

## TUESDAY, MARCH 12, 2019 MEETING AGENDA

- |                        |  |                 |
|------------------------|--|-----------------|
| <b>10:00 a.m.</b>      | 1. Call to Order — Chairman Kathy Busch  |                 |
|                        | 2. Roll Call   |                 |
|                        | 3. Mission Statement, Moment of Silence and Pledge of Allegiance   |                 |
|                        | 4. Approval of Agenda  |                 |
|                        | 5. Approval of February Minutes  | <b>page 5</b>   |
| <b>10:05 a.m.</b>      | 6. Commissioner's Report — Dr. Randy Watson  |                 |
| <b>10:30 a.m.</b>      | 7. Citizens' Open Forum  |                 |
| <b>10:45 a.m. (RI)</b> | 8. Receive Kansas model standards for Computer Science   | <b>page 27</b>  |
| <b>11:20 a.m.</b>      | Break  |                 |
| <b>11:30 a.m. (DI)</b> | 9. Discuss Kansans Can state-level outcome: social-emotional growth  | <b>page 119</b> |
| <b>Noon</b>            | Lunch  |                 |
| <b>1:30 p.m. (AI)</b>  | 10. Act to submit proposed amended Emergency Safety Intervention regulations to Department of Administration and Office of Attorney General for review | <b>page 121</b> |
| <b>1:50 p.m. (AI)</b>  | 11. Act on recommendations to change requirements for a Kansas paraprofessional to become highly qualified   | <b>page 127</b> |
| <b>2:00 p.m. (IO)</b>  | 12. Presentation on human trafficking education and outreach in Kansas   | <b>page 129</b> |
| <b>3:00 p.m.</b>       | Break  |                 |
| <b>3:15 p.m. (IO)</b>  | 13. Recognition of 2018 Milken Educator Award winner   | <b>page 131</b> |

**Location:** Landon State Office Building at 900 SW Jackson St., Board Room Suite 102, Topeka, KS 66612

**References:** (AI) Action Item, (DI) Discussion Item, (RI) Receive Item for possible action at a later date, (IO) Information Only

**Services:** 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 State Board meeting.

**Website:** Electronic versions of the agenda and meeting materials are available at [www.ksde.org/Board](http://www.ksde.org/Board). Information on live media streaming the day of the meeting is also posted there.

**Next Meeting:** April 16, 2019 in Topeka; April 17, 2019 in Kansas City and Olathe

- 3:35 p.m. (IO)** 14. Update on federal Strengthening Career and Technical Education Act (Perkins V) transition plan with Kansas Board of Regents **page 133**
- 3:55 p.m. (AI)** 15. Act on new appointment to the Professional Practices Commission **page 135**
- 4:05 p.m. (AI)** 16. Consent Agenda
  - a. Receive monthly personnel report **page 145**
  - b. Act on personnel appointments to unclassified positions **page 147**
  - c. Act on recommendations for licensure waivers **page 149**
  - d. Act on recommendations of the Licensure Review Committee **page 153**
  - e. Act on recommendations of the Evaluation Review Committee for higher education program reviews **page 155**
  - f. Act on request from USD 286 Chautauqua County to hold a bond elections **page 165**
  - g. Act on request from USD 286 Chautauqua County for capital improvement (bond and interest) state aid **page 167**
  - h. Act on request to amend a contract award for the Southwest Plains Regional Service Center **page 169**
  - i. Act on no-cost extension for use of Enhanced Learning Maps as an organizing structure for formative assessment **page 171**
  - j. Act on request to allocate Federal Title II funds for the purpose of providing project-based learning professional development to Kansans Can redesign schools **page 173**
  - k. Act on request to contract with eScholar LLC to continue to provide maintenance and support of the Uniq-ID for Staff System **page 175**
  - l. Act on request to contract with eScholar LLC to continue to provide renewal of software license, maintenance and support for Uniq-ID PK-12 for students **page 177**
- 4:10 p.m. (IO)** 17. Chairman’s Report **page 179**
  - a. Committee Reports
  - b. Board Attorney’s Report
  - c. Requests for Future Agenda Items
- 4:40 p.m. (IO)** 18. Legislative Matters **page 181**
- 5:10 p.m. (AI)** 19. Act on Board Travel **page 183**
- 5:20 p.m.** **RECESS**

