# TUESDAY, AUGUST 8, 2017
## MEETING AGENDA

**Landon State Office Bld.**  
900 SW Jackson St.  
Board Room, Ste 102  
Topeka, KS 66612

### 10:00 a.m.

1. Call to Order  
2. Roll Call  
3. Mission Statement, Moment of Silence and Pledge of Allegiance  
4. Approval of Agenda  
5. Approval of July Minutes

### 10:05 a.m.

6. Commissioner’s Report

### 10:30 a.m.

7. Citizens’ Open Forum

### 10:45 a.m.

8. Mercury 7: Announcement of School Redesign Project participants

**Noon**  
Lunch  
*Board Policy Committee will meet in Conference Room 600 North*

### 1:30 p.m.

9. Update on Science education in Kansas

### 1:55 p.m.

10. Act on assessment performance levels and cut scores for Science

### 2:15 p.m.

11. Act on recommendations of the State Board Policy Committee

### 2:25 p.m.

12. Act on 2018 and 2019 State Board meeting dates

### 2:40 p.m.

13. Presentation of Kansans Can Best Practices Awards to Child Nutrition Program recipients

### 3:00 p.m.

Break

### 3:15 p.m.

14. Receive proposed Kansans Can Accreditation Regulations

### 4:00 p.m.

15. Act on new appointments to the Professional Standards Board

### 4:10 p.m.

16. Legislative Matters

### 4:30 p.m.

17. Communications Committee Report

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**KSBE**  
Landon State Office Building  
900 SW Jackson St., Suite 600  
Topeka, KS 66612  
(785) 296-3203  
www.ksde.org
18. **Consent Agenda**

**Routine Items**

(RI) a. Receive monthly personnel report page 119
(AI) b. Act on personnel appointments to unclassified positions page 121
(RI) c. Receive fourth quarter report: Kansas State School for the Deaf pg 123
(RI) d. Receive fourth quarter report: Kansas State School for the Blind pg 135
(AI) e. Act on recommendations for Visiting Scholar licenses page 147
(AI) f. Act on requests from the following districts to hold bond elections: p151
  USD 373 Newton, USD 384 Blue Valley-Randolph, USD 393 Solomon
(AI) g. Act on requests from the following districts for capital improvement
  (bond and interest) state aid: USD 373 Newton, USD 384 Blue Valley-
  Randolph, USD 393 Solomon, USD 436 Caney Valley page 159
(AI) h. Act on recommendations for funding the 2017-18 McKinney-Vento
  Children and Youth Homeless grants page 171
(AI) i. Authorize Kansas State School for the Blind contract renewal with
  Accessible Arts, Inc. for related services and facilities use page 173
(AI) j. Act on contract for trainer services for 2017 Individual Plan of Study
  workshops page 175
(AI) k. Act on contract for computer program enhancements to Kansas
  Nutrition Claims and Information Management System (KN-CLAIM)
(AI) l. Act on contract with the Kansas Association of Independent and
  Religious Schools for the reimbursement of funds for professional
  development of non-public school teachers and leaders page 179

**RECESS**
WEDNESDAY, AUGUST 9, 2017
MEETING AGENDA

Landon State Office Bld.
900 SW Jackson St.
Board Room, Ste 102
Topeka, KS 66612

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<thead>
<tr>
<th>Time</th>
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<tbody>
<tr>
<td>9:00 a.m.</td>
<td>1. Call to Order</td>
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<td>2. Roll Call</td>
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<td>3. Approval of Agenda</td>
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<td>9:05 a.m.</td>
<td>4. Act on Kansas curricular standards for Mathematics</td>
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<td>9:35 a.m.</td>
<td>5. Information on Professional Education Standards in teacher programs</td>
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<td>10:15 a.m.</td>
<td>Break</td>
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<td>10:25 a.m.</td>
<td>6. <em>Kansans Can</em> highlight: USD 229 Blue Valley community partnership</td>
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<td>11:05 a.m.</td>
<td>7. Board Reports and Requests for Future Agenda Items</td>
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<td>11:45 a.m.</td>
<td>8. Act on Board Travel</td>
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<td>ADJOURN</td>
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Next Meeting: Sept. 12 and 13 in Topeka

Individuals who need the use of a sign language interpreter, or who require other special accommodations, should contact Peggy Hill at 785-296-3203, at least seven business days prior to a Kansas State Board of Education meeting.
MISSION
To prepare Kansas students for lifelong success through rigorous, quality academic instruction, career training and character development according to each student’s gifts and talents.

VISION
Kansas leads the world in the success of each student.

MOTTO
Kansans CAN.

SUCCESSFUL KANSAS HIGH SCHOOL GRADUATE
A successful Kansas high school graduate has the
- Academic preparation,
- Cognitive preparation,
- Technical skills,
- Employability skills and
- Civic engagement
to be successful in postsecondary education, in the attainment of an industry recognized certification or in the workforce, without the need for remediation.

OUTCOMES FOR MEASURING PROGRESS
- Social/emotional growth measured locally
- Kindergarten readiness
- Individual Plan of Study focused on career interest
- High school graduation rates
- Postsecondary completion/attendance
CALL TO ORDER
Chairman Jim Porter called the monthly meeting of the Kansas State Board of Education to order at 10 a.m. Tuesday, July 11, 2017, in the Board Room at the Landon State Office Building, 900 S.W. Jackson St., Topeka, Kansas. He welcomed special guests in attendance.

ROLL CALL
All Board members were present:
John Bacon  Jim McNiece
Kathy Busch  Jim Porter
Sally Cauble  Steve Roberts
Deena Horst  Janet Waugh
Ann Mah  Ken Willard

STATE BOARD MISSION STATEMENT, MOMENT OF SILENCE AND PLEDGE OF ALLEGIANCE
Chairman Porter read both the Board’s Mission Statement and Kansans Can Vision Statement. He exercised personal privilege by reading “Inspirations for Responsibility for Children” from the New York State PTA. He then asked for a moment of silence after which the Pledge of Allegiance was recited.

APPROVAL OF AMENDED AGENDA
Chairman Porter acknowledged the request for action on establishment of a State Board of Education School Mental Health Advisory Council this month. Therefore, #11 would be changed from a discussion item to an action item. Mr. McNiece moved to approve the agenda as amended. Mrs. Busch seconded. Motion carried 10-0.

APPROVAL OF THE JUNE MEETING MINUTES
Mrs. Horst moved to approve the minutes of the June Board meeting. Mr. Roberts seconded. Motion carried 10-0.

COMMISSIONER’S REPORT
Commissioner Randy Watson focused on three topics during his monthly report. First, he summarized findings from an outside capacity review of the State Department of Education conducted to help align agency work with the Kansans Can vision. The review identified both strengths and opportunities for growth. Since then, KSDE has been working through a Strategic Performance Management system, and as a result will be shifting some internal staff roles. Dr. Watson next updated members about the Kansans Can School Redesign application process. The announcement of the seven districts selected to participate in the redesign of an elementary and secondary school will be made in August. Lastly, he cited multiple examples of how the Every Student Succeeds Act and the Rose Capacities are embedded in the foundation of the state’s vision for education and the new accreditation model.

CITIZENS’ OPEN FORUM
Chairman Porter declared the Citizens’ Forum open at 10:26 a.m. Speakers and their topics were: Mark Tallman, Kansas Association of School Boards — connection between education and economic prosperity; Callie Peace, Kansas Parents as Teachers Association — changes affecting the PAT program, and the difference between model and curriculum. Chairman Porter declared the Citizens’ Forum closed at 10:33 a.m.
UPDATE ON TRANSITION TO COLLEGE ALGEBRA PILOT

The first year of the Transition to College Algebra Pilot offered to high school seniors is complete and year two is beginning. Mathematics Education Program Consultant Melissa Fast shared information about the inaugural year, the high school and postsecondary participants, and plans for the second year. She also relayed feedback received on the training and curriculum. The partnership between participating school districts and two-year institutions aids seniors who, based on placement test scores, would need to take remedial math classes prior to entering into College Algebra. The transition course fills in identified gaps with math content. Additional data from the pilot will be analyzed and provided to the Board in the fall.

ACTION ON KANSAS CURRICULAR STANDARDS FOR WORLD LANGUAGE

In April, recommended revisions to the Kansas Curricular Standards for World Language were presented to the State Board for consideration. Curricular standards provide teachers in the content area with information on what students need to know and be able to do in relationship to the subject matter. Curricular standards are reviewed every seven years and require approval for adoption by the State Board. Revision committee co-chairs Phyllis Farrar and Elke Lorenz presented the final standards and answered questions. Mrs. Farrar stated that the standards strongly tie in with the Seal of Biliteracy criteria. Mrs. Cauble moved to approve the adoption of the Kansas Curricular Standards for World Language. Mrs. Horst seconded. Motion carried 10-0.

ACTION ON HIGHER EDUCATION EDUCATOR PREPARATION PROGRAM STANDARDS FOR ELEMENTARY EDUCATION K-6

Institutions of Higher Education utilize program standards to develop and improve their educator preparation programs. Board members received proposed revisions to the Elementary Education K-6 higher education standards in June. Director of Teacher Licensure and Accreditation Dr. Scott Myers and Committee Chair Dr. Amy Hogan of Ottawa University stood for questions regarding the changes. There was discussion about the core professional education standards for teacher candidates and whether training was included for ESL instruction or addressing students’ mental health/social/emotional needs. Mr. McNiece moved to approve the new educator preparation program standards for Elementary Education K-6. Mrs. Busch seconded. Motion carried 8-1 with Mr. Roberts in opposition and Mr. Bacon absent for the vote.

MOTION
(01:00:00)

BREAK

Board members took a break until 11:25 a.m.

DISCUSSION AND ACTION ON ESTABLISHMENT OF KANSAS STATE BOARD OF EDUCATION SCHOOL MENTAL HEALTH ADVISORY COUNCIL

During last month’s work session, the State Board requested that Kansas State Department of Education staff put together an advisory council to work on issues related to school mental health. Director Colleen Riley outlined the purpose of the council. Board members considered a draft of the membership roles to be filled and how the council would be organized. They were asked to submit nominees within the week in anticipation of the council’s first meeting in August to set direction. Chairman Porter stressed the importance of addressing Erin’s Law (child sexual abuse) in a comprehensive way. Other suggestions were noted. Mrs. Waugh moved to approve setting up the Kansas State Board of Education School Mental Health Advisory Council to inform the Kansas State Board of Education of current issues and unmet needs regarding school mental health, which includes the Board’s appointment of Kathy Busch as chair. (The Board representative will automatically serve as council chair). Mrs. Cauble seconded. Motion carried 9-1 with Mr. Roberts in opposition.

MOTION
(01:32:29)

LUNCH

At 11:50 a.m., Chairman Porter recessed the meeting for lunch until 1:30 p.m. The Board’s Policy Committee met during the lunch break.
DISCUSSION AND ACTION ON THE COALITION OF INNOVATIVE SCHOOL DISTRICTS’ RECOMMENDATION FOR ISSUING A SPECIALIZED CERTIFICATE

The Coalition of Innovative School Districts recommended issuing a Specialized Certificate for one applicant in USD 364 Marysville. USD 364 is one of seven designated Innovative School Districts allowed to utilize the Specialized Certificate for hiring non-licensed professional employees to teach. Marysville High School Principal Darren Schroeder answered questions about a hard-to-fill vacancy to teach Spanish. He also provided the district’s planned program of support to aid the individual. USD 364 Superintendent Bill Mullins joined the conversation by speaker phone. Mrs. Busch moved to suspend Board rules to allow for a vote this month on a receive item based on time sensitivity. Mr. McNiece seconded. Motion carried 10-0. Mrs. Cauble then moved to approve the Specialized Certificate application as presented for use in USD 364 Marysville. Mrs. Horst seconded. Motion carried 10-0. Specialized Certificates are good for one year and are non-transferrable to any other Kansas school district. Applications must be approved by the local school board, the Coalition and the State Board.

RECEIVE SCIENCE ASSESSMENT PERFORMANCE LEVELS AND CUT SCORES

Assistant Director Beth Fultz and Kris Kaase, Director of the Center for Educational Testing and Evaluation (CETE), briefly described the design of the Kansas assessment for science, which was a collaborative work between KSDE and CETE. Mr. Kaase then explained the stages of the science standard setting process to be used with the assessment. Forty teachers from across the state were selected to participate in the process. They helped label Performance Level Descriptors, which define what students should know and be able to do at each of the achievement levels. Then cut scores and score ranges were considered for each of the tested grade levels. Questions were asked about the performance levels and what it means to be on target. A vote on the information is expected in August.

ACTION ON RECOMMENDATIONS OF THE PROFESSIONAL PRACTICES COMMISSION

Chair of the Professional Practices Commission Linda Sieck reported on the PPC’s recommendations for disciplinary action on six cases. She noted that none of the individuals requested a hearing. Mrs. Horst moved to adopt the findings of the Professional Practices Commission and deny Sarah Kennington’s application; and revoke the licenses of Jamanshua Howell, Jessica Laster, Terry McMurry, Claire Torres and Todd Kaiser. Mr. Roberts seconded. Motion carried 10-0.

RECEIVE RECOMMENDATIONS OF THE STATE BOARD POLICY COMMITTEE

Policy Committee Chair Janet Waugh highlighted the committee’s recommended changes to the Board’s Policies as detailed in the redline version provided to members. She explained that minor changes were made to reference the Kansans Can vision, to update boardmanship expectations and committee titles, and to coordinate the time frame of evaluations with the state’s employee performance evaluations. The Policy Committee of the Board is asked to review policies at least every two years and suggest any changes deemed necessary. Board members are expected to vote on the recommended changes in August. The committee will next go through the Policy Guidelines.

DISCUSSION ON 2018 AND 2019 STATE BOARD MEETING DATES

Board members were presented draft calendars of meeting dates for 2018 and 2019, which follow the traditional format of two-day meetings on the second Tuesday and Wednesday of the month. Chairman Porter noted that KSDE and other educational organizations plan events around the Board’s calendar. Therefore, he recommended setting dates for the next two years so the schedule is available well in advance. Discussion occurred on possible alternate dates in April and October. These will be presented for additional discussion next month.

Board members took a break until 2:35 p.m.
LEGISLATIVE MATTERS

In his monthly report, Deputy Commissioner Dale Dennis reminded members of the Supreme Court hearing on school finance July 18, plus shared information about upcoming budget workshops for school districts. He noted that budget software completion is dependent upon the court’s decision. He also provided members with summaries of selected enrolled bills passed into law during the 2017 Legislative Session. These included Senate Bill 19 (K-12 school finance) and House Sub. For SB 21 (KPERS and working after retirement). Members talked about accreditation, accountability and their report to the Legislature in January.

CONSENT AGENDA

Mr. McNiece moved to approve the Consent Agenda as presented. Mr. Willard seconded. Motion carried 9-0-1 with Mr. Roberts abstaining. In the Consent Agenda, the Board:

- received the monthly Personnel Report for June.
- confirmed the unclassified personnel appointment of Rachel Beech as Education Program Consultant on the Early Childhood, Special Education and Title Services team, effective June 8, 2017, at an annual salary of $56,118.40.
- accepted the following recommendations of the Evaluation Review Committee for program approval: Fort Hays State University — School Counselor (A, PreK-12) continuing program approved through Dec. 31, 2024; MidAmerica Nazarene University — History, Government and Social Studies (I, 6-12), Mathematics (I, 5-8), Mathematics (I, 6-12), Speech/Theatre (I, 6-12) all continuing programs approved through Dec. 31, 2024; Newman University — Innovative/Experimental Elementary Internship (I, K-6) new program approved with stipulation through Dec. 31, 2019; Pittsburg State University — Speech/Theatre (I, 6-12) continuing program approved through Dec. 31, 2024; Tabor College — Chemistry (I, 6-12) dormant program and Elementary (I, K-6) continuing program, both approved through Dec. 31, 2024; Washburn University — Chemistry (I, 6-12), Early Childhood Unified (I, Birth-Grade 3), Foreign Language (I, PreK-12), High Incidence (A, K-6), High Incidence (A, 6-12), Mathematics (I, 6-12), all continuing programs approved through Dec. 31, 2024.
- accepted recommendations of the Licensure Review Committee as follows: Approved Cases — 3140 Michelle Babcock, 3145 Deanna Fraley, 3147 Sue Davis (K-6 elementary endorsement), 3150 Casey Carroll, 3152 Sarah Henning, 3153 Joseph Janner, 3155 Rebecca Clark, 3159 Lori English, 3161 Pamela Waldrop. Denied Case — 3147 Sue Davis (PreK-12 high incidence special education endorsement).
- approved recommendation for funding a new Kansas 21st Century Community Learning Centers Grant for USD 349 Stafford (elementary program) in an amount not to exceed $75,000 for the 2017-18 school year.
- approved recommendations for funding of the Kansas Parent Educator Program Grants for fiscal year 2018 in an amount not to exceed $7,237,635.
- approved the recommended award of Early Learning Preschool Aged At-Risk slots for fiscal year 2018.
- approved five-year renewal of the charter status for West Franklin Learning Center USD 287, Yoder Charter School USD 312, Walton Rural Life Center USD 373, Smoky Valley Virtual Charter School USD 400, Lawrence Virtual School USD 497, and Hope Street Academy USD 501.
- approved issuance of Visiting Scholar licenses for the 2017-18 school year as follows: Janet Graham (global business), Robin Bacon (foundations of medicine), Marjorie Holloway (foundations of medicine research and innovation), and William Skeens (law and public safety) all renewals for Blue Valley USD 229 Center for Advanced Professional Studies (CAPS); Justin Wieser
(strength and conditioning) for Basehor-Linwood USD 458; Keri Caudle Maricle (biology, and anatomy and physiology) for Thomas More Prep-Marian High School; Nathaniel Terrell (psychology, leadership studies, sociology, African American studies) for Topeka USD 501.

- approved individual school district allocations for extraordinary need state aid for the 2017-18 school year as follows: USD 114 Riverside $100,000; USD 217 Rolla $79,689; USD 225 Fowler $101,946; USD 243 Lebo-Waverly $126,310; USD 247 Southeast $383,281; USD 283 Elk Valley $209,817; USD 329 Wabaunsee $84,650; USD 326 Logan $80,000; USD 337 Royal Valley $171,808; USD 338 Valley Falls $50,196; USD 334 Southern Cloud $120,000; USD 344 Pleasanton $102,846; USD 352 Goodland $268,628; USD 371 Montezuma $118,426; USD 377 Effingham $98,337; USD 399 Paradise $40,232; USD 456 Marais des Cygnes $147,667; USD 476 Copeland $203,725.

- approved reallocation of remaining funds from the federal IDEA Part D State Personnel Development Grant in an amount not to exceed $155,000 to the Southeast Kansas Education Service Center.

authorized the Commissioner of Education to negotiate and

- continue a contract with the Smoky Hill Central Kansas Education Service Center to support KSDE and the Kansas Professional Learning Team in providing professional learning across Kansas;

- approve the recommended vendor for the kindergarten entry snapshot tool and enter into contract negotiations with the vendor in an amount not to exceed $985,000;

- authorize the Interim Superintendent of the Kansas State School for the Deaf (KSSD) to enter into contracts for out-of-state tuition for the 2017-18 school year with the following school districts in Missouri: Center — not to exceed $36,960 for two students plus additional related services listed on the IEPs at a cost of $60 per hour, and Park Hill — not to exceed $40,000 for one student;

- authorize the Interim Superintendent of the Kansas State School for the Blind (KSSB) to enter into a contract for out-of-state tuition for the 2017-18 school year with Liberty School District, Liberty, Missouri, in an amount not to exceed $20,000 for one student;

- authorize the Interim Superintendent of KSSB to renew a contract with Providence Medical Center for physical and occupational therapy services for the 2017-18 school year in an amount not to exceed $45,000;

- authorize the Interim Superintendent of KSSB to renew a contract with Baer Wilson and Company, LLC to provide counseling/evaluation services for students who attend KSSB during the 2017-18 school year in an amount not to exceed $45,000;

- authorize the Interim Superintendent of KSSB to enter into a contract with USD 500 Kansas City Kansas Public Schools for use of KSSB facilities for the USD 500 local Head Start Program during the 2017-18 school year in an amount not to exceed $55,000.

BOARD REPORTS AND FUTURE AGENDA ITEMS

Legislative — Mr. McNiece recommended starting preparations for the Board’s report that will be provided to the Legislature in January.

Communications — The committee will be sharing its strategic plan for the coming months at the next meeting.

Board Attorney Mark Ferguson noted that the Legislature made changes to the Kansas Open Meetings Act that affects the language for recessing into Executive Session. He would assist with updating the prepared wording for motions.
**Individual Board member reports:** Mr. Willard participated in hearings to allocate Extraordinary Need state aid money, stressing the importance of being responsible financial stewards. Mrs. Busch reported on recent KSHSAA meetings and classification recommendations, plus the National Federation of State High School Associations’ annual conference in Providence, Rhode Island. She also asked that nominations to serve on the School Mental Health Advisory Council be given to her by Friday. Mrs. Waugh attended meetings for juvenile justice and KACEE, the 150th anniversary of the Kansas State School for the Blind, and events celebrating technology equipment donations from Amazon to the Schools for the Deaf and the Blind. Mrs. Mah attended a blended learning conference at Santa Fe Trail and the career and technical education meeting.

Chairman Porter attended the National Teacher Hall of Fame banquet in Emporia, KSSB’s 150th anniversary event, and has been invited to a conference on ESSA later in July.

**Requests for Future Agenda Items:**
- Professional Education Standards used in teacher preparation programs (Mrs. Cauble)
- Kansas Association of Youth (KAY) service program for students (Mrs. Busch)
- Kansas Masonic Literacy Center and its partnership with Emporia State (Mrs. Horst)
- Impact of physical classroom environment on instruction (Mrs. Mah)
- Communications Committee recommendations for August meeting (Mr. McNiece)

**BOARD MEMBER TRAVEL**
Additions to the travel requests were: Mrs. Busch — Aug. 25 School Mental Health Advisory Council; Mrs. Cauble — July 13 budget workshop at Oakley; Mrs. Horst — Aug 15 Solomon USD 393 in-service, Aug. 18 Washington Co. USD 108 in-service; Mr. Porter — July 14 budget workshop at El Dorado; Mr. Willard — Aug. 11 McPherson schools in-service. Mrs. Cauble moved to approve the travel requests and additions. Mrs. Busch seconded. Motion carried 10-0.

**RECESS**
Chairman Porter recessed the meeting at 3:37 p.m. until 9 a.m. Wednesday.

Jim Porter, Chairman

Peggy Hill, Secretary
CALL TO ORDER

Chairman Jim Porter called the Wednesday meeting of the State Board of Education to order at 9 a.m. on July 12, 2017 in the Board Room at the Landon State Office Building, 900 SW Jackson St., Topeka, Kansas.

ROLL CALL

All Board members were present:
John Bacon  Jim McNiece
Kathy Busch  Jim Porter
Sally Cauble  Steve Roberts
Deena Horst  Janet Waugh
Ann Mah  Ken Willard

APPROVAL OF AGENDA

Mr. Willard moved to approve the day’s agenda as presented. Mrs. Busch seconded. Motion carried 10-0.

RECEIVE KANSAS CURRICULAR STANDARDS FOR MATHEMATICS

Mathematics Education Program Consultant Melissa Fast and Mathematics Standards Chair Debbie Thompson of USD 259 presented the final draft of the mathematics standards to the State Board. They gave an overview of the feedback received during the public comment period and town hall meetings. They demonstrated how the document has been made interactive with links to online resources. General changes included moving some of the standards to different grade levels, making clarifications and placing more emphasis on modeling. They also addressed the implementation plan and training for teachers. During discussion, some Board members expressed concerns about the value of standards, meeting the individual needs of students and additional time for consideration.

Board members took a 10-minute break at 10 a.m.

INFORMATION ON VISION OUTCOME: POSTSECONDARY COMPLETION/ATTENDANCE

Deputy Commissioner Brad Neuenswander led the presentation on postsecondary success by sharing information given to the field during this summer’s KSDE Impact Institutes. Schools will be receiving data collected through the National Student Clearinghouse, which tracks high school graduates enrolling in two-year and four-year postsecondary institutions. He explained what information is provided to schools in this postsecondary progress report and how the data will be used to benefit schools. Not only is the data related to the accreditation model and the Rose Capacities, but will help indicate if enough students are gaining postsecondary education to meet predicted needs of the Kansas workforce. He also mentioned the ongoing work with the Kansas Board of Regents regarding postsecondary success. Board members asked questions about the five-year state averages presented, the difference between success rate and effective rate, and the risk factors that influence student success. They were also shown how to view aggregate data for schools in their districts.

BOARD DISCUSSION

Chairman Porter led a discussion centered on how Board members as individuals or as a group can better communicate the Kansans Can vision. He acknowledged the positive efforts in communicating
with the Legislature this year and his appreciation for their work. Topics included more outreach to
the public and main street businesses, continued progress on the vision outcomes, and measurable
results of the accreditation model.

**ADJOURN**
Chairman Porter adjourned the meeting at 11:50 a.m.

______________________________  ________________________________
Jim Porter, Chairman             Peggy Hill, Secretary
KANSAS STATE BOARD OF EDUCATION  
Meeting Minutes  
June 13, 2017

CALL TO ORDER  
Chairman Jim Porter called the monthly meeting of the Kansas State Board of Education to order at 10 a.m. Tuesday, June 13, 2017, in the Board Room at the Landon State Office Building, 900 S.W. Jackson St., Topeka, Kansas. He welcomed everyone and made brief announcements.

ROLL CALL
All Board members were present:
John Bacon  
Jim McNiece  
Kathy Busch  
Jim Porter  
Sally Cauble  
Steve Roberts  
Deena Horst  
Janet Waugh  
Ann Mah  
Ken Willard

STATE BOARD MISSION STATEMENT, MOMENT OF SILENCE AND PLEDGE OF ALLEGIANCE
Chairman Porter read both the Board’s Mission Statement and Kansans Can Vision Statement. He then asked for a moment of silence after which the Pledge of Allegiance was recited.

APPROVAL OF AGENDA
Mrs. Busch moved to approve the Tuesday agenda. Mrs. Horst seconded. Motion carried 9-0-1 with Mr. Roberts abstaining.

APPROVAL OF THE MAY MEETING MINUTES
Mr. Willard moved to approve the minutes of the May Board meeting. Mr. McNiece seconded. Motion carried 9-0-1 with Mr. Roberts abstaining.

COMMISSIONER’S REPORT
Commissioner Randy Watson provided an update on Kansas’ application for its state plan as required by the Every Student Succeeds Act (ESSA). The application is expected to be posted online for public comment in July and submitted to the US Department of Education in September. There were questions about the makeup of the agency’s ESSA Advisory Council. Dr. Watson also discussed the School Redesign Project. Aug. 1 is the deadline for demonstration school applications to be submitted. In addition, he announced the two individuals who will be working with schools selected to participate in the project — Tammy Mitchell (elementary) and Todd Wiedemann (secondary). He asked Board members to encourage districts in their areas to consider applying. The redesign project’s study and learn phase will be in 2017-18 followed by the launch phase.

CITIZENS’ OPEN FORUM
Chairman Porter declared the Citizens’ Forum open at 10:34 a.m. Speakers and their topics were: Emma Baker, Rose Hill — recommendation to add CPR certification as a high school graduation requirement; Leah Fliter, Kansas Association of School Boards — cuts to Medicaid reimbursement for in-school services; Janice Smith, Children’s Cabinet Trust Fund — school district partnerships and promotion of redesign project. Chairman Porter declared the Citizens’ Forum closed at 10:44 a.m.

RECEIVE HIGHER EDUCATION PROGRAM STANDARDS FOR ELEMENTARY EDUCATION K-6
Dr. Amy Hogan, Ottawa University, represented the committee reviewing the educator preparation program standards for Elementary Education K-6. These content standards help establish what is
taught in higher education teacher preparation programs. Board members received draft revised standards for review, the previous standards and a comparison of the two versions. Dr. Hogan highlighted recommended revisions. Discussion followed about grade divisions of students, licensure levels, consideration of English as a Second Language training, and a suggestion to use the term post-secondary instead of college. The Board is expected to vote on the standards in July.

RECOMMENDATION ON CULTURAL DIVERSITY AND ETHNIC STUDIES

State Representatives John Alcala and Valdenia Winn were present to discuss draft legislation (House Bill 2207) that addresses instruction on ethnic studies in Kansas classrooms. They outlined a proposed Ethnic Studies Curriculum Development Project that would bring scholars together to create curriculum guides aligned to the current standards and the Rose Standards, lesson plans and assessment tools for use with grades 7-12. Christina Valdivia Alcala assisted with the presentation. Discussion followed about funding, training and the need to include all cultural backgrounds. More information on refinement of the curriculum development project is expected later in the fall.

BREAK

Board members took a break until 11:45 a.m.

RECOGNITION OF SUPERINTENDENT AND PRINCIPALS OF THE YEAR

Deputy Commissioner Dale Dennis introduced the Kansas Superintendent of the Year and Principals of the Year as selected and recognized by their peers. Each honoree briefly shared with the Board about special activities and programs occurring in their schools. These included Chamber of Commerce members adopting a class, self-directed professional development, individual learning plans, and addressing the social-emotional needs of students. All speakers praised the work of their teachers, staff and students.

The recipients are: Sue Givens, Superintendent at El Dorado USD 490, the 2017 Kansas Superintendent of the Year as named by the Kansas School Superintendents Association; Britton Hart, Principal at Emporia High School (Emporia USD 253), the 2016-2017 Kansas High School Principal of the Year as named by the Kansas Association of Secondary School Principals; Terrell Davis, Principal at Truesdell Middle School (Wichita USD 259), and Tony Helfrich, Principal at Liberty Middle School (Pratt USD 382), both 2016-2017 Kansas Middle School Principals of the Year as named by the Kansas Association of Middle School Administrators; and Dana Sprinkle, Principal at Ell-Saline Elementary School (Ell-Saline USD 307), the 2017 National Distinguished Principal of the Year as named by the Kansas Association of Elementary School Principals.

LUNCH

Following photos with the honorees, Chairman Porter recessed the meeting for lunch at 12:35 p.m. The Board’s Policy Committee met during this time.

ACTION ON 2017-18 ASSESSMENT CONTRACT RECOMMENDATION

Chairman Porter called the afternoon session to order. Deputy Commissioner Brad Neuenswander summarized the history of state assessment services, options for administering, national assessment issues and long-term considerations. Mrs. Cauble moved to approve a 2017-18 assessment contract with the Center for Educational Testing and Evaluation for an amount not to exceed $6 million. Mrs. Horst seconded. During discussion, Board members’ questions included the topics of interim assessments, privacy laws with student data, system testing capacity levels and assurances. Chairman Porter called for the vote. Motion carried 10-0.

PRESENTATION ON EDUCATIONAL USE OF UNMANNED AIRCRAFT SYSTEMS

Board members received a presentation on how Unmanned Aircraft Systems (UAS), better known as drones, can be used as a creative tool for learning. Agriculture education instructors Paul Lierz, USD 335, and David Holliday, USD 232, talked about drone facts, aviation regulations, technology in agri-
culture and ethics of use. Bob Brock, Director of UAS with the Kansas Department of Transportation, spoke about safety, privacy, standardizing curriculum programs and opportunities for drone business growth in Kansas.

Board members took a 10-minute break at 3:37 p.m.

**ACTION ON RECOMMENDATIONS FROM COALITION OF INNOVATIVE SCHOOL DISTRICTS FOR ISSUING 2017-18 SPECIALIZED CERTIFICATES**

USD 364 Superintendent Bill Mullins, who chairs the Coalition of Innovative School Districts, asked for Board approval on 16 applications for Specialized Certificates. The applicants are all for USD 500 Kansas City Kansas and were presented for consideration at the May State Board meeting. The Specialized Certificate is effective for one year. Once approved, the Coalition member district may hire the individual as a non-licensed professional employee. Mrs. Waugh moved to approve the Specialized Certificate applications as presented for use in USD 500 Kansas City Kansas. Mrs. Busch seconded. Motion carried 10-0.

**INFORMATION ON COMPREHENSIVE SCHOOL MENTAL HEALTH FRAMEWORK**

Director Colleen Riley provided a preview of the next day’s work session to discuss the vision outcome on students’ social-emotional growth. She began with a chronological overview of regulations and statutes related to this topic. A focus of the work session will be creation of an integrated, comprehensive school mental health framework to include meeting requirements of relevant legislation, such as Senate Bill 367 and House Bill 2408. In addition, discussions will occur on building resource partnerships. Discussions are timely since the 2012 social-emotional character development standards are due for review soon. Members stressed the importance of communicating with legislators.

**ACTION ON APPOINTMENTS TO SPECIAL EDUCATION ADVISORY COUNCIL**

Colleen Riley presented the recommendations for three new appointments and four reappointments to serve on the Special Education Advisory Council (SEAC). One of the major functions of the SEAC is to serve as a liaison between the statewide populace and the Kansas State Board of Education. Mr. McNiece made the motion, which was read for the record by Mrs. Cauble, to reappoint Joan Macy, Kathy Kersenbrock-Ostmeyer, Dr. Marcy Aycock and Dr. Marvin Miller for their second three-year terms, and to appoint Laura Thompson, Kelly McCauley and Chelle Kemper to the Special Education Advisory Council for their first terms, all to run from July 1, 2017 through June 30, 2020. Motion carried 10-0.

**ACTION ON NEGOTIATED AGREEMENT WITH KANSAS STATE SCHOOL FOR THE DEAF NEA**

Board Attorney Mark Ferguson presented the negotiated Professional Agreement between the Kansas State School for the Deaf NEA and the Kansas State Board of Education. He reported that the document reflects minimal substantive changes. Mrs. Waugh moved to adopt the Professional Agreement between the Kansas State School for the Deaf NEA and the Kansas State Board of Education for the term Aug. 1, 2017 to July 31, 2018. Mrs. Busch seconded. Motion carried 10-0.

**LEGISLATIVE MATTERS**

Deputy Commissioner Dale Dennis addressed several areas of legislative action affecting education. He began by highlighting major policy provisions of Senate Bill 19, the proposed school finance plan, in addition to providing the committee report on the bill. Mr. Dennis provided information on issuance of bonds and criteria for bond election approval. Other handouts and discussions focused on changes to rules for working after retirement, guideline updates to the Kansas At-Risk Pupil Assistance Program including the definition of an at-risk student, and the appropriated amount of funds allotted for districts with extraordinary need due to declining enrollment. A question and answer period followed.
EXECUTIVE SESSION

Mrs. Busch moved to enter into Executive Session for 10 minutes for the purpose of discussing personnel matters of non-elected personnel in order to protect the privacy interests of the individual(s) to be discussed. The session would begin at 5:20 p.m. following a 10-minute break. Commissioner Watson and Wendy Fritz were invited to join the session. Mrs. Cauble seconded. Motion carried 10-0.

The Board returned to open session at 5:30 p.m.

ACTION ON RECOMMENDATION FOR INTERIM SUPERINTENDENT OF KANSAS STATE SCHOOL FOR THE DEAF AND KANSAS STATE SCHOOL FOR THE BLIND

A series of motions followed the executive session. Mrs. Busch moved to confirm the recommendation of Ms. Luanne Barron as Interim Superintendent to serve the Kansas State School for the Deaf, effective July 1, 2017, at a salary of $106,000. Mr. Bacon seconded. Motion carried 10-0.

Mrs. Busch moved to confirm the recommendation of Mr. Jon Harding as Interim Superintendent to serve the Kansas State School for the Blind, effective July 1, 2017, at a salary of $106,000. Mrs. Waugh seconded. Motion carried 10-0.

Mrs. Busch moved that the Interim Superintendents work together and with the Kansas Association of School Boards to bring back to the Kansas State Board of Education, no later than December of 2017, recommendations on administrative structures to serve both schools now and in the future. Mrs. Horst seconded. Motion carried 10-0.

CONSENT AGENDA

Mr. McNiece moved to approve the Consent Agenda as presented. Mr. Willard seconded. Motion carried 9-0-1 with Mr. Roberts abstaining. In the Consent Agenda, the Board:

- received the monthly Personnel Report for May.
- confirmed unclassified personnel appointments of Amanda Sales as Communications Specialist serving the teams of Communications and Recognition plus Child Nutrition and Wellness, effective May 24, 2017, at an annual salary of $53,414.40; and Kelly Steele as Education Program Consultant on the Early Childhood, Special Education and Title Services team, effective May 30, 2017, at an annual salary of $56,118.40.
- approved maintaining the current educator licensure fees for 2017-18, effective July 1, 2017.
- issued Calendar Year 2017 licenses to two commercial driver training schools — BuckleUp School, LLC, Lawrence, and EcoDriver School, Lenexa.
- issued a 2017 license to Behind the Wheel Defensive Driving School, effective from the date of approval through Dec. 31, 2017.
- approved IDEA Title VI-B Special Education Targeted Improvement Plan grants for 2017-18 as follows: USD 115 Marshall/Nemaha $16,675; USD 202 Turner School District $31,443; USD 207 Ft. Leavenworth $14,386; USD 229 Blue Valley $118,200; USD 230 Spring Hill School District $12,761; USD 231 Gardner-Edgerton-Antioch School District $21,887; USD 232 De Soto $29,134; USD 233 Olathe School District $145,814; USD 234 Ft Scott $18,986; USD 244 Coffey County SpEd Coop - Burlington $17,741; USD 253 Flint Hills SpEd Coop - Emporia $60,213; USD 259 Wichita Public Schools $346,381; USD 260 Derby Public Schools $50,609; USD 261 Haysville Public Schools $33,813; USD 263 Mulvane Special Education $18,094; USD 273 Beloit SpEd Coop $22,801; USD 282 West Elk $17,225; USD 290 Ottawa Public Schools $19,229; USD 305 Central
Kansas Coop - Salina $111,383; USD 308 Hutchinson Public Schools $42,846; USD 320 Special Svs Coop Wamego $25,870; USD 321 Kaw Valley Schools $12,978; USD 330 Mission Valley $10,865; USD 333 Learning Coop North Central KS $35,407; USD 336 Holton SpEd Coop $30,887; USD 345 Seaman Public Schools $25,035; USD 353 Wellington Public Schools $16,708; USD 364 Marshall County Coop - Marysville $14,402; USD 368 East Central KS SpEd Coop - Paola $69,962; USD 372 Silver Lake $11,420; USD 373 Harvey County SpEd Coop - Newton $39,845; USD 379 Twin Lakes Coop - Clay Center $26,142; USD 383 Manhattan-Ogden School District $43,550; USD 389 Eureka $12,315; USD 405 Rice County Sp Svcs Coop - Lyons $22,084; USD 407 Russell County $13,693; USD 409 Atchison Public Schools $20,908; USD 418 McPherson Co SpEd Coop - McPherson $38,785; USD 428 Barton County SpEd Coop - Great Bend $39,231; USD 437 Auburn-Washburn $37,066; USD 450 Shawnee Heights $25,193; USD 453 Leavenworth- Lansing $24,953; USD 457 Garden City $77,319; USD 458 Basehor-Linwood $17,283; USD 465 Cowley County Sp Svcs Coop - Winfield $53,477; USD 469 Lansing $19,440; USD 475 Junction City/Geary County $48,398; USD 480 Liberal $31,084; USD 489 Hays West Central KS SpEd Coop - Hays $34,343; USD 495 Tri County Sp Svcs - Larned $17,136; USD 497 Lawrence $76,744; USD 500 Wyandotte County SpEd Coop $175,153; USD 501 Topeka Public Schools $113,195; USD 512 Shawnee Mission $211,822; DO 602 NW KS Svc Center - Oakley $57,642; DO 603 ANW Coop - Humboldt $54,770; DO 605 South Central KS SpEd Coop - Pratt $64,064; DO 607 Tri County SpEd Coop - Independence $71,872; DO 608 NE KS Svc Center - Lecompton $43,710; DO 610 Reno County Coop - Hutchinson $41,148; DO 611 High Plains Coop - Ulysses $75,601; DO 613 SW Area Coop - Ensign $76,691; DO 614 East Central KS Coop - Baldwin City $27,097; DO 615 Brown County SpEd - Hiawatha $20,703; DO 616 Doniphan County SpEd Coop - Bendena $15,426; DO 617 Marion County SpEd Coop - Florence $26,637; DO 618 Sedgwick County - Goddard $117,123; DO 619 Sumner County Interlocal - Wellington $19,012; DO 620 Three Lakes Coop - Lyndon $33,019; DO 636 NCK Special Ed Coop - Glade $37,736; DO 637 SEK Interlocal - Pittsburg $95,872; DO 638 Butler Co SpEd Interlocal - El Dorado $96,827; SO 319/DO 629 Kansas Juvenile Correctional Complex $16,434; SO 507/DO 609 Parsons State Hospital $3,705; SO 525/DO 609 KS State Penitentiary $3,006; SO 604 KS School for the Blind $5,300; SO 610 KS School for the Deaf $10,235. Total funding: $3,635,949.

- approved recommendations for funding of the Migrant Family Literacy Grants for 2017-18 as follows: USD 102 Cimarron $78,000; USD 214 Ulysses $50,000; USD 215 Lakin $70,136; USD 216 Deerfield $72,000; USD 218 Elkhart $22,059; USD 445 Coffeyville $20,000; USD 457 Garden City $75,153; USD 500 Kansas City $75,000; Johnson County Community College $125,000. Total funding: $587,348.

- approved recommendations for funding the Kansas 21st Century Community Learning Centers Continuation Grants for 2017-18 as follows: USD 108 Washington County $125,000; USD 210 Hugoton $75,000; USD 214 Ulysses $74,978; USD 218 Elkhart $75,000; USD 244 Burlington $74,001; USD 252 Southern Lyon $124,949; USD 257 Iola (Jefferson) $75,000; USD 261 Haysville (Middle School) $73,000; USD 282 West Elk $119,120; USD 352 Goodland $74,945; USD 374 Sublette $87,590; USD 379 Clay County (Lincoln/Garfield) $75,000; USD 383 Manhattan-Ogden (Bergman) $75,000; USD 383 Manhattan-Ogden (Ogden) $75,000; USD 386 Madison-Virgil $94,329; USD 435 Abilene $75,000; USD 443 Dodge City $99,980; USD 445 Coffeyville $75,000; USD 446 Independence $75,000; USD 461 Neodesha $94,059; USD 475 Geary County (Washington/Grandview) $100,000; USD 499 Galena $75,000; USD 500 Kansas City (New Stanley) $75,000; USD 500 Kansas City (Silver City) $75,000; USD 500 Kansas City (Whittier) $75,000; USD 501 Topeka (Quincy) $75,000; USD 501 Topeka (Robinson) $75,000; Boys & Girls Club of Lawrence (Hillcrest) $75,000; Boys & Girls Club of Lawrence (Kennedy) $75,000; Boys & Girls Club of Lawrence (Woodlawn) $75,000; Boys & Girls Club of Manhattan (Eisenhower) $100,000; Boys & Girls Club of Manhattan (Lee) $75,000; Boys & Girls Club of Manhattan (Roosevelt) $75,000; Boys & Girls Club of Topeka (Tecumseh North) $100,000; Boys & Girls Club of Topeka...
(Tecumseh South) $100,000; Catholic Charities of Wichita (St. Anne’s) $99,985; KCK Community College (Schlague HS/Central MS) $75,000; KCK Community College (Wyandotte HS) $100,000; YWCA of NE KS (Williams Magnet) $74,918. Total funding: $3,291,854.

- approved recommendations for funding new Kansas 21st Century Community Learning Centers Grants for 2017-18 as follows: USD 101 Erie $98,331; USD 209 Moscow Public Schools $71,256; USD 225 Fowler Public Schools $71,016; USD 248 Girard $74,970; USD 257 Iola $75,000; USD 259 Wichita (Adams) $74,971; USD 259 Wichita (Ortiz) $61,813; USD 259 Wichita (Cleaveland) $61,813; USD 259 Wichita (Park) $72,305; USD 290 Ottawa (Sunflower/Lincoln) $74,875; USD 290 Ottawa (Garfield) $63,354; USD 349 Stafford (Middle School) $98,676; USD 387 Altoona-Midway $113,509; USD 445 Coffeyville (Preschool) $88,424; USD 466 Scott City, $74,977; USD 475 Geary County (Ware) $75,000; USD 498 Valley Heights $80,382. Total funding: $1,330,672.

- approved recommendations for continuation funding of Kansas After School Enhancement Grants for the 2017-18 as follows: USD 204 Bonner Springs $14,336; USD 310 Fairfield $11,156; USD 373 Newton $13,223; USD 383 Manhattan-Ogden $14,222; USD 445 Coffeyville $18,223, USD 446 Independence $11,627, USD 498 Valley Heights $18,223, USD 500 Kansas City $18,223, Boys & Girls Club of Hutchinson $18,223, Boys & Girls Club of Manhattan $14,097, Cherry Street Youth Center (Chanute) $17,724, Wichita YMCA $18,223. Total funding: $187,500.

- approved recommendations for continuation funding of the Kansas Middle School After School Advancement Grants for the 2017-18 as follows: USD 491 Eudora $21,800, USD 497 Lawrence $21,800, USD 500 Kansas City $21,800, Boys & Girls Club of Hutchinson $18,223, Boys & Girls Club of Manhattan $19,427, Boys & Girls Club of Topeka $21,801. Total funding: $125,000.

- approved the Kansas Volunteer Commission’s recommendations for 2017-18 Kansas AmeriCorps subgrantees as follows: Boys & Girls Club of Lawrence $343,250; Harvesters Community Food Network $69,150; Kansas City Kansas Public School District $156,717; Kansas Department of Wildlife and Parks $402,961; Rosedale Development Association $70,560; United Way of Douglas County $268,600; Topeka Habitat for Humanity $27,830; Wichita State University Community Engagement Institute $28,855. Total funding: $1,367,923.

authorized the Commissioner of Education to negotiate and

- continue a contract with the Kansas Department of Health and Environment for the support of an interagency information/resource service for persons with disabilities to provide toll-free telephone and website access to information on health, social services and education services, and resources available from public supported programs and special grant projects, in an amount not to exceed $25,000 annually for three years;

- enter into a contract with KU Medical Center’s Area Health Education Center to provide state advisor services for Kansas HOSA in an amount not to exceed $39,980 from July 1, 2017 through June 30, 2021;

- enter into a contract with the Kansas Chapter of Future Business Leaders of America to provide state advisor services in an amount not to exceed $100,000 from July 1, 2017 through June 30, 2021;

- continue a contract with Amber McNew for her services as the state advisor for Kansas Business Professionals of America in an amount not to exceed $60,000 from July 1, 2017 through June 30, 2021;

- continue a contract with Fort Hays State University to provide state advisor services for Kansas DECA in an amount not to exceed $80,000 from July 1, 2017 through June 30, 2021;
continue a contract with Kansas State University to provide Carl D. Perkins leadership grant activities for the position of Executive Director of FFA in an amount not to exceed $226,281 from July 1, 2018 to June 30, 2021 (extending from the contract approved in February 2017).

BOARD REPORTS
Legislative — Mr. McNiece announced that the State Board will report to the legislature next January on the implementation of the systems accreditation model and its connection to accountability.

Communications — Mr. McNiece noted the Communications Committee would meet the next day.

Policy — Mrs. Waugh reported that the committee’s recommended changes to State Board Policies would be presented to the Board in July as a receive item. The committee will meet in July to review guidelines.

Board Attorney Mark Ferguson offered to answer questions about the summary reports for April and May.

Individual Board member reports: Mrs. Mah attended local school board meetings in her district and participated in the New Member Institute hosted by the National Association of State Boards of Education (NASBE). Mrs. Horst commented on her work at the legislature. Mrs. Cauble completed presenting Challenge Awards and commented on work with the Teacher Vacancy and Supply Committee. Mrs. Waugh attended several graduations as well as the Confidence in Public Education Task Force meeting, noting that G.A. Buie will be the new chair. Mrs. Busch reported on NASBE policy committee work, the Teacher Vacancy and Supply Committee, a meeting with the Educators Rising organization, and the agenda for KSHSAA’s meeting this month. Mr. Roberts attended the Kansas Excellence in Math and Science Teaching Conference in Hutchinson. Mr. Willard, Mrs. Horst and Mr. McNiece attended the NASBE nominations committee meeting. Mr. McNiece also reported on the NASBE Board of Directors’ meeting.

Chairman Porter assigned Ann Mah as the Board’s ESSA representative, and Jim McNiece and Ken Willard as the Board’s representatives on the School Redesign Committee. He also reported on attending a professional development conference at KU. He offered final comments on the Board’s responsibility for education policy and the need to be proactive in working with the legislature.

Requests for Future Agenda Items:
Mrs. Waugh requested a presentation by the Kansas Alliance for the Arts in Education.

BOARD MEMBER TRAVEL
Additions to the travel requests were: Mrs. Horst—July 18 and 19 Impact Institute at Great Bend. Mrs. Horst moved to approve the travel requests and addition. Mrs. Busch seconded. Motion carried 10-0.

RECESS
Chairman Porter recessed the meeting at 6:12 p.m. until 9 a.m. Wednesday at the Kansas Association of School Boards offices.
WORK SESSION — WEDNESDAY, JUNE 14, 2017

The Kansas State Board of Education convened at 9 a.m. on Wednesday, June 14, for a work session, which was held at the Kansas Association of School Boards in Topeka. Board members in attendance were: Chairman Porter, Vice Chair Busch, Mr. Bacon, Mrs. Cauble, Mrs. Horst, Mrs. Mah, Mr. McNiece, Mr. Roberts, Mrs. Waugh and Mr. Willard.

Presentations and discussions centered on the Kansans Can vision outcome for addressing students’ social/emotional growth. The concept of creating a comprehensive school mental health framework would incorporate statutory and regulatory requirements targeted at youth suicide, sexual abuse, juvenile justice, bullying, etc. To aid in building the framework, a cross-sector workgroup was tasked with looking at trauma-informed care, including training needed for pre-service teachers and recommendations from other organizations. Mr. McNiece asked to see the report. Multiple presenters shared information and research during the work session. There were discussions about intervention models, social-emotional character development standards, the multi-tier system of supports (MTSS), involving community partners and available resources. Speakers from the Seaman, Emporia and Abilene school districts shared specific practices they’ve implemented to train staff and help students.

Board members then talked about actionable implementation and ways to work with the legislature. They also discussed trainings required and how to assist schools. A draft of a comprehensive school mental health framework with recommendations for action, task force composition and addressing Erin’s Law is expected in the near future.

The work session ended at 1:40 p.m.

__________________________________________  ___________________________________
Jim Porter, Chairman                        Peggy Hill, Secretary
Subject: Citizens’ Open Forum

Board Goals: Develop active communication and partnerships with families, communities, business stakeholders, constituents and policy partners

During the Citizens’ Open Forum, the State Board of Education provides an opportunity for citizens to share views about topics of interest or issues currently being considered by the State Board.

Each speaker shall be allowed to speak for three minutes. Any person wishing to speak shall complete a presenter’s card, giving his or her name and address, and the name of any group he or she is representing. (Ref. Board Policy 1012) The speaker’s card should be completed prior to 10:30 a.m.

If written material is submitted, 13 copies should be provided.
To: Commissioner Randy Watson
From: Brad Neuenswander
Subject: Announcement of School Redesign Project Participants
Board Goals: Provide a flexible and efficient delivery system to meet our students’ varied and changing needs

Agency staff will announce the seven districts that were selected for the School Redesign Project. They will discuss the selection process as well as the immediate next steps to move forward with these districts.
KSDE Science Consultant Lizette Burks will provide the State Board of Education with an update on Science education in Kansas. Her focus will be on professional learning for teachers, science education in Kansas schools, and the upcoming standards review process.

Additionally Brandi Leggett, past Presidential Award for Excellence in Mathematics and Science Teaching awardee and Shawnee Mission School District's Rosehill Elementary Instructional Coach, will be joined by others in her school district to discuss how they aligned standards, curriculum and instruction to effectively improve student learning in science and student science achievement.

Ms. Leggett will be joined by the following students: Nathan Fritz (3rd grade), David Flores (3rd grade), Victoria Oldberding (3rd grade), Owen Coleman (3rd grade), Maryn Clement (5th grade) and Hannah Giblin (5th grade). Erin Smith, District Teaching and Learning Coordinator, will also be in attendance.
UPDATE ON SCIENCE EDUCATION

August 8, 2017
Lizette Burks, KSDE Science Consultant

Kansas leads the world in the success of each student.

UPCOMING STANDARDS REVIEW PERIOD

- 2013 Board Adopted Kansas Standards for Science
- Seven Year Review Cycle
- August 2017- March 2018 Public Open Feedback
- Link will be given to Dr. Randy Watson to share with board members
- 2018-2019 Review of Science Standards
- Board Approval Scheduled in the 2019-2020 School Year
WE WELCOME FEEDBACK FROM

Board Members
Members of the business community
Constituents
Teachers
Parents
Other stakeholders

QUESTIONS OR COMMENTS?

LIZETTE BURKS
lburks@ksde.org
Career Standards and Assessment Services
REQUEST AND RECOMMENDATION FOR BOARD ACTION

Item Title:
Act on assessment performance levels and cut scores for Science

Board Goals:
Provide a flexible and efficient delivery system to meet our students’ varied and changing needs

Recommended Motion:
It is moved that the Kansas State Board of Education vote to approve the performance levels and cut scores for the Kansas College and Career Ready and Dynamic Learning Maps assessments in Science.

Explanation of Situation Requiring Action:
In July of 2017, the Kansas State Board of Education received performance levels and cut scores for the Kansas College and Career Ready Assessments in Science and Dynamic Learning Maps Science. If approved, these performance levels and cut scores will be applied for the first time on the assessments administered in the spring of 2017.
Item Title:
Act on recommendations of the State Board Policy Committee

Board Goals:
Board Matters

Recommended Motion:
It is moved that the Kansas State Board of Education adopt the recommendations of the Board Policy Committee as presented for updating the Policies, and instruct the committee to post the revised edition on the Board page of the KSDE website for accessibility.

Explanation of Situation Requiring Action:
The Policy Committee of the Board shall review Board policies at least every two years and shall suggest to the Board any changes deemed necessary. (Policy 1001)

Policy Committee members Janet Waugh, Steve Roberts and Ann Mah have been working to review and update the State Board Policies. The redline version of recommended revisions is provided for Board approval this month.
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ARTICLE VI

Section 2. State board of education. (a) The legislature shall provide for a state board of education which shall have general supervision of public schools, educational institutions and all the educational interests of the state, except educational functions delegated by law to the state board of regents. The state board of education shall perform such other duties as may be provided by law.

Section 3. Members of state board of education. (a) There shall be ten members of the state board of education with overlapping terms as the legislature may prescribe. The legislature shall make provision for ten member districts, each comprised of four contiguous senatorial districts. The electors of each member district shall elect one person residing in the district as a member of the board. The legislature shall prescribe the manner in which vacancies occurring on the board shall be filled.

Section 4. Commissioner of education. The state board of education shall appoint a commissioner of education who shall serve at the pleasure of the board as its executive officer.
STATUTES REGARDING THE STATE BOARD OF EDUCATION

72-7513. General powers of state board. In general, but not by way of limitation, consonant with other applicable statutory provisions, the state board of education shall:

(a) Adopt and maintain standards, criteria, guidelines or rules and regulations for the following:
   (1) School libraries and other educational materials with the exception of textbooks;
   (2) Course of study and curriculum;
   (3) Accreditation of schools including elementary and secondary, public and nonpublic;
   (4) Certification of administrators, teachers, counselors, school nurses and supervisors of school districts and of the state department of education and of teachers and administrators of nonpublic schools.

(b) Administer the laws of this state concerning the matters named in this section and all other matters relating to the general supervision of the public schools and institutions under supervision of the state board of education.

72-7514. Rules and regulations; authorization to adopt. The state board is hereby authorized to adopt rules and regulations not in conflict with law on any and all matters within its jurisdiction, except as is otherwise specifically provided by law.

76-1001a. State board of education; control and supervision; rules and regulations. The Kansas state school for the deaf is a state institution under the control and supervision of the state board of education. For such control and supervision, the state board of education may enter into contracts, adopt rules and regulations and do or perform such other acts as are authorized by law or are necessary for such purposes.

76-1101a. State board of education; control and supervision; rules and regulations. The Kansas state school for the blind is a state institution under the control and supervision of the state board of education. For such control and supervision, the state board of education may enter into contracts, adopt rules and regulations and do or perform such other acts as are authorized by law or are necessary for such purposes.
MISSION & VISION

The Kansas State Board of Education is charged with the general supervision of public schools and all the other educational interests of the state. While clearly acknowledging the role and importance of local control, the State Board of Education has the responsibility to provide direction and leadership for the supervision of all the state educational interests under its jurisdiction.

With this in mind, the State Board has adopted the following mission:

To prepare Kansas students for lifelong success through rigorous, quality academic instruction, career training and character development according to each student’s gifts and talents.

In September 2015, the State Board adopted the following vision:

Kansas leads the world in the success of each student.

ESTABLISHING GOALS

1. Towards accomplishment of its mission, the State Board, biennially, shall review and establish the goals of the Board biennially.

2. The State Board shall annually regularly monitor its progress and performance towards accomplishment of the State Board’s goals and objectives. The Board will be responsible for its performance.

BOARD CONTRIBUTIONS

The work of the Board shall be to:

1. Link the State Board and the people of Kansas.
2. Develop policies that address:
   a. Governance process (Policies 1001 et seq.) – how the Board conceives, carries out and monitors its own tasks.
   b. Board/commissioner relationships (Policies 2001 et seq.) – delegation authority and monitoring the authority thus delegated.
   c. Commissioner limitations (Policies 3001 et seq.) – constraints and boundaries which define the acceptable area of executive authority.

Adopted: March 14, 2000
Amended: November 14, 2001
Amended: March 11, 2014
GOVERNANCE PROCESS
POLICY REVIEW

Policy Type: Governance Process

The Policy Committee of the Board shall review Board policies at least every two years and shall suggest to the Board any changes deemed necessary.

Adopted: August 9, 1989
Amended: March 10, 1998
POLICY: GOVERNING STYLE

Policy Type: Governance Process

The Kansas State Board of Education (also referenced in this document as the State Board or the Board) will focus on its mission and vision, and approach its task in a manner which emphasizes strategic leadership, not administrative detail. It will make a clear distinction between its role and that of the commissioner. The Board will make decisions utilizing past results and current information and be proactive rather than reactive.

Accordingly, the Board will:

1. Set direction for education in Kansas by focusing on the careful initiation and establishment of policies.

2. Adhere to Board policies.

3. Be accountable to the public for competent, conscientious and effective accomplishment of its obligations as a Board. No member of the Board shall represent a minority position as that of the full Board.

Adopted: August 9, 1989
Amended: March 10, 1998
Amended: March 14, 2000
Amended: March 11, 2014
POLICY: STATE BOARD POLICIES, REGULATIONS
AND GUIDELINES

Policy Type: Governance Process

The State Board of Education shall adopt policies, regulations and guidelines necessary
to carry out the responsibilities of the State Board and to achieve the goals of the Board.

Any proposal to adopt or to amend or suspend an existing State Board policy or
guideline shall be presented in written form at a regular meeting of the Board,
and be voted upon at the next regular meeting; provided that this procedure may
be suspended by a vote of seven members at any meeting. A proposal that is on the
agenda for adoption may be amended and adopted at that meeting.

The State Board shall adopt rules and regulations required by law or deemed appropriate
by the Board. The State Board shall adopt rules and regulations in the manner required
by law.

The State Board of Education may adopt guidelines for advancing the vision or mission
of the State Board. The State Board may adopt guidelines for the advancement of the
educational interests of the state.

Adopted: August 9, 1989
Amended: March 10, 1998
Amended: March 14, 2000
POLICY: ORIENTATION OF NEW MEMBERS

Policy Type: Governance Process

The State Board, in cooperation with the commissioner, shall orient new State Board members into the work of the State Board of Education and the educational programs throughout the state.

Newly elected members shall be encouraged to attend meetings of the State Board of Education or to listen to the meetings on the Internet. The expenses of members-elect to attend meetings cannot be paid until their term of office begins. Notice of Board meetings, agendas and all supporting materials shall be sent to newly elected Board members in the interim before taking office.

For more information see Procedure A of the Guidelines

Adopted: August 9, 1989
Amended: March 10, 1998
Amended: November 14, 2007
Amended: March 11, 2014
POLICY: BOARD MEMBER DEVELOPMENT

Policy Type: Governance Process

The State Board of Education is responsible for its own development as a Board.

This development may take place in part through membership in national and state educational organizations.

Individual members of the Board are encouraged to participate fully in educational meetings to the extent funds are available.

The appointment of a State Board member to represent the Board on a national association, committee or position shall be by vote of the State Board. Appointment to a subcommittee, task force or other similar group of a national association or committee shall also be approved by vote of the Board if State Board funds will be utilized.

The State Board of Education may authorize Board members to attend in-state or out-of-state meetings for participation in matters of educational interest to the state of Kansas.

For more information see Guideline I.

Adopted: August 9, 1989
Amended: March 10, 1998
Amended: March 14, 2000
POLICY: BOARDSMANSHIP EXPECTATIONS

Policy Type: Governance Process

A. Board members are expected to:

1. maintain an open dialogue with each other;
2. listen and show courtesy and respect to each other, the public and staff;
3. respect other Board members and their opinions;
4. not make assumptions about the possible voting preferences of other members and feel free to ask for clarification of positions;
5. accept the fact that there will be differences of opinion and not take dissenting opinions personally;
6. make a good faith effort to find common ground on issues, including consideration of parts of proposals;
7. earn trust from one another; and
8. identify and utilize appropriate press relations to protect the integrity of the Board, and not misrepresent the Board’s official position on issues to the press or in social media.

B. Perceived Violations of Boardsmanship Expectations

1. Any perceived violation of boardsmanship expectations can be voiced to the chairman by any Board member.
2. The chairman shall rule on the alleged violation.
3. If any member is dissatisfied with the ruling of the chair, the member may make a motion on the issue.

C. Board members also expect the chair and vice chair of the Board to work as a team with the commissioner.

Adopted: August 9, 1989
Amended: March 10, 1998
Amended: February 9, 2000
Amended: September 15, 2005
Amended: July 15, 2009
POLICY: OFFICERS - ELECTION, TENURE, AND DUTIES

Policy Type: Governance Process

At its January meeting in odd-numbered years, the State Board shall organize by election of a chairman, vice chairman and appointment of an attorney for the Board and secretary to the Board. Election of officers may be by signed ballot. Each signed ballot shall be open for inspection as provided by law.

A. The immediate past chairman, if available and on the Board, shall be the temporary chairman of the biennial organization meeting and preside for the following purposes:
   1. Call to order
   2. Ensure that newly elected and re-elected members are administered the oath of office.
   3. Roll Call
   4. Election of Board chairman or conduct business of the Board if there is an impasse on election of a Board chairman.

If the immediate past chairman is not available, the immediate past vice chairman, if available and on the Board, shall be the temporary chairman. In the absence of the immediate past chairman and vice chairman, the Board member with the most seniority on the Board shall serve as temporary chairman and preside for the purposes specified in paragraph A. If the temporary chairman cannot be determined based on seniority because two or more Board members have the same level of seniority, the temporary chairman will be determined by lot between those Board members with the most seniority.

If the Board reaches an impasse on election of a Board chairman during its organizational meeting, the temporary chairman, as determined herein, will preside at each subsequent meeting of the Board until a chairman is elected.

B. Chairman: It shall be the duty of the chairman to preside at all meetings of the State Board and perform such other duties as the Board may direct. In case the office of chairman shall become vacant, the vice chairman shall
assume the title, duties, and responsibilities of the chair for the remainder of the term for which the chairman was originally selected. The chairman may serve as an ex-officio member of all State Board committees. In the absence of the commissioner or the inability of the commissioner to act, the chairman shall appoint a deputy commissioner to act as commissioner until the next regular meeting of the State Board.

C. Vice chairman: It shall be the duty of the vice chairman to preside at all meetings of the State Board in the absence of the chairman. In case the office of vice chairman shall become vacant, the State Board shall elect a new vice chairman.

D. In the absence of the chairman and the vice chairman at any meeting of the Board, the Board member with the most seniority on the Board shall serve as temporary chairman and preside for the purposes of calling the meeting to order, taking roll call and serving as temporary chairman to conduct business at the meeting.

E. Positions attached to the State Board

**Commissioner:** The State Board of Education shall appoint a Commissioner of Education who shall serve at the pleasure of the Board as its executive officer. (Kansas Constitution Article VI, Section 4) The Commissioner of Education implements the Kansas State Board of Education’s strategic goals and objectives, and leads the Kansas State Department of Education. The commissioner shall be evaluated annually by the State Board.

**Secretary:** The secretary to the State Board of Education shall be appointed by the State Board at each organizational meeting to serve at the pleasure of the State Board. The secretary shall not be a member of the Board. (K.S.A. 72-7508)

The secretary shall attend all meetings of the State Board and perform such other duties as assigned. The commissioner will provide day-to-day supervision of the secretary with input from the State Board.
**Attorney:** The attorney for the State Board of Education shall be appointed by the State Board at each organizational meeting to serve at the pleasure of the State Board. The attorney shall attend all meetings of the State Board and render any legal services which are directed by the State Board or the commissioner. The State Board may appoint an attorney other than the State Board attorney to represent it or members in any litigation. (K.S.A. 72-7512) The Board may enter into a contract for services with the State Board attorney.

**Evaluations of Secretary and Attorney:** The secretary to the Board shall be evaluated by the commissioner and the State Board. The first evaluation shall be within six months of hiring. Thereafter, the secretary to the Board shall be evaluated annually by the commissioner with input from the Board.

The Board attorney shall be evaluated annually by the Board in consultation with the commissioner.

**Position Descriptions:** Current position descriptions for the Commissioner of Education and the secretary to the Board are housed in the KSDE Human Resource Department. Evaluation instruments for these positions and the Board attorney are also housed there.

For Additional Information, See Procedure B of the Guidelines.

Adopted: August 9, 1989
Amended: March 10, 1998
Amended: March 14, 2000
Amended: November 14, 2001
Amended: December 10, 2002
Amended: September 9, 2003
Amended: November 14, 2007
Amended: September 10, 2008
Amended: October 17, 2012
Amended: March 11, 2014
POLICY: COMMITTEE PRINCIPLES

Policy Type: Governance Process

The Board may establish temporary committees to help carry out its responsibilities. However, the Board normally will operate as a committee of the whole and will rely sparingly on committees.

1. Any temporary committee of the State Board shall be created by vote of the State Board and shall not include more than three Board members.

2. Board committees may not speak or act for the Board except when formally given such authority for specific and time-limited purposes.

3. Board committees are to help the Board do its job, not to help the commissioner do his/her work. Committees will assist the Board chiefly by preparing policy alternatives, including their implications, for Board deliberation. Committees are not to be created by the Board to advise the commissioner.

4. Board committees cannot exercise authority over organization staff except by working through the commissioner.

5. This policy does not apply to committees established by the commissioner. It does apply to committees that are formed by the Board, whether or not the committees include non-Board members.

Adopted: August 9, 1989
Amended: March 10, 1998
Amended: December 10, 2003
Amended: October 17, 2012
POLICY: APPOINTMENTS TO COMMITTEES AND COMMISSIONS

Policy Type: Governance Process

A. The State Board makes appointments to the following types of committees:

1. Committees created by the State Board and having State Board membership, e.g., the State Board Policy Committee and the State Board Communications Committee.

2. Committees to which the State Board is required by law to appoint one or more of its members, e.g., KSHSAA's Board of Directors.

3. Committees to which the State Board is required by law to appoint one or more persons who are not members of the State Board, e.g., Professional Standards Advisory Board, Special Education Advisory Board Council and Professional Practices Commission.

4. Committees to which the State Board determines to appoint one or more of its members at the request of some organization, agency or government entity, e.g., the KSHSAA's Executive Board, Kansas Teacher of the Year and Communities in Schools NASBE Government Affairs Committee.

B. Appointments to Standing Committees of the State Board

1. At the organizational meeting, the chairman shall declare all memberships on State Board committees vacant. Then, representation of the State Board on such committees shall be determined by vote of the Board.

2. There shall be a standing State Board Policy Committee which shall be elected by the State Board at its organizational meeting. Three members shall serve on this committee.

3. There shall be a Legislative Coordinator and Assistant Legislative Coordinator who shall be elected by the State Board at its organizational meeting.
C. Appointments to Temporary Committees of the State Board:

The chairman and members of each temporary committee of the State Board shall be appointed by the chairman of the State Board from a list of those Board members who have expressed an interest in serving on the committee.

D. Appointments to Other Committees:

The State Board may appoint persons to committees on which State Board members do not serve in accordance with the following guidelines:

a. Prior to making an appointment, the State Board may receive nominations from statewide organizations, individuals, or State Board members.

b. Nominations may remain open until the time of appointment.

c. In appointment of members, the State Board may provide representation as required by law and seek broad representation by giving consideration to various appropriate factors, including the following:
   - geographic representation;
   - representation by school district enrollment;
   - representation by school level;
   - representation by various educational stakeholders; and
   - special knowledge or expertise.
POLICY: OPERATION OF THE STATE BOARD OF EDUCATION

Policy Type: Governance Process

1. Meetings

A. Regular Meetings
The State Board shall hold a regular meeting each month as provided by law. No later than January each year, the Board shall adopt by resolution specifying (1) the hour of commencement, (2) the day of the week, (3) the week of the month, and (4) locations for meetings for the entire year. (K.S.A. 72-7507) This shall include meetings to be held on the campus of each state school governed by the Board.

B. Other Meetings
The State Board may provide by resolution for (1) additional regular meetings; (2) special meetings; or (3) recessed or adjourned meetings. (K.S.A. 72-7507)

Special meetings may be called by the chairman or upon the request of four Board members submitted to the chairman.

Telephone conference meetings may be called by the chairman or at the request of four Board members.

C. Notification of Meetings
Notice of regular meetings shall be sent at least seven days in advance to members of the State Board and others who have requested notification.

When the regular meeting date, time or place is changed by resolution, or when additional regular meetings, special meetings, recessed or adjourned meetings are called, the secretary to the Board shall notify members of the Board and others who have requested notification, at least five days before such meetings. However, when the chairman deems the need for an emergency meeting, the chairman may call a meeting. In such event, reasonable notice shall be given to those parties named herein.

A party receiving notice of any conference shall be advised that this will be an open meeting and the discussion and action may be heard over speakers at the State Department of Education.
If State Board meetings are canceled due to extenuating circumstances the State Board chairman or the chairman’s designee shall notify other members of the State Board, the news media and others who have requested such notification.

D. All official business of the State Board shall be transacted as provided by state law.

E. Agenda
   (1) Construction
      (a) A State Board meeting agenda shall be prepared by the chairman of the State Board, the vice chairman of the State Board and the commissioner.

      (b) Any member of the State Board may request that an item related to State Board goals be placed on the agenda by submitting a request to the chairman in advance of the agenda preparation. Any such item shall be considered for the State Board agenda.

      (c) In addition, a member of the State Board may request that any matter be placed on a future agenda of the State Board at a regular meeting. The request shall be discussed at a meeting of the State Board. If consensus cannot be reached, the request shall be approved or disapproved by a vote of the State Board.

   (2) Advance Delivery
      The agenda for each meeting, along with complete supporting informational material and recommendations, shall be available to each member of the State Board at least seven days before such meeting.

   (3) Distribution
      The agenda of each meeting shall be distributed in advance to persons to appear before the State Board and others who have requested notification of meetings.

      One copy of the agenda and supporting materials shall be available on the day of the meeting for persons attending the State Board meeting.
F. Meeting Conduct

(1) Order of Business
The order of business of all meetings may be as follows:
(a) Call to Order
(b) Roll Call
(c) Moment of Silence
(d) Pledge of Allegiance
(e) Approval of Agenda
(f) Approval of Minutes of the Previous Meeting
(g) Citizens’ Open Forum – (See Policy No. 1012)
(h) Agenda Items
(i) Consent Agenda
(j) Recess until Day 2
(k) Call to Order
(l) Roll Call
(m) Approval of Agenda
(n) Agenda Items
(o) Adjournment

(2) Procedure official action by the State Board shall be by motion duly made and seconded. Allowable motions include the principle or initial motion on a matter; a motion to amend an initial motion; a substitute motion to an initial motion; a motion to table a matter; and a motion to remove a matter from the table. Other action regarding any matter may be taken upon an affirmative vote of six members of the Board.

It shall be the practice of the Board to take action only on those items that are noted on the agenda as action items. However, the Board, upon motion duly made and seconded, and upon an affirmative vote of seven members of the Board, may take action on any matter on the Board’s agenda, whether such matter is designated as an action item, receive item, discussion item or information item.

Routine, procedural or noncontroversial action items may be placed on the consent agenda. For items that require clarification, or for which a Board member has a question, that clarification should be requested before the Board meeting. An item should not be pulled from the consent agenda just to have a question answered. That sort of information gathering should
happen before the meeting. If there is an item about which a Board member disagrees, or believes the item requires discussion, then a request is made at the beginning of the Board meeting during the Approval of the Agenda to pull that item from the consent agenda.

G. Records and Minutes
(1) The secretary to the State Board shall take minutes at each Board meeting, shall record the actions of the State Board, and shall officially certify the minutes of each meeting. (K.S.A. 72-7508)

(2) On any motion before the State Board, a recorded vote shall be taken and made a part of the public record. (K.S.A. 72-7509) The name of any member voting against a motion or abstaining shall be recorded in the minutes.

(3) Additions and/or corrections may be made to the minutes by a majority vote of the State Board. (An example of this would be a minority report.)

Adopted: August 9, 1989
Amended: March 10, 1998
Amended: September 14, 1999
Amended: October 12, 1999
Amended: May 10, 2000
Amended: September 9, 2003
Amended: July 11, 2005
Amended: November 14, 2007
Amended: November 10, 2009
Amended: October 17, 2012
Amended: March 11, 2014
POLICY: BOARD MEMBER TRAVEL

Policy Type: Governance Process

The purpose of Board member travel is to accomplish the mission and goals of the Board, and to assist individual Board members in the development and improvement of boardsmanship skills.

Objectives of travel:

(1) To participate in regular monthly and special meetings of the Board.

(2) To travel in-district to maintain communication with constituents.

(3) To attend in-state organization meetings; to develop and improve boardsmanship skills; to participate in assigned in-state committee meetings; and to meet with the legislature.

(4) To attend meetings of national organizations to represent the Board, to develop and improve boardsmanship skills; and to participate in assigned national organizations' activities and/or study groups.

Pursuant to state law, each State Board member is entitled to the same compensation, travel expenses and subsistence allowance as provided for members of the legislature for attendance at meetings authorized by the State Board.

For more information see Guideline I.
POLICY: CITIZENS’ OPEN FORUM

Policy Type: Governance Process

The Citizens’ Open Forum is an opportunity for the general public to provide input on educational issues in the state of Kansas. Addressing the Board is a privilege and not a right. The Citizens’ Open Forum may be held shortly after the meeting is called to order on the first day of each two-day meeting of the State Board of Education. Procedures for the Citizens’ Open Forum are as follows:

(1) Each speaker shall be allowed to speak for three minutes.

(2) State Board of Education members may ask clarifying questions of the person making the presentation. The speaker will have up to one minute to respond. The presiding officer may grant additional time at his/her discretion.

(3) By consent of the Board, the agenda time may be extended. While offering a public forum is important to the Board, it is also necessary to ensure that the Board allows enough time to conduct its regular business.

(4) Information may be submitted to the Board in written form.

(5) At the discretion of the chair and with regards to the timeliness of the agenda, the Citizens’ Open Forum may be closed and reopened at a later time or date to be announced.

(6) Any person wishing to speak shall sign in prior to the commencement of the Citizens’ Open Forum and shall complete a presenter's card, giving his or her name and address, the subject, and the name of any group he or she is representing. Speakers shall be recognized according to the order in which they signed in.

(7) Presentations containing information or comments related to KSDE personnel may be referred for review in executive session.

(8) Following the Citizens’ Open Forum, the Chairman will acknowledge the participants and announce that the State Board will determine if any of the issues will be addressed at a future meeting.

Adopted: August 9, 1989
Amended: March 10, 1998
Amended: April 12, 2000
Amended: November 14, 2001
Amended: November 14, 2007
Amended: March 11, 2014
POLICY: PUBLIC HEARINGS

Policy Type: Governance Process

The purpose of a Public Hearing is to obtain comments from proponents and opponents on a specific topic that requires such a hearing before a decision is made. Notice of a Public Hearing must be published in advance of the hearing.

Procedures for any Public Hearing of the State Board are as follows:

1. Any person having an interest in the subject of the hearing shall have a right to provide oral and written testimony to the State Board on the subject of the hearing.

2. Any person wishing to speak at the hearing shall sign in prior to the commencement of the hearing by providing his/her name, address and identifying whether he/she represents an opinion of a group.

3. The presiding officer will conduct the hearing. Speakers shall be recognized according to the order in which they signed in. Limiting statements to five minutes encourages speakers to be focused and direct, and permits more people to testify.

4. If written testimony is submitted, 13 copies should be provided.

5. State Board of Education members may ask clarifying questions of the person making the presentation. The speaker will have up to one minute to respond. The presiding officer may grant additional time at his/her discretion.

6. The Public Hearing is not a debate, but an orderly gathering of facts on a particular subject matter. The presiding officer shall rule on comments that are too lengthy. Irrelevant or repetitious testimony is discouraged.

7. These Public Hearing procedures shall be printed and be made available upon request.

8. The chairman shall advise persons in attendance of these Public Hearing procedures.
Following each Public Hearing, all comments received shall be analyzed and considered.

COMMUNITY FORUMS

The Board may elect to host informal community forums at locations around the state to receive public input on various education topics. Such events would be at the discretion of the Board and should not be confused with required Public Hearings. The community forum format would be established prior to the event, depending upon time, location and agenda.

Adopted: August 9, 1989
Amended: March 10, 1998
Amended: March 14, 2000
Amended: November 14, 2007
Amended: March 11, 2014
BOARD-STAFF LINKAGE
POLICY: DELEGATION TO THE COMMISSIONER

Policy Type: Board-Staff Linkage

The responsibility of the Board is to establish policies, leaving implementation to the commissioner. Board policies relating to the work of the staff on behalf of the State Board direct the commissioner to achieve certain results or limit the commissioner to act within acceptable boundaries. All Board authority delegated to staff is delegated through the commissioner, so that all authority and accountability of staff can be phrased—insofar as the Board is concerned—as authority and accountability of the commissioner.

1. The commissioner is authorized to make all decisions, take all actions and develop all activities which are consistent with the Board's policies. The Board, by amending its policies, may expand or constrict the areas of the commissioner's delegated authority. However, the Board will respect the commissioner's choices so long as the delegation continues. This does not prevent the Board from obtaining information about activities in the delegated areas.

2. The commissioner serves the State Board. Therefore, no Board member, officer or committee shall exercise authority over the commissioner. If any request is made or direction given to the commissioner by a Board member, officer or committee which requires material resources, it may be refused.

3. The commissioner may not perform, allow or cause to be performed any act which is unlawful, insufficient to meet commonly accepted business and professional ethics or the "prudent person" test or contrary to explicit Board constraints on executive authority.

4. The commissioner may employ persons in unclassified special project positions subject to confirmation by the State Board.

5. The commissioner shall not establish the qualifications or method of selection of assistant commissioners without consulting the State Board.

Adopted: August 9, 1989
Amended: March 10, 1998
Amended: March 11, 2014
POLICY: MONITORING AND EVALUATING
COMMISSIONER PERFORMANCE

Policy Type: Board-Staff Linkage

1. A formal, cumulative evaluation of the commissioner shall be performed not more than six months after the commissioner is appointed. Thereafter, a formal, cumulative evaluation of the commissioner shall be performed annually by the State Board. Monitoring of the commissioner’s performance will focus on areas of job responsibilities, department performance in response to Board initiatives and policies, and leadership competencies as compared to Board goals and objectives and as stated in the position description for the Commissioner of Education. The purpose of monitoring is to determine the degree to which the commissioner’s performance fulfills the responsibilities for which the commissioner is accountable. The position description for the commissioner shall be presented biennially as part of new Board member orientation.

2. The commissioner’s performance may be monitored by the following:

   A. Monthly observations of, and communications with, the commissioner.

   B. Executive reports from the commissioner.

   C. Board member report where a Board member, a committee of the Board or the Board as a whole reviews information, activities or circumstances to determine accomplishment of responsibilities.

3. The Board, at any time, may request a monitoring report or external audit of the commissioner’s performance.

4. To assist the State Board in performing its evaluation, the commissioner shall submit to the Board by February of each year a list of performance objectives to be considered and approved by the State Board. In October, the commissioner shall provide to the Board a summary of progress on the Board goals objectives. The commissioner may also obtain feedback from KSDE staff and provide the compiled results to the State Board.
For more information see Procedure B of the Guidelines.
COMMISSIONER LIMITATIONS
POLICY: COMMUNICATION AND COUNSEL TO THE BOARD

Policy Type: Commissioner Limitations

The commissioner may not intentionally cause or allow the Board to be uninformed or misinformed. The commissioner shall not accept, on behalf of the State Board, policy or administrative duties concerning any program which has not been assigned to the State Board by law, without the prior approval of the State Board.

The commissioner shall inform the State Board of any program assigned by law to the State Board or to the State Department of Education and shall advise the State Board of the anticipated impact of the program’s assignment to the Board or the Department.

Adopted: August 9, 1989
Amended: March 10, 1998
Amended: October 12, 1999
Amended: September 9, 2003
POLICY: STAFF TREATMENT

Policy Type: Commissioner Limitations

With respect to employment and treatment of staff, the commissioner may not cause or allow conditions which that:

1. Withhold from staff an appropriate grievance procedure.
2. Prevent staff from grieving to the Board when the following conditions are met:
   a. internal grievance procedures have been exhausted; and,
   b. the employee states reasonable grounds to believe:
      (i) that Board policy has been violated to his/her detriment; or
      (ii) that Board policy does not adequately protect his/her human rights.

Adopted: August 9, 1989
Amended: March 10, 1998
Amended: September 14, 1999
Amended: July 15, 2009
Amended: March 11, 2014
POLICY: FINANCIAL PLANNING AND LEGISLATIVE RECOMMENDATIONS

Policy Type: Commissioner Limitations

With respect to planning fiscal initiatives and legislative recommendations, the commissioner may not jeopardize the integrity of the Department. Accordingly, he or she may not cause or allow:

1. Material deviation from Board-stated policies or priorities in the allocation of funds among competing budgetary needs.

2. Action contrary to the State Board’s legislative recommendations.

Adopted: August 9, 1989
Amended: March 10, 1998
POLICY: EMERGENCY EXECUTIVE SUCCESSION

Policy Type: Commissioner Limitations

With respect to protecting the Board from sudden loss of chief executive services, the commissioner may not allow insufficient executive backup. Accordingly, the commissioner shall have no fewer than two other executives familiar with Board and commissioner issues and processes. (See K.S.A. 72-7601 et seq.)

Adopted: August 9, 1989
Amended: March 10, 1998
Item Title:
Act on 2018 and 2019 meeting dates for the Kansas State Board of Education

Board Goals:
Board Matters

Recommended Motion:
It is moved that the Kansas State Board of Education establish the regular meeting dates for 2018 and 2019 as presented in Option ________.

Explanation of Situation Requiring Action:
In July, the State Board received proposed schedules of regular meeting dates for both 2018 and 2019. The drafts followed the traditional schedule of meeting the second Tuesday and Wednesday of the month.

Discussion prompted recommendations that alternative meeting dates for April and October be considered. It was also noted that the monthly meeting and State Board reorganization must occur after the second Monday in January, following the 2018 November elections. Therefore, the State Board’s meeting would be the third Tuesday and Wednesday in January 2019.

Two options are provided for each calendar year and are labeled accordingly.

Setting the 2018 and 2019 Board meeting schedules at this time allows for early publication of the dates for planning purposes. The Board, by Statute, will officially adopt the Resolution of meeting dates, times and locations at its January meeting.
# Kansas State Board of Education

## 2018 Meeting Dates - Option A

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- **Green** indicates State Holiday
- **Yellow** indicates Legis. Conf. Call

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*KSDE Annual Conf. Oct. 15-17*
# Kansas State Board of Education

## 2018 Meeting Dates - Option B

### January

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- **State Holiday**

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- **Legis. Conf. Call**

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*KSDE Annual Conf. Oct. 15-17*
### Kansas State Board of Education
#### 2019 Meeting Dates - Option A

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- **State Holiday**
- **Legis. Conf. Call**

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- **KSDE Annual Conf. Oct. 28-30**

**Calendar for Specific Months**

- **January**
- **February**
- **March**
- **April**
- **May**
- **June**
- **July**
- **August**
- **September**
- **October**
- **November**
- **December**

*KSDE Annual Conf. Oct. 28-30*
# Kansas State Board of Education

## 2019 Meeting Dates - Option B

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- **State Holiday**
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*KSDE Annual Conf. Oct. 28-30*
To: Commissioner Randy Watson
From: Cheryl Johnson
Subject: Presentation of Kansans CAN Best Practice Awards to Child Nutrition Program Recipients

Board Goals: Develop active communication and partnerships with families, communities, business stakeholders, constituents and policy partners

The KSDE Child Nutrition & Wellness Kansans CAN 2016-17 Best Practice Awards reward outstanding practices in Child Nutrition & Wellness Programs in Kansas that support the Kansans CAN vision. The following Child Nutrition & Wellness Program Sponsors will be honored for outstanding and/or innovative practices:

USD 512 Shawnee Mission Category: Kansans CAN Implement Innovative Meal Pattern Strategies
USD 229 Blue Valley Category: Kansans CAN Implement Innovative Meal Pattern Strategies
USD 500 Kansas City Kansas Category: Kansans CAN Increase Participation
USD 345 Seaman Category: Kansans CAN Increase Participation
USD 394 Rose Hill Category: Kansans CAN Manage Finances
USD 257 Iola Category: Kansans CAN Provide Outstanding Customer Service
Quality Care Services, Inc. Category: Kansans CAN Provide Outstanding Customer Service
Labette Health Category: Kansans CAN Impact Wellness
To: Commissioner Randy Watson  
From: Brad Neuenswander  
Subject: Receive proposed Kansans Can Accreditation regulations  

Board Goals: Provide a flexible and efficient delivery system to meet our students varied and changing needs

At the August State Board meeting, staff will provide the proposed Kansas Education Systems Accreditation (KESA) regulations. This will include the recommended changes from the old QPA regulations as well as the next steps moving forward. Enclosed is a copy of the proposed regulations.
91-31. Definitions. (a) “Accredited” means the status assigned to an education system school that meets the following minimum performance and quality criteria established by the state board:

(1) the system is in good standing with the state board; and

(2) the system provides conclusive evidence of growth in student performance and

(3) the system provides conclusive evidence of an intentional, quality growth process.

(b) “Accredited - Conditionally accredited on improvement” means the status assigned to a new education system seeking accreditation, an education system seeking accreditation after one or more years of not seeking accreditation, or an education system about which the following is true: school that, for two consecutive years, is described by any of the following:

(1) the system is in good standing with the state board; and

(2) the system does not provide conclusive evidence of growth in student performance; or

(3) the system does not provide conclusive evidence of an intentional, quality growth process.

(1) The school fails to meet one or more of the performance criteria applicable to the school.

(2) The school has a prescribed percentage of students in one or more student subgroups that fails to meet one or more of the performance criteria applicable to the school.

(3) The school fails to meet three or more of the quality criteria applicable to the school.

(c) “Conditionally accredited” means the status assigned to a school that, for three consecutive years, is described by either of the following:

(1) The school has a prescribed percentage of all students assessed that scores below the proficient level on the state assessments.

(2) The school fails to meet four or more of the quality criteria applicable to the school.

(d) “Curriculum standards” means statements, adopted by the state board, of what students should know and be able to do in specific content areas.
(e) “External technical assistance team” means a group of persons selected by a school for the purpose of advising school staff on issues of school improvement, curricula and instruction, student performance, and other accreditation matters.

(c) “Accreditation” means the act or process of establishing and recognizing that an education system meets requirements or criteria established by the state board.

(d) “Accreditation cycle” means the period of time from the beginning of the needs assessment process to the point at which the state board grants an accreditation rating to an education system.

(e) “Accreditation review council” means the body of education professionals charged with providing a recommendation of accreditation rating to the state board at the end of each cycle.

(f) “Accreditation rating” means the status granted by the state board upon recommendation of the accreditation review council.

(g) “Accreditation year” means the final year, or step, of an education system’s accreditation cycle.

(h) “Action plan” means the steps and strategies that an education system implements to achieve growth or progress.

(i) “Area for improvement” means the specific issue to be corrected, as determined by the accreditation review council, that an education system shall complete in order to improve the education system’s accreditation rating.

(j) “Building leadership team” means the group of employees of the school building, that leads the school building’s growth efforts during an accreditation cycle.

(k) “Building site council” means the group of non-employees of the school building with whom the building leadership team consults.

(l) “Chief administrative officer” means the person hired by the local governing body to lead the work of achieving its mission and goals and to oversee all aspects of the operation of an education system.

(m) “Commissioner” means the Commissioner of education.
(n) “Conclusive evidence” means data that is sufficient to the accreditation review council to justify its recommendation of accredited to the state board.

(o) “Corrective action plan” means the plan developed by an education system in response to areas for improvement identified by the accreditation review council.

(p) “Credit” means formal acknowledgment by an education system’s local governing body for standards-based accomplishment. In Kansas K-12 education, this term is usually expressed in a number of “units of credit”.

(q) “Curriculum standards” means statements, adopted by the state board, of what students should know and be able to demonstrate in specific content areas.

(r) “District leadership team” means the group of education system employees that leads the system’s growth efforts during an accreditation cycle.

(s) “District site council” means the group of non-employees of the education system from whom the district leadership team receives input and suggestions related to the education system’s growth efforts during an accreditation cycle.

(t) “Education system” means a Kansas unified school district, a private system of schools, or a private school not affiliated with any system for the purpose of state accreditation.

(u) “Final analysis” means the end-of-cycle process of reviewing system-level data.

(v) “Foundational structures” means programs, structures, or practices prerequisite to receiving an accreditation rating of “accredited” from the state board.

(w) “Framework” means a defined set of evidence-based practices that, together, encompass the work that education systems do to prepare students for success after high school.

(x) “Goal area” means one area of performance selected by an education system for specific focus during its accreditation cycle.

(y) “Independent private school” means a private school that, for state accreditation purposes, is not affiliated with a larger system of schools.
(z) “In good standing” means in compliance with, or actively working with the state board to achieve compliance with, all applicable federal and state statutes and regulations.

(aa) “Kansas Assessment Program” means the assessments that the state board administers in order to measure student learning within the Kansas curricular standards.

(bb) “Kansas Education Systems Accreditation” means the Kansas model for accreditation of education systems that offer any grades kindergarten through grade 12.

(cc) “KESA Rubrics” means the instruments used by education systems during the needs assessment process to evaluate their current conditions.

(dd) “Leadership goal” means the district leadership team’s statement or description of the desired result of a specified set of actions over a specified period of time.

(ee) “Local board of education governing body” means:

(1) the board of education of any unified school district; or

(2) the governing body of any private school or system.

(ff) “Mid-implementation review” means the process of examining progress of an initiative to determine if goal(s) and action plan(s) are having the desired effect and determining what revisions, if any, are needed as implementation continues.

(gg) “Needs assessment” means a systematic process of scoring the KESA rubrics or other state board-approved rubrics and examining current data supporting KESA results, for the purpose of determining needs, or gaps, between current conditions and desired conditions.

(hh) “Not accredited” means the status assigned to an education system which is described by either of the following: school that, for five consecutive years, is described by either of the following:

(1) The school has a prescribed percentage of all students assessed that scores below the proficient level on the state assessments.

(2) The school fails to meet four or more of the quality criteria applicable to the school.

(1) is not in good standing with the state board; or
(2) does not provide conclusive evidence of growth in student performance; and

(3) does not provide conclusive evidence of an intentional, quality growth process.

(ii) "Onsite visit" means a visit at an education system school by either the school system's external technical assistance outside visitation team or its state technical assistance team.

(jj) "Outside visitation team" means a group of trained education professionals selected by an education system to collaborate with the system in a coaching or mentoring role, supporting the system for the duration of an accreditation cycle.

(kk) “Outside visitation team chair” means the member of the outside visitation team who has been specifically trained and appointed to act as the leader of the group for the duration of an accreditation cycle.

(ll) “Private education system” means a system of schools or an independent school not funded with state monies.

(mm) “Qualified admissions” means the set of criteria allowing a high school graduate guaranteed admission into Kansas public universities.

(nn) “School” means an organizational unit that, for the purposes of school improvement, constitutes provides educational services in a logical sequence of elements that may be structured as grade levels, developmental levels, or instructional levels.

(jj) “School improvement plan” means a multiyear plan for five years or less that is developed by a school and that states specific actions for achieving continuous improvement in student performance.

(k) “Standards of excellence” means the expectations for academic achievement that the state board has set for Kansas schools.

(ll) “State assessments” means the assessments that the state board administers in order to measure student learning within the Kansas curriculum standards for mathematics, reading, science, history and government, and writing.

(oo) “State board” means the Kansas state board of education.
(pp) “State technical assistance team” means a group of persons appointed by the commissioner state department of education to assist public “not accredited” education systems schools in achieving an upgraded status, meeting the performance and quality criteria established by the state board.

(qq) “Successful Kansas high school graduate” means a high school graduate who has the academic preparation, cognitive preparation, technical skills, employability skills, and civic engagement to be successful in postsecondary education, in the attainment of an industry recognized certification, or in the workforce, without the need for remediation.

(o) “Student subgroup” means those students within a school who, for monitoring purposes, are classified by a common factor, including economic disadvantage, race, ethnicity, disability, and limited English proficiency.

(rr) “Unit of credit” means the number or amount, expressed in fractions or decimals, of credit assigned to a specific achievement, such as a measure of credit that may be awarded to a student for satisfactory completion of a particular course or subject. A full unit of credit is credit that is awarded for satisfactory the successful demonstration of competency and knowledge of a content area. completion of a course or subject that is offered for and (generally requires 120 clock-hours to complete), or subject is offered and generally requires to complete. Individual students may be awarded credit based on the student demonstrating competencies and upon demonstrated knowledge of the content of a course or subject, regardless of the amount of time spent by the student in the course or subject.

This regulation shall be effective on and after ____________. (Authorized by and implementing Article 6, Section 2(a) of the Kansas Constitution; effective ________________. )
**91-31-32. Performance and quality criteria Kansans Can accreditation.** (a) The Kansas accreditation model shall be the Kansas education systems accreditation model and shall employ a framework reflecting evidence-based practices for education systems in developing successful Kansas high school graduates.

(b) Each education system shall be assigned its accreditation status by the state board. The state board may change an education system’s accreditation status at any time for good reason.

(c) Each school that holds an accreditation status from the state board on June 30, 2017, shall retain that status, subject to K.A.R. 91-31-32(b) above and demonstrated engagement in the Kansas education systems accreditation process, until that status is superseded by the first system-level status granted under Kansas education systems accreditation.

(d) Mandatory participants in the state accreditation process are every Kansas unified school district.

(e) Voluntary participants in the state accreditation process are private education systems.

(f) Before an education system will be considered for a rating above “not accredited,” the education system must be in good standing with the state board.

(g) All education systems seeking accreditation shall comply with the following:

1. participate in the Kansas assessment program as directed by the state board;
2. have in place an instrument approved by the state board for collecting kindergarten entry data.
3. have in place a state board-approved individual plan of study program for every student. The program must begin for all students by grade eight and continue through high school graduation.
4. Education systems seeking state accreditation must have in place a system for assessing all students’ social-emotional growth as defined locally.

(k) In order to be considered for a rating above “not accredited,” the system must show evidence that foundational structures as determined by the state board for each cycle, are in place.
In order to be considered for a rating above “not accredited,” the system must offer curricula that allow students to meet requirements of the Kansas board of regents qualified admissions and the state scholarship program.

In order to be considered for a rating above “not accredited,” the system must offer subjects and areas of instruction approved by the state board that provide students with the opportunity to achieve at least the following Rose capacities:

1. Sufficient oral and written communication skills to enable students to function in a complex and rapidly changing civilization;
2. Sufficient knowledge of economic, social, and political systems to enable the student to make informed choices;
3. Sufficient understanding of governmental processes to enable the student to understand the issues that affect his or her community, state, and nation;
4. Sufficient self-knowledge and knowledge of his or her mental and physical wellness;
5. Sufficient grounding in the arts to enable each student to appreciate his or her cultural heritage;
6. Sufficient training or preparation for advanced training in either academic or vocational fields so as to enable each child to choose and pursue life work intelligently; and
7. Sufficient levels of academic or vocational skills to enable public school students to compete favorably with their counterparts in surrounding states, in academics or in the job market.

Each education system shall document the existence, membership, training, and meetings of building- and system-level site councils and leadership teams.

The length of the accreditation cycle shall be determined by the state board.