**WEDNESDAY, MARCH 13, 2019**  
**RETREAT AGENDA**

**Location:** Kansas State High School Activities Association, 601 SW Commerce Place, Topeka

**Work session is a public meeting, but will not be live streamed**

**9:00 a.m.**

1. Call to Order
2. Roll Call
3. Approval of Agenda

**9:05 a.m.**

4. Retreat topic: Kansans Can vision progress to date and direction for 2019 **page 187**

**Noon**

**ADJOURN**



# KANSAS STATE BOARD OF EDUCATION

## 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



**KANSAS STATE BOARD OF EDUCATION**

**Meeting Minutes  
February 12, 2019**

**CALL TO ORDER**

Chairman Kathy Busch called the monthly meeting of the Kansas State Board of Education to order at 10 a.m. Tuesday, Feb. 12, 2019, in the Board Room at the Landon State Office Building, 900 S.W. Jackson St., Topeka, Kansas. She welcomed all in attendance and asked guests with the USD 383/KSU Teacher Leadership Academy to introduce themselves. Mrs. Busch also thanked the Kansas Association of Independent and Religious Schools for hosting the morning panel discussion and breakfast for Board members.

**2/12/2019  
A.M. Session  
(00:00:03)**

**ROLL CALL**

All Board members were present:

Kathy Busch	Ann Mah
Jean Clifford	Jim McNiece
Michelle Dombrosky	Jim Porter
Deena Horst	Steve Roberts
Ben Jones	Janet Waugh

**STATE BOARD MISSION STATEMENT, MOMENT OF SILENCE AND PLEDGE OF ALLEGIANCE**

Chairman Busch read both the Board’s Mission Statement and Kansans Can Vision Statement. She then asked for a moment of silence after which the Pledge of Allegiance was recited.

**APPROVAL OF AMENDED AGENDA**

Mr. Roberts moved to amend the day’s agenda by adding additional time to Item 12 for his remarks. Mrs. Dombrosky seconded. Motion carried 10-0.

**MOTION  
(00:03:29)**

**APPROVAL OF THE JANUARY MEETING MINUTES**

Mr. Jones moved to approve the minutes of the January Board meeting. Dr. Horst seconded. Motion carried 10-0.

**MOTION  
(00:04:12)**

**COMMISSIONER’S REPORT**

In his monthly report, Commissioner Randy Watson commented on the following:

- Application period for Apollo. This is the next opportunity for school districts to participate in the Kansans Can School Redesign Project. The Apollo application window closes April 5 with anticipated launch in the 2020-21 school year.
- February as Black History Month. He commented on historic points of interest and cited work in Kansas around developing culturally relevant pedagogy.
- School redesign boot camp hosted at Stockton USD 271, one of the Mercury 7 redesign districts. He and Dr. Horst attended.
- A recent meeting with FBLA student officers. They talked about skill development gained through the organization that prepares them for real world work.

**(00:04:30)**

**CITIZENS’ OPEN FORUM**

Chairman Busch declared the Citizens’ Forum open at 10:25 a.m. Speakers and their topics were: Walt Chappell, Wichita — State assessment scores, definitions of performance levels; Lisa Huesers, Overland Park — recommendation from School Mental Health Advisory Council regarding Communities That Care survey and parent authority; Dr. Serena Patterson, Kansas City, Missouri — overview of

**(00:24:49)**

ASVAB career exploration program. Chairman Busch declared the Citizens' Forum closed at 10:45 a.m.

(00:43:07) **UPDATES FROM KANSAS STATE SCHOOL FOR THE BLIND, KANSAS SCHOOL FOR THE DEAF**  
Kansas State School for the Blind Superintendent Jon Harding included these topics in his regular update to the Board: increased offerings of online classes (i.e. computer science and Braille music), participation in Low Vision Clinics; direct services to students, and a new sensory room which was a gift from the KC Blind All-Stars. Next, Kansas School for the Deaf Superintendent Luanne Barron reported on increased service requests for children birth to age 3, blended learning opportunities for students, a new family and community engagement liaison position, and promotion of *Family Signs Kansas* to learn sign language. Board members commented on positive outreach efforts in rural parts of the state and work to engage families.

**BREAK** Board members took a 10-minute break.

**MOTION**  
(01:28:25) **ACTION ON RECOMMENDATIONS OF THE SCHOOL MENTAL HEALTH ADVISORY COUNCIL**  
Education Program Consultant Myron Melton reviewed the School Mental Health Advisory Council's recommendations presented to the Board in January, noting slight modifications to reflect comments from Board members at that time. The areas are suicide awareness and prevention training, and mandated reporter training. Mr. Porter moved to approve recommendations from the School Mental Health Advisory Council and instruct Kansas State Department of Education to take necessary action to put each recommendation into place. Mrs. Waugh seconded. During discussion, there were questions about the Communities That Care survey. Motion carried 10-0. Mrs. Busch acknowledged the past work of the Advisory Council and its continued tasks.