Each education system shall be granted its accreditation status following completion of the accreditation cycle. A new accreditation cycle will begin after any accreditation rating granted by the state board grants the new accreditation rating. Each school shall be assigned its accreditation status based upon the extent to which the school has met the performance and quality criteria established by the state board in this regulation.
(b) The performance criteria shall be as follows:

1. Except as provided in subsection (d) of this regulation, having met the percentage prescribed by
   the state board of students performing at or above the proficient level on state assessments or having
   increased overall student achievement by a percentage prescribed by the state board;

2. Having 95% or more of all students and 95% or more of each student subgroup take the state
   assessments; this should be percent, but since taken directly from the law, leave as is in the law.

3. Having an attendance rate equal to or greater than that prescribed by the state board; and

4. For high schools, having a graduation rate equal to or greater than that prescribed by the state
   board.

(c) The quality criteria shall consist of the following quality measures, which shall be required to be
   in place at each school:

1. A school improvement plan that includes a results-based staff development plan;

2. An external technical assistance team;

3. Locally determined assessments that are aligned with the state standards;

4. Formal training for teachers regarding the state assessments and curriculum standards;

5. 100% of the teachers assigned to teach in those areas assessed by the state or described as core
   academic subjects by the United States department of education, and 95% or more of all other faculty,
   fully certified for the positions they hold;

6. Policies that meet the requirements of S.B.R. 91-31-34;

7. Local graduation requirements that include at least those requirements imposed by the state board;

8. Curricula that allow each student to meet the Regents qualified admissions requirements and the
   state scholarship program;

9. Programs and services to support student learning and growth at both the elementary and
   secondary levels, including the following:

   (A) Computer literacy;

   (B) Counseling services;
(C) fine arts;
(D) language arts;
(E) library services;
(F) mathematics;
(G) physical education, which shall include instruction in health and human sexuality;
(H) science;
(I) services for students with special learning needs; and

(J) history and government. Each local board of education shall include in its history and government curriculum, within one of the grades seven through 12, a course of instruction in Kansas history and government. The course of instruction shall be offered for at least nine consecutive weeks. The local board of education shall waive this requirement for any student who transfers into the district at a grade level above that in which the course is taught;

(10) programs and services to support student learning and growth at the secondary level, including the following:

(A) Business;

(B) family and consumer science;

(C) foreign language; and

(D) industrial and technical education; and

(11) local policies ensuring compliance with other accreditation regulations and state education laws.

(d) If the grade configuration of a school does not include any of the grades included in the state assessment program, the school shall use an assessment that is aligned with the state standards.

This regulation shall be effective on and after ________________. (Authorized by and implementing Article 6, Section 2(a) of the Kansas Constitution; effective _________________.)
91-31-33. Data submission. Each education system school shall provide to the state department of education any information or data requested by the state board concerning each of the following, upon request:

(a) Qualifications of the school's teachers;

(b) Student attendance;

(c) The number of high school students who graduate; and

(d) Any other data requested by the state board.

This regulation shall be effective on and after __________. (Authorized by and implementing Article 6, Section 2(a) of the Kansas Constitution; effective ______________.)
91-31-34. Local governing body board of education requirements. (a) General. Each local governing body board of education shall ensure that its education system each school meets the requirements of this regulation.

(b) Staff.

(1) Except as otherwise provided in this subsection, in filling positions for which a license or certificate is issued by the state board, each education system school district shall employ persons who hold licenses or certificates with specific endorsements for the positions held.

(2) If a teacher holding an appropriate license or certificate is not available, the education system school district shall use a substitute teacher holding a valid Kansas teacher or administrator license or certificate at any level or in any field or subject. An education system school district shall not allow any person holding a Kansas teaching license or certificate to substitute teach for more than 140 days in the same assignment.

(3) If a substitute teacher holding a valid Kansas teacher or administrator license or certificate is not available, the education system school district shall use a substitute teacher holding a valid Kansas substitute teaching license or certificate. An education system school district shall not allow a person holding a substitute teaching license or certificate to teach for more than 90 days in the same assignment.

(4) If a substitute teacher holding a valid Kansas substitute teaching license or certificate is not available, the education system school district shall use a person who holds a baccalaureate degree and an emergency substitute teaching license or certificate. An education system school district shall not allow a person who holds a baccalaureate degree and an emergency substitute teaching license or certificate to teach for more than 45 days in the same assignment.

(5) (A) If a person holding a baccalaureate degree and an emergency substitute teaching license or certificate is not available, the education system school district shall use a person who has been licensed by the state board as an emergency substitute teacher. An education system school district shall not allow any person who does not hold a baccalaureate degree to teach for more than 25 days in the same assignment or more than 75 days in a semester.
(B) If a local governing body board of education documents that there is an insufficient supply of substitute teachers, the local governing body board may appeal to the commissioner of education for authority to allow individuals holding an emergency substitute teaching license or certificate to continue to teach for an additional length of time that shall not exceed a total of 93 days in a school year.

(6) If the state board of education has declared a time of emergency, any person holding a five-year substitute teaching license or certificate or an emergency substitute teaching license or certificate with a baccalaureate degree may teach for the duration of the time of emergency in a position made vacant by reason of the emergency.

(7) Each education system school shall report the name of each licensed or certified staff member on the personnel report or the supplemental personnel report required by the state board. Each licensed or certified personnel staff change that occurs between September 15 and the end of the school year shall be reported on a form prescribed by the state board within 30 days after the staff change.

(c) Minimum enrollment. Each elementary system shall have an enrollment of 10 or more students on September 20 to remain eligible for accreditation.

(d) Student credit. Each education system school, through the local governing body board of education, shall have a written policy specifying that the academic credit of any pupil transferring from an accredited school or system shall be accepted.

(e) Records retention. Each education system school shall permanently retain each student’s records relating to academic performance, attendance, and activities.

(f) Interscholastic athletics.

(1) A local governing body board of education shall not allow any student below the sixth grade level to participate in interscholastic athletics.

(2) A local governing body board of education may allow any student at the sixth grade level or higher to participate in interscholastic athletics.
(3) If a local board of education allows students at the sixth grade level to participate in interscholastic athletics, the local governing body board of education shall comply with the guidelines for interscholastic athletics adopted by the state board.

(4) A local governing body board of education may join the Kansas state high school activities association and participate under its rules. A local governing body board of education that does not join that association shall comply with guidelines for interscholastic athletics adopted by the state board.

(g) Athletic practice.

(1) Any elementary or middle school that includes any of the grades six through nine may conduct athletic practice during the school day only at times when one or more elective academic courses or a study period is offered to students.

(2) A high school shall not conduct athletic practice during the school day, and athletic practice shall not be counted for credit or as a part of the school term. High school athletic practice conducted during the school day will not count toward the statutorily required number of hours or days of instruction.

(3) A school shall neither offer credit for athletic practice nor count athletic practice as a physical education course.

This regulation shall be effective on and after ______________. (Authorized by and implementing Article 6, Section 2(a) of the Kansas Constitution; effective ______________.)
Graduation requirements. (a) Each local governing body board of education shall adopt a written policy specifying that pupils are eligible for graduation only upon after completion of at least the following graduation requirements as established by the state board:

(1) Four units of English language arts, which shall include reading, writing, literature, communication, and grammar. The building administrator may waive up to one unit of this requirement if the administrator determines that a pupil can profit more by taking another subject;

(2) three units of history and government, which shall include world history; United States history; United States government, including the Constitution of the United States; concepts of economics and geography; and, except as otherwise provided in S.B.R. 91-31-32, a course of instruction in Kansas history and government;

(3) three units of science, which shall include physical, biological, and earth and space science concepts and which shall include at least one unit as a laboratory course;

(4) three units of mathematics, including algebraic and geometric concepts;

(5) one unit of physical education, which shall include health and which may include safety, first aid, or physiology. This requirement shall be waived if the school district is provided with either of the following:

(A) A statement by a licensed physician that a pupil is mentally or physically incapable of participating in a regular or modified physical education program; or

(B) a statement, signed by a lawful custodian of the pupil, indicating that the requirement is contrary to the religious teachings of the pupil;

(6) one unit of fine arts, which may include art, music, dance, theatre, forensics, and other similar studies selected by a local board of education; and

(7) six units of elective courses.

(b) A minimum of 21 units of credit shall be required for graduation.

(c) Any local governing body board of education may increase the number of units of credit required for graduation. Any additional requirements of the local governing body board of education that increase
the number of units of credit required for graduation shall apply to those students who will enter the ninth grade in the school year following the effective date of the additional requirement.

(d) Unless more stringent requirements are specified by existing local policy, the graduation requirements established by this regulation shall apply to those students who enter the ninth grade in the school year following the effective date of this regulation and to each subsequent class of students.

(e) A local governing body may award incremental competency-based units of credit for standards-based accomplishment achieved under specific state board-adopted guidelines supporting this regulation.

This regulation shall be effective on and after ____________. (Authorized by and implementing Article 6, Section 2(a) of the Kansas Constitution; effective _______________.)
91-31-36. Outside visitation Technical assistance teams. (a) Each education system school shall select an outside visitation external technical assistance team, which shall be approved by the education system’s local governing body board of education. Each team’s composition and number shall be determined by the system’s leadership team according to guidelines established by the state board. shall be comprised of two or more people who are not affiliated with the school. The school shall determine the number of onsite visits to be made by this team.

(b) If a school is accredited on improvement or conditionally accredited, the school shall be assigned a state technical assistance team to assist the school in meeting the performance and quality criteria established by the state board. The state technical assistance team shall determine the number of on-site visits that the team needs to make to the school. This team shall remain assigned to the school until the school either attains accredited status or is not accredited. All members of an outside visitation team must receive specific training determined by the state board. Persons serving as a visitation team chair must attend additional, specific chair training to be determined by the state board.

(c) A meeting of between the outside visitation team and the education system’s leadership team must occur during each year of the accreditation cycle.

This regulation shall be effective on and after ______________. (Authorized by and implementing Article 6, Section 2(a) of the Kansas Constitution; effective _______________.)
91-31-37. Accreditation recommendation and appeal. (a) A written recommendation regarding the accreditation status to be assigned to each school shall be prepared annually by the state department of education. Each recommendation shall be prepared during or before the education system’s originally scheduled accreditation year, a recommendation from the accreditation review council regarding the accreditation status to be assigned to the education system shall be communicated to the education system. Recommendations shall include a statement of the reasons for the recommendation.

(b) The state department of education's recommendation shall be submitted to the local board of education of the school district in which the school is located.

(b) (c) If the local board of education disagrees with the recommendation, The education system’s local governing board may file an appeal with the commissioner of education within fifteen days after receipt of the recommendation. Except in regard to a recommendation for accredited on improvement, The education system’s local governing board may raise any issue and present any additional information that is relevant to its appeal. If the recommendation is for accredited on improvement, an appeal may be filed only if the local board of education believes that a statistical or clerical error has been made in regard to the recommendation.

(e) (d) (1) If the local governing board files an appeal, a consultation shall be ordered by the commissioner and shall be conducted by an appeal team appointed by the commissioner.

(2) The appeal team shall consult with one or more staff members who made the recommendation and one or more representatives of the local board of education.

(1) (3) If there is agreement on the recommendation following the appeal, the appeal team shall forward the accreditation recommendation to the commissioner for submission to the state board.

(2) (4) If there is not agreement on a recommendation following the appeal, the appeal team shall request the commissioner to appoint a hearing officer to conduct a hearing and forward an accreditation recommendation to the state board.

(d) (e) Each recommendation for accreditation status shall be acted upon by the state board.
This regulation shall be effective on and after ____________. (Authorized by and implementing Article 6, Section 2(a) of the Kansas Constitution; effective ______________.)
91-31-38. Accreditation status. (a) Each education system school shall be classified as one of the following:

(1) Accredited;

(2) accredited on improvement

(3) conditionally accredited; or

(4) not accredited.

(b) Each school that has accredited status from the state board on June 30, 2005 shall retain its accreditation status until that status is replaced with a status specified in subsection (a) of this regulation.

(b) Each education system school that seeks initial accreditation by the state board either as a new system or after one or more years of not seeking state accreditation shall be designated as “conditionally accredited” a candidate school and shall be granted accredited status until the school education system's status can be determined using the criteria prescribed in S.B.R. K.A.R. 91-31-32.

(c) If an education system receives a recommended rating of “conditionally accredited” from the accreditation review council, the accreditation review council shall notify the education system of specific Areas for Improvement and any other corrective action(s) that must be addressed.

(1) To change the accreditation review council’s recommended rating to “accredited,” the education system must develop and implement a corrective action plan approved by the accreditation review council.

(2) Upon satisfaction of the requirements of the corrective action plan and/or any other required corrective actions, the accreditation review council may upgrade its recommendation of the education system’s status to “accredited.”

(3) If the corrective action plan and/or any other required corrective actions are not fulfilled by the deadline established by the accreditation review council, the accreditation review council may downgrade its recommendation of the education system’s status to “not accredited.”

(d) If a public education system receives a rating of “not accredited” from the state board, the system shall be assigned a state technical assistance team to guide it in achieving an upgraded status. The state
technical assistance team shall be appointed by the commissioner and take the place of the outside
visitation team. The state technical assistance team shall provide guidance to the system in achieving
appropriate corrective action. The state technical assistance team shall remain assigned to the system until
it attains at least accredited-conditional status through action of the state board.

(e) If a public education system retains the rating of “not accredited” after state technical assistance
has been in place for one year, sanctions may be applied as determined by the state board in its
application of K.A.R. 91-31-40.

(f) A rating of “not accredited” for a private education system shall remain in effect until the system
demonstrates satisfactory achievement of all corrective actions required for an upgraded rating and until
the state board grants the upgraded rating.

(d) If a school is accredited on improvement or conditionally accredited, the school shall develop and
implement a corrective action plan approved by the state technical assistance team assigned to the school
and shall implement any corrective action required by the state board.

(e) Each school that is accredited on improvement and that fails to meet one or more of the
performance criteria in regard to all students assessed or four or more of the quality criteria shall be
classified as conditionally accredited.

(f) Any school that is accredited on improvement or conditionally accredited may attain the status of
accredited or accredited on improvement, respectively, by meeting, for two consecutive years, the criteria
for that accreditation status.

(g) Each school that is conditionally accredited and that, for a fifth consecutive year, fails to meet one
or more of the performance criteria or four or more of the quality criteria shall be classified as not
accredited.

(h) If a school is not accredited, sanctions shall be applied.

This regulation shall be effective on and after ______________________. (Authorized by and
implementing Article 6, Section 2(a) of the Kansas Constitution; effective_________________.)

(a) Each school Any education system that attains the status of accredited shall receive from the state board a letter of accreditation and a press release announcing that school’s accreditation status.

(b) Any school Any education system that attains the status of accredited may be recognized in additional ways by the state board or achieves a positive change in accreditation status may be recognized by the state board.

(Authorized by and implementing Article 6, Section 2(a) of the Kansas Constitution; effective July 1, 2005; revoked P-____________________.)
91-31-40. Sanctions. (a) One or more of the following Sanctions may be applied by the state board to a public education system in response to any of the following circumstances school that is conditionally accredited or not accredited:

(1) The system’s rating of “not accredited”;

(2) The system’s failure to move from “not accredited” to “accredited-conditional” after state technical assistance has been in place for one year;

(3) Failure to remain in good standing with the state board;

(b) One or more of the following sanctions may be applied in response to any of the circumstances enumerated in (a) above:

(1) An order that education system district personnel or resources be reassigned or reallocated (by the local governing body) within the education system district by the local board of education;

(2) An order that the board of education public education system be assigned a state technical assistance team to assist the education system until it achieves an upgraded status; hire one or more designated persons to assist the school in making the changes necessary to improve student performance;

(3) A recommendation to the legislature that it approve a reduction in state funding to the education system local school district by an amount that will be added to the local property tax imposed by the local governing body board of education;

(4) A recommendation that the legislature abolish or restructure the education system local district;

(5) A letter of notification and a press release announcing the education system’s accreditation status and specifying the reason(s) for that status of the school; or

(6) Other action, as deemed appropriate by the state board.

This regulation shall be effective on and after _______________. (Authorized by and implementing Article 6, Section 2(a) of the Kansas Constitution; effective _________________.)
91-31-41. Public disclosure. At least once each year, each school shall notify the local board of education, parents, and community of the school’s accreditation status and the progress that the school has made in school improvement. Within 60 days after being notified by the state board of the final determination of the school’s accreditation status, each school shall disclose the accreditation results, including any performance or quality criteria that are not met, to the local board of education, parents, and community. The school shall make all notices and disclosures available in the primary languages of the community.

(a) All education systems participating in state accreditation shall at all times provide, on the homepage of their official website, a link to their KSDE report card.

This regulation shall be effective on and after ______________. (Authorized by and implementing Article 6, Section 2(a) of the Kansas Constitution; effective ______________.)
91-31-42. Waiver. (a) Any education system school may request a waiver from one or more accreditation requirements imposed by the state board. Each request for a waiver shall meet the following requirements:

1. The education system school shall make the request, in writing, to the commissioner of education.

2. The chief administrative officer of the education system school shall sign the request. If the request is made by a public education system school, both the superintendent and the president of the local governing body school board shall sign the request.

3. In the request, the education system school shall state the specific requirement or requirements for which the education system school is requesting a waiver and shall indicate how the granting of the waiver would enhance improvement at the education system school.

(b) Within 30 days after the receipt of a request for a waiver, the commissioner shall make a recommendation shall be made by the commissioner of education to the state board either to either grant or to deny the request.

(c) The state board shall consider the original request and the recommendation from the commissioner of education shall be considered by the state board, and the final decision on whether to grant or deny the request shall be made by the state board.

This regulation shall be effective on and after _____________. (Authorized by and implementing Article 6, Section 2(a) of the Kansas Constitution; effective _________________.)
Item Title:

Act on appointments to the Professional Standards Board

Board Goals:

Provide an effective educator in every classroom

Recommended Motion:

It is moved that the Kansas State Board of Education act to appoint Crystal Carson and Nick Anderson to their first full three-year terms on the Professional Standards Board to run from July 1, 2017 through June 30, 2020.

Explanation of Situation Requiring Action:

It is requested that the Board appoint members of the Professional Standards Board as stipulated under the statute, K.S.A. 72-8508, which states: "members of the professional standards board and the professional practices commission shall be appointed for three-year terms and no person shall be appointed to serve longer than two full terms in addition to any term of a period less than three years."

Crystal Carson, an agriculture education instructor for USD 481 Rural Vista, is nominated to fill a vacancy for a career and technical education teacher.

Nick Anderson, a classroom teacher with Christ the King Catholic School in Topeka, is nominated to fill a vacancy for a representative of accredited K-12 non-public schools.

The current PSB roster and nominee applications are provided.
Item 15 Attachments

Nominees for Professional Standards Board, Professional Practices Commission, Licensure Review Committee

Teacher Licensure & Accreditation | KSDE | Lansing State Office Building | 300 SW Jackson Street, Suite 100 | Topeka, Kansas 66612-1212 | Phone: 785-294-2288 | www.ksde.org

Nominee: Complete this form and enclose a copy of resume or vita

NAME OF BOARD/COMMISSION/COMMITTEE:

☐ Professional Standards Board
☐ Licensure Review Committee
☐ Professional Practices Commission
☐ Regulations Committee
☐ Evaluation Review Committee
☐ Policies and Procedures Committee

Nominated by (organization) KNEA Date 4-1-17

Nominee's Name Crystal Carson Occupational Title Agriculture Ed Instructor

Place of employment (Facility) USD 481 High Schools Address 414 East Goodnow St

City White City State Kansas Zip 660872

Home address 428 S 2100 Rd

City White City State Kansas Zip 660872

Home e-mail mjcclr@gmail.com Work e-mail ccarson@usd481.com

Work Phone 785-349-2211 Home Phone 785-349-2057

Fax Number 785-349-2965

State Board District (that you work in) USD 481 Rural Vista - State Board Dist # 7

Please state briefly:
Qualifications for this appointment as set forth in the statute or policies developed by the Advisory Council. These qualifications include:
currently certified and actively practicing in the immediately preceding three years, or serving as a member of the faculty of an institution of post-secondary education. FTA and KASB representatives are excluded from meeting these qualifications.

I have actively taught High school CTE Agriculture courses since August of 2014 to present. My Kansas state Board of Education license number is 1798169576. I started and have taught consecutively for USD 481 Rural Vista High Schools.

Working and educational experience which might be pertinent to this appointment.

I am a KSU ASI Graduate that completed a Transition to Teach program to obtain my licensure. I am a traveling teacher between two schools within one district. My knowledge and experiences would prove useful and pertinent to this board's business.

Nominee represents school district or post-secondary institution size of:

☐ 0-499 ☐ 400-1200 ☐ 1201-2500 ☐ 2501-5000 ☐ 5000 and over

[To be completed by KSDE personnel]
Nominees will have provided representation of large (size school districts or post-secondary institutions to the committee.

☐ Yes ☐ No

Nominee represents an area that provides a geographical balance to the committee.

☐ Yes ☐ No

The Kansas State Department of Education does not discriminate on the basis of race, color, national origin, age, disability, or gender by program and activity, and provides equal access to all Boy Scouts and other designated youth groups. The following persons have been designated to handle inquiries regarding the non-discrimination policies: KSDE, General Counsel; Office of General Counsel, 1030 SW Jackson Street, Suite 100, Topeka, KS 66612; and KSDE, 400 SW Jackson Street, Suite 200, Topeka, KS 66612; (785) 294-2288.
Summary/Goals

I am prepared to become further educated in educational professional development in a way that will benefit not only me but most importantly my fellow educators. In accomplishing this may we all be better suited to educate and prepare students for life beyond school.

Core Qualifications

- Collaborative worker
- Leader as well as supporter
- Open to new ideas/change
- Outspoken yet reserved
- Parliamentary driven
- Perceptive of others

Achievements

-Suggested and volunteered to become our districts first district wide teacher negotiator as historically there were only negotiators picked at each high school even though decisions made effected teachers across the district equally. Doing this united our teaching district and enabled our teachers to make more uniform as well as informed decisions. It has empowered teachers within our district and makes us look much more organized when presenting to the Board of Education and Administration.

Professional Experience

Agriculture Education Instructor

August 2014 to Present

USD 481 Rural Vista High Schools

I have built up and improved a newly combined Ag Dept; one of which never had an Ag program. I have worked hard to provide the highest quality level experience for my students.
have also maintained contact with KNEA UniServ Director to ensure professional standards are being met in potential areas of concern. Our school has recently consolidated programs and now has numerous traveling teaching positions and often times questions arise regarding standards.

**Emergency Substitute Teacher**

August 2009 to 2014

USD 481 Rural Vista High Schools

I worked numerous days a week substituting for grades Pre-K through 12 developing a close relationship with numerous teachers, many of which still teach in the USD 481 district today. I valued this time very highly as I became very familiar with each of their needs and schedules as a teacher.

**Education/Training**

**Transition to Teach Graduate**

Fort Hays State University – Advanced Education Program

Completed 2016

**Bachelor of Science in Agriculture – Production Management**

Kansas State University

Completed 2012

**Certification**

KSDE Teaching licensure # 1798169576

**Affiliations**

2016-17 KNEA Member
Nominees for Professional Standards Board, Professional Practices Commission, Licensure Review Committee

Teacher Licensure & Accreditation | KSDE | Landon State Office Building | 900 SW Jackson Street, Suite 106 | Topeka, Kansas 66612-1212 | Phone: 785-296-2288

NOMINEE-COMPLETE THIS FORM AND ENCLOSE A COPY OF RESUME OR VITA

NAME OF BOARD/COMMISSION/COMMITTEE:

☐ Professional Standards Board
☐ Licensure Review Committee
☐ Regulations Committee
☐ Evaluation Review Committee
☐ Professional Practices Commission
☐ Policies and Procedures Committee

Nominated by (organization): Archdiocese of Kansas City KS Date 5-18-17

Nominee’s Name Nick Anderson Occupational Title Teacher

Place of employment (Facility): Christ the King Catholic School

Address: 5973 SW 25th St.

City Topeka State KS Zip 66614

Home address: 5631 SW Glendale Court

City Topeka State KS Zip 66606

Home phone: nick3278@gmail.com Work e-mail nick3278@gmail.com

Work Phone (785)272-2220 Home Phone (785)407-7010

Fax Number ( ) -

State Board District (that you work in)

Please state briefly:
Qualifications for this appointment as set forth in the statute or policies developed by the Advisory Council. These qualifications include: currently certified and actively practicing in the immediately preceding three years, or serving as a member of the faculty of an institution of post-secondary education. PTA and KASB representatives are excluded from meeting these qualifications.

KASB

Working and educational experience which might be pertinent to this appointment.

I’m attending Benedictine College to acquire a Master’s Degree in Educational Administration. I have been a classroom teacher in Kansas for 5 years.

Nominee represents school district or post-secondary institution size of:

☐ 0-400 ☐ 400-1200 ☐ 1200-2500 ☐ 2500-5000 ☐ 5000 and over

(To be completed by KSDE personnel)
Nominee will help provide representation of differing size school districts or post-secondary institutions to the committee.

☐ Yes ☐ No
Nominee represents an area that provides a geographical balance to the committee.

☐ Yes ☐ No

The Kansas State Department of Education does not discriminate on the basis of race, color, national origin, sex, disability, or age in its programs and activities and provides equal access to the Boy Scouts and other designated youth groups. The following person has been designated to handle inquiries regarding the non-discrimination policies KASDE General Counsel, Office of General Counsel, KSDE, Landon State Office Building, 900 SW Jackson, Suite 102, Topeka, KS 66612-1212, (785) 296-2211
EDUCATION

2016 - 2017
Benedictine College                  Atchison, Kansas
Master of Science in Educational Administration (12 Graduate Hours Completed)

2005 - 2006
Central Missouri State University       Lees Summit, Missouri
Master of Science in Educational Administration (18 Graduate Hours Completed)

1998 - 2002
Central Missouri State University       Warrensburg, Missouri
Bachelor of Science in Education (Graduated December, 2002)
  • 3.5 GPA
  • Regents Scholarship

PROFESSIONAL EXPERIENCE

August 2012 – Present
Catholic Schools of Topeka                  Topeka, Kansas
Classroom Teacher
  • Implement dynamic lesson plans
  • Behavior management of students grades 6-8
  • Use technology to record information for teacher-related duties

July 2010 – April 2012
Catholic Schools of Topeka                  Topeka, Kansas
Substitute Teacher
  • Implement teachers’ lesson plans
  • Behavior management of students grades 6-8
  • Use technology to record information for teacher-related duties

July 2010 – April 2012
A Spice Above                                Topeka, Kansas
Owner of A Spice Above
  • Handle all finances, contracts and day-to-day operations for business.
  • Hire, manage and pay employees.
  • Set up booth at sites all over the United States, coordinating all travel arrangements.

March 2010 – July 2010
Vatterott College                             Kansas City, Missouri
Retention Specialist
  • Initiates day-to-day objectives to achieve established retention goals.
  • Serves as a student advocate and participates in efforts that directly or indirectly promote the individual student’s scholastic achievement and academic progress.
  • Works hand in hand with the Career Services Coordinator to assist students towards job preparedness.

June 2009 – Feb 2010
Full Employment Council                      Independence, Missouri
WIA Youth Career Development Executive
  • Responsible to provide quality services and maintain customer satisfaction within the WIA Youth Program.
  • Monitor progress of youth in meeting goals.
  • Performance based evaluations with monitoring of expected outcomes.
• Perform necessary documentation, record keeping, and paperwork.

**February 2009 – May 2009**

**Quest Diagnostics**
Lees Summit, Missouri
Teleunderwriting
- Detail oriented position requiring the use of several applications to ensure proper transcription of life insurance information from phone call interviews

**June 2007 – January 2009**

**PolySchool and Avalon English**
Seoul, South Korea
English Language Teacher
- Create curriculum and teach TOEFL to Korean students

**June 2006 – May 2007**

**Sprint**
Kansas City, Missouri
Cable Order Management
- Detail oriented position requiring the use of several applications to ensure proper installation of services

**Dec 2004 – May 2006**

**Ray-Pec School District**
Peculiar, Missouri
7th Grade Social Studies Teacher
- Teach basic concepts of civics
- Student Council Sponsor
- 8th Grade Basketball Coach

**June 2004-Dec 2004**

**Eagles Nest Mortgage**
Kalispell, Montana
Loan Officer
- Work in a team environment to originate loans and facilitate borrowers through the process

**2002 – 2004**

**Independence School District**
Independence, Missouri
7th Grade Social Studies Teacher
- Teach basic concepts of geography and ancient civilizations
# Professional Standards Board

**Membership Set by Regulation**

21 Members, 1 KSBE liaison

*Updated 7/25/2017*

<table>
<thead>
<tr>
<th>Current Members</th>
<th>Position</th>
<th>Size of District</th>
<th>Term Ends</th>
<th>Board District</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bartels, Tammy</td>
<td>Member, Kansas PTA</td>
<td>NA</td>
<td>June 30, 2020 (2(^{nd}))</td>
<td>NA</td>
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<tr>
<td>Kansas PTA President</td>
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<tr>
<td>715 SW Tenth</td>
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<td>Topeka, KS 66612</td>
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<tr>
<td>Beougher, Kathryn</td>
<td>Administrator, Special Education</td>
<td>8,156</td>
<td>June 30, 2018 (1(^{st}))</td>
<td>6-Horst</td>
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<td>Geary County USD 475</td>
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<td>7-Willard</td>
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<td>123 North Eisenhower</td>
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<td>Junction City, KS 66441</td>
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<td>Biermann, Bill</td>
<td>Administrator, Chief Public School</td>
<td>1,091</td>
<td>June 30, 2018 (1(^{st}))</td>
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<td>Superintendent</td>
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<td>Goodland USD 352</td>
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<td>Compton, Amy</td>
<td>Teacher, Public Elementary School</td>
<td>2,211</td>
<td>June 30, 2018 (1(^{st}))</td>
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<td>Jefferson School</td>
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<td>Independence USD 446</td>
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<td>2101 N 13(^{th}) St</td>
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<tr>
<td>Erickson, Paul</td>
<td>Administrator, Public Elementary School</td>
<td>439</td>
<td>June 30, 2019 (2(^{nd}))</td>
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<tr>
<td>Buhler Elementary School</td>
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<td>Buhler USD 313</td>
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<td>808 North Main</td>
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<td>Buhler, KS 67522</td>
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<tr>
<td>Finkeldei, Jamie</td>
<td>Administrator, Non Public school</td>
<td>Over 5,000</td>
<td>June 30, 2018 (1(^{st}))</td>
<td>7-Willard</td>
</tr>
<tr>
<td>Associate Superintendent</td>
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<td>8-Busch</td>
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<td>Catholic Diocese of Wichita</td>
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<td>10-McNiece</td>
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<td>424 N. Broadway</td>
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<td>Wichita, KS 67202</td>
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<td>Goering, Jonathan</td>
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<td>Northwest Middle School</td>
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<td>Kansas City USD 500</td>
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<td>2010 N 59(^{th}) St</td>
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<td>Kansas City, KS 66104</td>
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<tr>
<td>Jones, Keith</td>
<td>Administrator, Middle Level Public</td>
<td>14,169</td>
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<tr>
<td>Chase Middle School</td>
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<td>Topeka USD 501</td>
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<td>2250 NE State Street</td>
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<tr>
<td>Current Members</td>
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<td>Term Ends</td>
<td>Board District</td>
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<tr>
<td>Landever, Gwen</td>
<td>Unit Head, IHE Private</td>
<td>NA</td>
<td>June 30, 2018 (2nd)</td>
<td>NA</td>
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<tr>
<td>University of St Mary, Overland Park Campus 11413 Pflumm Road Overland Park, KS 66215</td>
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<tr>
<td>Lower, Lisa</td>
<td>Teacher, Special Education</td>
<td>June 30, 2019 (1st)</td>
<td>9-Porter</td>
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<td>Burlington High School Burlington USD 244 830 Cross St Burlington, KS 66839</td>
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<td>Mercer, Deb</td>
<td>Unit Head, IHE Public</td>
<td>NA</td>
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<td>Kansas State University 6 Bluemont Hall Manhattan, KS 66506-5301</td>
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<tr>
<td>Miller, Dayna</td>
<td>Local Public School</td>
<td>June 30, 2020 (1st)</td>
<td>6-Horst</td>
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<tr>
<td>S&amp;S Alloy Steel, Inc. 17776 157th Street Basehor, KS 66007</td>
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<tr>
<td>Reilly, Patrick (PJ) District Director of CTE Valley Center USD 262 1432 S Meridian Valley Center, KS 67147</td>
<td>Administrator Career Technical Education</td>
<td>2,831</td>
<td>June 30, 2018 (1st)</td>
<td>7-Willard 10-McNiece</td>
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<td>Stadalman, Kyle</td>
<td>Teacher, Public Middle School</td>
<td>1,673</td>
<td>June 30, 2018 (2nd)</td>
<td>1-Waugh 3-Bacon</td>
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<tr>
<td>Eudora Elementary Eudora USD 491 801 E 10th Street Eudora, KS 66025</td>
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<td>Wilson, Mike</td>
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<td>3,926</td>
<td>June 30, 2020(2nd)</td>
<td>4-Mah</td>
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<tr>
<td>USD 345 Seaman Topeka, KS</td>
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<td>Worthington, Maria</td>
<td>Teacher, Public Secondary School</td>
<td>22,206</td>
<td>June 30, 2018 (1st)</td>
<td>2-Roberts 3-Bacon</td>
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<tr>
<td>Blue Valley North High School Blue Valley USD 229 12200 Lamar Avenue Overland Park, KS 66209</td>
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<tr>
<td>Porter, Jim</td>
<td>KSBE Liaison</td>
<td>NA</td>
<td>January 2019 (appointed by KSBoE)</td>
<td>NA</td>
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<tr>
<td>State Board of Education District 9 501 South 7th Fredonia, KS 66736</td>
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<tr>
<td>Current Members</td>
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<td>Size of District</td>
<td>Term Ends</td>
<td>Board District</td>
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<tr>
<td><strong>Vacancy</strong></td>
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<tr>
<td>Cloues, Stephanie</td>
<td>Teacher - Accredited K-12 Non-Public</td>
<td>886</td>
<td>6-30-17 (2nd) Resigned</td>
<td>2-Roberts 3-Bacon</td>
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<td>St Thomas Aquinas High School</td>
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<td>11411 Pflumm RD</td>
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<tr>
<td>Overland Park, KS 66215</td>
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<tr>
<td><strong>Vacancy</strong></td>
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<tr>
<td>Carson, Crystal pending PSB approval</td>
<td>Teacher, CTE</td>
<td>2,760</td>
<td>June 30, 2019 (1st) C. Carlson’s term incomplete</td>
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<td>Teacher, Public Elementary school</td>
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<td>7,022</td>
<td>June 30, 2017 (2nd)</td>
<td>8-Busch 10-McNiece</td>
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<tr>
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<td>3,013</td>
<td>June 30, 2017 (2nd)</td>
<td>5-Cauble</td>
</tr>
</tbody>
</table>
To: Commissioner Randy Watson  
From: Dale Dennis  
Subject: Legislative Matters  
Board Goals: Governmental Responsibility

The State Board of Education will be updated on the Kansas Supreme Court's decision on school finance (if available).
To: Kansas State Board of Education  
From: Communications Committee  
Subject: Receive report from the State Board Communications Committee  
Board Goal: Develop active communication and partnerships with families, communities, business stakeholders, constituents and policy partners

Committee members Jim McNiece and Deena Horst will discuss a proposed plan for communications activities and events in the months ahead.
To: Commissioner Randy Watson  
From: Gwen Kramer, Wendy Fritz  
Subject: Personnel Report  
Board Goals: Governmental Responsibility

<table>
<thead>
<tr>
<th>Total New Hires</th>
<th>July</th>
<th>Aug</th>
<th>Sept</th>
<th>Oct</th>
<th>Nov</th>
<th>Dec</th>
<th>Jan</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
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<th>Oct</th>
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Total employees 226 as of pay period ending 7/1/2017. Count excludes classified temporaries and agency reallocations, promotions, demotions and transfers. Includes employees terminating to go to a different state agency (which are not included in annual turnover rate calculations).
REQUEST AND RECOMMENDATION FOR BOARD ACTION

Staff Initiating: Gwen Kramer  
Director: Wendy Fritz  
Commissioner: Randy Watson

Meeting Date: 8/8/2017

Item Title:
Act on personnel appointments to unclassified positions

Board Goals:
Governmental Responsibility

Recommended Motion:
It is moved that the Kansas State Board of Education confirm the appointments of:

Jamie Ribordy to the position of Auditor on the Fiscal Auditing team, effective July 16, 2017, at an annual salary of $43,992. This position is funded by the State General Fund and Child and Adult Care Food Program.

Tiffany Blevins to the position of Assistant Director on the Early Childhood, Special Education and Title Services team, effective July 16, 2017, at an annual salary of $70,000. This position is funded by the State General Fund (SGF), School Improvement Administrative Funds and Title I Consolidated Pool Funds.

Explanation of Situation Requiring Action:

Jamie Ribordy will audit school district enrollments for state aid purposes, driver education programs, National School Lunch Programs, Child and Adult Food Programs and other programs administered by KSDE.

Tiffany Blevins will manage and supervise implementation of various state and federal programs and staff. The person in this position is responsible for providing technical assistance to ensure proper implementation and compliance with state and federal regulations related to the Individuals with Disabilities in Education Act (IDEA), the Kansas Exceptional Children’s Act, Kansas Education Systems Accreditation (KESA) and the Elementary and Secondary Education Act (ESEA) particularly at the birth through age 8 range. The employee will collaborate within KSDE and with outside agencies, organizations and school districts to ensure implementation of appropriate interventions and services for children birth through age 8 to support Early Learning and Kindergarten Readiness across Kansas, specifically Kansas Multi-Tier System of Supports (MTSS) and KansaStar. The person in this position will also interact with parents, general education, and faculty of institutions of higher education, business leaders and professional organizations in order to form private and public partnerships that can support Kansas Kindergarten Readiness technical assistance in local communities.
To:        Commissioner Randy Watson
From:      Interim Superintendent Luanne Barron
Subject:   Fourth Quarter Report, Kansas State School for the Deaf

The Fourth Quarter Report (FY 2017) has been prepared for the Kansas State School for the Deaf and is being provided for the State Board of Education’s review.
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KANSAS STATE SCHOOL FOR THE DEAF

VISION, MISSION, AND ACCREDITATION

VISION
A school, a community, a society in which hearing acuity is incidental, barriers are minimized, human potential is maximized and people are judged by their contributions and their character.

MISSION
To ensure that all students achieve their full potential in a language-rich environment.

ACCREDITATION
KSD was awarded full accreditation through CEASD (Conference of Educational Administrators of Schools and Programs for the Deaf). We will begin an 18 month self-study (needs assessment) for the new accreditation cycle beginning in the spring of 2019.

ASSESSMENTS AND CURRICULUM
Students completed both state and local assessments during the fourth quarter. This year both the state and Map assessment were delivered on Chromebooks for the first time.

This summer teacher groups from ELA and Math met to develop plans to incorporate more Project-Based Learning and Community-Based-Instruction in their secondary classes. The teachers developed standards-based activities around life-centered topics. Topics will include daily living skills, social-emotional skills, and transition skills. This curriculum project hopes to blend content skills with world knowledge and applications. By the end of this summer the framework will be developed with additional trainings and workshops throughout the next two years.

BILINGUAL DEPARTMENT
One of our KSD students won the state-wide Optimist International Oratorical Contest and a $2,500 scholarship. The theme for the year was “What the World Gains from Optimism.” The student was invited to a local Optimist Club luncheon to present his speech to the members. His speech included incidents of deaf people being killed due to communication barriers or breakdowns and offered real solutions to improve these types of situations. The club members were very interested and asked many questions about the Deaf community and Deaf culture.
INSTRUCTIONAL SERVICES

ELEMENTARY DEPARTMENT

EARLY CHILDHOOD CENTER
The use of a Language Facilitator in the Early Childhood Center has become a regular option available to all students in the prekindergarten classroom. Students may choose to go to a Language Facilitator’s small group activity where spoken English is used or to go to a teacher’s small group activity where American Sign Language (ASL) is used. This is known as Language Separation. Language Separation means one language will be used and if clarification is needed, the Language Facilitator (or teacher or staff) switches to another language to clarify or explain something then switches back to the first language.

ELEMENTARY SCHOOL
On May 24th, nine 6th grade students were promoted to middle school. During second semester training and practice was provided to help prepare the students for their transition to middle school and to equip them with basic time management skills, study skills, and the skills to adjust to having seven different teachers.

SECONDARY DEPARTMENT

2017 GRADUATES
Ten students met graduation requirements and went through KSD’s graduation ceremony on May 24th. Of those ten students, five will be returning to KSD in August to participate in the KSTAR program, two will join the workforce and three will attend a 4-year college.

2016-2017 KANSAS STUDENT TRANSITION AND ACADEMIC READINESS (KSTAR) STUDENTS
Seven students were enrolled in KSD’s Kansas Student Transition and Academic Readiness (KSTAR) program during the 2016-2017 school year. Six of the seven exited the program in May. Of those six, four will be working and attending college in the fall, one will attend Project Search, and one will attend a day/vocational support services program.

MATH COMPETITION AT NATIONAL TECHNOLOGY INSTITUTE FOR THE DEAF
Four middle school students participated in the annual Math competition held at the National Technical Institute for the Deaf (NTID) in Rochester, New York in April. One hundred and sixty-three students from 36 schools across the country and Canada were there to compete. KSD placed 25th out of the 36 schools. Our students favorite part of the competition was the Amazing Race. For this competition, students from different schools were grouped together to work on solving various puzzles.
OUTREACH

AUDIOLOGY

Auditory Training Unit (ATU) - An ATU is a wireless assistive listening device commonly referred to as an FM system. Students who are deaf/hard of hearing may utilize this device in the classroom to improve the signal-to-noise ratio. It picks up the teacher’s voice through a microphone and transmits it to the student wearing a receiver.

AUDIOLOGY/Hearing Assistive Technology (HAT) REPORT

<table>
<thead>
<tr>
<th>HAT Consults</th>
<th>ATU Calls</th>
<th>ATU Emails</th>
<th>Comp Evaluations</th>
<th>IEPs Attended</th>
<th>HA/CI Checks/Repairs</th>
<th>Non-KSD Parent Calls</th>
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<tbody>
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<td>15</td>
<td>6</td>
<td>18</td>
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<tr>
<td>Hutchinson (2)</td>
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<tr>
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<td>Westmoreland</td>
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Quarter 1

Quarter 2

7 Consultations: | 60        | 612        | 15               | 8            | 13                   | 0                    |
<p>| Ft. Leavenworth |          |            |                  |              |                      |                      |
| Lansing Elementary |         |            |                  |              |                      |                      |
| Lansing Jr. High |          |            |                  |              |                      |                      |
| Overbrook       |           |            |                  |              |                      |                      |
| Paola           |           |            |                  |              |                      |                      |
| St. James       |           |            |                  |              |                      |                      |
| Westmoreland    |           |            |                  |              |                      |                      |</p>
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<td></td>
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HA – Hearing Aid  
CI – Cochlear Implant

**Auditory Training Unit (ATU) Lease Program – Quarter 4**

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<tr>
<td>Current Number of Receivers Leased</td>
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<tr>
<td>Current ATUs Billed</td>
<td>$ 94,486.36</td>
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<td>$ 90,857.25</td>
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**Birth–Three Services**

Services were provided to the following networks:

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<td>Northwest Kansas Infant/Toddler Services</td>
</tr>
<tr>
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<td>Pottawatomie/Wabaunsee Infant/Toddler Network</td>
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<tr>
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<td>REACH tiny-k Infant/Toddler Services</td>
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<td>Salina Infant/Toddler Network</td>
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<td>Sunflower Infant/Toddler</td>
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<td>TLEC Infant/Toddler Program</td>
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<td>Pony Express</td>
</tr>
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<td>Pottawatomie/Wabaunsee Infant/Toddler Network</td>
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<tr>
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<td>Salina Infant/Toddler Network</td>
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<tr>
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<td>Shawnee County Infant Toddler Services</td>
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### OTHER OUTREACH SERVICES OVERVIEW

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<th>Quarter 2</th>
<th>Quarter 3</th>
<th>Quarter 4</th>
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</thead>
<tbody>
<tr>
<td>Consultations/Observations/Evaluations</td>
<td>65</td>
<td>38</td>
<td>37</td>
<td>15</td>
</tr>
<tr>
<td>Number of participants in workshops, trainings, professional developments</td>
<td>29</td>
<td>58</td>
<td>66</td>
<td>37</td>
</tr>
<tr>
<td>Number of families participating in Family Signs Kansas</td>
<td>10</td>
<td>11</td>
<td>10</td>
<td>10</td>
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<tr>
<td>Families served by Sound START</td>
<td>31</td>
<td>31</td>
<td>30</td>
<td>50</td>
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<tr>
<td>Number of future teachers of the deaf enrolled in the State Personnel Development Grant (SPDG) program</td>
<td>6</td>
<td>5</td>
<td>7</td>
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### ADDITIONAL SERVICES OVERVIEW

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<th>Quarter 3</th>
<th>Quarter 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mail, email, telephone and in-person contacts</td>
<td>1,411+</td>
<td>1,077+</td>
<td>1,294+</td>
<td>1,400+</td>
</tr>
<tr>
<td>Listserv</td>
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</tr>
<tr>
<td>• Members (cumulative)</td>
<td>280</td>
<td>287</td>
<td>306</td>
<td>319+</td>
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<tr>
<td>• Messages sent</td>
<td>22</td>
<td>26</td>
<td>25</td>
<td>48</td>
</tr>
<tr>
<td>Lending Library</td>
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<tr>
<td>• Contacts</td>
<td>22</td>
<td>2</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>• Materials checked out</td>
<td>22</td>
<td>6</td>
<td>21</td>
<td>7</td>
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CONFERENCES AND COLLABORATIONS – FY 17

CDC Parent-to-Parent Subcommittee
Children’s Mercy Hospital
Consortium of Low-Incident Teacher Preparation Programs (CLIPP)
Families Together
International Reading Association
Johnson County Infant-Toddler Services
Kansas Commission for the Deaf/Hard-of-Hearing
Kansas Division of Early Childhood Conference
Kansas Domestic Violence Project
Kansas Multi-Tiered System of Supports (MTSS) Symposium
Kansas Parent Support Group
Kansas Speech-Hearing Association (KSHA)
Kansas State Department of Education Annual Conference
Kansas Technical Assistance System Network (TASN) Leadership Conference
Kansas Technical Assistance System Network (TASN) Provider (Teachers of the Deaf SPDG)
Mid-America Regional Council – Regional Community Disaster Resiliency Steering Committee
Outreach Family Workshop
SB323 Language Assessment Committee
Sound Beginnings
Sound START
Special Education Advisory Council (SEAC)
Topeka Parent Group
Wichita Parent Group
Wyandotte County Early Childhood Interagency Coordinating Council
# Budget/Revenue & Expenditures by Fund

## FY 2017

<table>
<thead>
<tr>
<th>Budget/Revenue</th>
<th>Expenditures To Date 6/30/17</th>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Appropriation</td>
<td>8,812,578</td>
<td>8,812,578</td>
</tr>
<tr>
<td><strong>Federal Aid:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School Lunch &amp; Breakfast</td>
<td>43,906</td>
<td>42,891</td>
</tr>
<tr>
<td>Special Education – Regular</td>
<td>238,786</td>
<td>238,786</td>
</tr>
<tr>
<td>Other</td>
<td>16,400</td>
<td>16,400</td>
</tr>
<tr>
<td><strong>Subtotal – Federal Aid</strong></td>
<td>299,092</td>
<td>298,077</td>
</tr>
<tr>
<td>Fees/Tuition</td>
<td>700,319</td>
<td>218,739</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>11,536</td>
<td>0</td>
</tr>
<tr>
<td>Building</td>
<td>1,160,687</td>
<td>1,060,325</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>10,984,212</td>
<td>10,389,719</td>
</tr>
</tbody>
</table>

## Budget Expenditures by Object

<table>
<thead>
<tr>
<th>FY2017</th>
<th>Expenditures To Date 6/30/17</th>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries &amp; Wages</td>
<td>8,273,444</td>
<td>8,009,614</td>
</tr>
<tr>
<td>Contractual Services *</td>
<td>861,051</td>
<td>749,041</td>
</tr>
<tr>
<td>Commodities **</td>
<td>399,903</td>
<td>329,405</td>
</tr>
<tr>
<td>Capital Outlay</td>
<td>219,795</td>
<td>189,198</td>
</tr>
<tr>
<td>Debt Service</td>
<td>93,272</td>
<td>93,272</td>
</tr>
<tr>
<td>Other</td>
<td>57,706</td>
<td>39,673</td>
</tr>
<tr>
<td>Capital Improvements</td>
<td>1,079,041</td>
<td>979,516</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>10,984,212</td>
<td>10,389,719</td>
</tr>
</tbody>
</table>

* **Contractual Services** - includes communications, postage, printing, rent, travel, utilities, professional services

** **Commodities** - includes gasoline, paper, office supplies, food, educational materials, etc.
To: Commissioner Randy Watson  
From: Interim Superintendent Jon Harding  
Subject: Fourth Quarter Report, Kansas State School for the Blind

The Fourth Quarter Report (FY 2017) has been prepared for the Kansas State School for the Blind and is being provided for the State Board of Education's review.
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MISSION

*KSSB is a catalyst and leader in the development of exemplary programs and practices in vision services in Kansas. We build local capacity throughout the state via strategic partnerships to ensure learners with visual impairments are able to assume responsible roles in society and lead fulfilling lives.*

TRAININGS/WORK GROUPS/PROFESSIONAL DEVELOPMENT

SELF DETERMINATION – Our professional development focus continues to be promoting student “self-determination”. Research shows that self-determination is imperative for youth with disabilities to succeed in post-secondary settings. We have planned learning activities for the entire year that require staff to reflect on their own practices.

EVENTS

**KSSB’s 150th Anniversary Celebration** – On June 30th KSSB celebrated 150 years of educating students with visual impairments. An event was held at KSSB that afternoon which included a blessing by the Chief of the Wyandot Nation of Kansas (the land that KSSB sits on was once owned by the Wyandot Nation of Kansas). The Chief, Jan English, also shared the history of the Wyandot Nation of Kansas. Each of the classes from the KSSB Summer School Program prepared and shared presentations. The special day concluded with an evening event of dinner held at the Vox Theatre in Kansas City, Kansas.

**Extended School Year (ESY)** – The 2017 ESY programs, Vocational (VOC) and Kansas Summer Expanded Education (KSEE) held during the month of June focused on the KSSB’s Celebration of its 150 year anniversary. Students attended from as far away as Garden City and almost every region of the state was represented in the 55 participants.

The Expanded Core Curriculum (ECC) domains that the summer programs followed also incorporated the 150th theme. Students worked with their teachers and studied about life in Kansas in the 1860's to present day. In Week 1 of Activities of Daily Living students learned recipes and cooked favorite foods from the pioneer days (like Poorman's Stew), worked with tools (ex. hammers and saws) in Week 2 and rounded up Week 3 learning how to sew and repair clothes. In Recreation and Leisure students learned about games and sports from the early days (ex. see saw and jump rope). And in Assistive Technology classes, students learned to use technology to research the history of Kansas and KSSB, including how the early students of KSSB gathered information, and the development of technology from past to present day. The KSEE students and staff took a trip to the Mahaffie Farmstead in Olathe and each student had a fun filled day that concluded with a Stagecoach ride. On the final day of ESY, during the 150th Anniversary celebration event at KSSB, each class shared a skit, song, or presentation that they had prepared about something unique in history. One class sang the state song of Kansas, while another demonstrated popular jobs of the 1800's – it was a wonderful ending to a very fun summer!
CAMPUS ACTIVITIES

- Job Olympics – April 7
- Spring Concert – April 20th
- Prom – April 28th
- Honors and Awards ceremony – May 11th
- Graduation – May 18th

FIELD SERVICES

COMMUNITY OF PRACTICE MEETINGS – During fourth quarter six regional Community of Practice meetings were held giving vision professionals in Kansas the opportunity to seek technical assistance and support from the KSSB Field Services department. The meetings were held in Overland Park (2), Topeka (2), and Wichita (2).

WORKSHOPS PROVIDED – Teachers of students with a visual impairment (TVIs) and special education directors requested that KSSB Field Services provide a workshop on “The Role of the Paraprofessional Working with a Student who has a Visual Impairment”. The Blue Valley School District hosted the first training with over 25 paraprofessionals and braillists attending.

The Lawrence School District also requested training from KSSB Field Services in order to prepare classroom teachers, related services providers and paraprofessionals for the 2017-2018 school year. Forty-one participants attended this training which was held in April.

Regional back to school workshops will be held during the first week of August at Garden City, Lyons and Topeka. The topics will be, Designing and Modifying for the Regular Education Teacher and the Role of the Paraprofessional

The two openings for regional specialists – one for Western Kansas and one for Central Kansas have been filled. KSSB now employs six regional Field Services Specialists in locations throughout the state.

DEAF-BLIND PROJECT

- Submitted Annual Performance Report to the Office of Special Education Programs for year 4 activities. The registry/census has approximately 180 students reported as Deaf-Blind.
- Conducted playgroups and a community outing to assist and equip families in working with their young children who have vision or dual sensory losses; as well as to strengthen the partnership between KSSB and Infant-Toddler Services.
- Held an Assistive Technology Workshop on April 19th for families and educators/service providers
- Provided Usher Screening Training for nurses on May 5th in Wichita
- Met with a representative from Assistive Technology for Kansans on May 19th to devise a plan on how the two agencies can best utilize resources to serve the needs of students and families
<table>
<thead>
<tr>
<th>Low Vision Clinics</th>
<th>Students Evaluated</th>
<th>Number of Clinics</th>
<th>Clinic Sites</th>
<th>Number of Adults (parents, teachers, other service providers) in attendance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Quarter 1</strong></td>
<td>36</td>
<td>6</td>
<td>Dodge City (1) Girard (1) Kansas City (3) Oskaloosa (1)</td>
<td>172</td>
</tr>
<tr>
<td><strong>Quarter 2</strong></td>
<td>34</td>
<td>13</td>
<td>Garden City (1) Hays (1) Kansas City (4) Lawrence (1) Manhattan (1) Topeka (2) Wichita (3)</td>
<td>107</td>
</tr>
<tr>
<td><strong>Quarter 3</strong></td>
<td>66</td>
<td>14</td>
<td>Dodge City (1) Hays (1) Kansas City (4) Lawrence (1) Topeka (5) Wichita (2)</td>
<td>220</td>
</tr>
<tr>
<td><strong>Quarter 4</strong></td>
<td>42</td>
<td>14</td>
<td>Dodge City (1) Hays (1) Kansas City (6) Lyons (1) Manhattan (1) Oskaloosa (1) Phillipsburg (1) Salina (1) Topeka (1)</td>
<td>98</td>
</tr>
</tbody>
</table>
2016-2017 TASN - PERSONNEL DEVELOPMENT GRANT

**KSSB Field Service Staff Teaching University Courses**

KSSB Field Services Director, Aundrayah Shermer, is the university instructor for the Orientation and Mobility (O&M) courses for both UNL and MSU.

KSSB Field Services team member, Robert Taylor, is the university instructor for the Assistive Technology class for UNL.

**Completed Program**

**University of Nebraska Lincoln (UNL) – Current TVI Students**

<table>
<thead>
<tr>
<th>Completed TVI program and earned endorsement – Spring/Summer 2016</th>
<th>3</th>
<th>Centralia Lawrence Overland Park</th>
</tr>
</thead>
<tbody>
<tr>
<td>On track to complete TVI program and earn endorsement – Spring 2017</td>
<td>2</td>
<td>Lyndon Topeka</td>
</tr>
<tr>
<td>On track to complete TVI program and earn endorsement – Fall 2017</td>
<td>4</td>
<td>Garden City Goddard Ozawkie Wichita</td>
</tr>
<tr>
<td>On track to complete TVI program and earn endorsement – Fall 2018</td>
<td>1</td>
<td>Garden City</td>
</tr>
<tr>
<td>On track to complete TVI program and earn endorsement – Fall 2019</td>
<td>1</td>
<td>Topeka</td>
</tr>
<tr>
<td>Accepted at UNL and will begin TVI Program in Fall 2017</td>
<td>3</td>
<td>Goddard Hays Parsons</td>
</tr>
</tbody>
</table>

**Texas Tech University (TTU) – TVI and COMS Students**

| Completed COMS program and certification - Fall 2015 | 1 | Garden City |
| Completed TVI program and earned endorsement – Spring 2016 | 1 | Wichita |
| Completed COMS program and certification – Summer 2016 | 1 | Winfield |
| Completed COMS program and certification - Fall 2016 | 1 | Ensign |
| Completed TVI program and earned endorsement – Spring 2017 | 1 | Overland Park |
| On track to complete COMS program and certification – Fall 2017 | 2 | Ensign Wichita |
| On track to complete COMS program and certification – Fall 2017 | 1 | Olathe |
| Accepted at TTU and will begin COMS Program in Summer 2017 | 2 | Overland Park Phillipsburg |
### Missouri State University (MSU) – TVI Students

<table>
<thead>
<tr>
<th>Completed TVI program and earned endorsement – Spring 2017</th>
<th>1</th>
<th>Wichita</th>
</tr>
</thead>
<tbody>
<tr>
<td>On track to complete TVI program and earn endorsement – Fall 2017</td>
<td>3</td>
<td>Kansas City Lyons Overland Park</td>
</tr>
</tbody>
</table>

### Totals

<table>
<thead>
<tr>
<th>Students in Training</th>
<th>20</th>
<th>TVIs – 15 COMS – 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students Completed Program</td>
<td>9</td>
<td>TVIs – 6 COMS – 3</td>
</tr>
</tbody>
</table>
**KANSAS INSTRUCTIONAL RESOURCE CENTER (KIRC)**

**USD STUDENTS SERVED WITH KIRC MATERIALS SUPPORT (BY KSBE DISTRICT)**

<table>
<thead>
<tr>
<th>Region</th>
<th>1st Quarter</th>
<th>2nd Quarter</th>
<th>3rd Quarter</th>
<th>4th Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>102</td>
<td>106</td>
<td>105</td>
<td>102</td>
</tr>
<tr>
<td>II</td>
<td>104</td>
<td>102</td>
<td>106</td>
<td>107</td>
</tr>
<tr>
<td>III</td>
<td>80</td>
<td>79</td>
<td>78</td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>129</td>
<td>129</td>
<td>130</td>
<td>130</td>
</tr>
<tr>
<td>V</td>
<td>107</td>
<td>105</td>
<td>117</td>
<td>110</td>
</tr>
<tr>
<td>VI</td>
<td>97</td>
<td>97</td>
<td>105</td>
<td>101</td>
</tr>
<tr>
<td>VII</td>
<td>101</td>
<td>101</td>
<td>115</td>
<td>110</td>
</tr>
<tr>
<td>VIII</td>
<td>138</td>
<td>138</td>
<td>146</td>
<td>144</td>
</tr>
<tr>
<td>IX</td>
<td>107</td>
<td>107</td>
<td>108</td>
<td>105</td>
</tr>
<tr>
<td>X</td>
<td>101</td>
<td>100</td>
<td>96</td>
<td>98</td>
</tr>
<tr>
<td>KIRC</td>
<td>33</td>
<td>40</td>
<td>20</td>
<td>32</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1,099</td>
<td>1,104</td>
<td>1126</td>
<td>1118</td>
</tr>
</tbody>
</table>

**VALUE OF NEW MATERIALS PURCHASED FOR USDs WITH FEDERAL QUOTA FUNDS (BY KSBE DISTRICT)**

<table>
<thead>
<tr>
<th>Region</th>
<th>1st Quarter</th>
<th>2nd Quarter</th>
<th>3rd Quarter</th>
<th>4th Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>$31,009</td>
<td>$13,801</td>
<td>$7,448</td>
<td>$8,734</td>
</tr>
<tr>
<td>II</td>
<td>$16,244</td>
<td>$6,236</td>
<td>$7,678</td>
<td>$6,354</td>
</tr>
<tr>
<td>III</td>
<td>$2,049</td>
<td>$3,002</td>
<td>$4,699</td>
<td>$1,774</td>
</tr>
<tr>
<td>IV</td>
<td>$28,908</td>
<td>$14,535</td>
<td>$15,763</td>
<td>$6,749</td>
</tr>
<tr>
<td>V</td>
<td>$8,368</td>
<td>$3,774</td>
<td>$9,777</td>
<td>$5,818</td>
</tr>
<tr>
<td>VI</td>
<td>$17,258</td>
<td>$12,406</td>
<td>$12,817</td>
<td>$8,480</td>
</tr>
<tr>
<td>VII</td>
<td>$5,288</td>
<td>$14,215</td>
<td>$6,119</td>
<td>$2,632</td>
</tr>
<tr>
<td>VIII</td>
<td>$4,542</td>
<td>$10,151</td>
<td>$5,432</td>
<td>$4,615</td>
</tr>
<tr>
<td>IX</td>
<td>$5,758</td>
<td>$4,271</td>
<td>$7,487</td>
<td>$2,093</td>
</tr>
<tr>
<td>X</td>
<td>$15,889</td>
<td>$11,485</td>
<td>$8,477</td>
<td>$11,762</td>
</tr>
<tr>
<td>KIRC</td>
<td>$9,646</td>
<td>$13,978</td>
<td>$7,484</td>
<td>$7,277</td>
</tr>
<tr>
<td>KSSB</td>
<td>$6,985</td>
<td>$5,576</td>
<td>$3,851</td>
<td>$3,557</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$151,944</td>
<td>$113,430</td>
<td>$97,032</td>
<td>$69,845</td>
</tr>
</tbody>
</table>

**Materials/Services Provided**

<table>
<thead>
<tr>
<th></th>
<th>1st Quarter</th>
<th>2nd Quarter</th>
<th>3rd Quarter</th>
<th>4th Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Materials in Circulation to USDs</td>
<td>15,250</td>
<td>16,722</td>
<td>15,588</td>
<td>15,112</td>
</tr>
<tr>
<td>Number of Braille Pages Transcribed/Embossed for Students</td>
<td>2,552</td>
<td>4,168</td>
<td>4,176</td>
<td>3,647</td>
</tr>
</tbody>
</table>
**Statewide Teacher Training for USDs**

The webinar, “Understanding what children with CVI see”, with Dr. Gordon Dutton was offered through cooperative efforts among Perkins School for the Blind, the Kansas Instructional Resource Center, KSSB Field Services, and the Kansas TVI/COMs project.

**Statewide Collaborations for Improved Services**

KIRC Coordinator – 4th Quarter Activities:

- Completed Phases 3 and 4 of the 2017 APH Federal Quota Registration.
- Participated in the May 4th TASN meeting. In coordination with the Kansas State Department of Education, TASN members looked at the state high school graduation tracking system and Family Engagement services.
### Budget/Revenue & Expenditures by Fund

<table>
<thead>
<tr>
<th>Fund Type</th>
<th>FY 2017 Budget/Revenue</th>
<th>Expenditures To Date 6/30/17</th>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>State Appropriation</td>
<td>5,403,988</td>
<td>5,374,716</td>
<td>29,272</td>
</tr>
<tr>
<td>Federal Aid:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School Lunch</td>
<td>24,900</td>
<td>19,169</td>
<td>5,731</td>
</tr>
<tr>
<td>Special Education</td>
<td>549,813</td>
<td>476,950</td>
<td>72,863</td>
</tr>
<tr>
<td>Other</td>
<td>20,000</td>
<td>0</td>
<td>20,000</td>
</tr>
<tr>
<td>Subtotal – Federal Aid</td>
<td>594,713</td>
<td>496,119</td>
<td>98,594</td>
</tr>
<tr>
<td>Fees</td>
<td>286,852</td>
<td>230,867</td>
<td>55,985</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Building</td>
<td>830,205</td>
<td>714,585</td>
<td>115,620</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td>7,115,758</td>
<td>6,816,287</td>
<td>299,471</td>
</tr>
</tbody>
</table>

### Budget Expenditures by Object

<table>
<thead>
<tr>
<th>Object Type</th>
<th>FY2017 Budget/Revenue</th>
<th>Expenditures To Date 6/30/17</th>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries &amp; Wages</td>
<td>5,049,606</td>
<td>5,001,788</td>
<td>47,818</td>
</tr>
<tr>
<td>Contractual Services *</td>
<td>887,991</td>
<td>770,935</td>
<td>117,056</td>
</tr>
<tr>
<td>Commodities **</td>
<td>169,647</td>
<td>168,612</td>
<td>1,035</td>
</tr>
<tr>
<td>Capital Outlay</td>
<td>52,000</td>
<td>51,948</td>
<td>52</td>
</tr>
<tr>
<td>Other ***</td>
<td>122,840</td>
<td>104,950</td>
<td>17,890</td>
</tr>
<tr>
<td>Debt Service</td>
<td>43,928</td>
<td>43,928</td>
<td>0</td>
</tr>
<tr>
<td>Capital Improvements</td>
<td>789,746</td>
<td>674,126</td>
<td>115,620</td>
</tr>
<tr>
<td>TOTAL</td>
<td>7,115,758</td>
<td>6,816,287</td>
<td>299,471</td>
</tr>
</tbody>
</table>

* Contractual Services - includes communications, postage, printing, travel, utilities, professional services, repairs, rentals, Accessible Arts, etc.

** Commodities - includes gasoline, paper, office supplies, food, educational materials, etc.

*** Other - includes scholarships/tuition paid by federal grants; voluntary retirement incentive
REQUEST AND RECOMMENDATION FOR BOARD ACTION

Agenda Number: 18 e

Meeting Date: 8/8/2017

Staff Initiating: Susan Helbert
Interim Director: Susan Helbert
Commissioner: Randy Watson

Item Title:
Act on recommendations for Visiting Scholar licenses

Board Goals:
Provide an effective educator in every classroom

Recommended Motion:
It is moved that the Kansas State Board of Education accept the recommendations of Randy Watson, Commissioner of Education, regarding Visiting Scholar licenses.

Explanation of Situation Requiring Action:

Blue Valley USD 229 - Center for Advanced Professional Studies (CAPS) program
Alisa Morse

The Blue Valley School District – CAPS requests that Alisa Morse be granted a Visiting Scholar license valid for the 2017-18 school year. Ms. Morse will be assigned to teach the CAPS Filmmaking course. The course guides students through every aspect of the filmmaking process from story development to the production, editing and showing of their own short film. Students also learn photography, lighting and general career development skills in areas such as communication, finance, presentation and marketing.

Ms. Morse will be teaching the CAPS schedule of morning and afternoon sessions every day for a full semester, replicated again second semester. The sessions are each 2.5 hours and she will be teaching the morning and afternoon sessions, 6 periods a day. Credit for the course is 1 Fine Arts and .5 Technology credit, and the course is eligible for college credit.

Alisa Morse earned a Bachelor of Arts degree in Communication: Film and Media Arts in May 2011 from American University in Washington, D.C. A Master of Fine Arts in Film and Electronic Media was earned from American University in December 2015.

Alisa has varied experiences in the field of film and video, including freelance filmmaking contracts. Much of her experience has been in conjunction with high school students. While attending American University 2009-11, Alisa served as assistant director of the Discover the World of Communication, a collegiate educational experience for high school students. Since 2012, the National Student Leadership Conference (NSLC) has employed Alisa. She started with NSLC as Program Director/Assistant Site Director for the summer program at UC Berkeley, NSLC’s second largest location with nearly 1,500 students. She created curriculum and taught film for this program that influences high school media

(continued)
makers through the summer program. Her current role at NSLC is as Social Media Coordinator. In this role, she is in charge of managing all social media outlets: managing the daily blog and all content; conducting interviews with students and guest speakers, creating blog and marketing videos (two per day blog videos); handling all official photography; reviewing content submitted by students for social media platforms. In addition, she trains a staff of 40 in how to use the social media platforms throughout the summer and manages them on a daily basis to ensure a strong media presence. She is responsible for creating a schedule of videos and photos to give parents and teachers a look into what NSLC does, and corresponding with them throughout the summer. She has also served in this role at the new International Campus Yale – NUS in Singapore.

Ms. Morse focused her studies at the bachelor’s level on documentary film and photojournalism, based on her love for environmental and social education and the use of storytelling through visual and audio formats. During that time, she held freelance positions with Discovery Channel, the World Wildlife Fund, the Corporation for Public Broadcasting and a local television study in DC. She has worked with several Kansas based companies and non-profits. During 2013-16, she created, produced and directed three documentaries during a long-term media project for the Kansas Women Attorney Association. She serves as personal video creator and editor for Paul Lisnek, a television and radio personality based in Chicago.

Alisa Morse’s education and experiences will allow her to provide a unique educational experience to the high school students in the CAPS Filmmaking course. Her educational background, her expertise and experiences as a filmmaker, in combination with her experiences working in this field specifically with high school students through her NSLC roles, all contribute to a strong background relative to her teaching assignment. She meets the criteria of extensive related experience and an advanced degree in the subject. I recommend that the request of a Visiting Scholar license valid for the 2017-18 school year for Alisa Morse be approved, based on meeting two of the established criteria.

Geary County Schools USD 475
Kelly Welch

The Geary County school district requests that Kelly Welch be granted a Visiting Scholar license valid for the 2017-18 school year. Ms. Kelly will be assigned to teach Foundations of Early Childhood Development (grades 11-12), Orientation to Early Childhood Development (grades 10-12), and Teacher as a Career (Grades 11-12) at Junction City High School. The courses will be taught within an A/B block schedule, with Foundations and Orientations double blocked during the school day.

Kelly Welch has earned the following degrees from Kansas State University: Bachelor of Science in Psychology, May 1982; Master of Science in Family Studies and Human Services, December 1997; Doctor of Philosophy in Human Ecology, May 1999.

Ms. Welch has been teaching at Kansas State University in the College of Human Ecology since 1999, as an Assistant Professor and an Associate Professor. Her teaching load included online courses for at least the last 10 years. She also served as a graduate teaching assistant during her graduate studies. Her teaching and research have focused on the areas of human development across the entire lifespan, family health/life, relationship formation, and sexual and reproductive health. Kelly has served in

(continued)
advisor/mentor roles during her time at K-State. For the past nine years she has been teaching the first-year seminar courses for K-State First (a university-wide first-year experience program). Other involvement included the Staley School of Leadership Studies, university athletics, and development/implementation of campus programs for students to enhance their lifestyle and personal choices. She is active in related community and campus services and national organizations.

As a result of her ongoing research and interest, Kelly has developed teaching resources including published course software and textbooks. She is a Certified Family Life Educator (CFLE) through the National Council on Family Relations. Certification recognizes a proven background and understanding in each of 10 family life education (FLE) content areas.

Kelly Welch's educational background and studies along with her almost two decades of teaching experience in family studies and human ecology will provide a unique learning experience to the students at Junction City High. She meets the criteria of extensive related experience and an advanced degree in the subject. I recommend that the request of a Visiting Scholar license valid for the 2017-18 school year for Kelly Welch be approved, based on meeting two of the established criteria.

Criteria for a Visiting Scholar license:

A. Advanced course of study or extensive training in the area of licensure requested
B. Outstanding distinction or exceptional talent in the field
C. Significant recent occupational experience which is related to the field
Item Title:

Act on request from USD 373, Newton, Harvey County, to hold a bond election

Board Goals:

Governmental Responsibility

Recommended Motion:

It is moved that the Kansas State Board of Education issue an Order authorizing USD 373, Newton, Harvey County, to hold an election on the question of issuing bonds in excess of the district's general bond debt limitation.

Explanation of Situation Requiring Action:

Under KSA 75-2315 et seq., a school district may request that the State Board of Education authorize the district to hold an election on the question of issuing bonds in an amount which would cause the district's bonded indebtedness to exceed the district's general bond debt limitation. USD 373, Newton, Harvey County, has made such a request. If approved, the district could hold an election on the question of whether additional bonds be issued. If the voters approve such action, the district could issue the bonds.

USD 373 plans to use the bond proceeds to pay the costs to: (1) construct, furnish and equip renovations and additions to the existing Newton High School including new HVAC, a storm shelter for all students and staff, improved student security, improved teaching and learning environments, creating and building operational and technological efficiencies, ADA and code compliance, and for improved student, staff and patron accessibility; (2) construct, furnish and equip renovations and additions to the existing Cooper Elementary School, South Breeze Elementary School, Sunset Elementary School, Slate Creek Elementary School and Northridge Elementary School for improved student safety and security, technology, and required additional space at South Breeze Elementary School; (3) construct, furnish and equip renovations and additions to the existing Walton Elementary School for required additional space, a storm shelter for all students and staff, improved student security, technology upgrades, and improved teaching and learning environments; (4) make improvements to the existing Santa Fe Middle School for improved student security, technology upgrades, improvements to Lindley Hall locker room areas, and specialized teaching and learning environments for a 6-7-8 middle school; and (5) make improvements to the existing Chisholm Middle School for an additional storm shelter for students and staff, improved security, and technology upgrades.

Based upon the following criteria, staff recommends that this bond application be approved.

1. The community was involved in the process of the building proposal.
2. All required forms were properly filed with us, along with an appropriate notice for the election.

(continued)
3. The district outlined the needs for the building project by responding to all questions required by the State Board of Education.
4. An outside consultant was utilized in determining the school district needs.
5. The age of the existing building(s) appears to justify a bond election.
6. The application indicates that the building(s) are in need of major repairs in order to provide the necessary student programs.
## Summary of Appeal to State Board of Education to Allow Local Vote on Exceeding Debt Limit

**Unified School District 373 Newton**  
County: Harvey

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Value</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Current equalized assessed tangible valuation *</td>
<td>$180,902,111</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Percentage of bond debt limit</td>
<td>14%</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Amount of bond debt limit</td>
<td>$25,326,295</td>
<td></td>
</tr>
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<td>4.</td>
<td>State Aid Percentage</td>
<td>28%</td>
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<tr>
<td></td>
<td>* Includes assessed valuation of motor vehicle</td>
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<tr>
<td>5.</td>
<td>Amount of bond indebtedness at present time</td>
<td>$35,345,000</td>
<td>19.5</td>
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<td>6.</td>
<td>Amount of bond indebtedness requested</td>
<td>$61,295,000</td>
<td>33.9</td>
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<td>7.</td>
<td>Total amount of bond indebtedness if request approved (Lines 5 + 6)</td>
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<td>53.4</td>
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<td>8.</td>
<td>Estimated amount of bond indebtedness authorized without approval</td>
<td>$25,326,295</td>
<td>14.0</td>
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<td>9.</td>
<td>Amount of bond indebtedness above bond debt limit requested</td>
<td>$71,313,705</td>
<td>39.4</td>
</tr>
</tbody>
</table>

### Forms Requested
- (X) 5-210-118 General Information
- (X) 5-210-106 Resolution
- (X) 5-210-108 Publication Notice
- (X) 5-210-110 Application
- (X) 5-210-114 Equalized Assessed Valuation
- (X) Schematic floor plan of the proposed facilities
- (X) Map of the school district showing present facilities
- (X) Small map of the school district showing the adjoining school districts
- (X) Map of the school district showing proposed facilities

**July 16, 2017**  
Craig Neuenswander  
Director, School Finance

**July 16, 2017**  
Dale M. Dennis  
Deputy Commissioner
REQUEST AND RECOMMENDATION FOR BOARD ACTION

Agenda Number: 18 f. (2)

Meeting Date: 8/8/2017

Staff Initiating: Dale Dennis
Deputy Commissioner: Dale Dennis
Commissioner: Randy Watson

Item Title:
Act on request from USD 384, Blue Valley-Randolph, Riley County, to hold a bond election

Board Goals:
Governmental Responsibility

Recommended Motion:
It is moved that the Kansas State Board of Education issue an Order authorizing USD 384, Blue Valley-Randolph, Riley County, to hold an election on the question of issuing bonds in excess of the district's general bond debt limitation.

Explanation of Situation Requiring Action:
Under KSA 75-2315 et seq., a school district may request that the State Board of Education authorize the district to hold an election on the question of issuing bonds in an amount which would cause the district's bonded indebtedness to exceed the district's general bond debt limitation. USD 384, Blue Valley-Randolph, Riley County, has made such a request. If approved, the district could hold an election on the question of whether additional bonds be issued. If the voters approve such action, the district could issue the bonds.

USD 384 plans to use the bond proceeds to pay the costs to: (1) construct, furnish and equip and acquire a new agricultural education building, a new football field concession stand, press box and bathrooms, and other building, roof, door, window and security improvements in the district; (2) remodel, furnish and equip the existing agricultural education building into a district fitness facility, and remodel and furnish other classrooms and gyms; and (3) acquire new school buses and technology and playground equipment.

Based upon the following criteria, staff recommends that this bond application be approved.
1. The district is experiencing a growth in enrollment.
2. The community was involved in the process of the building proposal.
3. All required forms were properly filed with us, along with an appropriate notice for the election.
4. The district outlined the needs for the building project by responding to all questions required by the State Board of Education.
5. An outside consultant was utilized in determining the school district needs.
6. The age of the existing building(s) appears to justify a bond election.
7. The application indicates that the building(s) are in need of major repairs in order to provide the necessary student programs.
## Summary of Appeal to State Board of Education to Allow Local Vote on Exceeding Debt Limit

### Unified School District 384 Blue Valley-Randolph  
County: Riley

| 1. Current equalized assessed tangible valuation * | $23,440,761 |
| 2. Percentage of bond debt limit | 14% |
| 3. Amount of bond debt limit | $3,281,706 |
| 4. State Aid Percentage | 0% |

* Includes assessed valuation of motor vehicle

| 5. Amount of bond indebtedness at present time | $0 |
| 6. Amount of bond indebtedness requested | $4,100,000 |
| 7. Total amount of bond indebtedness if request approved (Lines 5 + 6) | $4,100,000 |
| 8. Estimated amount of bond indebtedness authorized without approval | $3,281,706 |
| 9. Amount of bond indebtedness above bond debt limit requested | $818,294 |

### Percent of Equalized Assessed Valuation - Current Year

| Percent | 0.0 | 17.5 | 14.0 | 3.5 |

### Forms Requested

| (X) 5-210-118 General Information | ( ) Schematic floor plan of the proposed facilities |
| (X) 5-210-106 Resolution | (X) Map of the school district showing present facilities |
| (X) 5-210-108 Publication Notice | (X) Small map of the school district showing the adjoining school districts |
| (X) 5-210-110 Application | (X) Map of the school district showing proposed facilities |
| (X) 5-210-114 Equalized Assessed Valuation | |

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July 11, 2017  
Craig Neuenswander  
Director, School Finance

July 11, 2017  
Dale M. Dennis  
Deputy Commissioner
Item Title:

Act on request from USD 393, Solomon, Dickinson County, to hold a bond election

Board Goals:

Governmental Responsibility

Recommended Motion:

It is moved that the Kansas State Board of Education issue an Order authorizing USD 393, Solomon, Dickinson County, to hold an election on the question of issuing bonds in excess of the district's general bond debt limitation.

Explanation of Situation Requiring Action:

Under KSA 75-2315 et seq., a school district may request that the State Board of Education authorize the district to hold an election on the question of issuing bonds in an amount which would cause the district's bonded indebtedness to exceed the district's general bond debt limitation. USD 393, Solomon, Dickinson County, has made such a request. If approved, the district could hold an election on the question of whether additional bonds be issued. If the voters approve such action, the district could issue the bonds.

USD 393 plans to use the bond proceeds to pay the costs to: (1) construct, furnish and equip additions to the existing campus for new classrooms, kitchen cafeteria and storage areas, and demolish the existing elementary school building; (2) renovate, furnish and equip existing areas for new classrooms, shop class, STEM lab, band room and office space; (3) construct, furnish and equip improvements to existing district facilities for enhanced safety and security, increased educational and operational efficiencies, infrastructure, parking, building, technology, playground, track, and HVAC improvements, and ADA and other code compliance; and (4) construct, furnish and equip a new bus storage facility and demolish the existing structure.

Based upon the following criteria, staff recommends that this bond application be approved.

1. The district is experiencing a growth in enrollment.
2. The community was involved in the process of the building proposal.
3. All required forms were properly filed with us, along with an appropriate notice for the election.
4. The district outlined the needs for the building project by responding to all questions required by the State Board of Education.
5. An outside consultant was utilized in determining the school district needs.
6. The age of the existing building(s) appears to justify a bond election.
7. The application indicates that the building(s) are in need of major repairs in order to provide the necessary student programs.
8. Several buildings are being consolidated under this proposal.
### Summary of Appeal to State Board of Education to Allow Local Vote on Exceeding Debt Limit

#### Unified School District 393 Solomon  
County: Dickinson

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Amount/Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Current equalized assessed tangible valuation *</td>
<td>$27,954,464</td>
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<tr>
<td>2.</td>
<td>Percentage of bond debt limit</td>
<td>14%</td>
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<td>3.</td>
<td>Amount of bond debt limit</td>
<td>$3,913,624</td>
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<tr>
<td>4.</td>
<td>State Aid Percentage</td>
<td>0%</td>
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<td>5.</td>
<td>Amount of bond indebtedness at present time</td>
<td>$0 0.0</td>
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<td>6.</td>
<td>Amount of bond indebtedness requested</td>
<td>$10,980,000 39.3</td>
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<td>7.</td>
<td>Total amount of bond indebtedness if request approved (Lines 5 + 6)</td>
<td>$10,980,000 39.3</td>
</tr>
<tr>
<td>8.</td>
<td>Estimated amount of bond indebtedness authorized without approval</td>
<td>$3,913,624 14.0</td>
</tr>
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<td>9.</td>
<td>Amount of bond indebtedness above bond debt limit requested</td>
<td>$7,066,376 25.3</td>
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</table>

#### Forms Requested

| (X) 5-210-118 General Information | (X) Schematic floor plan of the proposed facilities |
| (X) 5-210-106 Resolution | (X) Map of the school district showing present facilities |
| (X) 5-210-108 Publication Notice | (X) Small map of the school district showing the adjoining school districts |
| (X) 5-210-110 Application |  |
| (X) 5-210-114 Equalized Assessed Valuation | (X) Map of the school district showing proposed facilities |

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**Director, School Finance**

**Deputy Commissioner**

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* Includes assessed valuation of motor vehicle
ITEM TITLE:

Act on request from USD 373, Newton, Harvey County, to receive Capital Improvement (Bond & Interest) State Aid

BOARD GOALS:

Governmental Responsibility

RECOMMENDED MOTION:

It is moved that the Kansas State Board of Education issue an Order authorizing USD 373, Newton, Harvey County, to receive capital improvement (bond & interest) state aid as authorized by law.

EXPLANATION OF SITUATION REQUIRING ACTION:

Under 2016 Senate Bill 323, a school district may request that the State Board of Education authorize the district to receive capital improvement (bond & interest) state aid. USD 373, Newton, Harvey County, has made such a request. If approved, the district would receive capital improvement (bond & interest) state aid as provided by law. If the request is not approved, the district will not receive any capital improvement state aid.

USD 373 plans to use the bond proceeds to pay the costs to: (1) construct, furnish and equip renovations and additions to the existing Newton High School including new HVAC, a storm shelter for all students and staff, improved student security, improved teaching and learning environments, creating and building operational and technological efficiencies, ADA and code compliance, and for improved student, staff and patron accessibility; (2) construct, furnish and equip renovations and additions to the existing Cooper Elementary School, South Breeze Elementary School, Sunset Elementary School, Slate Creek Elementary School and Northridge Elementary School for improved student safety and security, technology, and required additional space at South Breeze Elementary School; (3) construct, furnish and equip renovations and additions to the existing Walton Elementary School for required additional space, a storm shelter for all students and staff, improved student security, technology upgrades, and improved teaching and learning environments; (4) make improvements to the existing Santa Fe Middle School for improved student security, technology upgrades, improvements to Lindley Hall locker room areas, and specialized teaching and learning environments for a 6-7-8 middle school; and (5) make improvements to the existing Chisholm Middle School for an additional storm shelter for students and staff, improved security, and technology upgrades.

This application does not contain any non-instructional-related items.

Based upon the following criteria, staff recommends that this bond application be approved.

1. The community was involved in the process of the building proposal.

(continued)
2. All required forms were properly filed with us, along with an appropriate notice for the election.
3. The district outlined the needs for the building project by responding to all questions required by the State Board of Education.
4. An outside consultant was utilized in determining the school district needs.
5. The age of the existing building(s) appears to justify a bond election.
6. The application indicates that the building(s) are in need of major repairs in order to provide the necessary student programs.
## Summary of Appeal to State Board of Education for State Aid

**Unified School District 373 Newton**

**County: Harvey**

| 1. Current equalized assessed tangible valuation * | $180,902,111 |
| 2. Percentage of bond debt limit                   | 14.00%      |
| 3. Amount of bond debt limit                       | $25,326,295 |
| 4. State Aid Percentage                            | 28%         |

* Includes assessed valuation of motor vehicle

| 5. Amount of bond indebtedness at present time     | $35,345,000 | 19.5   |
| 6. Amount of bond indebtedness requested          | $61,295,000 | 33.9   |
| 7. Total amount of bond indebtedness if request approved (Lines 5 + 6) | $96,640,000 | 53.4   |
| 8. Estimated amount of bond indebtedness authorized without approval | $25,326,295 | 14.0   |
| 9. Amount of bond indebtedness above bond debt limit requested | $71,313,705 | 39.4   |

### Forms Requested
- (X) 5-210-118 General Information
- (X) 5-210-106 Resolution
- (X) 5-210-108 Publication Notice
- (X) 5-210-110 Application
- (X) 5-210-114 Equalized Assessed Valuation
- (X) Schematic floor plan of the proposed facilities
- (X) Map of the school district showing present facilities
- (X) Small map of the school district showing the adjoining school districts
- (X) Map of the school district showing proposed facilities

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*July 16, 2017*

Craig Neuenswander

 Deputy Commissioner

*July 16, 2017*

Dale M. Dennis

 Director, School Finance
REQUEST AND RECOMMENDATION FOR BOARD ACTION

Item Title:
Act on request from USD 384, Blue Valley-Randolph, Riley County, to receive Capital Improvement (Bond & Interest) State Aid

Board Goals:
Governmental Responsibility

Recommended Motion:
It is moved that the Kansas State Board of Education issue an Order authorizing USD 384, Blue Valley-Randolph, Riley County, to receive capital improvement (bond & interest) state aid as authorized by law.

Explanation of Situation Requiring Action:
Under 2016 Senate Bill 323, a school district may request that the State Board of Education authorize the district to receive capital improvement (bond & interest) state aid. USD 384, Blue Valley-Randolph, Riley County, has made such a request. If approved, the district would receive capital improvement (bond & interest) state aid as provided by law. If the request is not approved, the district will not receive any capital improvement state aid.

USD 384 plans to use the bond proceeds to pay the costs to: (1) construct, furnish, equip and acquire a new agricultural education building, a new football field concession stand, press box and bathrooms, and other building, roof, door, window and security improvements in the district; (2) remodel, furnish and equip the existing agricultural education building into a district fitness facility, and remodel and furnish other classrooms and gyms; and (3) acquire new school buses and technology and playground equipment.

The application contains the following non-instructional-related items: football field concession stand and press box, school buses, and playground equipment.

Based upon the following criteria, staff recommends that this application for capital improvement (bond & interest) state aid be approved.

1. The district is experiencing a growth in enrollment.
2. The community was involved in the process of the building proposal.
3. All required forms were properly filed with us, along with an appropriate notice for the election.
4. The district outlined the needs for the building project by responding to all questions required by the State Board of Education.
5. An outside consultant was utilized in determining the school district needs.
6. The age of the existing building(s) appears to justify a bond election.
7. The application indicates that the building(s) are in need of major repairs in order to provide the necessary student programs.
# Summary of Appeal to State Board of Education to Allow Local Vote on Exceeding Debt Limit

**Unified School District 384 Blue Valley-Randolph**

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Amount/Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Current equalized assessed tangible valuation *</td>
<td>$23,440,761</td>
</tr>
<tr>
<td>2.</td>
<td>Percentage of bond debt limit</td>
<td>14%</td>
</tr>
<tr>
<td>3.</td>
<td>Amount of bond debt limit</td>
<td>$3,281,706</td>
</tr>
<tr>
<td>4.</td>
<td>State Aid Percentage</td>
<td>0%</td>
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</table>

* Includes assessed valuation of motor vehicle

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<tr>
<th>Item</th>
<th>Description</th>
<th>Amount/Percentage</th>
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<td>5.</td>
<td>Amount of bond indebtedness at present time</td>
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<td>6.</td>
<td>Amount of bond indebtedness requested</td>
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<td>7.</td>
<td>Total amount of bond indebtedness if request approved (Lines 5 + 6)</td>
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<td>8.</td>
<td>Estimated amount of bond indebtedness authorized without approval</td>
<td>$3,281,706</td>
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<td>9.</td>
<td>Amount of bond indebtedness above bond debt limit requested</td>
<td>$818,294</td>
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**Percent of Equalized Assessed Valuation - Current Year**

<p>| | |</p>
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<tr>
<th></th>
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<td>6.</td>
<td>17.5</td>
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<td>8.</td>
<td>14.0</td>
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<tr>
<td>9.</td>
<td>3.5</td>
</tr>
</tbody>
</table>

**Forms Requested**

(X) 5-210-118 General Information
(X) 5-210-106 Resolution
(X) 5-210-108 Publication Notice
(X) 5-210-110 Application
(X) 5-210-114 Equalized Assessed Valuation

( ) Schematic floor plan of the proposed facilities
( ) Map of the school district showing present facilities
( ) Small map of the school district showing the adjoining school districts
( ) Map of the school district showing proposed facilities

**Date**

July 11, 2017
July 11, 2017

**Signature**

Craig Neuenswander
Director, School Finance
Dale M. Dennis
Deputy Commissioner
REQUEST AND RECOMMENDATION FOR BOARD ACTION

Staff Initiating: Dale Dennis
Deputy Commissioner: Dale Dennis
Commissioner: Randy Watson
Meeting Date: 8/8/2017

Item Title:
Act on request from USD 393, Solomon, Dickinson County, to receive Capital Improvement (Bond & Interest) State Aid

Board Goals:
Governmental Responsibility

Recommended Motion:
It is moved that the Kansas State Board of Education issue an Order authorizing USD 393, Solomon, Dickinson County, to receive capital improvement (bond & interest) state aid as authorized by law.

Explanation of Situation Requiring Action:
Under 2016 Senate Bill 323, a school district may request that the State Board of Education authorize the district to receive capital improvement (bond & interest) state aid. USD 393, Solomon, Dickinson County, has made such a request. If approved, the district would receive capital improvement (bond & interest) state aid as provided by law. If the request is not approved, the district will not receive any capital improvement state aid.

USD 393 plans to use the bond proceeds to pay the costs to: (1) construct, furnish and equip additions to the existing campus for new classrooms, kitchen, cafeteria and storage areas, and demolish the existing elementary school building; (2) renovate, furnish and equip existing areas for new classrooms, shop class, STEM lab, band room and office space; (3) construct, furnish and equip improvements to existing district facilities for enhanced safety and security, increased educational and operational efficiencies, infrastructure, parking, building, technology, playground, track, and HVAC improvements, and ADA and other code compliance; and (4) construct, furnish and equip a new bus storage facility and demolish the existing structure.

This application contains the following non-instructional-related items: playground, track, and bus barn.

Under current law, USD 393 Solomon is not eligible for capital improvement state aid. If the district does become eligible in the future, capital improvement state aid would be prorated at 94.77 percent since part of the bond issue is being used for extracurricular facilities.

Based upon the following criteria, staff recommends that this application for capital improvement (bond & interest) state aid be approved.
1. The district is experiencing a growth in enrollment.
2. The community was involved in the process of the building proposal.

(continued)
3. All required forms were properly filed with us, along with an appropriate notice for the election.
4. The district outlined the needs for the building project by responding to all questions required by the State Board of Education.
5. An outside consultant was utilized in determining the school district needs.
6. The age of the existing building(s) appears to justify a bond election.
7. The application indicates that the building(s) are in need of major repairs in order to provide the necessary student programs.
8. Several buildings are being consolidated under this proposal.
### Summary of Appeal to State Board of Education for State Aid

<table>
<thead>
<tr>
<th>Unified School District 393 Solomon</th>
<th>County: Dickinson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Current equalized assessed tangible valuation *</td>
<td>$27,954,464</td>
</tr>
<tr>
<td>2. Percentage of bond debt limit</td>
<td>14.00%</td>
</tr>
<tr>
<td>3. Amount of bond debt limit</td>
<td>$3,913,624</td>
</tr>
<tr>
<td>4. State Aid Percentage</td>
<td>0%</td>
</tr>
<tr>
<td>* Includes assessed valuation of motor vehicle</td>
<td></td>
</tr>
<tr>
<td>5. Amount of bond indebtedness at present time</td>
<td>$0 0.0</td>
</tr>
<tr>
<td>6. Amount of bond indebtedness requested</td>
<td>$10,980,000 39.3</td>
</tr>
<tr>
<td>7. Total amount of bond indebtedness if request approved (Lines 5 + 6)</td>
<td>$10,980,000 39.3</td>
</tr>
<tr>
<td>8. Estimated amount of bond indebtedness authorized without approval</td>
<td>$3,913,624 14.0</td>
</tr>
<tr>
<td>9. Amount of bond indebtedness above bond debt limit requested</td>
<td>$7,066,376 25.3</td>
</tr>
</tbody>
</table>

**Per cent of Equalized Assessed Valuation - Current Year**

- 5. Amount of bond indebtedness at present time | $0 0.0 |
- 6. Amount of bond indebtedness requested | $10,980,000 39.3 |
- 7. Total amount of bond indebtedness if request approved (Lines 5 + 6) | $10,980,000 39.3 |
- 8. Estimated amount of bond indebtedness authorized without approval | $3,913,624 14.0 |
- 9. Amount of bond indebtedness above bond debt limit requested | $7,066,376 25.3 |

**Forms Requested**

- (X) 5-210-118 General Information
- (X) 5-210-106 Resolution
- (X) 5-210-108 Publication Notice
- (X) 5-210-110 Application
- (X) 5-210-114 Equalized Assessed Valuation

- ( ) Schematic floor plan of the proposed facilities
- (X) Map of the school district showing present facilities
- (X) Small map of the school district showing the adjoining school districts
- (X) Map of the school district showing proposed facilities

<table>
<thead>
<tr>
<th>Date</th>
<th>Signature</th>
</tr>
</thead>
<tbody>
<tr>
<td>July 16, 2017</td>
<td>Craig Neuenswander</td>
</tr>
<tr>
<td>Date</td>
<td>Director, School Finance</td>
</tr>
<tr>
<td>July 16, 2017</td>
<td>Dale M. Dennis</td>
</tr>
<tr>
<td>Date</td>
<td>Deputy Commissioner</td>
</tr>
</tbody>
</table>
REQUEST AND RECOMMENDATION FOR BOARD ACTION

Item Title:

Act on request from USD 436, Caney Valley, Montgomery County, to receive Capital Improvement (Bond & Interest) State Aid

Board Goals:

Governmental Responsibility

Recommended Motion:

It is moved that the Kansas State Board of Education issue an Order authorizing USD 436, Caney Valley, Montgomery County, to receive capital improvement (bond & interest) state aid as authorized by law.

Explanation of Situation Requiring Action:

Under 2016 Senate Bill 323, a school district may request that the State Board of Education authorize the district to receive capital improvement (bond & interest) state aid. USD 436, Caney Valley, Montgomery County, has made such a request. If approved, the district would receive capital improvement (bond & interest) state aid as provided by law. If the request is not approved, the district will not receive any capital improvement state aid.

USD 436 plans to use the bond proceeds to pay the costs to construct, furnish and equip and acquire (1) high efficiency lighting improvements to district buildings and (2) one or more of HVAC improvements, electrical system improvements, window repairs and replacements, door replacements, roof repairs and improvements, tuck pointing, sealing or parking lot improvements at the district attendance centers, stadium and the board office building.

The application contains the following non-instructional-related items: parking lot improvements at the district attendance centers, stadium and board office building.

Based upon the following criteria, staff recommends that this application for capital improvement (bond & interest) state aid be approved.