(01:35:50) **UPDATE ON SCHOOL BREAKFAST LEADERSHIP GRANT**  
Members of the Kansas Breakfast Leadership team shared progress on the goal of a five percent statewide increase in school breakfast participation. Kansas was awarded a School Breakfast Leadership Grant from Share Our Strength No Kid Hungry to help bridge the gap between the number of kids who are eligible for free or reduced price meals at school and those who are actually accessing these meals. Several members of the leadership team shared how they were implementing innovative meal delivery methods such as mobile carts, grab-and-go breakfast items and extended serving times. The Midwest Dairy Council is a partner and provided supplemental funding for the initiatives. There were questions about calculation of participant numbers and use of grant funds.

**LUNCH** Chairman Busch recessed the meeting for lunch at 12:27 p.m.

**P.M. SESSION**  
(02:14:55) **RECOGNITION OF 2019 KANSAS TEACHER OF THE YEAR TEAM**  
At 1:30 p.m., Chairman Busch reconvened the meeting and welcomed the Kansas Teacher of the Year team. Each member spoke about a particular topic: Nicole Corn, kindergarten teacher at Sunset Hill Elementary, Lawrence USD 497 (global interaction/awareness for students); Megan Clark, art teacher at Clear Creek Elementary, DeSoto USD 232 (connecting with arts education); Signe Cook, fifth-grade mathematics and science teacher at Park Elementary, Great Bend USD 428 (teaching social-emotional skills and awareness); T.J. Warsnak, social studies teacher at Halstead High School, Halstead-Bentley USD 440 (school activities support academic rigor); Sharon Kuchinski, social studies teacher at Leavenworth Senior High School, Leavenworth USD 453 (promotion and support of future educators); Jennifer Brown, first-grade teacher at Sheridan Elementary, Geary County USD 475 (innovation of teacher education); Lan Huynh, third-grade teacher at Christa McAuliffe Academy, Wichita USD 259 (opportunities to promote teaching profession) and Kansas Teacher of the Year Whitney Morgan, English language arts and English for Speakers of Other Languages teacher at Wyandotte High School, Kansas City KS USD 500 (equal opportunity for success, need for systematic reform). There was a short break for photos with the honorees.

**RECEIVE RECOMMENDATIONS TO CHANGE THE REQUIREMENTS FOR A KANSAS PARAPROFESSIONAL TO BECOME HIGHLY QUALIFIED**

The Elementary and Secondary Education Act (ESEA) requires Kansas to have in place requirements for paraprofessionals to be highly qualified in order to be paid with federal Title I funds. Assistant Director Tate Toedman reviewed the requirements in place. Of the three state-approved tests that can be utilized, WorkKeys needs to be updated based on changes made by ACT. He explained the recommendations to update the requirements on this one test, most notably to replace business writing with graphic literacy. State Board action is anticipated in March. Commissioner Watson pointed out that this is a small change to one of the three tests allowable for paraprofessionals, and not a brand new requirement.

(03:06:03)

**RECOGNITION OF NATIONAL ESEA DISTINGUISHED SCHOOLS**

The two Kansas Schools named as National Elementary and Secondary Education Act (ESEA) Distinguished Schools, formerly known as the National Title I Distinguished Schools Program, were honored. They are O’Loughlin Elementary in Hays USD 489 and Roesland Elementary in Shawnee Mission USD 512. Principals from each school described successful measures in place that contribute to student achievement. They also talked about what they learned from attending the ESEA national conference. There was a brief break for photos with the honorees.

(03:23:01)

**ACTION ON RECOMMENDATIONS OF THE PROFESSIONAL PRACTICES COMMISSION**

KSDE General Counsel Scott Gordon provided Board members with an overview of the process that occurs when an application for licensure is under review. He briefly outlined steps taken by the Office of General Counsel and Professional Practices Commission prior to providing recommendations to the State Board.

(03:36:18)

Linda Sieck, Chair of the Professional Practices Commission, appeared remotely to introduce three cases for consideration this month. The Board voted separately on each case. Dr. Horst moved to adopt the findings of the PPC and its recommendation to issue the license for Ashley Knier. Mr. Porter seconded. Motion carried 10-0. Mr. Jones moved to adopt the findings of the PPC and its recommendation for the denial of a license for Jessica Atkinson. Mr. Roberts seconded. Motion carried 10-0. Mr. Roberts moved to adopt the findings of the PPC and its recommendation for the denial of a license for Eric Brinkman. Mr. Jones seconded. Motion carried 6-3-1, with Dr. Horst, Mrs. Dombrosky and Mrs. Mah in opposition, and Mr. McNiece abstaining.