1. The vote to submit the application for state aid by the local board of education was unanimous
2. The community was involved in the process of the building proposal.
3. All required forms were properly filed with us, along with an appropriate notice for the election.
4. The district outlined the needs for the building project by responding to all questions required by the State Board of Education.
5. An outside consultant was utilized in determining the school district needs.
6. The age of the existing building(s) appears to justify a bond election.
7. The application indicates that the building(s) are in need of major repairs in order to provide the necessary student programs.
# Summary of Appeal to State Board of Education for State Aid

## Unified School District 436 Caney Valley

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Current equalized assessed tangible valuation *</td>
<td>$48,227,235</td>
</tr>
<tr>
<td>2.</td>
<td>Percentage of bond debt limit</td>
<td>14.00%</td>
</tr>
<tr>
<td>3.</td>
<td>Amount of bond debt limit</td>
<td>$6,751,812</td>
</tr>
<tr>
<td>4.</td>
<td>State Aid Percentage</td>
<td>9%</td>
</tr>
<tr>
<td>5.</td>
<td>Amount of bond indebtedness at present time</td>
<td>$0</td>
</tr>
<tr>
<td>6.</td>
<td>Amount of bond indebtedness requested</td>
<td>$4,000,000</td>
</tr>
<tr>
<td>7.</td>
<td>Total amount of bond indebtedness if request approved (Lines 5 + 6)</td>
<td>$4,000,000</td>
</tr>
<tr>
<td>8.</td>
<td>Estimated amount of bond indebtedness authorized without approval</td>
<td>$6,751,812</td>
</tr>
<tr>
<td>9.</td>
<td>Amount of bond indebtedness above bond debt limit requested</td>
<td>$0</td>
</tr>
</tbody>
</table>

* Includes assessed valuation of motor vehicle

<table>
<thead>
<tr>
<th>Percent of Equalized Assessed Valuation - Current Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>$0 0.0</td>
</tr>
<tr>
<td>$4,000,000 8.3</td>
</tr>
<tr>
<td>$4,000,000 8.3</td>
</tr>
<tr>
<td>$6,751,812 14.0</td>
</tr>
<tr>
<td>$0 0.0</td>
</tr>
</tbody>
</table>

### Forms Requested

- (X) 5-210-118 General Information
- (X) 5-210-106 Resolution
- (X) 5-210-108 Publication Notice
- (X) 5-210-110 Application
- (X) 5-210-114 Equalized Assessed Valuation
- (X) Schematic floor plan of the proposed facilities
- (X) Map of the school district showing present facilities
- (X) Small map of the school district showing the adjoining school districts
- (X) Map of the school district showing proposed facilities

**July 16, 2017**

**Date**

Craig Neuenswander

Director, School Finance

**July 16, 2017**

**Date**

Dale M. Dennis

Deputy Commissioner
REQUEST AND RECOMMENDATION FOR BOARD ACTION

Agenda Number: 18
Meeting Date: 8/8/2017

Staff Initiating: Tate Toedman
Director: Colleen Riley
Commissioner: Randy Watson

Item Title:
Act on recommendations for funding the McKinney-Vento Homeless Grants

Board Goals:
Provide a flexible and efficient delivery system to meet our students’ varied and changing needs

Recommended Motion:
It is recommended that the Kansas State Board of Education approve the recommendations for funding the 2017-2018 McKinney-Vento Children and Youth Homeless grants.

Explanation of Situation Requiring Action:
The Kansas State Department of Education received $437,102 for the 2017-2018 federal education for McKinney-Vento Homeless Children and Youth Program. The grants are continuation grants from federal formula funds from the US Department of Education. The purpose of the Education of Homeless Children and Youth Program is to ensure that all homeless children and youth have equal access to the same free, appropriate education - including public preschool education - provided to other children. The grant program will provide direct services to homeless children and youth that enable homeless students to enroll in, and achieve success in school. Services will be provided through programs on school grounds or at other facilities and shall, to the extent practical, be provided through existing programs and mechanisms that integrate homeless children and youth with non-homeless children and youth. Services provided shall not replace the regular academic program and shall be designed to expand upon or improve services provided as part of the schools' regular academic program. Professional development opportunities for the training of local homeless liaisons will be provided.

The following districts and funding amounts have been recommended for approval:

<table>
<thead>
<tr>
<th>District</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>USD 202 Turner</td>
<td>$12,000</td>
</tr>
<tr>
<td>USD 233 Olathe</td>
<td>$38,500</td>
</tr>
<tr>
<td>USD 259 Wichita</td>
<td>$142,000</td>
</tr>
<tr>
<td>USD 260 Derby</td>
<td>$2,100</td>
</tr>
<tr>
<td>USD 261 Haysville</td>
<td>$24,000</td>
</tr>
<tr>
<td>USD 305 Salina</td>
<td>$2,100</td>
</tr>
<tr>
<td>USD 308 Hutchinson</td>
<td>$2,100</td>
</tr>
<tr>
<td>USD 383 Manhattan-Ogden</td>
<td>$25,500</td>
</tr>
<tr>
<td>USD 457 Garden City</td>
<td>$22,000</td>
</tr>
<tr>
<td>USD 475 Geary County</td>
<td>$23,000</td>
</tr>
<tr>
<td>USD 480 Liberal</td>
<td>$2,100</td>
</tr>
<tr>
<td>USD 497 Lawrence</td>
<td>$2,100</td>
</tr>
<tr>
<td>USD 500 Kansas City</td>
<td>$102,000</td>
</tr>
<tr>
<td>USD 501 Topeka</td>
<td>$37,602</td>
</tr>
</tbody>
</table>

TOTAL: $437,102
Item Title:

Act on contract renewal with Accessible Arts, Inc. for related services and KSSB facilities use

Board Goals:

Governmental Responsibility

Recommended Motion:

It is moved that the Kansas State Board of Education authorize the Interim Superintendent of the Kansas State School for the Blind (KSSB) to renew a contract with Accessible Arts, Inc. (FY 2018) for arts-related services for students attending KSSB in exchange for KSSB facility use and statewide outreach services in the arts (drama, movement, dance, visual arts, music) for Kansas individuals with disabilities in an amount not to exceed $134,000.

Explanation of Situation Requiring Action:

The Kansas State School for the Blind desires to renew the contract with Accessible Arts, Inc. for student services and for KSSB facility use. The approximate $134,000 for statewide outreach is state general fund money that flows through the KSSB budget for Accessible Arts, Inc.
REQUEST AND RECOMMENDATION FOR BOARD ACTION

Item Title:
Act on contract for trainer services for 2017 Individual Plan of Study workshops

Board Goals:
Ensure effective, visionary leaders in every school

Recommended Motion:
It is moved that the Kansas State Board of Education approve funding for the 2017 Individual Plan of Study workshops in an amount not to exceed $19,600.

Explanation of Situation Requiring Action:
During the 2016-2017 school year, a survey of 370 principals and school counselors revealed that 52 percent of survey participants ranked their own schools as being in the implementation phase of Individual Plan of Study (IPS) integration. In order to support the Kansans Can Vision and strengthen school district capacity in implementing the Individual Plan of Study, KSDE will award two contracts of $9,800 each to Smoky Hill Education Service Center and ESSDACK to provide training and resources for 500 counselors and school team members at 10 regional trainings.
REQUEST AND RECOMMENDATION FOR BOARD ACTION

Agenda Number: 18 k.

Meeting Date: 8/8/2017

Staff Initiating: Cheryl Johnson  Director: Cheryl Johnson  Commissioner: Randy Watson

Item Title: Act on a request to contract with Michelle Pyle, Computer Applications Developer, to program enhancements to KN-CLAIM (Kansas Nutrition Claims and Information Management System)

Board Goals: Board Matters

Recommended Motion: It is moved that the Kansas State Board of Education authorize the Commissioner of Education to enter into a contract in an amount not to exceed $50,000 from Sept. 1, 2017 to Sept. 15, 2018 with Michelle Pyle, Computer Application Developer, to program enhancements in the KN-CLAIM (Kansas Nutrition Claims and Information Management System).

Explanation of Situation Requiring Action: Objective: Over the past three years, the KN-CLAIM claiming and information management system that is integral in the administration of the federal Child Nutrition Programs in Kansas has been being updated to make it secure. During this process, KSDE staff and Program Sponsors have determined that there are enhancements that could be made to KN-CLAIM to decrease paperwork, reduce error and increase integrity- see attached list of enhancements that have been requested. These enhancements could not be made as a part of the current grant to update the system because they are outside the scope of the grant.

Michelle Pyle worked as an Applications Developer for over 13 years for the Child Nutrition & Wellness team before retiring from KSDE. She is knowledgeable about federal Child Nutrition Program regulations and about the KN-CLAIM system. Ms. Pyle has the expertise and experience to program enhancements to KN-CLAIM. Michelle will be paid $35 per hour from Sept. 1, 2017 through Sept. 15, 2018 to complete the enhancements, with the total amount of the contract not to exceed $50,000.

Funding: It is projected that the Child Nutrition & Wellness team will have up to $50,000 in federal State Administrative Expense funds remaining at the end of the federal fiscal year that can be used for this contract. This money will be returned to USDA on Sept. 30, 2017 if not spent prior to that date.
REQUEST AND RECOMMENDATION FOR BOARD ACTION

Agenda Number: 18 I.

Meeting Date: 8/8/2017

Staff Initiating: Director: Commissioner:
Tate Toedman Colleen Riley Randy Watson

Item Title:

Act on contract with the Kansas Association of Independent and Religious Schools

Board Goals:

Provide an effective educator in every classroom

Recommended Motion:

It is moved that the Kansas State Board of Education authorize the Commissioner of Education to enter into a contract with the Kansas Association of Independent and Religious Schools for the reimbursement of funds for professional development of non-public school teachers and leaders, in an amount not to exceed $36,000.

Explanation of Situation Requiring Action:

Under the Every Student Succeeds Act, Kansas retains 2.5 percent of Title II, Part A funds for state level activities described under Section 2113, including professional development of teachers and leaders. KSDE is required to support equitably the Kansas non-public schools by providing funds for professional development of non-public teachers and leaders. By approving this contract, KSDE will be allowed to reimburse the Kansas Association of Independent and Religious Schools, the largest private school organization in Kansas, for professional development activities provided to private school educators during the 2017-2018 school year.
### WEDNESDAY, AUGUST 9, 2017
### MEETING AGENDA

<table>
<thead>
<tr>
<th>Time</th>
<th>Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:00 a.m.</td>
<td>1. Call to Order</td>
</tr>
<tr>
<td></td>
<td>2. Roll Call</td>
</tr>
<tr>
<td></td>
<td>3. Approval of Agenda</td>
</tr>
<tr>
<td>9:05 a.m.</td>
<td>4. Act on Kansas curricular standards for Mathematics</td>
</tr>
<tr>
<td>9:35 a.m.</td>
<td>5. Information on Professional Education Standards in teacher programs</td>
</tr>
<tr>
<td>10:15 a.m.</td>
<td>Break</td>
</tr>
<tr>
<td>10:25 a.m.</td>
<td>6. <em>Kansans Can</em> highlight: USD 229 Blue Valley community partnership</td>
</tr>
<tr>
<td>11:05 a.m.</td>
<td>7. Board Reports and Requests for Future Agenda Items</td>
</tr>
<tr>
<td>11:45 a.m.</td>
<td>8. Act on Board Travel</td>
</tr>
<tr>
<td>Noon</td>
<td>ADJOURN</td>
</tr>
</tbody>
</table>

**Next Meeting: Sept. 12 and 13 in Topeka**

Individuals who need the use of a sign language interpreter, or who require other special accommodations, should contact Peggy Hill at 785-296-3203, at least seven business days prior to a Kansas State Board of Education meeting.
Staff Initiating: Director: Commissioner:
Melissa Fast Jeannette Nobo Randy Watson

Meeting Date: 8/9/2017

Item Title:
Act on Kansas Curricular Standards for Mathematics

Board Goals:
Provide an effective educator in every classroom

Recommended Motion:
It is moved that the Kansas State Board of Education approve the adoption of the Kansas Curricular Standards for Mathematics.

Explanation of Situation Requiring Action:
KSDE Mathematics Consultant Melissa Fast and Mathematics Committee Chair Debbie Thompson presented the final draft of the Kansas Curricular Standards for Mathematics to the Kansas State Board of Education at the July meeting. Ms. Fast and Ms. Thompson informed the Board of the changes in the standards at all three educational levels: K-5, 6-8 and high school. The Kansas Curricular Standards for Mathematics are before the Kansas State Board of Education this month for the purpose of adoption.

Curricular standards are reviewed every seven years and require approval for adoption by the State Board of Education. Curricular standards provide teachers in the content area with information on what students need to know and be able to do in relationship to the content. Curricular standards are used by schools to develop their local curriculum.
Kindergarten Content Standards Overview

Critical Areas for Kindergarten

Counting and Cardinality (K.CC)
- Know number names and the count sequence.
  - CC.1  CC.2  CC.3
- Count to tell the number of objects.
  - CC.4  CC.5
- Compare numbers.
  - CC.6  CC.7

Operations and Algebraic Thinking (K.OA)
- Understand addition as putting together and adding to and understand subtraction as taking apart and taking from.
  - OA.1  OA.2  OA.3  OA.4  OA.5

Number and Operations in Base Ten (K.NBT)
- Work with numbers 11-19 to gain foundations for place value.
  - NBT.1

Measurement and Data (K.MD)
- Describe and compare measurable attributes.
  - MD.1  MD.2
- Classify objects and count the number of objects in each category.
  - MD.3

Geometry (K.G)
- Identify and describe shapes.
  - G.1  G.2  G.3
- Analyze, compare, create, and compose shapes.
  - G.4  G.5  G.6

Standards for Mathematical Practice
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Click on the box to open specific details related to Kindergarten!
**Counting and Cardinality K.CC**

(Counting and Cardinality and Operations and Algebraic Thinking Progression K-5 Pg. 1-5)

**Know number names and the count sequence.**

(Counting and Cardinality and Operations and Algebraic Thinking Progression K-5 Pg. 4-5)

K.CC.1 Count to 100 by ones and by tens and identify as a growth pattern. (2017)
K.CC.2 Count forward beginning from a given number within the known sequence (instead of having to begin at 1). (K.CC.1)
K.CC.3 Read and write numerals from 0 to 20. (K.CC.2)

**Count to tell the number of objects.**

(Counting and Cardinality and Operations and Algebraic Thinking Progression K-5 Pg. 4-5)

K.CC.4 Understand the relationship between numbers and quantities; connect counting to cardinality. (K.CC.3)
  K.CC.4a. When counting objects, say each number’s name in sequential order, pairing each object with one and only one number name and each number name with one and only one object (Click here for a video showing this concept). (K.CC.3a)
  K.CC.4b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted. (K.CC.3b)
  K.CC.4c. Understand that each successive number name refers to a quantity that is one larger. (K.CC.3c)
  K.CC.4d. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects). (K.CC.3d)
K.CC.5 Count to answer “how many?” up to 20 concrete or pictorial objects arranged in a line, a rectangular array, or a circle, or as many as 10 objects in a scattered configuration (subitizingError! Bookmark not defined.); given a number from 1 to 20, count out that many objects. (K.CC.4)

**Compare numbers.**

(Counting and Cardinality and Operations and Algebraic Thinking Progression K-5 Pg. 5)

K.CC.6 Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, (e.g. by using matching and counting strategies.) Include groups with up to ten objects. (K.CC.6)
K.CC.7 Compare two numbers between 1 and 10 presented as written numerals. (K.CC.7)

**Operations and Algebraic Thinking K.OA**

(Counting and Cardinality and Operations and Algebraic Thinking Progression K-5 Pg. 5 last paragraph)

Understand addition as putting together and adding to, and understand subtraction as taking apart and taking from.

K.OA.1. Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g. claps), acting out situations, verbal explanations, expressions, or equations.
K.OA.2. Solve addition and subtraction word problems, and add and subtract within 10, (e.g. by using objects or drawings to represent the problem.) Refer to shaded section of Table 1 for specific situation types. (K.OA.2)

K.OA.3. Decompose numbers less than or equal to 10 into pairs in more than one way, (e.g. by using objects or drawings, and record each decomposition by a drawing or equation (e.g. 5 = 2 + 3 and 5 = 4 + 1)). (K.OA.3)

K.OA.4. For any number from 1 to 9, find the number that makes 10 when added to the given number, (e.g. by using objects or drawings, and record the answer with a drawing or equation.). (K.OA.4)

K.OA.5. Fluently (efficiently, accurately, and flexibly) add and subtract within 5. (K.OA.5)

Number and Operations in Base Ten K.NBT
(Numbers & Operations Base 10 Progression K-5 Pg. 5)

Work with numbers 11–19 to gain foundations for place value.

K.NBT.1. Compose and decompose numbers from 11 to 19 into ten ones and some further ones, (e.g. by using objects or drawings, and record each composition or decomposition by a drawing or equation)

(e.g. 10 + 8 = 18 and 19 = 10 + 9);
understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. (K.NBT.1)

Measurement and Data K.MD
Describe and compare measurable attributes.

K.MD.1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. (K.MD.1)

K.MD.2. Directly compare two objects, with a measurable attribute in common, to see which object has “more of”/”less of” the attribute, and describe the difference. For example,
directly compare the heights of two children and describe one child as taller/shorter. (K.MD.2)

Classify objects and count the number of objects in each category.

K.MD.3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count (Limit category counts to be less than or equal to 10). (K.MD.3)

Geometry K.G

Identify and describe shapes (squares, circles, triangles, rectangles, hexagons, cubes, cones, cylinders, and spheres).

K.G.1. Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to. (K.G.1)

K.G.2. Correctly gives most precise name of shapes regardless of their orientations (position and direction in space) or overall size. (K.G.2)

K.G.3. Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”). (K.G.3)

Analyze, compare, create, and compose shapes.

K.G.4. Analyze and compare two- and three-dimensional shapes, in different sizes and orientations (position and direction in space, using informal language to describe their similarities, differences, parts (e.g. number of sides and vertices/“corners”) and other attributes (e.g. having sides of equal length). (K.G.4)

K.G.5. Model shapes in the world by building shapes from components (e.g. sticks and clay balls) and drawing shapes. (K.G.5)

K.G.6. Compose simple shapes to form larger shapes. For example, “Can you join these two triangles with full sides touching to make a rectangle?” (K.G.6)
Critical Areas for Grade One

Operations and Algebraic Thinking (1.OA)
- Represent and solve problems involving addition and subtraction.
  OA.1  OA.2
- Understand & apply properties of operations and the relationship between addition & subtraction.
  OA.3  OA.4
- Add and subtract within 20.
  OA.5  OA.6
- Work with addition and subtraction equations.
  OA.7  OA.8

Number and Operations in Base Ten (1.NBT)
- Extend the counting sequence.
   NBT.1
- Understand place value.
   NBT.2  NBT.3
- Use place value understanding and properties of operations to add and subtract.
  NBT.4  NBT.5  NBT.6

Measurement and Data (1.MD)
- Measure lengths indirectly and by iterating length units.
  MD.1  MD.2
- Tell and write time.
  MD.3
- Represent and interpret data.
  MD.4

Geometry (1.G)
- Reason with shapes and their attributes.
  G.1  G.2  G.3

Standards for Mathematical Practices
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.
Click on the box to open specific details related to Grade One!
Operations and Algebraic Thinking 1.OA
(Counting and Cardinality and Operations and Algebraic Thinking Progression K-5 Pg. 12)

Represent and solve problems involving addition and subtraction.
(Refer to shaded section of Table 1 for specific situation types.)

1.OA.1. Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, (e.g. by using objects, drawings, and situation equations and/or solution equations with a symbol for the unknown number to represent the problem.) (1.OA.1)

For Example:
A clown had 20 balloons. He sold some and has 12 left. How many did he sell?
Situation Equation: 20 – ? = 12
Solution Equation: 20 -12 = ?

1.OA.2. Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, (e.g. by using objects, drawings, and equations with a symbol for the unknown number to represent the problem.) (1.OA.2)

Understand and apply properties of operations and the relationship between addition and subtraction.

1.OA.3. Apply (not necessary to name) properties of operations as strategies to add and subtract. Examples: 8 + 3 = 11 is known, then 3 + 8 = 11 is also known. (Commutative property of addition.) To add 2 + 6 + 4, the second two numbers can be added to make a ten, so 2 + 6 + 4 = 2 + 10 = 12. (Associative property of addition.) To add 0 to any number, the answer is that number 7 + 0 = 7 (Additive identity property of 0). Students need not use formal terms for these properties. (1.OA.3)

1.OA.4. Understand subtraction as an unknown-addend problem. For example, subtract 10 – 8 by finding the number that makes 10 when added to 8. (1.OA.4)

Add and subtract within 20.

1.OA.5. Relate counting to addition and subtraction (e.g. by counting on 2 to add 2, counting back 1 to subtract 1). (1.OA.5)

1.OA.6. Add and subtract within 20, demonstrating fluency (efficiently, accurately, and flexibly) for addition and subtraction within 10. Use mental strategies such as counting on; making ten (e.g. 8 + 6 = 8 + 2 + 4 = 10 + 4 = 14); decomposing a number leading to a ten (e.g. 13 – 4 = 13 – 3 – 1 = 10 – 1 = 9); using the relationship between addition and subtraction (e.g. knowing that 8 + 4 = 12, one knows 12 – 8 = 4); and creating equivalent but easier or known sums (e.g. adding 6 + 7 by creating the known equivalent 6 + 6 + 1 = 12 + 1 = 13). (1.OA.6)
Work with addition and subtraction equations.

1.OA.7. Understand the meaning of the equal sign (the value is the same on both sides of the equal sign), and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false?
   \[ 6 = 6; \ 7 = 8 - 1; \ 5 + 2 = 2 + 5; \ 4 + 1 = 3 + 2; \ 7 - 1 = 4; \ 5 + 4 = 7 - 2 \]
(1.OA.7)

1.OA.8. Using related equations, determine the unknown whole number in an addition or subtraction equation. For example, determine the unknown number that makes the equation true in each of the equations \[ \Box - 3 = 7; \ 7 + 3 = \Box. \]
(1.OA.8)

Number and Operations in Base Ten 1.NBT

Extend the counting sequence.

1.NBT.1. Count to 120 (recognizing growth and repeating patterns), starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral. (1.NBT.1)

Understand place value.

1.NBT.2. Understand that the two digits of a two-digit number represent amounts of tens and ones. Understand the following as special cases:
   1.NBT.2a. 10 can be thought of as a grouping of ten ones—called a “ten.” (1.NBT.2a)
   1.NBT.2b. The numbers from 11 to 19 are composed of a ten and one, two, three, four, five, six, seven, eight, or nine ones. (1.NBT.2b)
   1.NBT.2c. The numbers 10, 20, 30, 40, 50, 60, 70, 80, 90 refer to one, two, three, four, five, six, seven, eight, or nine tens (and 0 ones). (1.NBT.1c)
   1.NBT.2d. Show flexibility in composing and decomposing tens and ones (e.g. 20 can be composed from 2 tens or 1 ten and 10 ones, or 20 ones.) (2017)
1.NBT.3. Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the relational symbols \( >, <, =, \) and \( \neq \). (1.NBT.3)

Use place value understanding and properties of operations to add and subtract.

1.NBT.4. Add within 100 using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used including:
   (1.NBT.4)
   1.NBT.4a. Adding a two-digit number and a one-digit number (1.NBT.4)
   1.NBT.4b. Adding a two-digit number and a multiple of 10 (1.NBT.4)
   1.NBT.4c. Understanding that when adding two-digit numbers, combine like base-ten units such as tens and tens, ones and ones; and sometimes it is necessary to compose a ten. (1.NBT.4)
1.NBT.5. Given a two-digit number, mentally find 10 more or 10 less than the number, without having to count; explain the reasoning used. (1.NBT.5)
1.NBT.6. Subtract multiples of 10 in the range 10 to 90 from multiples of 10 in the range 10 to 90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. (1.NBT.6)

Measurement and Data 1.MD

Measure lengths indirectly and by iterating length units.

1.MD.1. Order three objects by length; compare the lengths of two objects indirectly by using a third object. (1.MD.1) (Measurement and Data (measurement part) Progression K–5 Pg. 8 Paragraph 1.)

1.MD.2. Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps. (1.MD.2) (Measurement and Data (measurement part) Progression K–5 Pg. 8, 3rd Section.)

Tell and write time.

1.MD.3. Tell and write time in hours and half-hours using analog and digital clocks. (1.MD.3)

Represent and interpret data.

1.MD.4. Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another. (1.MD.4) (Measurement and Data (data part) Progression K–5 Pg. 5).

Geometry 1.G

Reason with shapes and their attributes.

1.G.1. Distinguish between defining attributes (e.g. triangles are closed and three-sided) versus non-defining attributes (e.g. color, orientation, overall size); build and draw shapes that possess defining attributes. (1.G.1)

1.G.2. Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. Students do not need to learn formal names such as “right rectangular prism.” (1.G.2)

1.G.3. Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Note: fraction notation (1/2, 1/4) is not expected at this grade level. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares. (1.G.3)
Grade Two Content Standards Overview

Critical Areas for Grade Two

Operations and Algebraic Thinking (2.OA)
- Represents and solves problems involving addition and subtraction
  OA.1
- Add and subtract within 20
  OA.2
- Work with equal groups of objects to gain foundations for multiplication
  OA.3  OA.4

Number and Operations in Base Ten (2.NBT)
- Understand place value.
  NBT.1  NBT.2  NBT.3  NBT.4
- Use place value understanding and properties of operations to add and subtract.
  NBT.5  NBT.6  NBT.7  NBT.8  NBT.9

Measurement and Data (2.MD)
- Measure and estimate lengths in standard units
  MD.1  MD.2  MD.3  MD.4
- Relate addition and subtraction to length
  MD.5  MD.6
- Work with time and money
  MD.7  MD.8  MD.9
- Represent and interpret data
  MD.10  MD.11

Geometry (2.G)
- Reason with shapes and their attributes
  G.1  G.2  G.3

Standards for Mathematical Practices
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Click on the box to open specific details related to Grade Two!
Operations and Algebraic Thinking 2.OA

(Counting and Cardinality and Operations and Algebraic Thinking Progression K-5 Pg. 18)

Represent and solve problems involving addition and subtraction.

2.OA.1. Use addition and subtraction within 100 to solve one- and two-step word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, (e.g. by using drawings and situation equations and/or solution equations with a symbol for the unknown number to represent the problem.) Refer to shaded section of Table 1 for specific situation types. (2.OA.1)

For Example:
A clown had 20 balloons. He sold 8. Another clown came by and gave him more. He now has 24 balloons. How many did the clown give him?

Situation Equation: 20 – 8 = ?

? + □ = 24

Solution Equation: 20 – 8 = ?

24 - ? = □

Add and subtract within 20.

2.OA.2. Fluently (efficiently, accurately, and flexibly) add and subtract within 20 using mental strategies (counting on, making a ten, decomposing a number, creating an equivalent but easier and known sum, and using the relationship between addition and subtraction) Work with equal groups of objects to gain foundations for multiplication. (2.OA.2)

2.OA.3. Determine whether a group of objects (up to 20) has an odd or even number of members, (e.g. by pairing objects or counting them by 2s); write an equation to express an even number as a sum of two equal addends. (2.OA.3)

2.OA.4. Use addition to find the total number of objects arranged in rectangular arrays with up to 5 rows and up to 5 columns; write an equation to express the total as a sum of equal addends. (2.OA.4)

Number and Operations in Base Ten 2.NBT

(Numbers & Operations Base 10 Progression K-5 Pg. 8)

Understand place value.

2.NBT.1. Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; (e.g. 706 equals 7 hundreds, 0 tens, and 6 ones.) Understand the following as special cases:

2.NBT.1a. 100 can be thought of as a bundle of ten tens—called a “hundred.” (2.NBT.1a)

2.NBT.1b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (2.NBT.1b)

2.NBT.1c. Show flexibility in composing and decomposing hundreds, tens and ones (e.g. 207 can be composed from 2 hundreds 7 ones OR 20 tens 7 ones OR 207 ones OR 1 hundred 10 tens 7 ones OR 1 hundred 9 tens 17 ones, etc.) (2017)

2.NBT.2. Count within 1000; skip-count by 2s, 5s, 10s, and 100s; explain and generalize the
patterns. \(2.NBT.2\)

2.NBT.3. Read and write numbers within 1000 using base-ten numerals, number names, expanded form, and unit form. \(2.NBT.3\)

2.NBT.4. Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using >, <, =, and ≠ relational symbols to record the results of comparisons. \(2.NBT.4\)

**Use place value understanding and properties of operations to add and subtract.**

(Numbers & Operations Base 10 Progression K-5 Pg. 8)

2.NBT.5. Fluently (efficiently, accurately, and flexibly) add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction (e.g. composing/decomposing by like base-10 units, using friendly or benchmark numbers, using related equations, compensation, number line, etc.). \(2.NBT.5\)

2.NBT.6. Add up to four two-digit numbers using strategies based on place value and properties of operations. \(2.NBT.6\)

2.NBT.7. Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, like base-ten units such as hundreds and hundreds, tens and tens, ones and ones are used; and sometimes it is necessary to compose or decompose tens or hundreds. \(2.NBT.7\)

2.NBT.8. Mentally add 10 or 100 to a given number 100 – 900, and mentally subtract 10 or 100 from a given number 100 – 900. \(2.NBT.8\)

2.NBT.9. Explain why addition and subtraction strategies work using place value and the properties of operations. The explanations given may be supported by drawings or objects. \(2.NBT.9\)

**Measurement and Data 2.MD**

**Measure and estimate lengths in standard units.**

2.MD.1. Measure the length of an object by selecting and using appropriate tools such as rulers, yardsticks, meter sticks, and measuring tapes. \(2.MD.1\)

2.MD.2. Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen. \(2.MD.2\)

(Measurement and Data (measurement part) Progression K–5 Pg. 12.)

2.MD.3. Estimate lengths using whole units of inches, feet, centimeters, and meters. \(2.MD.3\)

(Measurement and Data (measurement part) Progression K–5 Pg. 14-15.)

2.MD.4. Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit (inches, feet, centimeters, and meters). \(2.MD.4\)
Relate addition and subtraction to length.

2.MD.5. Use addition and subtraction within 100 to solve one- and two-step word problems involving lengths that are given in the same units, e.g. by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem. (2.MD.5)

2.MD.6. Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ..., and represent whole-number sums and differences within 100 on a number line diagram. (2.MD.6)

Work with time and money.

2.MD.7. Tell and write time from analog and digital clocks to the nearest five minutes. (2.MD.7)

2.MD.8. Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using $ and ¢ symbols appropriately (Do not use decimal point, if showing 25 cents, use the word cents or ¢). For example: If you have 2 dimes and 3 pennies, how many cents do you have? (2.MD.8)


Represent and interpret data.

2.MD.10. Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object using different units. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units. (2.MD.10)

2.MD.11. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph (See Table 1). (2.MD.10)

Geometry 2.G

Reason with shapes and their attributes

(Geometry Progression K-6 Pg. 10).

2.G.1. Recognize and draw shapes having specified attributes, such as a given number of angles or a given number of equal faces. Identify triangles, quadrilaterals, pentagons, hexagons, and cubes. (2.G.1)

2.G.2. Partition a rectangle into rows and columns of same-size squares and count to find the total number of them. (2.G.2)

2.G.3. Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Note: fraction notation \( \frac{1}{2}, \frac{1}{3}, \frac{1}{4} \) is not expected at this grade level. Recognize that equal shares of identical wholes need not have the same shape. (2.G.3)
Grade Three Content Standards Overview

Critical Areas for Grade Three

Operations and Algebraic Thinking (3.OA)
- Represents and solves problems involving multiplication and division
  OA.1 OA.2 OA.3 OA.4
- Understand properties of multiplication and the relationship between multiplication and division
  OA.5 OA.6
- Multiply and divide within 100
  OA.7
- Solve problems involving the four operations, and identify and explain patterns in arithmetic.
  OA.8 OA.9

Number and Operations in Base Ten (3.NBT)
- Use place value understanding and properties of operations to perform multi-digit arithmetic.
  NBT.1 NBT.2 NBT.3

Number and Operations – Fractions (3.NF)
- Develop understanding of fractions as numbers.
  NF.1 NF.2 NF.3

Measurement and Data (3.MD)
- Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.
  MD.1 MD.2 MD.3
- Represent and interpret data.
  MD.4 MD.5
- Geometric measurement: understand concepts of area and relate area to multiplication and to addition.
  MD.6 MD.7 MD.8
- Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.
  MD.9

Geometry (3.G)
- Reason with shapes and their attributes
  G.1 G.2

Standards for Mathematical Practices
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Click on the box to open specific details related to Grade Three!
Operations and Algebraic Thinking 3.OA

(Counting and Cardinality and Operations and Algebraic Thinking Progression K-5 Pg. 22)

Represent and solve problems involving multiplication and division.
(Counting and Cardinality and Operations and Algebraic Thinking Progression K-5 Pg. 22)

3.OA.1. Interpret products of whole numbers, (e.g. interpret $5 \cdot 7$ as the total number of objects in 5 groups of 7 objects each.) (3.OA.1)

3.OA.2. Interpret whole-number quotients of whole numbers, (e.g. interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each.) (3.OA.2)

3.OA.3. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, (e.g. by using drawings and equations with a symbol for the unknown number to represent the problem.) Refer to shaded section of Table 2 for specific situation types. (3.OA.3)

3.OA.4. Determine the unknown whole number in a multiplication or division equation by using related equations. For example, determine the unknown number that makes the equation true in each of the equations $8 \cdot ? = 48; \ 5 = \Box \div 3; \ 6 \times 6 = ___$ (3.OA.4)

Understand properties of multiplication and the relationship between multiplication and division.
(Counting and Cardinality and Operations and Algebraic Thinking Progression K-5 Pg. 22)

3.OA.5. Apply properties of operations as strategies to multiply and divide. Examples: If $6 \cdot 4 = 24$ is known, then $4 \cdot 6 = 24$ is also known. (Commutative property of multiplication.) $3 \cdot 5 \cdot 2$ can be found by $3 \cdot 5 = 15$, then $15 \cdot 2 = 30$, or by $5 \cdot 2 = 10$, then $3 \cdot 10 = 30$. (Associative property of multiplication.) Knowing that $8 \cdot 5 = 40$ and $8 \cdot 2 = 16$, one can find $8 \cdot 7$ as $8 \cdot (5 + 2) = (8 \cdot 5) + (8 \cdot 2) = 40 + 16 = 56$. (Distributive property.) Students need not use formal terms for these properties. (3.OA.5)

3.OA.6. Understand division as an unknown-factor problem. For example, find $32 \div 8$ by finding the number that makes 32 when multiplied by 8. (3.OA.6)

Multiply and divide within 100 (basic facts up to 10 x 10).

3.OA.7. Fluently (efficiently, accurately, and flexibly) multiply and divide with single digit multiplications and related divisions using strategies (e.g. relationship between multiplication and division, doubles, double and double again, half and then double, etc.) or properties of operations. (3.OA.7)

Solve problems involving the four operations, and identify and explain patterns in arithmetic.
(Counting and Cardinality and Operations and Algebraic Thinking Progression K-5 Pg. 27 Paragraph 2)

3.OA.8. Solve two-step word problems using any of the four operations. Represent these problems using both situation equations and/or solution equations with a letter or symbol standing for the unknown quantity (refer to Table 1 and Table 2 and standard 3.OA.3). Assess the reasonableness of answers using mental computation and estimation strategies including rounding. This standard is limited to problems posed with whole numbers and having whole-number answers. (3.OA.8)
3.OA.9. Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations (See Table 5). For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends. (3.OA.9)

Number and Operations in Base Ten 3.NBT

Use place value understanding and properties of operations to perform multi-digit arithmetic.

3.NBT.1. Use place value understanding to round whole numbers to the nearest 10 or 100. (3.NBT.1)

3.NBT.2. Fluently (efficiently, accurately, & flexibly) add and subtract within 1000 using strategies (e.g. composing/decomposing by like base-10 units, using friendly or benchmark numbers, using related equations, compensation, number line, etc.) and algorithms (including, but not limited to: traditional, partial-sums, etc.) based on place value, properties of operations, and/or the relationship between addition and subtraction. (3.NBT.2)

3.NBT.3. Multiply one-digit whole numbers by multiples of 10 in the range 10 to 90 (e.g. $9 \cdot 80$, $5 \cdot 60$) using strategies based on place value and properties of operations. (3.NBT.3)

Number and Operations—Fractions 3.NF

Develop understanding of fractions as numbers.

(Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.) (Number and Operations – Fractions Progression Pg. 3-5)

3.NF.1. Understand a fraction $\frac{1}{b}$ as the quantity formed by 1 part when a whole is partitioned into $b$ equal parts; understand a fraction $\frac{a}{b}$ as the quantity formed by $a$ parts of size $\frac{1}{b}$. (3.NF.1)

3.NF.2. Understand a fraction as a number on the number line; represent fractions on a number line diagram.

3.NF.2a. Represent a fraction $\frac{1}{b}$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into $b$ equal parts. Recognize that each part has size $\frac{1}{b}$ and that the endpoint of the part based at 0 locates the number $\frac{1}{b}$ on the number line.

Ex: $\frac{1}{3}$ $\frac{1}{3}$ $\frac{1}{3}$ (3.NF.2a)
3.NF.2b. Represent a fraction \(\frac{a}{b}\) on a number line diagram by marking off \(a\) lengths \(\frac{1}{b}\) from 0. Recognize that the resulting interval has size \(\frac{a}{b}\) and that its endpoint locates the number \(\frac{a}{b}\) on the number line (\(a\) is the countable units of \(\frac{1}{b}\) that determines the place on the number line). (3.NF.2b)

3.NF.3. Explain equivalence of fractions, and compare fractions by reasoning about their size (it is a mathematical convention that when comparing fractions, the whole is the same size).

3.NF.3a. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. (3.NF.3a)

3.NF.3b. Recognize and generate simple equivalent fractions, (e.g. \(\frac{1}{2} = \frac{2}{4} = \frac{4}{8}\)) Explain why the fractions are equivalent, e.g. by using a visual fraction model. (3.NF.3b)

3.NF.3c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. Examples: Express 3 in the form \(3 = \frac{3}{1}\); recognize that \(\frac{6}{1} = 6\); locate \(\frac{4}{4}\) and 1 at the same point of a number line diagram. (3.NF.3c)

3.NF.3d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the relational symbols \(>\), \(<\), \(=\), or \(\neq\), and justify the conclusions, (e.g. by using a visual fraction model.) (3.NF.3d)

Measurement and Data 3.MD

Solve problems involving measurement and estimation of intervals of time, liquid volumes, and masses of objects.

3.MD.1. Tell and write time to the nearest minute using a.m. and p.m. and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, (e.g. by representing the problem on a number line diagram.) (See Table 1) (3.MD.1)

3.MD.2. Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l) (Excludes cubed units such as \(cm^3\) and finding the geometric volume of a container). (3.MD.2)

3.MD.3. Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, (e.g. by using drawings (such as a beaker with a measurement scale) to represent the problem.) (Excludes multiplicative comparison problems) (See Table 1 and Table 2). (3.MD.2)

Represent and interpret data.

3.MD.4. Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. (See Table 1). For example, draw a bar graph in which each square in the bar graph might represent 5 pets. (3.MD.3) (Measurement and Data (data part) Progression K–5 Pg. 7)
3.MD.5. Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters. (3.MD.4) 
(Measurement and Data (data part) Progression K–5 Pg. 10)

Geometric measurement: understand concepts of area and relate area to multiplication and to addition.

3.MD.6. Recognize area as an attribute of plane figures and understand concepts of area measurement.

3.MD.6a. A square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area, and can be used to measure area (does not require standard square units). (3.MD.5a)

3.MD.6b. A plane figure which can be covered without gaps or overlaps by \(n\) unit squares is said to have an area of \(n\) square units (does not require standard square units). (3.MD.5b)

3.MD.7. Measure areas by counting unit squares (square cm, square m, square in, square ft, and non-standard square units). (3.MD.6)

3.MD.8. Relate area to the operations of multiplication and addition (Measurement and Data (measurement part) Progression K–5 Pg. 16).

3.MD.8a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths. (3.MD.7a)

3.MD.8b. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning. (3.MD.7b)

3.MD.8c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths \(a\) and \(b + c\) is the sum of \(a \cdot b\) and \(a \cdot c\). Use area models to represent the distributive property in mathematical reasoning (Supports 3.OA.5). (3.MD.7c)
(Measurement and Data (measurement part) Progression K–5 Pg. 18).

3.MD.8d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems. (3.MD.7d)

Example:

```
+-----+-----+-----+
|     |     |     |
|     |     |     |
|     |     |     |
+-----+-----+-----+
```

Students can find the total area of the shape by finding the areas of \(a\), \(b\), and \(c\) and adding them together.
Geometric measurement: recognize perimeter as an attribute of plane figures and distinguish between linear and area measures.

3.MD.9. Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters. (3.MD.8) (Measurement and Data (measurement part) Progression K-5 Pg. 16)

Geometry 3.G

Reason with shapes and their attributes.

(Geometry Progression K-6 Pg. 13)

3.G.1. Understand that shapes in different categories (e.g. rhombuses, rectangles, trapezoids, kites and others) may share attributes (e.g. having four sides), and that the shared attributes can define a larger category (e.g. quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories. Refer to inclusive definitions noted in the glossary. (3.G.1)

3.G.2. Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. For example, partition a shape into 4 parts with equal area, and describe the area of each part as $\frac{1}{4}$ of the area of the shape. (3.G.2)
Grade Four Content Standards Overview

Critical Areas for Grade Four

Operations and Algebraic Thinking (4.OA)
- Use the four operations with whole numbers to solve problems.
  OA.1  OA.2  OA.3
- Gain familiarity with factors and multiples.
  OA.4
- Generate and analyze patterns.
  OA.5

Number and Operations in Base Ten (4.NBT)
- Generalize place value understanding for multi-digit whole numbers.
  NBT.1  NBT.2  NBT.3
- Use place value understanding and properties of operations to perform multi-digit arithmetic.
  NBT.4  NBT.5  NBT.6

Number and Operations—Fractions (4.NF)
- Extend understanding of fraction equivalence and ordering.
  NF.1  NF.2
- Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
  NF.3  NF.4
- Understand decimal notation for fractions, and compare decimal fractions.
  NF.5  NF.6  NF.7

Measurement and Data (4.MD)
- Solve problems involving measurement and conversions of measurements from larger units to smaller units.
  MD.1  MD.2  MD.3
- Represent and interpret data.
  MD.4

Geometry (4.G)
- Draw and identify lines and angles, and classify shapes by properties of their lines and angles.
  G.1  G.2  G.3

Standards for Mathematical Practices
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Click on the box to open specific details related to Grade Four!
Operations and Algebraic Thinking 4.OA

Use the four operations with whole numbers to solve problems.

4.OA.1. Interpret a multiplication equation as a comparison, (e.g. interpret \(35 = 5 \cdot 7\) as a statement that 35 is 5 times as many as 7 and 7 times as many as 5.) Represent verbal statements of multiplicative comparisons as multiplication equations. (4.OA.1)

4.OA.2. Multiply or divide to solve word problems involving multiplicative comparison, (e.g. by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.) (4.OA.2)

Additive Comparison

<table>
<thead>
<tr>
<th>greater quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>lesser quantity</td>
</tr>
<tr>
<td>difference</td>
</tr>
</tbody>
</table>

Multiplicative Comparison

<table>
<thead>
<tr>
<th>unit</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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<td></td>
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<td></td>
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<tr>
<td></td>
</tr>
</tbody>
</table>

Copies of multiplicative unit

For Example:
A clown had 20 balloons. He sold some and has 12 left. Each balloon costs $2. How much money did he make?
Situation Equation: \(20 - n = 12\)
\(n \times $2 = \square\)
Solution Equation: \(20 - 12 = n\)
\(n \times $2 = \square\)

4.OA.3. Solve multi-step word problem posed with whole numbers and having whole number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using situation equations and/or solution equations with a letter or symbol standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. (4.OA.3)
Gain familiarity with factors and multiples.

4.OA.4. Find all factor pairs for a whole number in the range 1 to 100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1 to 100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1 to 100 is prime or composite. (4.OA.4)

Generate and analyze patterns.

4.OA.5. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way. (4.OA.5)

Number and Operations in Base Ten 4.NBT

Generalize place value understanding for multi-digit whole numbers.
(Limited to whole numbers less than or equal to 1,000,000.)

4.NBT.1. Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that 700 ÷ 70 = 10 by applying concepts of place value and division. (4.NBT.1)

4.NBT.2. Read and write multi-digit whole numbers using base-ten numerals, number names, expanded form, and unit form. Compare two multi-digit numbers based on meanings of the digits in each place, using >, <, =, and ≠ symbols to record the results of comparisons. (Note: Students should demonstrate understanding and application of place value decomposition. For example, 127 can be 1 hundred, 2 tens, 7 ones or 12 tens, 7 ones. Refer to 2.NBT.1) (4.NBT.2)

4.NBT.3. Use place value understanding to round multi-digit whole numbers to any place. (4.NBT.3)

Use place value understanding and properties of operations to perform multi-digit arithmetic.

4.NBT.4. Fluently (efficiently, accurately, and flexibly) add and subtract multi-digit whole numbers using an efficient algorithm (including, but not limited to: traditional, partial-sums, etc.), based on place value understanding and the properties of operations. (4.NBT.4)

4.NBT.5. Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. (4.NBT.5)

4.NBT.6. Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. (4.NBT.6)
Number and Operations—Fractions 4.NF

Extend understanding of fraction equivalence and ordering.
(Limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, 100.)
(Number and Operations – Fractions Progression Pg. 3)

4.NF.1. Explain why a fraction \( \frac{a}{b} \) is equivalent to a fraction \( \frac{(n \cdot a)}{(n \cdot b)} \) by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions. (4.NF.1)
(Number and Operations—Fractions Progression 3–5 Pg. 6)

4.NF.2. Compare two fractions with different numerators and different denominators, (e.g. by creating common numerators or denominators, or by comparing to a benchmark fraction such as \( \frac{1}{2} \).) Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with relational symbols >, <, =, or ≠, and justify the conclusions, (e.g. by using visual fraction models.). (4.NF.2)

Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.
(Limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, 100.)

4.NF.3. Understand a fraction \( \frac{a}{b} \) with \( a > 1 \) as a sum of fractions \( \frac{1}{b} \).

4.NF.3a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. (4.NF.3a)

4.NF.3b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g. by using a visual fraction model. (4.NF.3b)

Examples: \( \frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8} \); \( \frac{3}{8} = \frac{1}{8} + \frac{2}{8} \); \( 2 \frac{1}{8} = 1 + 1 + \frac{1}{8} = \frac{8}{8} + \frac{8}{8} + \frac{1}{8} \).

4.NF.3c. Add and subtract mixed numbers with like denominators, e.g. by replacing each mixed number with an equivalent fraction (simplest form is not an expectation), and/or by using properties of operations and the relationship between addition and subtraction. (4.NF.3c)

4.NF.3d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g. by using visual fraction models and equations to represent the problem. (4.NF.3d)

4.NF.4. Apply and extend previous understandings of multiplication (refer to 2.OA.3, 2.OA.4, 3.OA.1, 3.NF.1, 3.NF.2) to multiply a fraction by a whole number.

4.NF.4a. Understand a fraction \( \frac{a}{b} \) as a multiple of \( \frac{1}{b} \). For example, use a visual fraction model to represent \( \frac{5}{4} \) as 5 copies of \( \frac{1}{4} \), recording the conclusion by the equation \( \frac{5}{4} = 5 \cdot \frac{1}{4} \). (4.NF.4a)
4.NF.4b. Understand a multiple of \( \frac{a}{b} \) as a multiple of \( \frac{1}{b} \), and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express \( 3 \cdot \frac{2}{5} \) as \( 6 \cdot \frac{1}{5} \), recognizing this product as \( \frac{6}{5} \). (In general, \( n \cdot \frac{a}{b} = \frac{n \cdot a}{b} \).)

4.NF.4c. Solve word problems involving multiplication of a fraction by a whole number, (See Table 2) (e.g. by using visual fraction models and equations to represent the problem.) For example, if each person at a party will eat \( \frac{3}{8} \) of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie? (4.NF.4c)

Understand decimal notation for fractions, and compare decimal fractions. (Students are expected to learn to add decimals by converting them to fractions with the same denominator, in preparation for general fraction addition in grade 5.)

4.NF.5. Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express \( \frac{3}{10} \) as \( \frac{30}{100} \) and add \( \frac{3}{10} + \frac{4}{100} = \frac{34}{100} \). (4.NF.5)

4.NF.6. Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as \( \frac{62}{100} \), describe a length as 0.62 meters; locate 0.62 on a number line diagram. (4.NF.6)

4.NF.7. Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the relational symbols >, <, =, or \( \neq \), and justify the conclusions, (e.g. by using a visual model.). (4.NF.7)

**Measurement and Data 4.MD**

Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit.

4.MD.1. Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ... (4.MD.1)

(Measurement and Data (measurement part) Progression K–5 Pg. 20)

4.MD.2. Use the four operations to solve word problems (See Table 1 and Table 2) involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. (4.MD.2)

4.MD.3. Apply the area and perimeter formulas for rectangles in real world and mathematical problems explaining and justifying the appropriate unit of measure. For example, find
the width of a rectangular room given the area of the flooring and the length, by viewing
the area formula as a multiplication equation with an unknown factor. (4.MD.3)

Represent and interpret data.

4.MD.4. Make a data display (line plot, bar graph, pictograph) to show a set of measurements in
fractions of a unit \(\frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \frac{1}{16}\). Solve problems involving addition and subtraction of
fractions by using information presented in the data display. For example, from a line
plot find and interpret the difference in length between the longest and shortest
specimens in an insect collection. (4.MD.4)

Geometry 4.G

Draw and identify lines and angles, and classify shapes by properties of their lines and angles.