**MOTIONS**  
(03:48:10)

(03:51:29)  
(03:56:40)

**RECOGNITION OF NATIONAL PTA SCHOOL OF EXCELLENCE RECIPIENTS FROM KANSAS**

The National PTA School of Excellence recognition program supports and celebrates partnerships between PTAs and schools to enrich the educational experience and overall well-being for all students. Denise Sultz, National PTA Secretary-Treasurer, introduced the honorees from Kansas for the two-year distinction (2018-2020). They are Shawnee Mission North High School and Mill Creek Elementary, both in Shawnee Mission USD 512, and Eisenhower Middle School in Kansas City Kansas USD 500. Members of the Kansas State PTA, honored schools and their local PTAs were in attendance.

(03:59:33)

**PRESENTATION FROM USD 383 AND KANSAS ASSOCIATION OF CONSERVATION AND ENVIRONMENTAL EDUCATION ON FEDERAL GREEN RIBBON SUSTAINABILITY AWARD**

Manhattan-Ogden USD 383 was one of six school districts across the country, and the only one in Kansas, to be designated a 2018 U.S. Department of Education Green Ribbon School District Sustainability awardee. Dr. Lizette Burks, KSDE Science Education Program Consultant, gave opening remarks. Then representatives from Manhattan-Ogden USD 383 and the Kansas Association for Conservation and Environmental Education (KACEE) described practices that center on mainstream environmental education and sustainability, such as school-wide recycling and waste audits. KACEE representatives talked about the partnership between the school and the association.

(04:13:32)

**MOTION**  
(04:31:14)

**ACTION ON CONSENT AGENDA**

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

- received the monthly Personnel Report for January
- confirmed the unclassified personnel appointment of Tiffany Hester as Education Program Consultant on the Special Education and Title Services team, effective Jan. 27, 2019, at an annual salary of \$56,118.40.
- accepted the following recommendations for licensure waivers valid for one school year: *Early Childhood Special Education* -- Jennifer Gibbs, D0345; Ashley Bosworth, Megan Chappell, Stephanie Long, Micaela Espinoza, D0500; Amanda Tucker, Gina Mangiaracino, D0501; Jenni Henson, D0605; Sandra Howe, D0620. *General Science - extension on the number of days under an emergency substitute license* - Allyson Knoll, D0363. *Gifted* - Lisa Mechels, D0383; Llara Baska, D0497; Jacqueline Franklin, D0501. *High Incidence Special Education* - Brittany Hemann, Deborah Kreie, Elizabeth Warrick, Jaxon Autry, Kaci Bell, Kara Delauretis, Linda Steele, Lisa Schultz, Sheila Fowler, Tessa West, Wendy Byrne, D0200; Courtnie Adam, D0202; Shelly Stringer, D0230; Scott Starr, D0253; Robert Miller, Kayla Nott, D0259; Robin Wallace, D0260; Monica Zier, D0305; Jessica Bienhoff, D0336; Chloe Pyle, D0383; Brenda Zahm, D0407; Alyssa Willhite, Katharine Ritter, D0497; April Frederick, Cole Younger, Molly Maher, Reginia O'Dell, Sarah Folse, Siel Snowden, Betty Thomas, Christopher Wheat, Robert Ewing, Kelly Meyer, Marsha Corzan, Patty Ratliff, Benjamin Phillips, Michael Carpenter, Sara Meis, Scott Snavely, Stefanie Boice, Tara Chalfant, D0500; Robert Brown, Stephanie Hamilton, Suzanne Carlgren, D0501; Jacob Neiman, D0620; Caitlyn Hecker, D0725. *High Incidence Special Education – extension on the number of days under an emergency substitute license* - Quinten McDowell, D0609. *Low Incidence Special Education* - Amy Hajdukovich, D0260; Karen Phillips, D0383; Abigail Easter, D0618.
- issued Calendar Year 2019 licenses to the following commercial Kansas driver training schools: Horizons Driving Academy in Salina and Suburban Driving Academy in Kansas City.
- approved, with modifications, the in-service education plans for USD 230 Spring Hill, USD 356 Conway Springs, USD 357 Belle Plaine, USD 360 Caldwell, USD 475 Geary County, USD 382 Pratt, USD 428 Great Bend.
- authorized the following districts to hold elections on the question of issuing bonds in excess of the district's general bond debt limitation: USD 257 Iola, USD 407 Russell.
- authorized the following districts to receive capital improvement (bond and interest) state aid as authorized by law: USD 257 Iola, USD 407 Russell.

*authorized the Commissioner of Education to negotiate and*

- enter into a contract with Jones Huyett Partners in an amount not to exceed \$12,500 for the purpose of creating AmeriCorps recruitment materials for the Kansas Volunteer Commission;
- enter into a contract with the Kansas Department of Agriculture for the purpose of completing on-site health inspections of unlicensed Summer Food Service Program meal preparation and service sites at the rate of \$180 per inspection, not to exceed \$36,000.

**CHAIRMAN'S REPORT AND REQUESTS FOR FUTURE AGENDA ITEMS**

(04:31:43)

**Committee Reports** — An update from Legislative Liaisons was provided in writing. Mr. McNiece referenced the Communications Committee's draft strategic plan for the year, which included renewal of an informational postcard campaign to legislators and the 50th anniversary of the State Board under constitutional design.

Those wishing to provide individual Board reports did so in writing.

Board Attorney Mark Ferguson provided Board members with a refresher on what elements to consider when reviewing licensure cases. He also shared statistical information on trends.

**Requests for Future Agenda Items —**

- Update on School Breakfast Leadership Grant goal status
- Update on transition work group (Mr. Porter)
- Report from redesign schools on alternative credit opportunities (Mr. McNiece)
- Differentiated compensation for teachers (Mr. Roberts)
- Concerns for student vaping and health risks (Mrs. Busch)

During the Chairman's Report, Mrs. Busch provided information on the re-structured Governor's Education Council and previewed the March State Board meeting.

**LEGISLATIVE MATTERS**

Deputy Commissioner Dale Dennis distributed the 2019 legislative calendar of deadlines. He also highlighted selected House and Senate bills related to education.

(05:01:52)

**RECESS**

Chairman Busch recessed the meeting at 5:18 p.m. to attend the scheduled legislative dinner at the Celtic Fox with members of the House and Senate Education Committees. The business meeting would resume at 9 a.m. on Wednesday.

\_\_\_\_\_  
Kathy Busch, Chairman

\_\_\_\_\_  
Peggy Hill, Secretary



**KANSAS STATE BOARD OF EDUCATION**

**Meeting Minutes**

**Feb. 13, 2019**

**CALL TO ORDER**

Chairman Kathy Busch called the Wednesday meeting of the State Board of Education to order at 9 a.m. on Feb. 13, 2019, in the Board Room at the Landon State Office Building, 900 S.W. Jackson St., Topeka, Kansas. She acknowledged the attendance of superintendents participating in the Kansas Education Leadership Institute and asked them to introduce themselves.

**ROLL CALL**

All Board members were present:

Kathy Busch	Ann Mah
Jean Clifford	Jim McNiece
Michelle Dombrosky	Jim Porter
Deena Horst	Steve Roberts
Ben Jones	Janet Waugh

**APPROVAL OF AGENDA**

Mrs. Waugh moved to approve the Wednesday agenda as presented. Mr. Jones seconded. Motion carried 9-0-1, with Mr. Roberts abstaining.

**DISCUSSION ON SCHOOL BUS STOP ARM VIOLATIONS**

Kansas law requires all motorists to stop when approaching a stopped school bus displaying its flashing red lights and activated stop arm. Keith Dreiling, School Bus Safety Director at KSDE, provided information on the school bus stop arm law and data from both a one-day stop arm violation count and a voluntary 30-day school bus passing survey. Board members expressed concern about the number of motorist violations. Mr. Dreiling presented a copy of a North Carolina statute that authorizes the use of photographic or video evidence for the civil enforcement of violations for passing a stopped school bus. Board discussion included driver education about the law, greater school district participation in the survey and information on effectiveness of using school bus cameras as an enforcement tool. Chairman Busch asked that KSDE devise a plan for working with the Kansas Highway Patrol and legislature for addressing school bus stop arm violations and bus safety.

**RECEIVE PROPOSED AMENDMENTS TO EMERGENCY SAFETY INTERVENTION REGULATIONS**

KSDE Assistant Director Laura Jurgensen reiterated the purpose of proposed amendments to Emergency Safety Intervention regulations in order to clarify the definitions, meaning and interpretation of key words embedded in the regulatory language regarding seclusion. Board members this month received the proposed amendments which impact K.A.R. 91-42-1 and 91-42-2. She addressed each change, including the addition of definitions for “an enclosed area” and “isolation.” The Board will act in March on the next steps required for amending regulations.