4.G.1. Draw points, lines, line segments, rays, angles (right, acute, obtuse, straight, reflex), and
perpendicular and parallel lines. Identify these in two-dimensional figures. (4.G.1)

4.G.2. Classify two-dimensional figures based on the presence or absence of parallel or
perpendicular lines, or the presence or absence of angles (right, acute, obtuse, straight,
reflex). Recognize and categorize triangles based on angles (acute, obtuse, equiangular,
and right) and/or sides (scalene, isosceles, and equilateral). (4.G.2)

4.G.3. Recognize a line of symmetry for a two-dimensional figure as a line across the figure
such that the figure can be folded along the line into matching parts. Identify line-
symmetric figures and draw lines of symmetry. (4.G.3)
Grade Five Content Standards Overview

Critical Areas for Grade Five

Operations and Algebraic Thinking (5.OA)
- Write and interpret numerical expressions.
  OA.1  OA.2

Number and Operations in Base Ten (5.NBT)
- Understand the place value system.
  NBT.1  NBT.2  NBT.3  NBT.4
- Perform operations with multi-digit whole numbers and with decimals to hundredths.
  NBT.5  NBT.6  NBT.7

Number and Operations—Fractions (5.NF)
- Use equivalent fractions as a strategy to add and subtract fractions.
  NF.1  NF.2
- Apply and extend previous understandings of multiplication and division to and divide fractions.
  NF.3  NF.4  NF.5  NF.6
  NF.7

Measurement and Data (5.MD)
- Convert like measurement units within a given measurement system.
  MD.1
- Represent and interpret data.
  MD.2
- Geometric measurement: understand concepts of volume and related volume to multiplication and to addition.
  MD.3  MD.4  MD.5

Geometry (5.G)
- Graph points on the coordinate plane to solve real world and mathematical problems.
  G.1  G.2
- Classify two-dimensional figures into categories based on their properties.
  G.3  G.4

Standards for Mathematical Practices
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Click on the box to open specific details related to Grade Five!
**Operations and Algebraic Thinking 5.OA**

*Counting and Cardinality and Operations and Algebraic Thinking Progression K-5 Pg. 32*

**Write and interpret numerical expressions.**

5.OA.1. Use parentheses in numerical expressions and evaluate expressions with these symbols. *(5.OA.1)*

5.OA.2. Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. *For example, express the calculation “multiply the sum of 8 and 7 by 2” as 2 \times (8 + 7) because parenthetical information must be solved first. Recognize that 3 \times (18932 + 921) is three times as large as 18932 + 921, without having to calculate the indicated sum or product.* *(5.OA.2)*

**Number and Operations in Base Ten 5.NBT**

**Understand the place value system.**

5.NBT.1. Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and \( \frac{1}{10} \) of what it represents in the place to its left. *(5.NBT.1)*

5.NBT.2. Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. *(5.NBT.2)*

5.NBT.3. Read, write, and compare decimals to thousandths.

5.NBT.3a. Read and write decimals to thousandths using base-ten numerals, number names, expanded form, and unit form *(e.g.)*

expanded form \( 47.392 = 4 \cdot 10 + 7 \cdot 1 + 3 \cdot \frac{1}{10} + 9 \cdot \frac{1}{100} + 2 \cdot \frac{1}{1000} \)

unit form \( 47.392 = 4 \text{ tens} + 7 \text{ ones} + 3 \text{ tenths} + 9 \text{ hundredths} + 2 \text{ thousandths} \). *(5.NBT.3a)*

5.NBT.3b. Compare two decimals to thousandths based on meanings of the digits in each place, using \( >, <, = \), and \# relational symbols to record the results of comparisons. *(5.NBT.3b)*

5.NBT.4. Use place value understanding to round decimals to any place *(Note: In fifth grade, decimals include whole numbers and decimal fractions to the hundredths place.)* *(5.NBT.4)*

**Perform operations with multi-digit whole numbers and with decimals to hundredths.**

5.NBT.5. Fluently *(efficiently, accurately, and flexibly)* multiply multi-digit whole numbers using an efficient algorithm *(ex., traditional, partial products, etc.)* based on place value understanding and the properties of operations. *(5.NBT.5)*

5.NBT.6. Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. *(5.NBT.6)* *(Number and Operations Base 10 Progression K-5 Pg. 16-17)*
5.NBT.7. Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. (5.NBT.7)  
(Number and Operations Base 10 Progression K-5 Pg. 18-20)

Number and Operations—Fractions 5.NF
(Number and Operations – Fractions Progression Pg. 3)

Use equivalent fractions as a strategy to add and subtract fractions.  
(Number and Operations – Fractions Progression Pg. 3-5)

5.NF.1. Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example,  
\[
\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12} \quad \text{In general, } \frac{a}{b} + \frac{c}{d} = \frac{ad+bc}{bd} \quad (5.NF.1)
\]

5.NF.2. Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, (e.g. by using visual fraction models or equations to represent the problem.) Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. (See Table 1 to view situation types). For example, recognize an incorrect result \(\frac{2}{5} + \frac{1}{2} = \frac{3}{7}\) by observing that \(\frac{3}{7} < \frac{1}{2}\). (5.NF.2)

Apply and extend previous understandings of multiplication and division to multiply and divide fractions.  
(Number and Operations – Fractions Progression Pg. 12-14)

5.NF.3. Interpret a fraction as division of the numerator by the denominator by the denominator \(\left(\frac{a}{b} = a \div b\right)\).  
Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g. by using visual fraction models or equations to represent the problem. For example, interpret \(\frac{3}{4}\) as the result of dividing 3 by 4, noting that \(\frac{3}{4}\) multiplied by 4 equals 3, and that when 3 wholes are shared equally among 4 people each person has a share of size \(\frac{3}{4}\). If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie? (5.NF.3)

5.NF.4. Apply and extend previous understandings of multiplication (refer to 2.OA.3, 2.OA.4, 3.OA.1, 3.NF.1, 3.NF.2, 4.NF.4) to multiply a fraction or whole number by a fraction.  
(Number and Operations—Fractions Progression 3–5 Pg. 12 - 13)

5.NF.4a. Interpret the product \(\frac{a}{b} \cdot q\) as a parts of a partition of \(q\) into \(b\) equal parts; equivalently, as the result of a sequence of operations \(a \cdot \frac{q}{b}\). For example, use a visual fraction model to show \(\frac{2}{3} \cdot 4 = \frac{8}{3}\) and create a story context for this equation. Do the same with \(2 \cdot \frac{3}{5} = \frac{8}{5}\). (In general, \(\frac{a}{b} \cdot \frac{c}{d} = \frac{ac}{bd}\). (5.NF.4a)
5.NF.4b. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas. (5.NF.4b)

5.NF.5. Interpret multiplication as scaling (resizing), by:

5.NF.5a. Comparing the size of a product to the size of one factor based on the size of the other factor, without performing the indicated multiplication (e.g. They see \( \frac{1}{2} \cdot 3 \) as half the size of 3). (5.NF.5a)

5.NF.5b. Explain why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explain why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence \( \frac{a}{b} = \frac{na}{nb} \) to the effect of multiplying \( \frac{a}{b} \) by 1. (e.g. Students may have the misconception that multiplication always produces a larger result. They need to have the conceptual understanding with examples like; \( \frac{3}{4} \times \) one dozen eggs will have a product that is less than 12.) (5.NF.5b)

5.NF.6. Solve real world problems involving multiplication of fractions and mixed numbers, (e.g. by using visual fraction models or equations to represent the problem) (See Table 2 to view situation types). (5.NF.6)

5.NF.7. Apply and extend previous understandings of division (3.OA.2, 3.OA.5), to divide unit fractions by whole numbers and whole numbers by unit fractions. Division of a fraction by a fraction is not a requirement at this grade.

5.NF.7a. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story context for \( \frac{1}{3} \div 4 \), and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that \( \frac{1}{3} \div 4 = \frac{1}{12} \) because \( \frac{1}{12} \cdot 4 = \frac{1}{3} \). (5.NF.7a)

5.NF.7b. Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for \( 4 \div \frac{1}{5} \), and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that \( 4 \div \frac{1}{5} = 20 \) because \( 20 \cdot \frac{1}{5} = 4 \). (5.NF.7b)

5.NF.7c. Solve real world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g. by using visual fraction models and equations to represent the problem. For example, how much chocolate will each person get if 3 people share \( \frac{1}{3} \) lb of chocolate equally? How many \( \frac{1}{3} \) cup servings are in 2 cups of raisins? (5.NF.7c)
Measurement and Data 5.MD

Convert like measurement units within a given measurement system.

5.MD.1. Convert among different-sized standard measurement units within a given measurement system (e.g. convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems. (5.MD.1)

Represent and interpret data.

5.MD.2. Make a data display (line plot, bar graph, pictograph) to show a data set of measurements in fractions of a unit (\(\frac{1}{2}, \frac{1}{4}, \frac{1}{8}\)). Use operations (add, subtract, multiply) on fractions for this grade to solve problems involving information presented in the data display. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally. After lunch everyone measured how much milk they had left in their containers. Make a line plot showing data to the nearest \(\frac{1}{4}\) cup. Which value has the greatest amount? What is the total? (5.MD.2)

Geometric measurement: understand concepts of volume and relate volume to multiplication and to addition.

5.MD.3. Recognize volume as an attribute of solid figures and understand concepts of volume measurement.

5.MD.3a. A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume. (5.MD.3a)

5.MD.3b. A solid figure which can be packed without gaps or overlaps using \(n\) unit cubes is said to have a volume of \(n\) cubic units. (5.MD.3b)

5.MD.4. Measure volumes by counting unit cubes such as cubic cm, cubic in, cubic ft. or non-standard cubic units. (5.MD.4)

5.MD.5. Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.

5.MD.5a. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent three-dimensional whole-number products as volumes, (e.g. to represent the associative property of multiplication.) (5.MD.5a)

5.MD.5b. Apply the formulas \(V = l \cdot w \cdot h\) and \(V = B \cdot h\) (\(B\) represents the area of the base) for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems. (5.MD.5b)

5.MD.5c. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems. (5.MD.5c)
Geometry 5.G

Graph points on the coordinate plane to solve real-world and mathematical problems.

5.G.1. Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g. x-axis and x-coordinate, y-axis and y-coordinate). (5.G.1)

5.G.2. Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation. (e.g. plotting the relationship between two positive quantities such as maps, coordinate grid games (such as Battleship), time/temperature, time/distance, cost/quantity, etc.). (5.G.2)

Classify two-dimensional figures into categories based on their properties

(Geometry Progression K-6 Pg. 17 and graphic from Pg. 18)

5.G.3. Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles. (5.G.3)

Grade Six Content Standards Overview

**Critical Areas for Grade Six**

**Ratios and Proportional Relationships (6.RP)**
- Understand ratio concepts and use ratio reasoning to solve problems.
  - 6.RP.1  6.RP.2  6.RP.3

**The Number System (6.NS)**
- Apply and extend previous understandings of multiplication and division to divide fractions by fractions.
  - 6.NS.1
- Compute fluently (efficiently, accurately, and flexibly) with multi-digit numbers and find common factors and multiples.
  - 6.NS.2  6.NS.3  6.NS.4
- Apply and extend previous understandings of numbers to the system of rational numbers
  - 6.NS.5  6.NS.6  6.NS.7  6.NS.8

**Expressions and Equations (6.EE)**
- Apply and extend previous understandings of arithmetic to algebraic expressions.
  - 6.EE.1  6.EE.2  6.EE.3
- Reason about and solve one-variable equations and inequalities.
  - 6.EE.4  6.EE.5  6.EE.6  6.EE.7
- Represent and analyze quantitative relationships between dependent and independent variables.
  - 6.EE.8

**Geometry (6.G)**
- Solve real-world and mathematical problems involving area, surface area, and volume.

**Statistics and Probability (6.SP)**
Develop concepts of statistical measures of center and variability and an informal understanding of outlier.
- 6.SP.1  6.SP.2  6.SP.3
- Summarize and describe distributions.
  - 6.SP.4  6.SP.5

**Standards for Mathematical Practices**
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Click on the box to open specific details related to Grade Six!
Ratios and Proportional Relationships 6.RP

Understand ratio concepts and use ratio reasoning to solve problems.

6.RP.1. Use ratio language to describe a relationship between two quantities. Distinguish between part-to-part and part-to-whole relationships. For example, “The ratio of wings to beaks in the bird house at the zoo was 2:1, because for every 2 wings there was 1 beak.” “For every vote candidate A received, candidate C received nearly three votes.” (6.RP.1)

6.RP.2. Use unit rate language (“for each one”, “for every one” and “per”) and unit rate notation to demonstrate understanding the concept of a unit rate \( \frac{a}{b} \) associated with a ratio \( \frac{a}{b} \). For example, “This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is \( \frac{3}{4} \) cup of flour for each cup of sugar.” “We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger.” (Expectations for unit rates in this grade are limited to non-complex fractions.) (6.RP.2)

6.RP.3. Use ratio and rate reasoning to solve real-world and mathematical problems, (e.g. by reasoning about tables of equivalent ratios, tape diagrams, double number line diagram, or using calculations.)

6.RP.3a. Make tables of equivalent ratios relating quantities with whole-number measurements, find the missing values in the tables, and plot the pairs of values on the coordinate plane. Use tables to compare ratios. Solve unit rate problems including those involving unit pricing and constant speed. For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed? (6.RP.3a) (6.RP.3b)

6.RP.3b. Find a percent of a quantity as a rate per 100 (e.g. 30% of a quantity means \( \frac{30}{100} \) times the quantity); solve problems involving finding the whole, given a part and the percent. (6.RP.3c)

6.RP.3c. Use ratio reasoning to convert measurement units; manipulate and transform units appropriately when multiplying or dividing quantities. (6.RP.3d)

The Number System 6.NS

Apply and extend previous understandings of multiplication and division to divide fractions by fractions.

6.NS.1. Interpret and compute quotients of fractions, and solve word problems involving division of fractions by fractions, requiring multiple exposures connecting various concrete and abstract models. (6.NS.1)

Compute fluently (efficiently, accurately, and flexibly) with multi-digit numbers and find common factors and multiples.

6.NS.2. Fluently (efficiently, accurately, and flexibly) divide multi-digit numbers using an efficient algorithm. (6.NS.2)
6.NS.3. Fluently (efficiently, accurately, and flexibly) add, subtract, multiply, and divide multi-
digit decimals using an efficient algorithm for each operation. (6.NS.3)

6.NS.4. Find the greatest common factor of two whole numbers less than or equal to 100 and
the least common multiple of two whole numbers less than or equal to 12. Use the
distributive property to express a sum of two whole numbers 1–100 with a common
factor as a multiple of a sum of two whole numbers with no common factor. For
example, express 18 + 48 as 6(3 + 8). (6.NS.4)

Apply and extend previous understandings of numbers to the system of rational numbers.

6.NS.5. Understand positive and negative numbers to describe quantities having opposite
directions or values (e.g. temperature above/below zero, elevation above/below sea
level, credits/debits, positive/negative electric charge); (6.NS.5)

6.NS.5a. Use positive and negative numbers to represent quantities in real-world
contexts, (6.NS.5)

6.NS.5b. Explaining the meaning of 0 in each situation. (6.NS.5)

6.NS.6. Understand a rational number as a point on the number line and a coordinate pair as a
location on a coordinate plane.

6.NS.6a. Recognize opposite signs of numbers as indicating locations on opposite sides of
0 on the number line; recognize that the opposite of the opposite of a number is
the number itself, (e.g. −(−3) = 3,) and that 0 is its own opposite. (6.NS.6a)

6.NS.6b. Recognize signs of numbers in ordered pairs indicate locations in quadrants of
the coordinate plane; recognize that when two ordered pairs differ only by
signs, the locations of the points are related by reflections across one or both
axes. (6.NS.6b)

6.NS.6c. Find and position integers and other rational numbers on a horizontal or vertical
number line diagram; find and position pairs of integers and other rational
numbers on a coordinate plane. (6.NS.6c)


6.NS.7a. Interpret statements of inequality as statements about the relative position of
two numbers on a number line diagram. For example, interpret −3 > −7 as a
statement that −3 is located to the right of −7 on a number line oriented from
left to right. (6.NS.7a)

6.NS.7b. Write, interpret, and explain statements of order for rational numbers in real-
world contexts. For example, write −3°C > −7°C to express the fact that −3°C
is warmer than −7°C. (6.NS.7b)

6.NS.7c. Explain the absolute value of a rational number as its distance from 0 on the
number line; interpret absolute value as magnitude for a positive or negative
quantity in a real-world situation. For example, for an account balance of −30
dollars, write |−30| = 30 to describe the size of the debt in dollars. (6.NS.7c)

6.NS.7d. Distinguish comparisons of absolute value from statements about order. For
example, recognize that an account balance less than −30 dollars represents a
debt greater than 30 dollars. (6.NS.7d)

6.NS.8. Solve real-world and mathematical problems by graphing points in all four quadrants of
the coordinate plane. Include use of coordinates and absolute value to find distances
between points with the same first coordinate or the same second coordinate. (6.NS.8)
Expressions and Equations 6.EE
(Expressions and Equations Progression 6–8 Pg. 4)

Apply and extend previous understandings of arithmetic to algebraic expressions.
6.EE.1. Write and evaluate numerical expressions involving whole-number exponents. (6.EE.1)
6.EE.2. Write, read, and evaluate expressions in which letters stand for numbers.
   6.EE.2a. Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation “Subtract y from 5” as $5 - y$. (6.EE.2a)
   6.EE.2b. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example, describe the expression $2(8 + 7)$ as a product of two factors; view $(8 + 7)$ as both a single entity and a sum of two terms. (6.EE.2b)
   6.EE.2c. Evaluate expressions at specific values of their variables. Include expressions that arise from formulas used in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). For example, use the formulas $V = e^3a$ and $A = 6e^2$ to find the volume and surface area of a cube with sides of length $e = \frac{1}{2}$. (6.EE.2c)
6.EE.3. Apply the properties of operations and combine like terms, with the conventions of algebraic notation, to identify and generate equivalent expressions. For example, apply the distributive property to the expression $3(2 + x)$ to produce the equivalent expression $6 + 3x$; apply properties of operations to $y + y + y$ to produce the equivalent expression $3y$. (6.EE.3) (6.EE.4)

Reason about and solve one-variable equations and inequalities.
6.EE.4. Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true. (6.EE.5)
6.EE.5. Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. (6.EE.6)
6.EE.6. Solve one-step equations involving non-negative rational numbers using addition, subtraction, multiplication and division. (6.EE.7)
6.EE.7. Write an inequality of the form $x > c$ or $x < c$ to represent a constraint or condition in a real-world or mathematical problem. Recognize that inequalities of the form $x > c$ or $x < c$ have infinitely many solutions; represent solutions of such inequalities on number line diagrams. (6.EE.8)

Represent and analyze quantitative relationships between dependent and independent variables.
6.EE.8. Use variables to represent two quantities in a real-world problem that change in relationship to one another.
   6.EE.8a. Identify the independent and dependent variable. (6.EE.9)
6.EE.8b. Write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation \( d = 65t \) to represent the relationship between distance and time. (6.EE.9)

6.EE.8c. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. (6.EE.9)

**Geometry 6.G**  
(Geometry Progression K-6 Pg. 19)

**Solve real-world and mathematical problems involving area, surface area, and volume.**  
(Geometry Progression K-6 Pg. 19 - 20)

6.G.1. Find the area of all triangles, special quadrilaterals (including parallelograms, kites and trapezoids), and polygons whose edges meet at right angles (rectilinear figure (See Geometry Progression K-6 Pg. 19 Paragraph 4) polygons) by composing into rectangles or decomposing into triangles and other shapes; apply these techniques in the context of solving real-world and mathematical problems. (6.G.1)

6.G.2. Find the volume of a right rectangular prism with fractional edge lengths by applying the formulas \( V = lwh \) and \( V = Bh \) \( (B \) is the area of the base and \( h \) is the height) to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems. (Builds on the 5th grade concept of packing unit cubes to find the volume of a rectangular prism with whole number edge lengths.) (6.G.2)

6.G.3. Draw polygons whose edges meet at right angles (rectilinear figure polygons) in the coordinate plane given coordinates for the vertices; use coordinates to find the length of a side joining points with the same first coordinate or the same second coordinate. Apply these techniques in the context of solving real-world and mathematical problems. (6.G.3)

6.G.4. Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems. (6.G.4)

**Statistics and Probability 6.SP**  
(Statistics and Probability Progression 6–8 Pg. 4)

**Develop concepts of statistical measures of center and variability and an informal understanding of outlier.**  
(Statistics and Probability Progression 6–8 Pg. 4)

6.SP.1. Recognize and generate a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. For example, “How old am I?” is not a statistical question, but “How old are the students in my school?” is a statistical question because one anticipates variability in students’ ages. (6.SP.1)

6.SP.2. Analyze a set of data collected to answer a statistical question with a distribution which can be described by its center (mean, median and/or mode), spread (range and/or
interquartile range), and overall shape (cluster, peak, gap, symmetry, skew (data) and/or outlier). (6.SP.2)

6.SP.3. Recognize that a measure of center (mean, median and/or mode) for a numerical data set summarizes all of its values with a single number, while a measure of variation (range and/or interquartile range) describes how its values vary with a single number. (6.SP.3)

Summarize and describe distributions.

6.SP.4. Display numerical data on dot plots, histograms, stem-and-leaf plots, and box plots. (6.SP.4)

6.SP.5. Summarize numerical data sets in relation to their context, such as by:

6.SP.5a. Reporting the number of observations. (6.SP.5a)
6.SP.5b. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement. (6.SP.5b)
6.SP.5c. Giving quantitative measures of center (mean, median and/or mode) and variability (range and/or interquartile range), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data were gathered. (6.SP.5c)
6.SP.5d. Relating the choice of measures of center and variability to the distribution of the data. (6.SP.5d)
Grade Seven Content Standards Overview

Critical Areas for Grade Seven

Ratios and Proportional Relationships (7.RP)
- Analyze proportional relationships and use them to solve real-world and mathematical problems.
  7.RP.1  7.RP.2  7.RP.3

The Number System (7.NS)
- Apply and extend previous understandings of operations with fractions to add, subtract, multiply, and divide rational numbers.
  7.NS.1  7.NS.2  7.NS.3

Expressions and Equations (7.EE)
- Use properties of operations to generate equivalent expressions.
  7.EE.1  7.EE.2
- Solve real-life and mathematical problems using numerical and algebraic expressions and equations.
  7.EE.3  7.EE.4

Geometry (7.G)
- Draw, construct, and describe geometrical figures and describe the relationships between them.
- Solve real-life and mathematical problems involving area, surface area, and volume.

Statistics and Probability (7.SP)
- Use random sampling to draw inferences about a population.
  7.SP.1  7.SP.2
- Draw informal comparative inferences about two populations.
  7.SP.3  7.SP.4
- Investigate chance processes and develop, use, and evaluate probability models.
  7.SP.5  7.SP.6  7.SP.7  7.SP.8

Standards for Mathematical Practices
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Click on the box to open specific details related to Grade Seven!
Ratios and Proportional Relationships 7.RP

Analyze proportional relationships and use them to solve real-world and mathematical problems.

7.RP.1. Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. For example, if a person walks $\frac{1}{2}$ mile in each $\frac{1}{4}$ hour, compute the unit rate as the complex fraction $\frac{\frac{1}{2}}{\frac{1}{4}}$ miles per hour (interpreting a complex fraction as division of fractions), equivalently 2 miles per hour. (7.RP.1)

7.RP.2. Recognize and represent proportional relationships between quantities:

7.RP.2a. Determine whether two quantities are in a proportional relationship, e.g. by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin. (7.RP.2a)

7.RP.2b. Analyze a table or graph and recognize that, in a proportional relationship, every pair of numbers has the same unit rate (referred to as the “m”). (7.RP.2b)

7.RP.2c. Represent proportional relationships by equations. For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as $t = pn$. (7.RP.2c)

7.RP.2d. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0, 0) and (1, r) where r is the unit rate. (7.RP.2d)

7.RP.3. Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error. (7.RP.3)

The Number System 7.NS

Apply and extend previous understandings of operations with positive rational numbers to add, subtract, multiply, and divide all rational numbers.

7.NS.1. Represent addition and subtraction on a horizontal or vertical number line diagram.

7.NS.1a. Describe situations in which opposite quantities combine to make 0. Show that a number and its opposite have a sum of 0 (are additive inverses). For example, show zero-pairs with two-color counters. (7.NS.1a)

7.NS.1b. Show $p + q$ as the number located a distance $|q|$ from $p$, in the positive or negative direction depending on whether $q$ is positive or negative. (7.NS.1b)

7.NS.1c. Model subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. (7.NS.1c)
7.NS.1d. Model subtraction as the distance between two rational numbers on the number line where the distance is the absolute value of their difference. (7.NS.1c)

7.NS.1e. Apply properties of operations as strategies to add and subtract rational numbers. (7.NS.1d)

7.NS.2. Apply and extend previous understandings of multiplication and division of positive rational numbers to multiply and divide all rational numbers.

7.NS.2a. Describe how multiplication is extended from positive rational numbers to all rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as \((-1)(-1) = 1\) and the rules for multiplying signed numbers. (7.NS.2a)

7.NS.2b. Explain that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. Leading to situations such that if \(p\) and \(q\) are integers, then \(-\frac{p}{q} = \frac{-p}{q} = \frac{p}{-q}\). (7.NS.2b)

7.NS.2c. Apply properties of operations as strategies to multiply and divide rational numbers. (7.NS.2c)

7.NS.2d. Convert a rational number in the form of a fraction to its decimal equivalent using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats. (7.NS.2d)

7.NS.3. Solve and interpret real-world and mathematical problems involving the four operations with rational numbers. (Computations with rational numbers extend the rules for manipulating fractions to complex fractions.) (7.NS.3)

Expressions and Equations 7.EE
(Expressions and Equations Progression 6–8 Pg. 8)

Use properties of operations to generate equivalent expressions.

7.EE.1. Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with integer coefficients. For example: apply the distributive property to the expression \(24x + 18y\) to produce the equivalent expression \(6(4x + 3y)\). (7.EE.1)

7.EE.2. Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. For example, \(a + 0.05a = 1.05a\) means that “increase by 5%” is the same as “multiply by 1.05.” (7.EE.2)

Solve real-life and mathematical problems using numerical and algebraic expressions and equations.

7.EE.3. Solve multi-step real-life and mathematical problems with rational numbers. Apply properties of operations to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. For example: If a woman making $25 an hour gets a 10% raise, she will make an additional \(\frac{1}{10}\) of her salary an hour, or $2.50, for a new salary of $27.50. (7.EE.3)

7.EE.4. Use variables to represent quantities in a real-world or mathematical problem, and construct two-step equations and inequalities to solve problems by reasoning about the quantities.
7.EE.4a. Solve word problems leading to equations of the form \( px + q = r \), and \( p(x + q) = r \) where \( p, q, \) and \( r \) are specific rational numbers. Solve equations of these forms fluently (efficiently, accurately, and flexibly). Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, the perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width? (7.EE.4a)

7.EE.4b. Solve word problems leading to inequalities of the form \( px + q > r \) or \( px + q < r \) where \( p, q, \) and \( r \) are specific rational numbers and \( p > 0 \). Graph the solution set of the inequality and interpret it in the context of the problem. For example: As a salesperson, you are paid $50 per week plus $3 per sale. This week you want your pay to be at least $100. Write an inequality for the number of sales you need to make, and describe the solutions. (7.EE.4b)

**Geometry 7.G**

*(Geometry High School Progression Pg. 6)*

Draw, construct, and describe geometrical figures and describe the relationships between them.

7.G.1. Solve problems involving scale drawings of geometric figures, such as computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale. (7.G.1)

7.G.2. Identify three-dimensional objects generated by rotating a two-dimensional (rectangular or triangular) object around one edge. (G.GMD.4)

7.G.3. Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right cylinder. (7.G.3)

Solve real-life and mathematical problems involving area, surface area, and volume.

7.G.4. Use the formulas for the area and circumference of a circle and solve problems; give an informal derivation of the relationship between the circumference and area of a circle. (7.G.4)

7.G.5. Investigate the relationship between three-dimensional geometric shapes;

7.G.5a. Generalize the volume formula for prisms and cylinders \( V = Bh \) where \( B \) is the base and \( h \) is the height). (2017)

7.G.5b. Generalize the surface area formula for prisms and cylinders \( SA = 2B + Ph \) where \( B \) is the area of the base, \( P \) is the perimeter of the base, and \( h \) is the height (in the case of a cylinder, perimeter is replaced by circumference). (2017)

7.G.6. Solve real-world and mathematical problems involving area of two-dimensional objects and volume and surface area of three-dimensional objects including cylinders and right prisms. (Solutions should not require students to take square roots or cube roots. For example, given the volume of a cylinder and the area of the base, students would identify the height.) (7.G.6)
Statistics and Probability 7.SP

(Statistics and Probability Progression 6–8 Pg. 7)

Use random sampling to draw inferences about a population.

7.SP.1. Use statistics to gain information about a population by examining a sample of the population;

7.SP.1a. Know that generalizations about a population from a sample are valid only if the sample is representative of that population and generate a valid representative sample of a population. (7.SP.1)

7.SP.1b. Identify if a particular random sample would be representative of a population and justify your reasoning. (7.SP.1)

7.SP.2. Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to informally gauge the variation in estimates or predictions. For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be. (7.SP.2)

Draw informal comparative inferences about two populations.

(Statistics and Probability Progression 6–8 Pg. 5 Paragraph 3)

7.SP.3. Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability (requires introduction of mean absolute deviation). For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable. (7.SP.3)

7.SP.4. Use measures of center (mean, median and/or mode) and measures of variability (range, interquartile range and/or mean absolute deviation) for numerical data from random samples to draw informal comparative inferences about two populations. For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book. (NOTE: Students should not have to calculate mean absolute deviation but use it to interpret data). (7.SP.4)

Investigate chance processes and develop, use, and evaluate probability models.

7.SP.5. Express the probability of a chance event as a number between 0 and 1 that represents the likelihood of the event occurring. (Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around \( \frac{1}{2} \) indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event.) (7.SP.5)

7.SP.6. Collect data from a chance process (probability experiment). Approximate the probability by observing its long-run relative frequency. Recognize that as the number of trials increase, the experimental probability approaches the theoretical probability. Conversely, predict the approximate relative frequency given the probability. For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times. (7.SP.6)
7.SP.7. Develop a **probability model** and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.

7.SP.7a. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. *For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected.* (7.SP.7a)

7.SP.7b. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. *For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?* (7.SP.7b)

7.SP.8. Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.

7.SP.8a. Know that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs. (7.SP.8a)

7.SP.8b. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (*e.g.* “rolling double sixes”), identify the outcomes in the sample space which compose the event. (7.SP.8b)

7.SP.8c. Design and use a simulation to generate frequencies for compound events. *For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?* (7.SP.8c)
Grade Eight Content Standards Overview

Critical Areas for Grade Eight

The Number System (8.NS)
- Know that there are numbers that are not rational, and approximate them by rational numbers.
  NS.1  NS.2

Expressions and Equations (8.EE)
- Work with radicals and integer exponents.
  EE.1  EE.2  EE.3
- Understand the connections between proportional relationships, lines, and linear equations.
  EE.4  EE.5  EE.6
- Analyze and solve linear equations and inequalities.
  EE.7

Functions (8.F)
- Define, evaluate, and compare functions.
  F.1  F.2  F.3
- Use functions to model relationships between quantities.
  F.4  F.5

Geometry (8.G)
- Geometric measurement: understand concepts of angle and measure angles.
  G.1  G.2  G.3  G.4
  G.5  G.6
- Understand and apply the Pythagorean Theorem.
  G.7  G.8  G.9
- Solve real-world and mathematical problems involving measurement.
  G.10  G.11  G.12

Statistics and Probability (8.SP)
- Investigate patterns of association in bivariate data.
  SP.1  SP.2  SP.3

Standards for Mathematical Practices
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Click on the box to open specific details related to Grade Eight!
The Number System 8.NS
(Number System 6–8 and High School Number Progression Pg. 14)

Know that there are numbers that are not rational, and approximate them by rational numbers.

8.NS.1. Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number. (8.NS.1)

8.NS.2. Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g. \( \pi^2 \)). For example, for the approximation of 68, show that \( \sqrt{68} \) is between 8 and 9 and closer to 8. (8.NS.2)

Expressions and Equations 8.EE
(Expression and Equations Progression 6–8 Pg. 11)

Work with radicals and integer exponents.

8.EE.1. Use square root and cube root symbols to represent solutions to equations of the form \( x^2 = p \) and \( x^3 = p \), where \( p \) is a positive rational number. Evaluate square roots of whole number perfect squares with solutions between 0 and 15 and cube roots of whole number perfect cubes with solutions between 0 and 5. Know that \( \sqrt{2} \) is irrational. (8.EE.2)

8.EE.2. Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. For example, estimate the population of the United States as \( 3 \times 10^8 \) and the population of the world as \( 7 \times 10^9 \), and determine that the world population is more than 20 times larger. (8.EE.3)

8.EE.3. Read and write numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g. use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology. (8.EE.4)

Understand the connections between proportional relationships, lines, and linear equations.

8.EE.4. Graph proportional relationships, interpreting its unit rate as the slope (m) of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed. (8.EE.5)

8.EE.5. Use similar triangles to explain why the slope (m) is the same between any two distinct points on a non-vertical line in the coordinate plane and extend to include the use of the slope formula \( m = \frac{y_2 - y_1}{x_2 - x_1} \) when given two coordinate points \((x_1, y_1)\) and \((x_2, y_2)\).
Generate the equation \( y = mx \) for a line through the origin (proportional) and the equation \( y = mx + b \) for a line with slope \( m \) intercepting the vertical axis at \( y \)-intercept \( b \) (not proportional when \( b \neq 0 \)). (8.EE.6)
8.EE.6. Describe the relationship between the proportional relationship expressed in \( y = mx \) and the non-proportional linear relationship \( y = mx + b \) as a result of a vertical translation. Note: be clear with students that all linear relationships have a constant rate of change (slope), but only the special case of proportional relationships (line that goes through the origin) continue to have a constant of proportionality. (2017)

Analyze and solve linear equations and inequalities.
8.EE.7. Fluently (efficiently, accurately, and flexibly) solve one-step, two-step, and multi-step linear equations and inequalities in one variable, including situations with the same variable appearing on both sides of the equal sign.

8.EE.7a. Give examples of linear equations in one variable with one solution \( (x = a) \), infinitely many solutions \( (a = a) \), or no solutions \( (a = b) \). Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form \( x = a, a = a, \) or \( a = b \) results (where \( a \) and \( b \) are different numbers). (8.EE.7a)

8.EE.7b. Solve linear equations and inequalities with rational number coefficients, including equations/inequalities whose solutions require expanding and/or factoring expressions using the distributive property and collecting like terms. (8.EE.7b)

Functions 8.F

Define, evaluate, and compare functions.
8.F.1. Explain that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output. (Function notation is not required in Grade 8.) (8.F.1)

8.F.2. Compare properties of two linear functions represented in a variety of ways (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change, the greater y-intercept, or the point of intersection. (8.F.2)

8.F.3. Interpret the equation \( y = mx + b \) as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. For example, the function \( A = s^2 \) giving the area of a square as a function of its side length is not linear because its graph contains the points \((1,1), (2,4)\) and \((3,9)\), which are not on a straight line. (8.F.3)

Use functions to model relationships between quantities.
8.F.4. Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two \((x, y)\) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values. (8.F.4)

8.F.5. Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g. where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally. (8.F.5)
Geometry 8.G

(Geometry High School Progression Pg. 9)

Geometric measurement: understand concepts of angle and measure angles.

8.G.1. Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:

8.G.1a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through \( \frac{1}{360} \) of a circle is called a “one-degree angle,” and can be used to measure angles. (4.MD.5a)

8.G.1b. An angle that turns through \( n \) one-degree angles is said to have an angle measure of \( n \) degrees. (4.MD.5a)


(Measurement and Data (measurement part) Progression K-5 Pg. 22-25)

8.G.3. Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g. by using an equation with a symbol for the unknown angle measure. (4.MD.7)

8.G.4. Use facts about supplementary, complementary, vertical, and adjacent angles in a multi-step problem to write and use them to solve simple equations for an unknown angle in a figure. (7.G.5)

8.G.5. Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. For example, arrange three copies of the same triangle so that the sum of the three angles appears to form a line, and give an argument in terms of transversals why this is so. (8.G.5)

8.G.6. Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on drawing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle. (7.G.2)

Understand and apply the Pythagorean Theorem.


8.G.8. Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. For example: Finding the slant height of pyramids and cones. (8.G.7)

8.G.9. Apply the Pythagorean Theorem to find the distance between two points in a coordinate system. (8.G.8)
Solve real-world and mathematical problems involving measurement.

8.G.10. Use the formulas or informal reasoning to find the arc length, areas of sectors, surface areas and volumes of pyramids, cones, and spheres. *For example, given a circle with a 60° central angle, students identify the arc length as $\frac{1}{6}$ of the total circumference $\left(\frac{1}{6} = \frac{60}{360}\right)$. (2017)

8.G.11. Investigate the relationship between the formulas of three dimensional geometric shapes;

8.G.11a. Generalize the volume formula for pyramids and cones ($V = \frac{1}{3} Bh$). (G.GMD.3)

8.G.11b. Generalize surface area formula of pyramids and cones ($SA = B + \frac{1}{2} pl$).

8.G.12. Solve real-world and mathematical problems involving arc length, area of two-dimensional shapes including sectors, volume and surface area of three-dimensional objects including pyramids, cones and spheres. (2017)

Statistics and Probability 8.SP

(Statistics and Probability Progression 6–8 Pg. 11)

Investigate patterns of association in bivariate data.

8.SP.1. Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association. (8.SP.1)

8.SP.2. Know that straight lines are widely used to model relationships between two quantitative variables. For scatter plots that suggest a linear association, informally fit a straight line, and informally assess the model fit by judging the closeness of the data points to the line. (8.SP.2)

8.SP.3. Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. *For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height. (8.SP.3)
One of the insights provided by mathematical modeling is that essentially the same mathematical or statistical structure can sometimes model seemingly different situations. Models can also shed light on the mathematical structures themselves.

Some examples of such situations might include:

- Estimating how much water and food is needed for emergency relief in a devastated city of 3 million people, and how it might be distributed.
- Planning a table tennis tournament for 7 players at a club with 4 tables, where each player plays against each other player.
- Designing the layout of the stalls in a school fair so as to raise as much money as possible.
- Analyzing stopping distance for a car.
- Modeling savings account balance, bacterial colony growth, or investment growth.
- Engaging in critical path analysis, e.g. applied to turnaround of an aircraft at an airport.
- Analyzing risk in situations such as extreme sports, pandemics, and terrorism.
- Relating population statistics to individual predictions.

In situations like these, the models devised depend on a number of factors: How precise an answer do we want or need? What aspects of the situation do we most need to understand, control, or optimize? What resources of time and tools do we have? The range of models that we can create and analyze is also constrained by the limitations of our mathematical, statistical, and technical skills, and our ability to recognize significant variables and relationships among them. Diagrams of various kinds, spreadsheets and other technology, and algebra are powerful tools for understanding and solving problems drawn from different types of real-world situations.

The basic modeling cycle is summarized in the diagram. It involves (1) identifying variables in the situation and selecting those that represent essential features, (2) formulating a model by creating and selecting geometric, graphical, tabular, algebraic, or statistical representations that describe relationships between the variables, (3) analyzing and performing operations on these relationships to draw conclusions, (4) interpreting the results of the mathematics in terms of the original situation, (5) validating the conclusions by comparing them with the situation, and then either improving the model or, if it is acceptable, (6) reporting on the conclusions and the reasoning behind them. Choices, assumptions, and approximations are present throughout this cycle.

There are different types of modeling. In descriptive modeling, a model simply describes the phenomena or summarizes them in a compact form. Graphs of observations are a familiar descriptive model—for example, graphs of global temperature and atmospheric CO₂ over time.
Analytic modeling seeks to explain data based on deeper theoretical ideas, albeit with parameters that are empirically based; for example, exponential growth of bacterial colonies (until cut-off mechanisms such as pollution or starvation intervene) follows from a constant reproduction rate. Functions are an important tool for analyzing such problems.

Graphing utilities, spreadsheets, computer algebra systems, and dynamic geometry software are powerful tools that can be used to model purely mathematical phenomena (e.g. the behavior of polynomials) as well as physical phenomena.

**Modeling Standards**: Modeling is best interpreted not as a collection of isolated topics but rather in relation to other standards. Making mathematical models is a Standard for Mathematical Practice, and specific modeling standards appear throughout the high school standards indicated by a star symbol (★). The star symbol sometimes appears on the heading for a group of standards; in that case, it should be understood to apply to all standards in that group.
The Real Number System (N.RN)
- Use properties of rational and irrational numbers.
  N.RN.1  N.RN.2  N.RN.3

Quantities (★★) (N.Q)
- Reason quantitatively and use units to solve problems.
  N.Q.1 (★★)  N.Q.2 (★★)  N.Q.3 (★★)

The Complex Number System (N.CN)
- Perform arithmetic operations with complex numbers.
  N.CN.1  N.CN.2  N.CN.3
- Represent complex numbers and their operations on the complex plane.
  N.CN.4 (+)  N.CN.5 (+)  N.CN.6 (+)
- Use complex numbers in polynomial identities and equations.
  N.CN.7 (+)  N.CN.8  N.CN.9 (+)
  N.CN.10 (+)

Vector and Matrix Quantities (N.VM)
- Represent and model with vector quantities.
  N.VM.1 (+)  N.VM.2 (+)  N.VM.3 (+)
- Perform operations on vectors.
  N.VM.4 (+)  N.VM.5 (+)
- Perform operations on matrices and use matrices in applications.
  N.VM.6  N.VM.7  N.VM.8
  N.VM.9 (+)  N.VM.10 (+)  N.VM.11 (+)
  N.VM.12 (+)
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The Real Number System N.RN
(Number System 6–8 and High School Number Progression Pg. 16)

Use properties of rational numbers and irrational numbers.

N.RN.1. (9/10) Know and apply the properties of integer exponents to generate equivalent numerical and algebraic expressions. (8.EE.1)

N.RN.2. (11) Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. For example, we define \(5^{1/3}\) to be the cube root of 5 because we want \((5^{1/3})^3 = 5^{(1/3)\times3}\) to hold, so \((5^{1/3})^3\) must equal 5. (N.RN.1)

N.RN.3. (11) Rewrite expressions involving radicals and rational exponents using the properties of exponents. (N.RN.2)

Quantities* N.Q

Reason quantitatively and use units to solve problems.

N.Q.1. (all) Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays. * (N.Q.1)

N.Q.2. (all) Define appropriate quantities for the purpose of descriptive modeling. * (N.Q.2)

N.Q.3. (all) Choose a level of accuracy appropriate to limitations on measurement when reporting quantities. * (N.Q.3)
The Complex Number System N.CN
(Number System 6–8 and High School Number Progression Pg. 18)

Perform arithmetic operations with complex numbers.
N.CN.1. (11) Know there is a complex number \( i \) such that \( i^2 = -1 \), and every complex number has the form \( a + bi \) with \( a \) and \( b \) real. (N.CN.1)
N.CN.2. (11) Use the relation \( i^2 = -1 \) and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers. (N.CN.2)
N.CN.3. (11) Find the conjugate of a complex number. (N.CN.3)
N.CN.4. (+) Use conjugates to find moduli and quotients of complex numbers. (N.CN.3)

Represent complex numbers and their operations on the complex plane.
N.CN.5. (+) Represent complex numbers on the complex plane in rectangular and polar form (including real and imaginary numbers), and explain why the rectangular and polar forms of a given complex number represent the same number. (N.CN.4)
N.CN.6. (+) Represent addition, subtraction, multiplication, and conjugation of complex numbers geometrically on the complex plane; use properties of this representation for computation. For example, \((-1 + \sqrt{3} i)^3 = 8 \) because \((-1 + \sqrt{3} i) \) has modulus 2 and argument 120°. (N.CN.5)
N.CN.7. (+) Calculate the distance between numbers in the complex plane as the modulus of the difference, and the midpoint of a segment as the average of the numbers at its endpoints. (N.CN.6)

Use complex numbers in polynomial identities and equations.
N.CN.8. (11) Solve quadratic equations with real coefficients that have complex solutions. (N.CN.7)
N.CN.9. (+) Extend polynomial identities to the complex numbers. For example, rewrite \( x^2 + 4 \) as \((x + 2i)(x - 2i)\). (N.CN.8)
N.CN.10. (+) Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials. (N.CN.9)

Vector and Matrix Quantities N-VM

Represent and model with vector quantities.
N.VM.1. (+) Recognize vector quantities as having both magnitude and direction. Represent vector quantities by directed line segments, and use appropriate symbols for vectors and their magnitudes (e.g., \( v, |v|, \|v\|, v \)). (N.VM.1)
N.VM.2. (+) Find the components of a vector by subtracting the coordinates of an initial point from the coordinates of a terminal point. (N.VM.2)
N.VM.3. (+) Solve problems involving velocity and other quantities that can be represented by vectors. (N.VM.3)

Perform operations on vectors.
N.VM.4. (+) Add and subtract vectors.
N.VM.4a. Add vectors end-to-end, component-wise, and by the parallelogram rule. Understand that the magnitude of a sum of two vectors is typically not the sum of the magnitudes. (N.VM.4a)
N.VM.4b. Given two vectors in magnitude and direction form, determine the magnitude and direction of their sum. \((N.\text{VM.4b})\)

N.VM.4c. Understand vector subtraction \(\mathbf{v} - \mathbf{w}\) as \(\mathbf{v} + (-\mathbf{w})\), where \(-\mathbf{w}\) is the additive inverse of \(\mathbf{w}\), with the same magnitude as \(\mathbf{w}\) and pointing in the opposite direction. Represent vector subtraction graphically by connecting the tips in the appropriate order, and perform vector subtraction component-wise. \((N.\text{VM.4c})\)

N.VM.5. \((\pm)\) Multiply a vector by a scalar.

N.VM.5a. Represent scalar multiplication graphically by scaling vectors and possibly reversing their direction; perform scalar multiplication component-wise, \((e.g. as\ c(v_x, v_y) = (cv_x, cv_y))\). \((N.\text{VM.5a})\)

N.VM.5b. Compute the magnitude of a scalar multiple \(cv\) using \(\|cv\| = |c|\|v\|\). Compute the direction of \(cv\) knowing that when \(|c|\|v\| \neq 0\), the direction of \(cv\) is either along \(v\) (for \(c > 0\)) or against \(v\) (for \(c < 0\)). \((N.\text{VM.5b})\)

Perform operations on matrices and use matrices in applications.

N.VM.6. \((11)\) Use matrices to represent and manipulate data, \((e.g. to represent payoffs or incidence relationships in a network.\) \((N.\text{VM.6})\)

N.VM.7. \((11)\) Multiply matrices by scalars to produce new matrices, \((e.g. as when all of the payoffs in a game are doubled.)\) \((N.\text{VM.7})\)

N.VM.8. \((11)\) Add, subtract, and multiply matrices of appropriate dimensions; find determinants of \(2 \times 2\) matrices. \((N.\text{VM.8})\)

N.VM.9. \((\pm)\) Understand that, unlike multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributive properties. \((N.\text{VM.9})\)

N.VM.10. \((\pm)\) Understand that the zero and identity matrices play a role in matrix addition and multiplication similar to the role of 0 and 1 in the real numbers. The determinant of a square matrix is nonzero if and only if the matrix has a multiplicative inverse. \((N.\text{VM.10})\)

N.VM.11. \((\pm)\) Multiply a vector (regarded as a matrix with one column) by a matrix of suitable dimensions to produce another vector. Work with matrices as transformations of vectors. \((N.\text{VM.11})\)

N.VM.12. \((\pm)\) Work with \(2 \times 2\) matrices as transformations of the plane, and interpret the absolute value of the determinant in terms of area. \((N.\text{VM.12})\)
High School – Algebra Content Standards Overview

Seeing Structure in Expressions (A.SSE)
- Interpret the structure of expressions.
  \textbf{A.SSE.1 (*)}  \textbf{A.SSE.2}
- Write expressions in equivalent forms to solve problems.
  \textbf{A.SSE.3 (*)}

Arithmetic with Polynomials and Rational Expressions (A.APR)
- Perform arithmetic operations on polynomials.
  \textbf{A.APR.1}  \textbf{A.APR.2}  \textbf{A.APR.3}
- Use polynomial identities to solve problems.
  \textbf{A.APR.4}  \textbf{A.APR.5 (+)}
- Rewrite rational expressions.
  \textbf{A.APR.6 (+)}  \textbf{A.APR.7 (+)}

Creating Equations (*) (A.CED)
- Create equations that describe numbers or relationships.
  \textbf{A.CED.1 (*)}  \textbf{A.CED.2 (*)}  \textbf{A.CED.3 (*)}
  \textbf{A.CED.4 (*)}

Reasoning with Equations and Inequalities (A.REI)
- Understand solving equations as a process of reasoning and explain the reasoning.
  \textbf{A.REI.1}
- Solve equations and inequalities in one variable.
  \textbf{A.REI.2}  \textbf{A.REI.3}  \textbf{A.REI.4}  \textbf{A.REI.5}
- Solve systems of equations.
  \textbf{A.REI.6}  \textbf{A.REI.7 (+)}
- Represent and solve equations and inequalities graphically.
  \textbf{A.REI.8}  \textbf{A.REI.9 (*)}  \textbf{A.REI.10}

Standards for Mathematical Practices
1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Click on the box to open specific details related to High School - Algebra!
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**Seeing Structure in Expressions A.SSE**

*(High School Algebra Progression Pg. 4)*

Interpret the structure of expressions.