**ACTION ON FINAL REPORT FROM LEGISLATIVE TASK FORCE ON DYSLEXIA**

Jim Porter chaired the Legislative Task Force on Dyslexia, which was created by 2018 Substitute for House Bill 2602. The Task Force was to prepare a report with recommendations regarding matters concerning the use of evidence-based practices for students with dyslexia. The report was to be submitted to the Governor, the Legislature and the State Board of Education. Mr. Porter described the charges given to the group and the four subcommittees formed to address each area. Members of the sub-committees addressed the Board. Discussion followed on the screening and identification of

**2/13/2019  
A.M. Session  
(00:00:09)**

**MOTION  
(00:04:14)**

**(00:04:38)**

**(00:32:50)**

**(00:50:42)**

students with dyslexia, the science of teaching struggling readers and the Task Force recommendations on pre-service training, professional learning, screening and evaluation processes and evidence-based reading practices. Mr. McNiece moved to receive the Report of the Legislative Task Force on Dyslexia. Mrs. Clifford seconded. Motion carried 10-0. This action gives the Commissioner of Education authority to activate KSDE staff to work on the recommendations.

**MOTION**  
(01:48:00)

Board members took a break from 10:50 to 11 a.m.

**BREAK**

**DISCUSSION ON SCHOOL AND FIRE SAFETY**

Kansas State Fire Marshal Doug Jorgensen presented information on the statutory responsibilities of the Office of the State Fire Marshal regarding K-12 public and private school buildings. He talked about the school building inspection process, emergency preparedness drills, the recently formed Fire and Safety Code Advisory Committee which will look at rules and regulations, and required emergency preparedness drills in schools. A time for questions and answered followed.

(01:49:05)

**BOARD MEMBER TRAVEL**

Additions to the travel requests were: Mrs. Busch and Dr. Horst — March 4-5 Kansans Can Symposium; Mr. Jones — Feb. 18 Burrton school visit, March 5 Kansas Ag in the Classroom meeting, March 6 Kansas Teacher of the Year visit to Geary County schools; Mr. McNiece Feb. 22 and 23 Spirit Industries CTE event; Feb. 27 Clearwater Superintendents meeting, Mr. Roberts, cancelled attendance at Kansas Council for Economic Education. Dr. Horst moved to approve the travel requests and changes. Mrs. Mah seconded. Motion carried 10-0.

**MOTION**  
(02:25:56)

**ADJOURNMENT**

The meeting was adjourned at 11:40 a.m. The next State Board meeting is March 12 and 13, 2019 in Topeka.

\_\_\_\_\_  
Kathy Busch, Chairman

\_\_\_\_\_  
Peggy Hill, Secretary

**KANSAS STATE BOARD OF EDUCATION**

**Meeting Minutes  
January 15, 2019**

**SWEARING-IN CEREMONY AND RECEPTION**

The swearing-in ceremony for new State Board members Michelle Dombrosky (District 3), Jean Clifford (District 5) and Ben Jones (District 7) along with re-elected members Janet Waugh (District 1) and Jim Porter (District 9) occurred in conjunction with the Governor’s Inauguration Monday, Jan. 14, 2019 at the Statehouse. A reception in the Board Room honoring those serving a new four-year term on the State Board of Education preceded the Oath of Office ceremony.

**CALL TO ORDER**

Chairman Jim Porter called the monthly meeting of the Kansas State Board of Education to order at 10 a.m. Tuesday, Jan. 15, 2019, in the Board Room at the Landon State Office Building, 900 S.W. Jackson St., Topeka, Kansas. He welcomed new Board members to their first participatory meeting. Other guests were education majors from Baker University who are currently student teaching.

1/15/2019  
A.M. Session  
(00:00:01)

**ROLL CALL**

All Board members were present:

Kathy Busch	Ann Mah
Jean Clifford	Jim McNiece
Michelle Dombrosky	Jim Porter
Deena Horst	Steve Roberts
Ben Jones	Janet Waugh

**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 AMENDED AGENDA**

Mr. Porter announced an amendment to the day’s agenda in order to discuss and vote separately on consent item 27 F. (recommendations of the Evaluation Review Committee) and the group of consent items 27 M-S (contracts to support the Preschool Development Grant Birth through Five). Mr. McNiece moved to approve the agenda as amended. Mrs. Busch seconded. Motion carried 10-0.