A.SSE.1. (all) Interpret expressions that represent a quantity in terms of its context. *

  A.SSE.1a. (all) Interpret parts of an expression, such as terms, factors, and coefficients. *(A.SSE.1a)*

  A.SSE.1b. (all) Interpret complicated expressions by viewing one or more of their parts as a single entity. *For example, interpret \( P(1 + r)^n \) as the product of \( P \) and \( (1 + r)^n \).* *(A.SSE.1b)*

A.SSE.2. (all) Use the structure of an expression to identify ways to rewrite it. *(A.SSE.2)*

Write expressions in equivalent forms to solve problems.

A.SSE.3. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression. *

  A.SSE.3a. (9/10) Factor a quadratic expression to reveal the zeros of the function it defines. *(A.SSE.3a)*

  A.SSE.3b. (11) Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines. *(A.SSE.3b)*
A.SSE.3c. (11) Use the properties of exponents to transform expressions for exponential functions. For example, the expression $1.15^t$ can be rewritten as 

$$\left(1.15^{\frac{1}{12}}\right)^{12t} \approx 1.012^{12t}$$

to reveal the approximate equivalent monthly interest rate if the annual rate is 15%. *(A.SSE.3c)*

**Arithmetic with Polynomials and Rational Expressions A.APR**

*(High School Algebra Progression Pg. 7)*

Perform arithmetic operations on polynomials.

A.APR.1. *(9/10)* Add, subtract, and multiply polynomials. *(A.APR.1)*

A.APR.2. *(11)* Factor polynomials; identifying that some polynomials are prime. *(2017)*

A.APR.3. *(11)* Know and apply the **Remainder Theorem**: For a polynomial $p(x)$ and a number $c$, the remainder on division by $(x - c)$ is $p(c)$, so $p(c) = 0$ if and only if $(x - c)$ is a factor of $p(x)$. *(A.APR.2)*

Use polynomial identities to solve problems.

A.APR.4. *(9/10/11)* Generate polynomial identities from a pattern. For example, difference of squares, perfect square trinomials, *(emphasize sum and difference of cubes in grade 11)*. *(A.APR.4)*

A.APR.5. *(+)* Know and apply the **Binomial Theorem** for the expansion of $(x + y)^n$ in powers of $x$ and $y$ for a positive integer $n$, where $x$ and $y$ are any numbers, with coefficients determined for example by Pascal’s Triangle. The Binomial Theorem can be proven by mathematical **induction** or by a **combinatorial argument**. *(A.APR.5)*

Rewrite rational expressions.

A.APR.6. *(+)* Rewrite simple rational expressions in different forms; write $\frac{a(x)}{b(x)}$ in the form $q(x) + \frac{r(x)}{b(x)}$, where $a(x)$, $b(x)$, $q(x)$, and $r(x)$ are polynomials with the degree of $r(x)$ less than the degree of $b(x)$, using inspection, long division, or, for the more complicated examples, a computer algebra system. *(A.APR.6)*

A.APR.7. *(+)* Add, subtract, multiply, and divide rational expressions. *(2017)*

**Creating Equations** *(A.CED)*

*(High School Algebra Progression Pg. 10)*

Create equations that describe numbers or relationships.

A.CED.1. *(all)* Apply and extend previous understanding to create equations and inequalities in one variable and use them to solve problems. *(A.CED.1)*

A.CED.2. *(all)* Apply and extend previous understanding to create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales. *(A.CED.2)*

A.CED.3. *(all)* Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. For example, represent inequalities describing nutritional and cost constraints on combinations of different foods. *(A.CED.3)*
A.CED.4.  (all) Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. For example, rearrange Ohm’s law $V = IR$ to highlight resistance $R$.

* (A.CED.4)

Reasoning with Equations and Inequalities A.REI

(High School Algebra Progression Pg. 13)

Understand solving equations as a process of reasoning and explain the reasoning.

A.REI.1.  (all) Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method. (A.REI.1)

Solve equations and inequalities in one variable.

A.REI.2.  (all) Apply and extend previous understanding to solve compound inequalities in one variable, including literal equations and inequalities. (A.REI.3)

A.REI.3.  Solve equations in one variable and give examples showing how extraneous solutions may arise.

A.REI.3a.  (9/10/11) Solve rational, absolute value and square root equations. (A.REI.2)

A.REI.3b.  (9/10) Limited to simple equations such as, $2\sqrt{x-3} + 8 = 16$, $\frac{x+3}{2x-1} = 5$, $x \neq \frac{1}{2}$.

A.REI.3b.  (+) Solve exponential and logarithmic equations. (2017)

A.REI.4.  (11) Solve radical and rational exponent equations and inequalities in one variable, and give examples showing how extraneous solutions may arise. (A.REI.2)

A.REI.5.  Solve quadratic equations and inequalities

A.REI.5a.  (9/10) Solve quadratic equations by inspection (e.g. for $x^2 = 49$), taking square roots, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives no real solutions. (A.REI.4b)

A.REI.5b.  (11) Solve quadratic equations with complex solutions written in the form $a \pm bi$ for real numbers $a$ and $b$. (A.REI.4b)

A.REI.5c.  (11) Use the method of completing the square to transform and solve any quadratic equation in $x$ into an equation of the form $(x - p)^2 = q$ that has the same solutions. (A.REI.4a)

A.REI.5d.  (+) Solve quadratic inequalities and identify the domain. (2017)

Solve systems of equations.

A.REI.6.  (9/10) Analyze and solve pairs of simultaneous linear equations.

A.REI.6a.  (9/10) Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously. (8.EE.8a)

A.REI.6b.  (9/10) Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. For example, $3x + 2y = 5$ and $3x + 2y = 6$ have no solution because $3x + 2y$ cannot simultaneously be 5 and 6. (8.EE.8b)

A.REI.6c.  (9/10) Solve real-world and mathematical problems leading to two linear equations in two variables. For example, given coordinates for two pairs of
points, determine whether the line through the first pair of points intersects the line through the second pair. (8.EE.8c)

A.REI.7. (+) Represent a system of linear equations as a single matrix equation and solve (incorporating technology) for matrices of dimension $3 \times 3$ or greater. (A.REI.8) (A.REI.9)

Represent and solve equations and inequalities graphically.

A.REI.8. (all) Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). (A.REI.10)

A.REI.9. (9/10/11) Solve an equation $f(x) = g(x)$ by graphing $y = f(x)$ and $y = g(x)$ and finding the $x$-value of the intersection point. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions. * For (9/10) focus on linear, quadratic, and absolute value. (A.REI.11)

A.REI.10. (9/10) Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes. (A.REI.12)
High School – Functions Content Standards Overview

Interpreting Functions (F.IF)

- Understand the concept of a function and use function notation.
  - F.IF.1  F.IF.2  F.IF.3
- Interpret functions that arise in applications in terms of the context.
  - F.IF.4 (★)  F.IF.5 (★)  F.IF.6 (★)
- Analyze functions using different representations.
  - F.IF.7 (★)  F.IF.8  F.IF.9

Building Functions (F.BF)

- Build a function that models a relationship between two quantities.
  - F.BF.1  F.BF.2 (+)(★)
- Build new functions from existing functions.
  - F.BF.3  F.BF.4  F.BF.5

Linear, Quadratic, and Exponential Models (★) (F.LQE)

- Construct and compare linear, quadratic, and exponential models and solve problems.
  - F.LQE.1 (★)  F.LQE.2 (★)

Trigonometric Functions (F.TF)

- Extend the domain of trigonometric functions using the unit circle.
  - F.TF.1 (+)  F.TF.2 (+)  F.TF.3 (+)
  - F.TF.4 (+)
- Model periodic phenomena with trigonometric functions.
  - F.TF.5 (+) (★)  F.TF.6 (+)  F.TF.7 (+) (★)
- Prove and apply trigonometric identities.
  - F.TF.8 (+)  F.TF.9 (+)

Standards for Mathematical Practices

1. Make sense of problems and persevere in solving them.
2. Reason abstractly and quantitatively.
3. Construct viable arguments and critique the reasoning of others.
4. Model with mathematics.
5. Use appropriate tools strategically.
6. Attend to precision.
7. Look for and make use of structure.
8. Look for and express regularity in repeated reasoning.

Click on the box to open specific details related to High School - Functions!
The grade level classifications for the high school standards are as follows:

<table>
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**Interpreting Functions F.IF**

*(High School Functions Progression Pg. 7)*

**Understand the concept of a function and use function notation.**

- **F.IF.1.** *(all)* Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If $f$ is a function and $x$ is an element of its domain, then $f(x)$ denotes the output of $f$ corresponding to the input $x$. The graph of $f$ is the graph of the equation $y = f(x)$. *(F.IF.1)*

- **F.IF.2.** *(all)* Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context. *(F.IF.2)*

- **F.IF.3.** *(9/10/11)* Recognize patterns in order to write functions whose domain is a subset of the integers. *(9/10)* Limited to linear and quadratic. *For example, find the function given* \{$(-1,4), (0,7), (1,10), (2,13)$\}. *(F.IF.3)*
Interpret functions that arise in applications in terms of the context.

F.IF.4. (all) For a function that models a relationship between two quantities, interpret key features of expressions, graphs and tables in terms of the quantities, and sketch graphs showing key features given a description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity. * (F.IF.4)

F.IF.5. (all) Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function $h(n)$ gives the number of person-hours it takes to assemble $n$ engines in a factory, then the positive integers would be an appropriate domain for the function. * (F.IF.5)

F.IF.6. (9/10/11) Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph. (9/10) limited to linear functions. * (F.IF.6)

Analyze functions using different representations.

F.IF.7. Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases. *

F.IF.7a. (9/10) Graph linear, quadratic and absolute value functions and show intercepts, maxima, minima and end behavior. * (F.IF.7a)

F.IF.7b. (11) Graph square root, cube root, and exponential functions. * (F.IF.7b)

F.IF.7c. (11) Graph logarithmic functions, emphasizing the inverse relationship with exponentials and showing intercepts and end behavior. * (F.IF.7c)

F.IF.7d. (+) Graph piecewise-defined functions, including step functions. * (F.IF.7d)

F.IF.7e. (11) Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior. * (F.IF.7e)

F.IF.7f. (+) Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior. * (F.IF.7f)

F.IF.7g. (+) Graph trigonometric functions, showing period, midline, and amplitude. * (F.IF.7g)

F.IF.8. Write a function in different but equivalent forms to reveal and explain different properties of the function.

F.IF.8a. (9/10) Use different forms of linear functions, such as slope-intercept, standard, and point-slope form to show rate of change and intercepts. (2017)

F.IF.8b. (11) Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context. (F.IF.8a)

F.IF.8c. (11) Use the properties of exponents to interpret expressions for exponential functions. For example, identify percent rate of change in functions such as $y = (1.02)^t$, $y = (0.97)^t$, $y = (1.01)^{12t}$, $y = (1.2)^{\frac{t}{10}}$, and classify them as representing exponential growth or decay. (F.IF.8b)

F.IF.9. (all) Compare properties of two functions using a variety of representations (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, a quantity increasing exponentially eventually exceeds a quantity increasing linearly. (F.IF.9)
Building Functions F.BF

Build a function that models a relationship between two quantities.

F.BF.1. Use functions to model real-world relationships.
   - F.BF.1a. (9/10) Combine multiple functions to model complex relationships. For example, \( p(x) = r(x) - c(x) \); \( \text{profit} = \text{revenue} - \text{cost} \). (2017)
   - F.BF.1b. (11) Determine an explicit expression, a recursive function, or steps for calculation from a context. (F.BF.1a)
   - F.BF.1c. (11) Compose functions. For example, if \( T(y) \) is the temperature in the atmosphere as a function of height, and \( h(t) \) is the height of a weather balloon as a function of time, then \( T(h(t)) \) is the temperature at the location of the weather balloon as a function of time. (F.BF.1c)

F.BF.2. (+) Write arithmetic and geometric sequences and series both recursively and with an explicit formula, use them to model situations, and translate between the two forms. *(F.BF.2)

Build new functions from existing functions.

F.BF.3. (9/10/11) Transform parent functions \( f(x) \) by replacing \( f(x) \) with \( f(x) + k \), \( kf(x) \), \( f(kx) \), and \( f(x + k) \) for specific values of \( k \) (both positive and negative); find the value of \( k \) given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. Include recognizing even and odd functions from their graphs and algebraic expressions for them. For (9/10) focus on linear, quadratic, and absolute value functions. (F.BF.3)

F.BF.4. Find inverse functions.
   - F.BF.4a. (11) Write an expression for the inverse of a function. (F.BF.4a)
   - F.BF.4b. (11) Read values of an inverse function from a graph or a table, given that the function has an inverse. (F.BF.4c)
   - F.BF.4c. (+) Verify by composition that one function is the inverse of another. (F.BF.4b)
   - F.BF.4d. (+) Produce an invertible function from a non-invertible function by restricting the domain. (F.BF.4d)

F.BF.5. (11) Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents. (F.BF.5)

Linear, Quadratic, and Exponential Models* F.LQE

Construct and compare linear, quadratic, and exponential models and solve problems.

F.LQE.1. Distinguish between situations that can be modeled with linear functions and with exponential functions.*
   - F.LQE.1a. (11) Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals. * (F.LQE.1a)
   - F.LQE.1b. (11) Recognize situations in which one quantity changes at a constant rate per unit interval relative to another. *(F.LQE.1b)
F.LQE.1c. (11) Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another. * (F.LQE.1c)

F.LQE.2. (11) Construct exponential functions, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table). * (F.LQE.2)

Trigonometric Functions F-TF
(High School Functions Progression Pg. 18)

Extend the domain of trigonometric functions using the unit circle.

F.TF.1. (+) Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle. (F.TF.1)

F.TF.2. (+) Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle. (F.TF.2)

F.TF.3. (+) Use special triangles to determine geometrically the values of sine, cosine, tangent for $\frac{\pi}{3}$, $\frac{\pi}{4}$, and $\frac{\pi}{6}$ and use the unit circle to express the values of sine, cosine, and tangent for $\pi - x$, $\pi + x$, and $2\pi - x$ in terms of their values for $x$, where $x$ is any real number. (F.TF.3)

F.TF.4. (+) Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions. (F.TF.4)

Model periodic phenomena with trigonometric functions.

F.TF.5. (+) Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline. * (F.TF.5)

F.TF.6. (+) Understand that restricting a trigonometric function to a domain on which it is always increasing or always decreasing allows its inverse to be constructed. (F.TF.6)

F.TF.7. (+) Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context. * (F.TF.7)

Prove and apply trigonometric identities.

F.TF.8. (+) Prove the Pythagorean identity $\sin^2(\theta) + \cos^2(\theta) = 1$ and use it to find $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ given $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ and the quadrant. (F.TF.8)

F.TF.9. (+) Prove the addition and subtraction formulas for sine, cosine, and tangent and use them to solve problems. (F.TF.9)
High School – Geometry Content Standards Overview

Congruence (G.CO)
- Experiment with transformations in the plane.
  \[\text{G.CO.1} \quad \text{G.CO.2}\]
- Understand congruence in terms of rigid motions.
  \[\text{G.CO.3} \quad \text{G.CO.4} \quad \text{G.CO.5 (+)}\]
  \[\text{G.CO.6 (+)}\]
- Construct arguments about geometric theorems using rigid transformations and/or logic.
  \[\text{G.CO.8} \quad \text{G.CO.9} \quad \text{G.CO.10} \quad \text{G.CO.11}\]
- Make geometric constructions.
  \[\text{G.CO.12 (+)}\]

Similarity, Right Triangles, and Trigonometry (G.SRT)
- Understand similarity in terms of similarity transformations.
  \[\text{G.SRT.1} \quad \text{G.SRT.2} \quad \text{G.SRT.3}\]
- Construct arguments about theorems involving similarity.
  \[\text{G.SRT.4} \quad \text{G.SRT.5}\]
- Define trigonometric ratios and solve problems involving right triangles.
  \[\text{G.SRT.6} \quad \text{G.SRT.7} \quad \text{G.SRT.8 (★)}\]
- Apply trigonometry to general triangles.
  \[\text{G.SRT.9 (+)} \quad \text{G.SRT.10 (+)} \quad \text{G.SRT.11 (+)}\]

Circles (G.C)
- Understand and apply theorems about circles.
  \[\text{G.C.1} \quad \text{G.C.2} \quad \text{G.C.3} \quad \text{G.C.4 (+)} \quad \text{G.C.5 (+)}\]
- Find arc lengths and areas of sectors of circles.
  \[\text{G.C.6 (+)}\]

Expressing Geometric Properties with Equations (G.GPE)
- Translate between the geometric description and the equation for a conic section.
  \[\text{G.GPE.1} \quad \text{G.GPE.2 (+)} \quad \text{G.GPE.3 (+)} \quad \text{G.GPE.4 (+)} \quad \text{G.GPE.5 (+)}\]
- Use coordinates to prove simple geometric theorems algebraically.
  \[\text{G.GPE.6} \quad \text{G.GPE.7} \quad \text{G.GPE.8 (★)}\]

Geometric Measurement and Dimensions (G.GMD)
- Explain volume formulas and use them to solve problems.
  \[\text{G.GMD.1 (+)} \quad \text{G.GMD.2 (+)}\]

Modeling with Geometry (G.MG) (★)
- Apply geometric concepts in modeling situations.
  \[\text{G.MG.1 (★)} \quad \text{G.MG.2 (★)} \quad \text{G.MG.3 (★)}\]
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**Congruence G.CO**

*(Geometry High School Progression Pg. 13)*

**Experiment with transformations in the plane.**

G.CO.1. **(9/10)** Verify experimentally (for example, using patty paper or geometry software) the properties of rotations, reflections, and translations:

G.CO.1a. Lines are taken to lines, and line segments to line segments of the same length. *(8.G.1a)*

G.CO.1b. Angles are taken to angles of the same measure. *(8.G.1b)*

G.CO.1c. Parallel lines are taken to parallel lines. *(8.G.1c)*

G.CO.2. **(9/10)** Recognize transformations as functions that take points in the plane as inputs and give other points as outputs and describe the effect of translations, rotations, and reflections on two-dimensional figures. *For example, (x, y) maps to (x + 3, y − 5); reflecting triangle ABC(input) across the line of reflection maps the triangle to exactly one location, A'B'C'(output). (G.CO.2)*

**Understand congruence in terms of rigid motions.**

G.CO.3. **(9/10)** Given two congruent figures, describe a sequence of rigid motions that exhibits the congruence (isometry) between them using coordinates and the non-coordinate plane. *(8.G.3)*
G.CO.4. (9/10) Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent. (G.CO.7)

G.CO.5. (+) Given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent. (G.CO.6)

G.CO.6. (+) Demonstrate triangle congruence using rigid motion (ASA, SAS, and SSS). (G.CO.8)

Construct arguments about geometric theorems using rigid transformations and/or logic.

G.CO.7. (9/10) Construct arguments about lines and angles using theorems. Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment’s endpoints. (Building upon standard in 8th grade Geometry.) (G.CO.9)

G.CO.8. (9/10) Construct arguments about the relationships within one triangle using theorems. Theorems include: measures of interior angles of a triangle sum to 180°; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point; angle sum and exterior angle of triangles. (G.CO.10)

G.CO.9. (9/10) Construct arguments about the relationships between two triangles using theorems. Theorems include: SSS, SAS, ASA, AAS, and HL. (2017)

G.CO.10. (9/10) Construct arguments about parallelograms using theorems. Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals. (Building upon prior knowledge in elementary and middle school.) (G.CO.11)

Make geometric constructions.

G.CO.11. (9/10) Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line. (G.CO.12)

G.CO.12. (+) Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle. (G.CO.13)

Similarity, Right Triangles, and Trigonometry G.SRT

(Geometry High School Progression Pg. 16)

Understand similarity in terms of similarity transformations.

G.SRT.1. (9/10) Use geometric constructions to verify the properties of dilations given by a center and a scale factor:

G.SRT.1a. A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged. (G.SRT.1a)

G.SRT.1b. The dilation of a line segment is longer or shorter in the ratio given by the scale factor. (G.SRT.1b)
G.SRT.2. (9/10) Recognize transformations as functions that take points in the plane as inputs and give other points as outputs and describe the effect of dilations on two-dimensional figures. (2017)

G.SRT.3. (9/10) Understand the meaning of similarity for two-dimensional figures as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides. (2017)

Construct arguments about theorems involving similarity.

G.SRT.4. (9/10) Construct arguments about triangles using theorems. Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity, and AA. (G.SRT.4)

G.SRT.5. (9/10) Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures. (G.SRT.5)

Define trigonometric ratios and solve problems involving right triangles.

G.SRT.6. (9/10) Show that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles. (G.SRT.6)

G.SRT.7. (9/10) Explain and use the relationship between the sine and cosine of complementary angles. (G.SRT.7)

G.SRT.8. (9/10) Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems. *(G.SRT.8)

Apply trigonometry to general triangles

G.SRT.9. (+) Derive the formula \( A = \frac{1}{2} ab \sin C \) for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side. (G.SRT.9)

G.SRT.10. (+) Prove the Laws of Sines and Cosines and use them to solve problems. (G.SRT.10)

G.SRT.11. (+) Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g. surveying problems, resultant forces). (G.SRT.11)

Circles G.C

Understand and apply theorems about circles.

G.C.1. (9/10) Construct arguments that all circles are similar. (G.C.1)

G.C.2. (9/10) Identify and describe relationships among inscribed angles, radii, and chords. Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle. (G.C.2)

G.C.3. (9/10) Construct arguments using properties of polygons inscribed and circumscribed about circles. (G.C.3)

G.C.4. (+) Construct inscribed and circumscribed circles for triangles. (G.C.3)

G.C.5. (+) Construct inscribed and circumscribed circles for polygons and tangent lines from a point outside a given circle to the circle. (G.C.4)

Find arc lengths and areas of sectors of circles.

G.C.6. (+) Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector. (G.C.5)
Expressing Geometric Properties with Equations G.GPE

Translate between the geometric description and the equation for a conic section.

G.GPE.1. \(\frac{9}{10}\) Write the equation of a circle given the center and radius or a graph of the circle; use the center and radius to graph the circle in the coordinate plane. \(\text{(G.GPE.1)}\)

G.GPE.2. \(+\) Derive the equation of a circle of given center and radius using the Pythagorean Theorem; graph the circle in the coordinate plane; \(\text{(G.GPE.1)}\)

G.GPE.3. \(+\) Complete the square to find the center and radius of a circle given by an equation. \(\text{(G.GPE.1)}\)

G.GPE.4. \(+\) Derive the equation of a parabola given a focus and directrix; graph the parabola in the coordinate plane. \(\text{(G.GPE.1)}\)

G.GPE.5. \(+\) Derive the equations of ellipses and hyperbolas given the foci, using the fact that the sum or difference of distances from the foci is constant; graph the ellipse or hyperbola in the coordinate plane. \(\text{(G.GPE.3)}\)

Use coordinates to prove simple geometric theorems algebraically.

G.GPE.6. \(\frac{9}{10}\) Use coordinates to prove simple geometric theorems algebraically, including the use of slope, distance, and midpoint formulas. For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle. \(\text{(G.GPE.4)}\)

G.GPE.7. \(\frac{9}{10}\) Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g. find the equation of a line parallel or perpendicular to a given line that passes through a given point). \(\text{(G.GPE.5)}\)

G.GPE.8. \(\frac{9}{10}\) Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, including the use of the distance and midpoint formulas. * \(\text{(G.GPE.7)}\)

Geometric Measurement and Dimension G.GMD

(\text{Geometry High School Progression Pg. 19})

Explain volume formulas and use them to solve problems.

G.GMD.1. \(\text{(+)}\) Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. Use dissection arguments and informal limit arguments. \(\text{(G.GMD.1)}\)

G.GMD.2. \(\text{(+)}\) Give an informal argument using \text{Cavalieri’s principle} for the formulas for the volume of a solid figure. \(\text{(G.GMD.2)}\)

Modeling with Geometry G-MG

(\text{Geometry High School Progression Pg. 19})

Apply geometric concepts in modeling situations.

G.MG.1. \(\frac{9}{10}\) Use geometric shapes, their measures, and their properties to describe objects (e.g. modeling a tree trunk or a human torso as a cylinder).* \(\text{(G.MG.1)}\)

G.MG.2. \(\frac{9}{10}\) Apply concepts of density and displacement based on area and volume in modeling situations (e.g. persons per square mile, BTUs per cubic foot).* \(\text{(G.MG.2)}\)

G.MG.3. \(\frac{9}{10}\) Apply geometric methods to solve design problems (e.g. designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).* \(\text{(G.MG.3)}\)
High School – Statistics & Probability Content Standards Overview

Interpreting Categorical and Quantitative Data (S.ID)

- Summarize, represent, and interpret data on a single count or measurement variable.
  - S.ID.1  S.ID.2  S.ID.3 (+)
- Summarize, represent, and interpret data on two categorical and quantitative variables.
  - S.ID.4  S.ID.5
- Interpret linear models.
  - S.ID.6  S.ID.7  S.ID.8

Making Inferences and Justifying Conclusions (+) (S.IC)

- Understand and evaluate random processes underlying statistical experiments.
  - S.IC.1 (+)  S.IC.2 (+)
- Make inferences and justify conclusions from sample surveys, experiments, and observational studies.
  - S.IC.3 (+)  S.IC.4 (+)  S.IC.5 (+)  S.IC.6 (+)

Conditional Probability and the Rules of Probability (S.CP)

- Understand independence and conditional probability and use them to interpret data.
  - S.CP.1 (+)  S.CP.2 (+)  S.CP.3 (+)  S.CP.4 (+)  S.CP.5 (+)
- Use the rules of probability to compute probabilities of compound events in a uniform probability model.
  - S.CP.6 (+)  S.CP.7 (+)  S.CP.8 (+)  S.CP.9 (+)

Using Probability to Make Decisions (+) (★) (S.MD)

- Calculate expected values and use them to solve problems.
- Use probability to evaluate outcomes of decisions.
The grade level classifications for the high school standards are as follows:

<table>
<thead>
<tr>
<th>Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>(9/10)</td>
<td>These standards are required for all students by the end of their first two years of high school math courses.</td>
</tr>
<tr>
<td>(11)</td>
<td>These standards are required for all students by the end of their third year math course.</td>
</tr>
<tr>
<td>(9/10/11)</td>
<td>These standards are required for all students in their first three years of high school math courses. These standards are often further divided to (9/10) and (11) to identify specific concepts and their appropriate grade level. <em>(9/10) should primarily accomplish the standards described as linear, quadratic and absolute value while (11) should primarily accomplish the standards described as logarithmic, square root, cube root, and exponential.</em></td>
</tr>
<tr>
<td>(all)</td>
<td>These standards should be taught throughout every high school math course, and often represent over-arching themes or key features of the mathematical concept. These standards should be taught in conjunction with the appropriate grade level standards.</td>
</tr>
<tr>
<td>(+)</td>
<td>These standards should be taught as extensions to grade level standards when possible, or in a 4th year math course. These standards prepare students to take advanced courses such as college algebra, calculus, advanced statistics, or discrete mathematics.</td>
</tr>
<tr>
<td>(★) Modeling Standards:</td>
<td>Modeling is best interpreted not as a collection of isolated topics but rather in relation to other standards. Making mathematical models is a Standard for Mathematical Practice, and specific modeling standards appear throughout the high school standards indicated by a star symbol. The star symbol sometimes appears on the heading for a group of standards; in that case, it should be understood to apply to all standards in that group.</td>
</tr>
</tbody>
</table>

### Interpreting Categorical and Quantitative Data S.ID

(Original text from High School Statistics and Probability Progression Pg. 3)

**Summarize, represent, and interpret data on a single count or measurement variable.**

- **S.ID.1.** *(9/10)* Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.
- **S.ID.2.** *(9/10)* Interpret differences in shape, center, and spread in the context of the data sets using dot plots, histograms, and box plots, accounting for possible effects of extreme data points (outliers). *(S.ID.2)*
- **S.ID.3.** *(+) Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve. *(S.ID.3)*

**Summarize, represent, and interpret data on two categorical and quantitative variables.**

- **S.ID.4.** *(9/10)* Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data. *(S.ID.4)*
S.ID.5. Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.

S.ID.5a. (9/10) Use a given linear function to solve problems in the context of data. (S.ID.5a)

S.ID.5b. (9/10) Fit a linear function to data and use it to solve problems in the context of the data. (S.ID.5a)

S.ID.5c. (+) Assess the fit of a function by plotting and analyzing residuals. (S.ID.5b)

S.ID.5d. (+) Fit quadratic and exponential functions to the data. Use functions fitted to data to solve problems in the context of the data. (S.ID.5a)

Interpret linear models.

S.ID.6. (9/10) Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data. (S.ID.6)

S.ID.7. (11) Compute (using technology) and interpret the correlation coefficient of a linear fit. (S.ID.7)

S.ID.8. (11) Distinguish between correlation and causation. (S.ID.8)

Making Inferences and Justifying Conclusions S.IC

Understand and evaluate random processes underlying statistical experiments.

S.IC.1. (+) Understand statistics as a process for making inferences to be made about population parameters based on a random sample from that population. (S.IC.1)

S.IC.2. (+) Decide if a specified model is consistent with results from a given data-generating process, e.g. using simulation. For example, a model says a spinning coin falls heads up with probability 0.5. Would a result of 5 tails in a row cause you to question the model? (S.IC.2)

Make inferences and justify conclusions from sample surveys, experiments, and observational studies.

S.IC.3. (+) Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each. (S.IC.3)

S.IC.4. (+) Use data from a sample survey to estimate a population mean or proportion; develop a margin of error, (e.g. through the use of simulation models for random sampling.) (S.IC.4)

S.IC.5. (+) Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant. (S.IC.5)

S.IC.6. (+) Evaluate reports based on data. (S.IC.6)

Conditional Probability and the Rules of Probability S.CP

Understand independent and conditional probability and use them to interpret data.

S.CP.1. (+) Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events (”or,” “and,” “not”). (S.CP.1)
S.CP.2. (+) Understand that two events $A$ and $B$ are independent if the probability of $A$ and $B$ occurring together is the product of their probabilities, and use this characterization to determine if they are independent. (S.CP.2)

S.CP.3. (+) Understand the conditional probability of $A$ given $B$ as $\frac{P(A \text{ and } B)}{P(B)}$, and interpret independence of $A$ and $B$ as saying that the conditional probability of $A$ given $B$ is the same as the probability of $A$, and the conditional probability of $B$ given $A$ is the same as the probability of $B$. (S.CP.3)

S.CP.4. (+) Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results. (S.CP.4)

S.CP.5. (+) Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer. (S.CP.5)

Use the rules of probability to compute probabilities of compound events in a uniform probability model.

S.CP.6. (+) Find the conditional probability of $A$ given $B$ as the fraction of $B$’s outcomes that also belong to $A$, and interpret the answer in terms of the model. (S.CP.6)

S.CP.7. (+) Apply the Addition Rule, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$, and interpret the answer in terms of the model. (S.CP.7)

S.CP.8. (+) Apply the general Multiplication Rule in a uniform probability model, $P(A \text{ and } B) = P(A)P(B|A) = P(B)P(A|B)$, and interpret the answer in terms of the model. (S.CP.8)

S.CP.9. (+) Use permutations and combinations to compute probabilities of compound events and solve problems. (S.CP.9)

Using Probability to Make Decisions S.MD
(High School Statistics and Probability Progression Pg. 18)

Calculate expected values and use them to solve problems.

S.MD.1. (+) Define a random variable for a quantity of interest by assigning a numerical value to each event in a sample space; graph the corresponding probability distribution using the same graphical displays as for data distributions. * (S.MD.1)

S.MD.2. (+) Calculate the expected value of a random variable; interpret it as the mean of the probability distribution. * (S.MD.2)

S.MD.3. (+) Develop a probability distribution for a random variable defined for a sample space in which theoretical probabilities can be calculated; find the expected value. For example, find the theoretical probability distribution for the number of correct answers obtained by guessing on all five questions of a multiple-choice test where each question has four choices, and find the expected grade under various grading schemes. * (S.MD.3)

S.MD.4. (+) Develop a probability distribution for a random variable defined for a sample space in which probabilities are assigned empirically; find the expected value. For example, find a current data distribution on the number of TV sets per household in the United
States, and calculate the expected number of sets per household. How many TV sets would you expect to find in 100 randomly selected households? * (S.MD.4)

Use probability to evaluate outcomes of decisions.

S.MD.5. (+) Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values. *

S.MD.5a. Find the expected payoff for a game of chance. For example, find the expected winnings from a state lottery ticket or a game at a fast-food restaurant. * (S.MD.5a)

S.MD.5b. Evaluate and compare strategies on the basis of expected values. For example, compare a high-deductible versus a low-deductible automobile insurance policy using various, but reasonable, chances of having a minor or a major accident. * (S.MD.5b)

S.MD.6. (+) Use probabilities to make fair decisions (e.g. drawing by lots, using a random number generator). * (S.MD.6)

S.MD.7. (+) Analyze decisions and strategies using probability concepts (e.g. product testing, medical testing, pulling a hockey goalie at the end of a game). * (S.MD.7)
**Teacher Glossary**

**Acute angle.** An angle with a measure less than 90°

**Acute triangle.** A triangle with each of the interior angles measuring less than 90°

**Addition.** An operation that combines two or more numbers or groups of objects (component parts: addend + addend = sum)

**Addition and subtraction within 5, 10, 20, 100, or 1000.** Addition or subtraction of two whole numbers with whole number answers, and with sum or minuend in the range 0-5, 0-10, 0-20, 0-100, or 0-1,000 respectively. For example, 8 + 2 = 10 is an addition within 10, 14 − 5 = 9 is a subtraction within 20, and 55 − 18 = 37 is a subtraction within 100

**Additive identity (property of zero).** Adding 0 to any number with the result of that number

**Additive inverses.** Two numbers whose sum is 0 are additive inverses of one another. Example: $\frac{3}{4}$ and $\left(-\frac{3}{4}\right)$ are additive inverses of one another because $\frac{3}{4} + \left(-\frac{3}{4}\right) = \left(-\frac{3}{4}\right) + \frac{3}{4} = 0$

**Algorithm.** A step-by-step method for computing or solving a problem

**Angle.** Two rays or line segments that share an endpoint

**Area.** The number of square units needed to cover a given surface

**Array.** A rectangular arrangement of objects with equal amounts in each row

**Associative property.** The associative property states that numbers in an addition expression can be grouped in different ways without changing the sum OR the numbers in a multiplication expression can be grouped in different ways without changing the product. By “grouped” we mean where the parenthesis are placed in the expression

**Associative property of multiplication.** See Table 3

**Attribute.** A defining characteristic of a number, geometric figure, mathematical operation, equation, or inequality

**Auxiliary line.** An auxiliary line (or helping line) is an extra line needed to complete a proof in plane geometry

**Bar graph.** A display that uses horizontal or vertical bars to represent data (categorical data)

**Binomial theorem:** Formula for finding any power of a binomial without multiplying at length. $(a + b)^n = \sum_{k=0}^{n} \binom{n}{k} a^{n-k} b^k$

**Bivariate data.** Pairs of linked numerical observations. Example: a list of heights and weights for each player on a football team

**Box plot.** A method of visually displaying a distribution of data values by using the median, quartiles, and extremes of the data set

**Cardinality.** Understands last number word said when counting, tells how many

**Cavalieri’s principle.** If two solids have the same height and the same cross-sectional area at every level, then they have the same volume
**Chance processes.** A probability experiment. *For example, flipping a coin, drawing a card, tossing a number cube*

**Chart (table).** Information organized in columns and rows

**Circle.** A closed curve with all its points the same distance from the center

**Circular arc.** The arc of a circle is a portion of the circumference. It can be measured by its central angle or the length of the arc

**Circumference.** The distance around the outside (perimeter) of a circle

**Cluster.** Numbers which tend to crowd around a particular point in a set of values

**Combinatorial argument.** In mathematics, the term combinatorial proof is often used to mean either of two types of mathematical proof

**Commutative property.** Numbers may be added or multiplied together in any order without changing the answer. *See Table 3*

**Compensation.** Understanding that decreasing from one part and increasing it to another leaves the quantity unchanged

**Complex fraction.** A fraction $\frac{A}{B}$ where $A$ and/or $B$ are fractions ($B$ cannot equal zero)

**Component-wise vector addition.** The component method of addition can be summarized this way:

- Using trigonometry, find the x-component and the y-component for each vector. Refer to a diagram of each vector to correctly reason the sign, (+ or -), for each component
- Add up both x-components, (one from each vector), to get the x-component of the total
- Add up both y-components, (one from each vector), to get the y-component of the total
- Add the x-component of the total to the y-component of the total, and then use the Pythagorean theorem and trigonometry to get the size and direction of the total

**Composite number.** A number that has more than two factors

**Computation algorithm.** A set of predefined steps applicable to a class of problems that gives the correct result in every case when the steps are carried out correctly. *See also: computation strategy*

**Computation strategy.** Purposeful manipulations that may be chosen for specific problems, may not have a fixed order, and may be aimed at converting one problem into another. *See also: computation algorithm*

**Cone.** A 3-dimensional figure with a curved surface, a flat circular base, and a vertex

**Congruent.** Having exactly the same size and shape

**Congruent figures.** Two plane or solid figures are congruent if one can be obtained from the other by rigid motion (a sequence of rotations, reflections, and translations)

**Conservation.** Understands quantity stays the same when physical space is changed

**Constant of proportionality:** A fixed value of the ratio of two proportional quantities

**Coordinate grid/plane.** The plane formed by two perpendicular number lines intersecting at their zero points used for displaying the location of coordinates
**Coordinates.** An ordered pair of numbers that gives the location of a point on a coordinate grid

**Counting on.** A strategy for finding the number of objects in a group without having to count every member of the group. *For example, if a stack of books is known to have 8 books and 3 more books are added to the top, it is not necessary to count the stack all over again; one can find the total by counting on—pointing to the top book and saying “eight,” following this with “nine, ten, eleven. There are eleven books now.”*

**Cube.** A 3-dimensional figure with six congruent square faces

**Cylinder.** A 3-dimensional figure with one curved surface and two parallel, congruent circular bases

**Data.** Information that is collected by counting, measuring, asking questions, or observing that is usually organized for analysis

**Data display.** A way to visually organize data

**Decagon.** A polygon with 10 sides

**Decimal.** A number in a number system based on 10 (also known as base-ten system or Hindu-Arabic system)

**Decimal fraction.** A number written in standard base-10 notation

**Decimal notation.** Representation of a fraction or other real number using the base ten and consisting of any of the digits 0, 1, 2, 3, 4, 5, 6, 7, 8, 9, and a decimal point

**Decimal point.** A demarcation between whole numbers and numbers less than one

**Decompose.** The process of separating into smaller parts

**Denominator.** The number of equal parts making up a whole (the bottom number in a fraction)

**Diameter.** A line segment that passes through the center of a circle and has endpoints on the circle

**Difference.** The space between the value of two numbers on a number line (the result of subtracting one number from another)

**Digit.** Any one of the ten symbols 0, 1, 2, 3, 4, 5, 6, 7, 8, 9

**Digital root.** The result of adding digits in a number until only one digit remains

**Dilation.** A transformation that moves each point along the ray through the point emanating from a fixed center, and multiplies distances from the center by a common scale factor

**Directrix.** A fixed line used in the description of a curve or surface

**Distributive property of multiplication.** A property indicating a special way in which multiplication is applied to addition or subtraction of two or more numbers in which each term inside a set of parentheses can be multiplied by a factor outside the parentheses. *For example,*

\[4(2 + 3) = 4 \cdot 2 + 4 \cdot 3 \quad 5(9 - 3) = 5 \cdot 9 - 5 \cdot 3\]

**Division.** The operation of making equal groups to find out how many in each group or how many groups (component parts: dividend ÷ divisor = quotient)
**Double number line diagram.** Two number lines with different scales intended to organize and compare values

**Edge.** It is the line segment that joins two vertices where two faces of a solid shape intersect

**Ellipse.** A curved line forming a closed loop, where the sum of the distances from two points (foci) to every point on the line is constant

**End-to-end vector addition.** Added or subtracted graphically by laying them end to end on a set of axes

**Equal.** Having the same value

**Equation.** A mathematical sentence where the left side of the equal sign has the same value as the right side of the equal sign

**Equilateral.** A polygon with all sides congruent

**Equilateral triangle.** A triangle whose sides are all the same length

**Equivalence.** The condition of being equal or equivalent in value, worth, function, etc.

**Equivalent.** Having the same value

**Estimate.** To find a number close to an exact amount

**Even number.** Whole numbers that are divisible by 2; even numbers have 0, 2, 4, 6, or 8 in the ones place

**Expanded form.** A multi-digit number is expressed in expanded form when it is written as a sum of single-digit multiples of powers of ten. *For example, 643 = 600 + 40 + 3.*

**Expected value.** For a random variable, the weighted average of its possible values, with weights given by their respective probabilities

**Experimental probability.** The ratio of the number of times an event occurs to the total number of trials in a chance process

**Explicit function.** A function in which the dependent variable can be written explicitly in terms of the independent variable

**Exponent.** A numeral telling how many times a factor is to be multiplied

**Expression.** A mathematical phrase made up of numbers, variables, operational symbols, and/or parentheses

**Face.** The flat surface of a solid figure

**First quartile.** For a data set with median $M$, the first (lower) quartile is the median of the data values less than $M$. *See also: median, third quartile, interquartile range*

**Fluency.** Performing a skill flexibly, accurately, and efficiently

**Focus.** The locus of all points that are equidistant from a given point
**Fraction.** A number expressible in the form $\frac{a}{b}$ where $a$ is the number of equal parts being referenced and $b$ is the number of equal parts in the whole. *Note: There is no need to introduce “proper fractions” and “improper fractions” (i.e. $\frac{5}{3}$ is the quantity you get by combining 5 parts together when the whole is divided into 3 equal parts) rather student recognize that fractions can be between 0 and 1 or more than 1*

**Frequency table.** A table that shows how often that data point occurred (tally marks are commonly used)

**Fundamental Theorem of Algebra.** The theorem that establishes that, using complex numbers, all polynomials can be factored. A generalization of the theorem asserts that any polynomial of degree $n$ has exactly $n$ zeroes, counting multiplicity

**Growth pattern.** A type of pattern made by following a rule using operations

**Height.** The distance from the base to the top of an object or shape

**Heptagon (septagon).** A polygon with 7 sides

**Hexagon.** A polygon with 6 sides

**Hierarchical inclusion.** Numbers build by exactly one each time—smaller numbers are part of bigger numbers (For example, 3 is “nested” in 4)

**Identity property of 0.** See Table 3

**Improper fraction.** A fraction with a numerator that is greater than or equal to its denominator

**Incidence relationships in a network.** Shows the relationship between two classes of objects

**Independently combined probability models.** Two probability models are said to be combined independently if the probability of each ordered pair in the combined model equals the product of the original probabilities of the two individual outcomes in the ordered pair

**Induction.** A means of proving a theorem by showing that if it is true of any particular case, it is true of the next case in a series, and then showing that it is indeed true in one particular case

**Inequality.** A number sentence comparing the size, amount, or value using one of the following symbols: $<, >, \leq, \geq, \neq$. Also used to define sets of numbers

**Informal derivation:** An informal development of a theorem

**Inscribe.** Draw (a figure) within another so that their boundaries touch but do not intersect

**Integers.** The set of whole numbers and their opposites: $\ldots, -2, -1, 0, 1, 2, \ldots$

**Interquartile Range.** A measure of variation in a set of numerical data, the interquartile range is the distance between the upper (third) quartile and the lower (first) quartile of the data set. Example: For the data set {$1, 3, 6, 7, 10, 12, 14, 15, 22, 120$}, the interquartile range is $15 − 6 = 9$. *See also: first quartile, third quartile*

**Intersecting lines.** Lines that meet or cross

**Interval (linear).** Space between numbers on a number line or the grid lines of a graph
**Interval (time).** A space of time between events

**Inscribed.** Draw (a figure) within another so that their boundaries do not intersect

**Irrational number.** A number that cannot be expressed as a ratio between two integers and is not an imaginary number. If written in decimal notation, an irrational number would have an infinite number of digits to the right of the decimal point, without repetition

**Irregular polygon.** A polygon whose sides are not all the same length

**Isometry.** A distance-preserving transformation

**Isosceles triangle.** A triangle with exactly two sides of equal length (exclusive); a triangle with at least two sides of equal length (inclusive)

**Iteration.** Repeating the same unit

**Kite.** A quadrilateral with two distinct pairs of equal adjacent sides (exclusive); a quadrilateral with two pairs of equal adjacent sides (inclusive)

**Law of cosines.** The law of cosines (also referred to as cosine law, cosine formula, cosine rule) is used to calculate one side of a triangle when the angle opposite and the other two sides are known \[ c^2 = a^2 + b^2 - 2ab \cos C \]

**Law of sines.** The law of sines (also referred to as sine law, sine formula, sine rule) states that the ratio of the length of a side of a triangle to the sine of the angle opposite that side is the same for all sides and angles in a given triangle. \[ \frac{a}{\sin A} = \frac{b}{\sin B} = \frac{c}{\sin C} \]

**Length.** The distance from one end of something to the other end

**Line.** An infinite set of points forming a straight path extending in opposite directions (Although mathematically undefined, we will use this description for line)

**Line plot.** A method of visually displaying a frequency of data values where each data value is shown as a dot or mark above a number line. Also known as a dot plot

**Line segment.** A part of a line defined by two endpoints

**Line symmetry.** See symmetry

**Linear measure.** A measure of a distance or length that is one-dimensional

**Liquid volume (capacity).** The amount that a container can hold (common units of measure: cup, pint, gallon, liter, etc.)

**Literal equations.** Equations with several variables often solved in terms of a single variable

**Magnitude.** Distance of a number from zero

**Magnitude of a vector.** Size of a mathematical object, a property by which the object can be compared as larger or smaller than other objects of the same kind

**Mass.** The amount of matter

**Mean.** A measure of center in a set of numerical data, computed by adding the values in a list and then dividing by the number of values in the list
Mean absolute deviation. A measure of variation in a set of numerical data, computed by adding the distances between each data value and the mean, then dividing by the number of data values. Also known as MAD. For example: For the data set {2, 3, 6, 7, 10, 12, 14, 15, 22, 120}, the mean absolute deviation is 19.96

Median. A measure of center in a set of numerical data. The median of a list of values is the value appearing at the center of a sorted version of the list—or the mean of the two central values, if the list contains an even number of values

Midline. In the graph of a trigonometric function, the horizontal line half-way between its maximum and minimum values

Mixed number. A quantity written with an integer and a fraction (3 1/2)

Moduli/modulus. The modulus of a complex number is the square root of the product of a complex number and its conjugate

Multiple. The product of any number and a counting number

Multiplication. The operation of repeated addition (component parts: factor x factor = product)

Multiplication and division within 100. Multiplication or division of two whole numbers with whole number answers, and with product or dividend in the range 0-100. For example, (72|8) = 9

Multiplicative comparison. Comparing the difference between values using multiplication

Multiplicative identity property of one. When a number is multiplied by 1, the product is that number

Multiplicative inverses. Two numbers whose product is 1 are multiplicative inverses of one another. For example, 3/4 and 4/3 are multiplicative inverses of one another because 3/4 · 4/3 = 4/3 · 3/4 = 1

Negative numbers. Numbers less than zero

Nonagon. A polygon with 9 sides

Number line diagram. A diagram of the number line used to represent numbers and support reasoning about them. In a number line diagram for measurement quantities, the interval from 0 to 1 on the diagram represents the unit of measure for the quantity

Number model. A mathematical representation of a situation

Number sentence. An equation and/or algebraic expressions (=) or inequality (<, >, ...) with numbers

Number systems. The different subgroups of numbers For example, natural numbers, whole numbers, integers, rational numbers, etc.

Numeral. A symbol or group of symbols that stand for a number. For example, the numeral symbol for twenty-four is 24

Numerator. Tells how many equal parts of a whole are being described (the top number of a fraction)

Obtuse angle. An angle with a measure greater than 90° and less than 180°

Obtuse triangle. A triangle with a single angle measuring more than 90°
Octagon. A polygon with 8 sides

Odd number. Whole numbers that cannot be divided into 2 equal groups of whole numbers; odd numbers have 1, 3, 5, 7, or 9 in the ones place

One-to-one correspondence. Counting objects by saying one number for each object, when counting in sequential order

Operational symbols. Symbols used to indicate computation (+, -, x, ●, ÷, etc.)