**MOTION**  
(00:06:10)

**APPROVAL OF THE DECEMBER MEETING MINUTES**

Dr. Horst moved to approve the minutes of the December Board meeting. Mr. McNiece seconded. Motion carried 10-0.

**MOTION**  
(00:06:39)

**BOARD REORGANIZATION**

Reorganization of the Kansas State Board of Education occurs every two years, which coincides with the election and/or re-election of Board members. Mr. Porter gave parting remarks in appreciation for the work of the department and his colleagues during his past two years as Board Chairman. The following action was taken during reorganization for 2019-2021:

**ELECTION OF BOARD CHAIRMAN**

Mr. Porter moved to nominate Kathy Busch as Chairman. Mr. McNiece seconded. There were no other nominations. Motion carried 9-1, with Mr. Roberts in opposition. Mrs. Busch accepted, then assumed leadership of the meeting.

**MOTION**  
(00:08:34)

**MOTIONS**  
(00:15:36)  
(00:16:09)

**ELECTION OF VICE CHAIRMAN**

Mrs. Mah moved to nominate Janet Waugh as Vice Chairman. Dr. Horst seconded. Mrs. Dombrosky moved to nominate Steve Roberts as Vice Chairman. The nomination did not receive a second. There were no other nominations. Mrs. Waugh was elected on a vote of 9-1, with Mr. Roberts opposing. Mrs. Waugh accepted the position, then assumed the designated Vice Chairman's seat at the Board table.

Board members proceeded to select or confirm their preferred places at the Board table based on seniority.

**ACTION ON PROPOSED CHANGE TO BOARD POLICY FOR MEMBER LEGISLATIVE COORDINATOR DESCRIPTION**

**MOTIONS**  
(00:20:44)  
(00:21:34)

State Board Policy 1009, Section B (3) references the member-elected positions of Legislative Coordinator and Assistant Legislative Coordinator. Chair Busch stated that the responsibilities in serving as liaisons with the Kansas legislature merit a proposed change in Board Policy to allow for two Legislative Liaisons rather than one Coordinator and one Assistant. Mr. Roberts moved to suspend Board practice and allow for a vote this month on an item of first review. Mr. McNiece seconded. Motion carried 10-0. Mr. Jones moved to approve a change to Board Policy that allows for the appointment of two Legislative Liaisons who shall be elected by the State Board at its organization meeting. Dr. Horst seconded. Motion carried 10-0.

**ELECTION OF LEGISLATIVE LIAISONS**

**MOTION**  
(00:23:03)

Mr. McNiece moved to nominate Deena Horst and Jim Porter as the Board's Legislative Liaisons. Mrs. Waugh seconded. Motion carried 10-0.

**ELECTION OF BOARD POLICY COMMITTEE MEMBERS**

**SERIES OF MOTIONS**  
(00:24:15)

Reorganization continued with the election of three Board members to serve on the Policy Committee. Mrs. Waugh moved to nominate Jean Clifford for the first opening. Dr. Horst seconded. For the second opening, Mr. Porter moved to nominate Deena Horst. Mr. McNiece seconded. Next, Dr. Horst moved to nominate Ann Mah for the final position on the Policy Committee. Mrs. Waugh seconded. A single vote was taken on the three-member slate, passing 10-0.

**CITIZENS' OPEN FORUM**

(00:25:56)

Chairman Busch declared the Citizens' Forum open at 10:31 a.m. Speakers and their topics were: Crystal Davis, Emporia — TASN (Technical Assistance System Network) and its impact on Kansas education; Jane Groff, Topeka — support of federal funding for TASN projects, particularly family engagement; Cynthia Galemore, Olathe — Kansas Vision Coalition and proposed changes to vision screening statute; John Richard Schrock, Emporia — graduation rate across Kansas and nation, academic rationale for school consolidation. Chairman Busch declared the Citizens' Forum closed at 10:52 a.m.

**ADOPTION OF RESOLUTION FOR 2019 BOARD MEETING DATES**

**MOTION**  
(00:47:21)

Mr. Porter moved to adopt the Resolution establishing the 2019 calendar of Board meeting dates, time and location for the Kansas State Board of Education. Mr. Jones seconded. Motion carried 10-0. The signed resolution is provided as an attachment to the minutes.

**APPOINTMENT OF BOARD ATTORNEY AND BOARD SECRETARY**

**MOTION**  
(00:50:23)

Mrs. Waugh moved to approve the designation of Mark Ferguson of Gates Shields Ferguson Swall Hammond, P.A., Overland Park, as the State Board Attorney, and approve the designation of Peggy Hill as State Board Secretary. Mr. McNiece seconded. Motion carried 10-0.