Ordered pair. A pair of numbers that gives the coordinates of a point on a grid in this order: (horizontal coordinate, vertical coordinate)

Ordinality. A number indicating a series or specific order (1st, 2nd, etc.)

Orientation. Position and direction in space (usually around a fixed point)

Outcome. A possible result of a chance process

Outlier. A value in a data set that lies outside the overall pattern of a distribution or relationship

Parallel lines. Lines that are always the same distance apart

Parallelogram. A quadrilateral with two pairs of parallel sides

Parallelogram rule vector addition. When two vectors are represented by two adjacent sides of a parallelogram by direction and magnitude then the resultant of these vectors is represented in magnitude and direction by the diagonal of the parallelogram starting from the same point

Pattern. A logical sequence of numbers, pictures, shapes, or symbols

Peak. A data value that is greater than its neighboring values

Pentagon. A polygon with 5 sides

Percent rate of change. A rate of change expressed as a percent. For example: if a population grows from 50 to 55 in a year, it grows by \( \frac{5}{50} = 10\% \) per year

Perimeter. The distance around a figure

Perpendicular lines. Two lines that form a right angle where they intersect

Pictograph. A display that uses pictures or symbols to represent data

Place value. The value of a digit depending on its place in a number

Plane figures (2-D). Any 2-dimensional shape that lays in a single plane

Plot. To place (points or other figures) on a graph by means of coordinates

Point. An exact location in space

Polar form. \( z = r(\cos \theta + i \sin \theta) \)

Polygon. A closed plane figure made from line segments that meet at endpoints and do not cross

Positive numbers. Numbers that are greater than zero
**Prime number.** A counting number greater than 1 that has exactly two factors, itself and 1

**Prism.** A 3-dimensional figure with two identical, parallel faces (bases) that are polygons; the remaining faces are parallelograms. **A prism is named by its base**

**Probability.** A number between 0 and 1 used to quantify likelihood for processes that have uncertain outcomes (such as tossing a coin, selecting a person at random from a group of people, tossing a ball at a target, testing for a medical condition)

**Probability distribution.** The set of possible values of a random variable with a probability assigned to each

**Probability model.** A mathematical representation (such as tree diagram or table) used to assign probabilities to all outcomes in the sample space in which the probabilities sum to 1. See also: uniform probability model

**Properties of equality.** See Table 4

**Properties of inequality.** See Table 5

**Properties of operations.** See Table 3

**Pyramid.** A 3-dimensional figure whose base is a polygon and whose other faces are triangles that share a common vertex. **(A pyramid is named by its base)**

**Quadrilateral.** A polygon with four sides

**Radius.** The distance from the center of a circle to any point on a circle

**Random variable.** An assignment of a numerical value to each outcome in a sample space

**Ratio.** The quantitative relation between two amounts

**Rational expression.** A quotient of two polynomials with a non-zero denominator

**Rational number.** A number expressible in the form \(\frac{a}{b}\), where \(a\) and \(b\) are both integers and \(b\) cannot equal zero

**Ray.** A part of a line that has one endpoint and extends forever in one direction

**Rectangle.** A parallelogram with four right angles

**Rectilinear figure.** A polygon where all angles are right angles

**Recursive function.** Relating to or involving the repeated application of a rule, definition, or procedure to create successive results

**Reflex angle.** An angle that measures greater than 180°

**Regular polygon.** A polygon with all sides the same length and all angles the same measure

**Related equations (used to be known as fact families).** A set of equations that all communicate the same relationship between three values, but in different ways (there are eight ways to show a relationship between addition/subtraction and multiplication/division)
**Relational symbols.** Symbols used to show relationships between quantities, values, and figures (\(=, \neq, <, >, \leq, \geq, \sim, \approx, \cong\))

**Remainder.** When dividing, the part of a number or quantity that is left over

**Remainder Theorem.** The assertion that \(P(c)\) is the remainder when polynomial \(P(x)\) is divided by \((x - c)\)

**Repeating decimal.** The decimal form of a rational number. See also: terminating decimal

**Residuals.** Difference between the observed y-value (from scatter plot) and the predicted y-value (from regression equation line). It is the vertical distance from the actual plotted point to the point on the regression line

**Rhombus.** A parallelogram with equal sides and opposite angles equal

**Right angle.** An angle that measures 90°

**Right triangle.** A triangle that has one 90° angle

**Rigid motion.** A transformation of points in space consisting of a sequence of one or more translations, reflections, and/or rotations. Rigid motions are here assumed to preserve distances and angle measures

**Rounding.** Replacing a numerical value by another value that is approximately equal but has a shorter, simpler, or more explicit representation

**Sample space.** The set of all possible outcomes in the context of probability

**Scalar.** (of a quantity) having only magnitude, not direction

**Scale.** Ordered marks at fixed intervals (graphing or measurement)

**Scalene triangle.** A triangle having no equal sides

**Scaling (resizing).** Expressing the amount of the enlargement or reduction to the original

**Scatter plot.** A graph in the coordinate plane representing a set of bivariate data.

**Septagon.** See heptagon

**Sequence.** A particular order in which relative events, movements, or things follow each other

**Similarity transformation.** A rigid transformation (reflection, rotation, translation) followed by a dilation

**Situation equation.** An equation that models the situation in a real-life and/or word problem (For example: A boy had some balloons and his dad gave him 2 more so he has 8. How many balloons did he start with? Situation equation \(-? + 2 = 8\). Solution equation \(-8 - 2 = ?\))

**Skew (data).** The asymmetry from the mean of a data distribution. A distribution is skewed if one tail is longer than another. When data has a long tail on the left side of the peak (in the negative direction on the number line), it is left-skewed. If it has a long tail on the right side of the peak (in the positive direction on the number line), it is right-skewed

**Solid figures (3-D).** A geometric figure with three dimensions (length, width, and height)
Solution equation. An equation that models how the situation in a real-life and/or word problem can be solved (the situation equation does not always allow for an easy solution path) [For example: A boy had some balloons and his dad gave him 2 more so he has 8. How many balloons did he start with? Situation equation \(-? +2 = 8\). Solution equation \(-8 - 2 = ?\)]

Sphere. A closed three-dimensional figure with every point of its surface the same distance from the center

Square. A parallelogram with equal sides and four right angles

Standard form. A number written with one digit for each place value in a base ten numeric system

Statistical question. A question that can be answered by collecting data where there will be variability in the data

Straight angle. An angle with a measure of 180°

Strategies. System of finding and developing solutions when followed consistently

Subitizing. Instantly seeing how many

Subset. A set within a larger set. One unique subset of the whole set is the whole set itself

Subtraction. An operation that gives the difference or comparison between two numbers (component parts: minuend - subtrahend = difference)

Symmetric property of equality. The answer to an equation can be on either side of the equal sign

Symmetry (line symmetry). A line that divides a figure into two congruent halves that are mirror images of each other

Table. See chart

Tape diagram. A visual model using rectangles that looks like a segment of tape, used to illustrate number relationships. Also known as a strip diagram, bar model, fraction strip, or length model

Terminating decimal. A decimal is called terminating if its repeating digit is 0

Theoretical probability. The ratio of the number of ways the event can occur to the total number of possible outcomes based on a probability model

Third quartile. For a data set with median \(M\), the third (upper) quartile is the median of the data values greater than \(M\). See also: median, first quartile, interquartile range

Time. The way we measure years, days, minutes, etc.

Transitivity principle. Indirect comparison of two objects by the use of a third object

Transitivity principle for indirect measurement. If the length of object A is greater than the length of object B, and the length of object B is greater than the length of object C, then the length of object A is greater than the length of object C. This principle applies to measurement of other quantities as well

Trapezoid. A quadrilateral with exactly one pair of parallel sides (exclusive); a quadrilateral with at least one pair of parallel sides (inclusive)

Triangle. A polygon with three sides
**Uniform probability model.** A probability model which assigns equal probability to all outcomes. See also: probability model

**Unit (unit size).** A single object or any group of things or persons regarded as an entity that can be iterated

**Unit form.** A way to write numbers showing the place value of each digit by using the name of the place (Ex: 3045 = 3 thousands + 4 tens + 5 ones)

**Unit fraction.** When a whole is divided into equal parts, a unit fraction is one of those parts (a unit fraction has a numerator of one)

**Variable.** A letter or symbol that represents a number

**Vector.** A quantity with magnitude and direction in the plane or in space, defined by an ordered pair or triple of real numbers.

**Vertex.** The point at which two line segments, lines, or rays meet to form an angle

**Visual fraction model.** A tape diagram, number line diagram, or area model.

**Volume.** The number of cubic units it takes to fill a three-dimensional figure

**Weight.** The measure of how heavy something is; the force of gravity on an object

**Whole numbers.** The numbers 0, 1, 2, 3, ....

**Width.** The measure of one side of an object.

**Word form.** Numbers written with only words (Ex: 3045 = three thousand forty-five)

**Zero property (multiplication property of zero).** When a number is multiplied by 0, the product is always 0

[Click to open the Student Glossary]
### TABLE 1: Common Addition and Subtraction Situations

Shading taken from OA progression

<table>
<thead>
<tr>
<th>Add to</th>
<th>Start Unknown</th>
<th>Change Unknown</th>
<th>Result Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>Two bunnies sat on the grass. Three more bunnies hopped there. How many bunnies are on the grass now? 2 + 3 = ?</td>
<td>Some bunnies were sitting on the grass. Three more bunnies hopped there. Then there were five bunnies. How many bunnies were on the grass before? 2 + ? = 5</td>
<td>Two bunnies were sitting on the grass. Some more bunnies hopped there. Then there were five bunnies. How many bunnies hopped over to the first two? ? + 3 = 5</td>
<td></td>
</tr>
<tr>
<td>Five apples were on the table. I ate two apples. How many apples are on the table now? 5 − 2 = ?</td>
<td>Some apples were on the table. I ate two apples. Then there were three apples. How many apples were on the table before? ? − 2 = 3</td>
<td>Five apples were on the table. I ate some apples. Then there were three apples. How many apples did I eat? 5 − ? = 3</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Put Together/Take Apart</th>
<th>Total Unknown</th>
<th>Addend Unknown</th>
<th>Both Addends Unknown¹</th>
</tr>
</thead>
<tbody>
<tr>
<td>Three red apples and two green apples are on the table. How many apples are on the table? 3 + 2 = ?</td>
<td>Five apples are on the table. Three are red and the rest are green. How many apples are green? 3 + ? = 5, 5 − 3 = ?</td>
<td>Grandma has five flowers. How many can she put in her red vase and how many in her blue vase? 5 = 0 + 5, 5 = 5 + 0</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Compare³</th>
<th>Difference Unknown</th>
<th>Bigger Unknown</th>
<th>Smaller Unknown</th>
</tr>
</thead>
<tbody>
<tr>
<td>(&quot;How many more?&quot; version): Lucy has two apples. Julie has five apples. How many more apples does Julie have than Lucy? 2 + ? = 5, 5 − 2 = ?</td>
<td>(Version with &quot;more&quot;): Julie has three more apples than Lucy. Lucy has two apples. How many apples does Julie have? 2 + 3 = ?, 3 + 2 = ?</td>
<td>(Version with &quot;more&quot;): Julie has three more apples than Lucy. Julie has five apples. How many apples does Lucy have?</td>
<td></td>
</tr>
<tr>
<td>(&quot;How many fewer?&quot; version): Lucy has two apples. Julie has five apples. How many fewer apples does Lucy have than Julie?</td>
<td>(Version with &quot;fewer&quot;): Lucy has 3 fewer apples than Julie. Lucy has two apples. How many apples does Julie have?</td>
<td>(Version with &quot;fewer&quot;): Lucy has 3 fewer apples than Julie. Julie has five apples. How many apples does Lucy have? 5 − 3 = ?, ? + 3 = 5</td>
<td></td>
</tr>
</tbody>
</table>

Blue shading indicates the four Kindergarten problem subtypes. Students in grades 1 and 2 work with all subtypes and variants (blue and green). Yellow indicates problems that are the difficult four problem subtypes or variants that students in Grade 1 work with but do not need to master until Grade 2.

¹These take apart situations can be used to show all the decompositions of a given number. The associated equations, which have the total on the left of the equal sign, help children understand that the = sign does not always mean makes or results in but always does mean is the same number as.

²Either addend can be unknown, so there are three variations of these problem situations. Both Addends Unknown is a productive extension of this basic situation, especially for small numbers less than or equal to 10.

³For the Bigger Unknown or Smaller Unknown situations, one version directs the correct operation (the version using more for the bigger unknown and using less for the smaller unknown). The other versions are more difficult.
### TABLE 2: Common Multiplication and Division Situations
Grade level identification of introduction of problems taken from OA progression

<table>
<thead>
<tr>
<th>Unknown Product</th>
<th>Group Size Unknown (“How many in each group?” Division)</th>
<th>Number of Groups Unknown (“How many groups?” Division)</th>
</tr>
</thead>
<tbody>
<tr>
<td>$3 \times 6 = ?$</td>
<td>$3 \times ? = 18, \quad 18 \div 3 = ?$</td>
<td>$? \times 6 = 18, \quad 18 \div 6 = ?$</td>
</tr>
</tbody>
</table>

**Equal Groups**
- **Unknown Product**: There are 3 bags with 6 plums in each bag. How many plums are there in all?
  - **Group Size Unknown**: If 18 plums are shared equally into 3 bags, then how many plums will be in each bag?
  - **Number of Groups Unknown**: If 18 plums are to be packed 6 to a bag, then how many bags are needed?

- **Measurement example.** You need 3 lengths of string, each 6 inches long. How much string will you need altogether?
  - **Group Size Unknown**: You have 18 inches of string, which you will cut into 3 equal pieces. How long will each piece of string be?
  - **Number of Groups Unknown**: You have 18 inches of string, which you will cut into pieces that are 6 inches long. How many pieces of string will you have?

**Arrays, Area**
- **Unknown Product**: There are 3 rows of apples with 6 apples in each row. How many apples are there?
  - **Group Size Unknown**: If 18 apples are arranged into 3 equal rows, how many apples will be in each row?
  - **Number of Groups Unknown**: If 18 apples are arranged into equal rows of 6 apples, how many rows will there be?

- **Area example.** What is the area of a 3 cm by 6 cm rectangle?
  - **Group Size Unknown**: A rectangle has area 18 square centimeters. If one side is 3 cm long, how long is a side next to it?
  - **Number of Groups Unknown**: A rectangle has area 18 square centimeters. If one side is 6 cm long, how long is a side next to it?

**Compare**
- **Unknown Product**: A blue hat costs $6. A red hat costs 3 times as much as the blue hat. How much does the red hat cost?
  - **Group Size Unknown**: A red hat costs $18 and that is 3 times as much as a blue hat costs. How much does a blue hat cost?
  - **Number of Groups Unknown**: A red hat costs $18 and a blue hat costs $6. How many times as much does the red hat cost as the blue hat?

- **Measurement example.** A rubber band is 6 cm long. How long will the rubber band be when it is stretched to be 3 times as long?
  - **Group Size Unknown**: A rubber band is stretched to be 18 cm long and that is 3 times as long as it was at first. How long was the rubber band at first?
  - **Number of Groups Unknown**: A rubber band was 6 cm long at first. Now it is stretched to be 18 cm long. How many times as long is the rubber band now as it was at first?

**General**
- **Unknown Product**: $a \times b = ?$
- **Group Size Unknown**: $a \times ? = p$ and $p \div a = ?$
- **Number of Groups Unknown**: $? \times b = p$ and $p \div b = ?$

Multiplicative compare problems appear first in Grade 4 (green), with whole number values and with the “times as much” language from the table. In **Grade 5, unit fractions language** such as “one third as much” may be used. Multiplying and unit language change the subject of the comparing sentence (“A red hat costs $n$ times as much as the blue hat” results in the same comparison as “A blue hat is $\frac{1}{n}$ times as much as the red hat” but has a different subject.)
TABLE 3: Fundamental Properties of Number and Operations

<table>
<thead>
<tr>
<th>Name of Property</th>
<th>Representation of Property</th>
<th>Example of Property, Using Real Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Properties of Addition</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Associative</td>
<td>((a + b) + c = a + (b + c))</td>
<td>((78 + 25) + 75 = 78 + (25 + 75))</td>
</tr>
<tr>
<td>Commutative</td>
<td>(a + b = b + a)</td>
<td>(2 + 98 = 98 + 2)</td>
</tr>
<tr>
<td>Additive Identity</td>
<td>(a + 0 = a) and (0 + a = a)</td>
<td>(9875 + 0 = 9875)</td>
</tr>
<tr>
<td>Additive Inverse</td>
<td>For every real number (a), there is a real number (-a) such that (a + (-a) = -a + a = 0)</td>
<td>(-47 + 47 = 0)</td>
</tr>
<tr>
<td><strong>Properties of Multiplication</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Associative</td>
<td>((a \times b) \times c = a \times (b \times c))</td>
<td>((32 \times 5) \times 2 = 32 \times (5 \times 2))</td>
</tr>
<tr>
<td>Commutative</td>
<td>(a \times b = b \times a)</td>
<td>(10 \times 38 = 38 \times 10)</td>
</tr>
<tr>
<td>Multiplicative Identity</td>
<td>(a \times 1 = a) and (1 \times a = a)</td>
<td>(387 \times 1 = 387)</td>
</tr>
<tr>
<td>Multiplicative Inverse</td>
<td>For every real number (a), (a \neq 0), there is a real number (\frac{1}{a}) such that (a \times \frac{1}{a} = \frac{1}{a} \times a = 1)</td>
<td>(\frac{8}{3} \times \frac{3}{8} = 1)</td>
</tr>
<tr>
<td><strong>Distributive Property of Multiplication over Addition</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distributive</td>
<td>(a \times (b + c) = a \times b + a \times c)</td>
<td>(7 \times (50 + 2) = 7 \times 50 + 7 \times 2)</td>
</tr>
</tbody>
</table>

(Variables \(a\), \(b\), and \(c\) represent real numbers.)

Excerpt from Developing Essential Understanding of Algebraic Thinking, grades 3-5 p. 16-17
### TABLE 4: Properties of Equality

<table>
<thead>
<tr>
<th>Name of Property</th>
<th>Representation of Property</th>
<th>Example of property</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reflexive Property of Equality</strong></td>
<td>$a = a$</td>
<td>$3,245 = 3,245$</td>
</tr>
<tr>
<td><strong>Symmetric Property of Equality</strong></td>
<td>If $a + b$, then $b = a$</td>
<td>$2 + 98 = 90 + 10$, then $90 + 10 = 2 + 98$</td>
</tr>
<tr>
<td><strong>Transitive Property of Equality</strong></td>
<td>If $a = b$ and $b = c$, then $a = c$</td>
<td>If $2 + 98 = 90 + 10$ and $90 + 10 = 52 + 48$ then $2 + 98 = 52 + 48$</td>
</tr>
<tr>
<td><strong>Addition Property of Equality</strong></td>
<td>If $a + b$, then $a + c = b + c$</td>
<td>If $\frac{1}{2} = \frac{2}{4}$, then $\frac{1}{2} + \frac{3}{5} = \frac{2}{4} + \frac{3}{5}$</td>
</tr>
<tr>
<td><strong>Subtraction Property of Equality</strong></td>
<td>If $a = b$, then $a - c = b - c$</td>
<td>If $\frac{1}{2} = \frac{2}{4}$, then $\frac{1}{2} - \frac{1}{5} = \frac{2}{4} - \frac{1}{5}$</td>
</tr>
<tr>
<td><strong>Multiplication Property of Equality</strong></td>
<td>If $a = b$, then $a \times c = b \times c$</td>
<td>If $\frac{1}{2} = \frac{2}{4}$, then $\frac{1}{2} \times \frac{1}{5} = \frac{2}{4} \times \frac{1}{5}$</td>
</tr>
<tr>
<td><strong>Division Property of Equality</strong></td>
<td>If $a = b$ and $c \neq 0$, then $a \div c = b \div c$</td>
<td>If $\frac{1}{2} = \frac{2}{4}$, then $\frac{1}{2} \div \frac{1}{5} = \frac{2}{4} \div \frac{1}{5}$</td>
</tr>
<tr>
<td><strong>Substitution Property of Equality</strong></td>
<td>If $a = b$, then $b$ may be substituted for $a$ in any expression containing $a$.</td>
<td>If $20 = 10 + 10$, then $90 + 20 = 90 + (10 + 10)$</td>
</tr>
</tbody>
</table>

(Variables $a$, $b$, and $c$ can represent any number in the rational, real, or complex number systems.)

### TABLE 5: Properties of Inequality

Exactly one of the following is true: $a < b$, $a = b$, $a > b$.

If $a > b$ and $b > c$ then $a > c$.

If $a > b$, then $b < a$.

If $a > b$, then $-a < -b$.

If $a > b$, then $a \pm c > b \pm c$.

If $a > b$ and $c > 0$, then $a \times c > b \times c$.

If $a > b$ and $c < 0$, then $a \times c < b \times c$.

If $a > b$ and $c > 0$, then $a \div c > b \div c$.

If $a > b$ and $c < 0$, then $a \div c < b \div c$.

Here $a$, $b$, and $c$ stand for arbitrary numbers in the rational or real number systems.
To: Commissioner Randy Watson  
From: Susan Helbert  
Subject: Information on Professional Education Standards in teacher preparation programs  
Board Goals: Provide an effective educator in every classroom

Educator Preparation Program Standards establish requirements for universities to build and evaluate their programs to ensure that educator candidates have the opportunity to learn the skills needed for today’s learning context. Two groups of standards exist: professional education standards and content specific program standards.

The professional education standards establish core teaching knowledge and skills that cut across all content subject areas. The standards outline what teachers should know and be able to do to ensure every PK-12 student reaches the goal of being ready to enter college or the workforce in today’s world.

As requested by the Board, staff will conduct a review of the current professional education standards.
Kansas Educator Preparation Program Standards for Professional Education

**Learner(s) is defined as children including those with disabilities or exceptionalities, who are gifted, and students who represent diversity based on ethnicity, race, socioeconomic status, gender, language (single and/or multi), religion, and geographic origin.**

***Learning environments are defined as the diverse physical locations, face-to-face and virtual environments, contexts, and cultures in which students learn.***

<table>
<thead>
<tr>
<th>Standard 1: Learner Development. The teacher understands how learners grow and develop, recognizing that patterns of learning and development vary individually within and across the cognitive, linguistic, social, emotional, and physical areas, and designs and implements developmentally appropriate, relevant, and rigorous learning experiences.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Function 1:</strong> The teacher understands how learners grow and develop.</td>
</tr>
<tr>
<td><strong>Content Knowledge (CK):</strong></td>
</tr>
<tr>
<td>1.1.1CK The teacher understands how learning occurs-- how learners construct knowledge, acquire skills, and develop disciplined thinking processes.</td>
</tr>
<tr>
<td>1.1.2CK The teacher understands the role of language and culture in learning.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Function 2:</strong> The teacher recognizes that patterns of learning and development vary individually within and across the cognitive, linguistic, social, emotional, and physical areas.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content Knowledge (CK):</strong></td>
</tr>
<tr>
<td>1.2.1CK The teacher understands that each learner’s cognitive, linguistic, social, emotional, and physical development influences learning.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Function 3:</strong> The teacher designs and implements developmentally appropriate, relevant, and rigorous learning experiences.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content Knowledge (CK):</strong></td>
</tr>
<tr>
<td>1.3.1CK The teacher knows how to use instructional strategies that promote student learning.</td>
</tr>
<tr>
<td>1.3.2CK The teacher knows how to make instructional decisions that build on learners’ strengths and needs.</td>
</tr>
</tbody>
</table>
### Standard 2: Learning Differences. The teacher uses understanding of differences in individuals, languages, cultures, and communities to ensure inclusive learning environments that enable each learner to meet rigorous standards.

#### Function 1: The teacher uses an understanding of differences in individuals, languages, cultures, and communities to ensure inclusive learning environments.

<table>
<thead>
<tr>
<th>Content Knowledge (CK):</th>
<th>Professional Skills (PS):</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1.1CK The teacher understands students with exceptional needs, including those associated with disabilities and giftedness, and knows how to use strategies and resources to address these needs.</td>
<td>2.1.4PS The teacher uses strategies and accesses resources, including specialized assistance and services to meet particular learning differences or needs.</td>
</tr>
<tr>
<td>2.1.2CK The teacher knows about second language acquisition processes and knows how to incorporate instructional strategies and resources to support language acquisition.</td>
<td>2.1.5PS The teacher incorporates tools of language development into planning and instruction, including strategies for making content accessible to English language learners and for evaluating and supporting their development of English proficiency.</td>
</tr>
<tr>
<td>2.1.3CK The teacher understands that learners bring assets for learning based on their individual experiences, abilities, talents, prior learning, and peer and social group interactions, as well as language, culture, family, and community values.</td>
<td>2.1.6PS The teacher brings multiple perspectives to the discussion of content, including attention to learner’s personal, family, and community experiences and cultural norms.</td>
</tr>
</tbody>
</table>

#### Function 2: The teacher uses an understanding of differences in individuals, languages, cultures, and communities to enable each learner to meet rigorous standards.

<table>
<thead>
<tr>
<th>Content Knowledge (CK):</th>
<th>Professional Skills (PS):</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2.1CK The teacher understands and identifies differences in appropriate approaches to learning and performance and knows how to design instruction that uses each learner’s strengths to promote growth.</td>
<td>2.2.3PS The teacher designs, adapts, and delivers instruction to address each student’s diverse learning strengths and needs and creates opportunities for students to demonstrate their learning in multiple ways.</td>
</tr>
<tr>
<td>2.2.2CK The teacher knows how to access information about the values of diverse cultures and communities and how to incorporate each learner’s experiences, languages, cultures, and community into instruction.</td>
<td>2.2.4PS The teacher makes appropriate and timely provisions (e.g., pacing for individual rates of growth, task demands, communication, assessment, and response modes) for individual students with particular learning differences or needs.</td>
</tr>
<tr>
<td>2.2.5PS The teacher designs instruction to activate prior knowledge and experiences, allowing learners to accelerate as they demonstrate their understandings.</td>
<td></td>
</tr>
</tbody>
</table>
of technology, and encourages positive social interaction, active engagement in learning, and self-motivation.

**Function 1:** The teacher works with others to create learning environments that support individual and collaborative learning.

<table>
<thead>
<tr>
<th>Content Knowledge (CK):</th>
<th>Professional Skills (PS):</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1.1CK The teacher knows how to help learners work productively and cooperatively with each other to achieve learning goals.</td>
<td>3.1.3PS The teacher manages the learning environment, to actively engage all learners appropriately by organizing, allocating, and coordinating the resources of time, space and learner’s attention.</td>
</tr>
<tr>
<td>3.1.2CK The teacher knows how to collaborate with learners to establish and monitor elements of a safe and productive learning environment, including norms, expectations, routines and organizational structures.</td>
<td>3.1.4PS The teacher uses a variety of methods to engage learners by evaluating the learning environment and by observing and collaborating with learners to make appropriate adjustments.</td>
</tr>
</tbody>
</table>

**Function 2:** The teacher works with others to create environments that include teacher and student use of technology.

<table>
<thead>
<tr>
<th>Content Knowledge (CK):</th>
<th>Professional Skills (PS):</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2.1CK The teacher understands digital citizenship, knows safe and appropriate technology tools for teachers and students, and their effective use in all learning environments.</td>
<td>3.2.2PS The teacher works collaboratively with technology leaders to promote responsible learner use of interactive technologies to extend the possibilities for learning locally and globally.</td>
</tr>
<tr>
<td>3.2.3PS The teacher intentionally builds learner capacity to collaborate through applying effective academic activities and discussions in virtual and classroom environments.</td>
<td></td>
</tr>
</tbody>
</table>

**Function 3:** The teacher works with others to encourage positive social interaction, active engagement in learning, and self-motivation.

<table>
<thead>
<tr>
<th>Content Knowledge (CK):</th>
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</tr>
</thead>
<tbody>
<tr>
<td>3.3.1CK The teacher understands the relationship between motivation and engagement and knows how to design learning experiences using strategies that build learner self-governance, self-direction, and ownership of learning.</td>
<td>3.3.2PS The teacher collaborates with learners, families and colleagues to build a safe, positive learning climate of openness, mutual respect, support and inquiry.</td>
</tr>
<tr>
<td>3.3.3PS The teacher develops learning experiences that engage learners in collaboration, self-governance, self-directed learning and that extend learner interaction with ideas and people locally and globally.</td>
<td>3.3.4PS The teacher collaborates with learners and colleagues to develop shared values and expectations for respectful interactions, rigorous academic discussions, and individual and group responsibility for quality work.</td>
</tr>
<tr>
<td>3.3.5PS The teacher communicates verbally and nonverbally in ways that demonstrate respect for and responsiveness to the diverse backgrounds and differing perspectives learners bring to the learning environment.</td>
<td></td>
</tr>
</tbody>
</table>

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**Standard 4: Content Knowledge.** The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches and creates content-specific learning and literacy experiences that make the discipline accessible and relevant to assure mastery of the content.

**Function 1:** The teacher understands the central concepts, tools of inquiry, and structures of the discipline(s) he or she teaches.

<table>
<thead>
<tr>
<th>Content Knowledge (CK):</th>
<th>Professional Skills (PS):</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.1.1CK The teacher understands major concepts, assumptions, debates, the process of inquiry, and ways of knowing that are central to the discipline(s) s/he teaches.</td>
<td>4.1.4PS The teacher effectively uses multiple representations and explanations that capture key ideas in the discipline, guide learners through learning progressions, and promote each learner’s achievement of content standards.</td>
</tr>
<tr>
<td>4.1.2CK The teacher understands common misconceptions that occur in learning the discipline and how to guide learners to accurate conceptual understanding.</td>
<td>4.1.5PS The teacher evaluates and modifies instructional resources and curriculum materials for their comprehensiveness, accuracy for representing particular concepts in the discipline and appropriateness for his/her learners.</td>
</tr>
<tr>
<td>4.1.3CK The teacher has a deep knowledge of Kansas College and Career Ready Standards and their learning progressions for the discipline(s) s/he teaches.</td>
<td>4.1.6PS The teacher uses supplementary resources and technologies effectively to ensure accessibility, rigor, and relevance for all learners.</td>
</tr>
</tbody>
</table>

**Function 2:** The teacher creates learning experiences that make the discipline accessible and relevant for learners to assure mastery of the content and provides opportunities for literacy experiences across content areas.

<table>
<thead>
<tr>
<th>Content Knowledge (CK):</th>
<th>Professional Skills (PS):</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.2.1CK The teacher knows and uses the academic language of the discipline and knows how to make it accessible, relevant, and rigorous.</td>
<td>4.2.3PS The teacher engages students in learning experiences in the discipline(s) that encourage learners to understand, question, and analyze ideas from diverse perspectives so that they master the content.</td>
</tr>
<tr>
<td>4.2.2CK The teacher knows how to integrate culturally relevant content to build on learners’ background knowledge.</td>
<td>4.2.4PS The teacher engages learners in applying methods of inquiry and standards of evidence used in the discipline.</td>
</tr>
<tr>
<td>4.2.5PS The teacher stimulates learner reflection on prior content knowledge, links new concepts to familiar concepts, and makes connections to learners’ experiences.</td>
<td>4.2.6PS The teacher recognizes learner misconceptions in a discipline that interfere with learning and creates experiences to build accurate conceptual understanding.</td>
</tr>
<tr>
<td>4.2.7PS The teacher creates opportunities for students to learn, practice, and master academic language in their content.</td>
<td>4.2.8PS The teacher accesses school and/or district based resources to evaluate the learner’s content knowledge in their primary language.</td>
</tr>
</tbody>
</table>
**Standard 5: Application of Content.** The teacher understands how to engage learners through interdisciplinary lessons that utilize concept based teaching and authentic learning experiences to engage students in effective communication and collaboration, and in critical and creative thinking.

**Function 1:** The teacher engages learners through the creation of interdisciplinary lessons and facilitates the examination of issues from multiple perspectives through varied communication modes.

<table>
<thead>
<tr>
<th>Content Knowledge (CK):</th>
<th>Professional Skills (PS):</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.1.1CK The teacher understands how cross-curricular themes interlace and provide an in depth learning experience.</td>
<td>5.1.3PS Using content specific pedagogy, the teacher creates interdisciplinary lessons connecting content themes and literacy.</td>
</tr>
<tr>
<td>5.1.2CK The teacher understands varied communication methods are used as vehicles for gaining and expressing learning, and for gaining an understanding of and expressing multiple perspectives.</td>
<td>5.1.4PS The teacher develops learners’ communication skills by creating interdisciplinary learning opportunities requiring the employment of varied forms of communication tailored to given audiences and purposes.</td>
</tr>
<tr>
<td>5.1.5PS The teacher facilitates learning opportunities that require examination of issues from multiple perspectives, expanding understanding of local and global issues.</td>
<td></td>
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</table>

**Function 2:** The teacher facilitates learning opportunities involving critical and creative thinking.

<table>
<thead>
<tr>
<th>Content Knowledge (CK):</th>
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</thead>
<tbody>
<tr>
<td>5.2.1CK The teacher understands thinking processes which lead to creative and critical analysis.</td>
<td>5.2.3PS The teacher facilitates innovative learning experiences that require creative and critical analysis.</td>
</tr>
<tr>
<td>5.2.2CK The teacher understands the role of high level questioning to promote independent thinking.</td>
<td>5.2.4PS The teacher engages learners through experiences requiring analysis of complex issues resulting in inventive solutions through original thinking.</td>
</tr>
<tr>
<td>5.2.5PS The teacher engages learners in questioning and challenging assumptions and processes to foster innovative thinking and problem solving.</td>
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</tbody>
</table>

**Function 3:** Through concept-based teaching, the teacher incorporates learning opportunities that involve solving authentic, real world problems independently and collaboratively.

<table>
<thead>
<tr>
<th>Content Knowledge (CK):</th>
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</thead>
<tbody>
<tr>
<td>5.3.1CK The teacher understands the concepts that govern his/her content area.</td>
<td>5.3.4PS The teacher creates concept-based lessons, which facilitate conceptual and philosophical understandings.</td>
</tr>
<tr>
<td>5.3.2CK The teacher understands how concept based teaching leads to conceptual and philosophical understandings.</td>
<td>5.3.5PS The teacher facilitates the application of conceptual and philosophical understandings to the resolution of local and global issues.</td>
</tr>
</tbody>
</table>
5.3.3CK The teacher understands the role information literacy skills play in understanding issues and solving problems independently and collaboratively.

5.3.6PS Through the use of varied technologies and resources, the teacher facilitates the acquisition and application of that knowledge to solve real world problems.

Standard 6: Assessment. The teacher understands how to use multiple measures to monitor and assess individual student learning, engage learners in self-assessment, and use data to make decisions.

**Function 1:** The teacher understands how to use multiple measures to monitor and assess individual student learning.

<table>
<thead>
<tr>
<th>Content Knowledge (CK)</th>
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</tr>
</thead>
<tbody>
<tr>
<td>6.1.1CK The teacher understands the difference between formative and summative assessment.</td>
<td>6.1.4PS The teacher designs assessment plans with a balance between formative and summative assessments.</td>
</tr>
<tr>
<td>6.1.2CK The teacher understands the multiple methods of assessment and how to select assessments based that are both reliable and valid based on the specific learning goals and learner needs.</td>
<td>6.1.5PS The teacher designs assessments aligned with the learning goals, utilizing multiple measures that maintain validity and reliability.</td>
</tr>
<tr>
<td>6.1.3CK The teacher understands the role of feedback in learner achievement and can supply feedback in a variety of communication modes.</td>
<td>6.1.6PS The teacher differentiates assessments and assessment environments based on learner needs.</td>
</tr>
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</table>

| Function 2: The teacher understands how to engage learners in self-assessment. |

<table>
<thead>
<tr>
<th>Content Knowledge (CK)</th>
<th>Professional Skills (PS)</th>
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</thead>
<tbody>
<tr>
<td>6.2.1CK The teacher knows when to engage learners in analyzing their own assessment results.</td>
<td>6.2.4PS The teacher engages learners in analyzing their own assessment data.</td>
</tr>
<tr>
<td>6.2.2CK The teacher knows how and when to engage learners in setting goals for future achievement.</td>
<td>6.2.5PS The teacher guides learners through a process of analyzing their own thinking and learning, resulting in goal setting using data.</td>
</tr>
<tr>
<td>6.2.3CK The teacher knows how to prepare learners for assessments.</td>
<td>6.2.6PS The teacher engages learners in the assessment process through appropriate feedback utilizing technology and other communication modes.</td>
</tr>
</tbody>
</table>

**Function 3:** The teacher understands how to make informed decisions.

<table>
<thead>
<tr>
<th>Content Knowledge (CK)</th>
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<tbody>
<tr>
<td>6.3.1CK The teacher knows how to analyze and report assessment data to understand patterns and gaps in learning based on given learning goals.</td>
<td>6.3.4PS The teacher works independently and collaboratively to examine test and other performance data to understand patterns and gaps in learning based on given learning goals.</td>
</tr>
<tr>
<td>6.3.2CK The teacher knows how to use data to guide planning and instruction.</td>
<td>6.3.5PS The teacher works independently and collaboratively to examine test and other performance data to understand each learner’s differentiated needs and to guide planning and instruction accordingly.</td>
</tr>
</tbody>
</table>
6.3.3CK The teacher knows how to provide relevant feedback to all learners.

6.3.6PS The teacher communicates feedback from assessments to assist students in making relevant decision.

**Standard 7: Planning for Instruction.** The teacher plans instruction that supports every student in meeting rigorous learning goals by drawing upon knowledge of content areas, technology, curriculum, cross-disciplinary skills, and pedagogy, as well as knowledge of learners and the community context.

**Function 1:** The teacher plans instruction that supports every student in meeting rigorous learning goals.

<table>
<thead>
<tr>
<th>Content Knowledge (CK):</th>
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</tr>
</thead>
<tbody>
<tr>
<td>7.1.1CK The teacher knows a range of evidence-based instructional strategies, resources, and technological tools and how to use them effectively to plan instruction that meets diverse learning needs.</td>
<td>7.1.3PS The teacher develops and evaluates plans in relation to short- and long-range goals.</td>
</tr>
<tr>
<td>7.1.2CK The teacher knows when and how to adjust plans based on assessment information and learner responses.</td>
<td>7.1.4PS The teacher systematically adjusts plans to enhance each student’s learning.</td>
</tr>
</tbody>
</table>

**Function 2:** The teacher plans instruction by drawing upon knowledge of content areas, technology, curriculum, cross-disciplinary skills, and pedagogy.

<table>
<thead>
<tr>
<th>Content Knowledge (CK):</th>
<th>Professional Skills (PS):</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.2.1CK The teacher understands content and content standards and how these are organized in the curriculum.</td>
<td>7.2.4PS The teacher individually and collaboratively selects and creates learning experiences that are appropriate for curriculum goals and content standards, and are relevant to learners.</td>
</tr>
<tr>
<td>7.2.2CK The teacher understands how integrating cross-disciplinary skills in instruction engages learners in applying content knowledge in relevant ways.</td>
<td>7.2.5PS The teacher plans collaboratively with professionals who have specialized expertise (e.g., special educators, related service providers, language learning specialists, instructional technology coordinators, librarians, media specialists) to design and jointly deliver, as appropriate, learning experiences to meet unique learning needs.</td>
</tr>
<tr>
<td>7.2.3CK The teacher knows when and how to access multiple types of resources and collaborate with others to support student learning (e.g., special educators, related service providers, language learner specialists, instructional technology coordinators, librarians, media specialists, community organizations).</td>
<td></td>
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</table>

**Function 3:** The teacher plans instruction based on knowledge of learners and the community context.

<table>
<thead>
<tr>
<th>Content Knowledge (CK):</th>
<th>Professional Skills (PS):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard 8: Instructional Strategies. The teacher understands and uses a variety of appropriate instructional strategies and resources to encourage learners to develop deep understanding of content areas and their connections, and to build skills to apply knowledge in relevant ways.</td>
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</tr>
<tr>
<td><strong>Function 1:</strong> The teacher understands and uses a variety of instructional strategies and resources to encourage learners to develop deep understanding of content areas and their connections.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Content Knowledge (CK):</th>
<th>Professional Skills (PS):</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.1.1CK The teacher understands the cognitive processes associated with various kinds of learning (e.g., critical and creative thinking, problem framing and problem solving, invention, memorization and recall) and how these processes can be stimulated.</td>
<td>8.1.5PS The teacher uses appropriate strategies and resources to differentiate instruction to meet the needs of individuals and groups of learners.</td>
</tr>
<tr>
<td>8.1.2CK The teacher knows how to apply a range of developmentally, culturally, and linguistically appropriate instructional strategies to achieve learning goals.</td>
<td>8.1.6PS The teacher continuously monitors student learning, engages learners in assessing their progress and setting goals, and adjusts instruction in response to student learning needs.</td>
</tr>
<tr>
<td>8.1.3CK The teacher knows when and how to use appropriate strategies to differentiate instruction and engage all learners in complex thinking and meaningful tasks.</td>
<td>8.1.7PS The teacher collaborates with learners to design and implement relevant and rigorous learning experiences, identify their strengths, and access family and community resources to develop their areas of interest.</td>
</tr>
<tr>
<td>8.1.4CK The teacher understands how content and skill development can be supported by media and technology and knows how to evaluate these resources for rigor, quality, accuracy, and effectiveness.</td>
<td>8.1.8PS The teacher varies his/her role in the instructional process (e.g., instructor, facilitator, coach, co-teacher, audience) in relation to the content and purposes of instruction and the needs of learners.</td>
</tr>
<tr>
<td>8.1.9PS The teacher engages all learners in developing higher order questioning skills and the metacognitive processes.</td>
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</tbody>
</table>
### Function 2: The teacher understands and uses a variety of instructional strategies and resources to encourage learners to build skills to apply knowledge in relevant ways.

<table>
<thead>
<tr>
<th>Content Knowledge (CK):</th>
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</tr>
</thead>
<tbody>
<tr>
<td>8.2.1CK The teacher understands how multiple forms of communication (oral, written, nonverbal, digital, visual) convey ideas, foster self-expression, and build relationships.</td>
<td>8.2.3PS The teacher provides multiple models and representations of concepts and skills with opportunities for learners to demonstrate their knowledge through a variety of products and performances.</td>
</tr>
<tr>
<td>8.2.2CK The teacher knows how to use a wide variety of appropriate resources, including human resources, print and visual materials, and technology, to engage students in skill building and learning.</td>
<td>8.2.4PS The teacher engages learners in using a range of learning skills and technology tools to access, interpret, evaluate, and apply information.</td>
</tr>
<tr>
<td>8.2.5PS The teacher uses a variety of instructional strategies to support and expand learners’ communication through speaking, listening, reading, writing, visual representation, and viewing.</td>
<td>8.2.6PS The teacher uses a variety of resources, including human resources, print and visual materials, and technology to engage students in learning.</td>
</tr>
</tbody>
</table>

### Standard 9: Professional Learning and Ethical Practice. The teacher engages in ongoing professional learning and uses evidence to continually evaluate his/her practice, particularly the effects of his/her choices and actions on others (learners, families, other professionals, and the community), and adapts practice to meet the needs of each learner.

<table>
<thead>
<tr>
<th>Function 1: The teacher engages in ongoing professional learning.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Content Knowledge (CK):</td>
</tr>
<tr>
<td>9.1.1CK The teacher understands the laws related to learner rights and teacher responsibilities (educational equity, appropriate education for learners with disabilities, confidentiality, privacy, appropriate treatment of learners, and reporting situations related to possible child abuse).</td>
</tr>
<tr>
<td>9.1.2CK</td>
</tr>
<tr>
<td>9.1.3CK</td>
</tr>
</tbody>
</table>

**Function 2:** The teacher uses evidence to continually evaluate his/her practice, particularly the effects of his/her choices and actions on others (learners, families, other professionals, and the community), and adapts practice to meet the needs of each learner.

<table>
<thead>
<tr>
<th>Content Knowledge (CK):</th>
<th>Professional Skills (PS):</th>
</tr>
</thead>
<tbody>
<tr>
<td>9.2.1CK The teacher understands the role and goals of reflection in professional growth.</td>
<td>9.2.3PS The teacher effectively uses student data, self-assessment, teaching evaluations / observations, educator colleagues, school and district goals, and problem solving strategies to analyze and reflect on his/her practice related to all stakeholders, and to plan for professional growth.</td>
</tr>
<tr>
<td>9.2.2CK The teacher understands how the elements of the evaluation protocol corresponds with professional learning experiences or opportunities.</td>
<td></td>
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</tbody>
</table>

**Standard 10: Leadership and Collaboration.** The teacher seeks appropriate leadership roles and opportunities to take responsibility for student learning, to collaborate with learners, families, colleagues, other school professionals, support staff, and community members to ensure learner growth, and to advance the profession.

**Function 1:** The teacher seeks appropriate leadership roles and opportunities to take responsibility for student learning.

<table>
<thead>
<tr>
<th>Content Knowledge (CK):</th>
<th>Professional Skills (PS):</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.1.1CK The teacher understands schools as organizations within a historical, cultural, political, and social context and knows how to work with others across the system to support learners.</td>
<td>10.1.2PS The teacher is able to incorporate multiple measures of student learning with a clear focus on improving teacher practice.</td>
</tr>
<tr>
<td>10.2.3PS The teacher is an active participant in professional learning communities, recognizing that all teachers share responsibility for student success.</td>
<td></td>
</tr>
</tbody>
</table>

**Function 2:** The teacher seeks appropriate leadership roles and opportunities to collaborate with learners, families, colleagues, other school professionals, and community members to ensure learner growth.

<table>
<thead>
<tr>
<th>Content Knowledge (CK):</th>
<th>Professional Skills (PS):</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.2.1CK The teacher understands the importance of the multiple roles of teachers with regards to the diversity of learners, families, colleagues, other school professionals, and community members and interacts with each appropriately in planning, instructing, collaborating, mentoring, learning, leading, etc.</td>
<td>10.2.3PS The teacher welcomes families; participates in regular two-way, meaningful communication; supports student successes; advocates for every child; shares power with the families and professionals involved with each individual student; and collaborates with appropriate school and community resources (PTA.org, n. d.).</td>
</tr>
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</tr>
<tr>
<td>10.2.2CK The teacher knows how to collaborate with families, colleagues, other school professionals, and community members to contribute to a common culture that supports high expectations for student learning.</td>
<td>10.2.4PS The teacher provides information to families about the instructional programs, each individual student’s progress, and ways that they can be engaged in learning activities (Danielson, 2013).</td>
</tr>
<tr>
<td>10.2.5PS The teacher works with colleagues in a leadership role to examine teacher practice and student data to plan and jointly meet the needs of learners.</td>
<td>10.2.6PS The teacher engages collaboratively in the school-wide effort to build a shared vision and supportive culture, to identify common goals, and monitor and evaluate progress toward those goals.</td>
</tr>
</tbody>
</table>
To: Commissioner Randy Watson  
From: Colleen Riley  
Subject: Kansans Can Highlight: USD 229 Blue Valley community partnership  
Board Goals: Provide a flexible and efficient delivery system to meet our students’ varied and changing needs

Mark Schmidt from USD 229 Blue Valley and a representative from Children’s Mercy Hospital will provide information about the partnership they have developed to support students’ mental health needs. This partnership provides social workers hired by Children’s Mercy to work in the Blue Valley schools. Social workers are often the best equipped staff to connect children and families with community organizations that provide help outside of school. The partnership is helping students access services and support, both in and outside of school, so they can focus on learning in the classroom.

This partnership is key to the Blue Valley district in meeting the social and emotional needs of their students.
To: Kansas State Board of Education

Subject: Monthly Board Reports & Requests for Future Agenda Items

These updates will include:

1. Committee Reports
2. Board Attorney’s Report
3. Individual Board Member Reports and Requests for Future Agenda Items
4. Chairman’s Report
To: Board Members  
From: Peggy Hill  
Subject: Board Member Travel

Travel requests submitted prior to the meeting, and any announced changes, will be considered for approval by the Board.

Upcoming deadlines for reporting salary/payroll information to the Board office are:

<table>
<thead>
<tr>
<th>Pay Period Begins</th>
<th>Pay Period Ends</th>
<th>Deadline to Report</th>
<th>Pay Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/16/2017</td>
<td>7/29/2017</td>
<td>7/27/2017</td>
<td>8/11/2017</td>
</tr>
<tr>
<td>7/30/2017</td>
<td>8/12/2017</td>
<td>8/10/2017</td>
<td>8/25/2017</td>
</tr>
<tr>
<td>8/13/2017</td>
<td>8/26/2017</td>
<td>8/24/2017</td>
<td>9/08/2017</td>
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</table>