**REVIEW OF APPOINTMENTS TO BE MADE BY CHAIRMAN AND COMMISSIONER**

During reorganization, memberships on State Board committees become vacant as per Board Policy. Brief committee descriptions were provided for those appointments made by either the Chairman or Commissioner. Each member was asked to complete an interest survey to indicate where he or she would like to serve for the next two years. Assignments would be announced on Wednesday.

(00:51:01)

**STATUS OF OTHER ELECTED POSITIONS**

Board-elected positions on the Kansas State High School Activities Association's Board of Directors and Executive Board are held by Deena Horst and Kathy Busch, and not yet expired. However, Mrs. Busch will be vacating her positions, therefore consideration for replacements will occur later in the meeting.

Board members took a break until 11:20 a.m.

**BREAK**

**ACTION ON NEW APPOINTMENT TO THE PROFESSIONAL STANDARDS BOARD**

Mr. Porter moved to appoint Elizabeth (Libby) Clum to complete a partial term on the Professional Standards Board representing teachers of accredited K-12 non-public schools, effective from the date of appointment to June 30, 2019. Mr. Roberts seconded. Motion carried 10-0. Ms. Clum teaches at Hayden High School in Topeka.

**MOTION**  
(00:57:00)

**COMMISSIONER'S REPORT**

Commissioner Randy Watson shared examples how student learning can take place in environments outside the classroom. He commented on the Horizon Award program to recognize teachers and the need to honor the profession in a variety of ways. Dr. Watson presented a summary of the state's top regional workforce opportunities, citing a need to promote careers in teaching. Next, he talked about the Apollo phase of school redesign. The Apollo application window opens Feb. 4; participating schools will be announced in April. Finally, he encouraged attendance at the Kansans Can and Do Symposium March 4 and 5 in Manhattan.

(00:57:40)

**ELECTION OF KSHSAA REPRESENTATIVES**

As a result of Mrs. Busch's decision to step down from her position on the Executive Board and Board of Directors for the Kansas State High School Activities Association (KSHSAA), there are two openings to be filled. Dr. Horst is the only State Board member eligible at the present time to serve on the Executive Board. Mr. McNiece moved that Deena Horst assume the KSHSAA Executive Board position (through June 30, 2020) vacated by Mrs. Busch. Mr. Porter seconded. Motion carried 10-0. Mrs. Waugh moved to nominate Jim McNiece to fill the remaining partial term (through June 30, 2019) on the KSHSAA Board of Directors, with an option to renew. Mr. Porter seconded. Motion carried 10-0.

**MOTIONS**  
(01:35:30)  
(01:36:03)

Chairman Busch recessed the meeting for lunch at noon.

**LUNCH**

**RECEIVE KANSAS SPECIAL EDUCATION ADVISORY COUNCIL ANNUAL REPORT**

At 1:30 p.m., Chairman Busch reconvened the meeting. KSDE Director Colleen Riley gave opening remarks and invited members present from the Special Education Advisory Council (SEAC) to introduce themselves. SEAC serves as a liaison between the statewide populace and the State Board of Education. The major responsibilities of the Council are to advise, consult and provide recommendations to the State Board regarding matters concerning special education services. Joan Macy, SEAC Chairperson for 2017-18, provided an overview of work and highlights from the past year in serving students ages 3 to 21. A copy of the SEAC 2017-18 Annual Report was provided.

**P.M. SESSION**  
(01:37:39)

**INFORMATION ON VISITING INTERNATIONAL TEACHERS PROGRAM**

(01:58:36)

Dr. Regina Peszat and Sarah Perryman, KSDE consultants and coordinators of the Visiting International Teacher program, provided an overview of the cultural exchange program. KSDE has agreements to collaborate with Spain, Germany and France. They explained how KSDE facilitates the program and coordinates summer orientation. Two of the Visiting International Teachers shared comments — Nazareth Sanchez who is at Scott Dual Language Magnet School and Eduard Carbonell who is at Landon Middle School, both in Topeka. Board members' questions included program expansion, both with other countries and to rural areas of Kansas.

**UPDATE ON PLANS TO STRENGTHEN EARLY CHILDHOOD IN KANSAS IN 2019**

(02:25:15)

KSDE Director of Early Childhood Amanda Petersen described the plans to implement federal funds awarded for a Preschool Development Grant Birth through Five. The one-year planning grant will aid in the strategic direction to build and enhance Kansas' early childhood infrastructure. KSDE is the lead agency for the grant, but will collaborate with multiple early childhood partners. Kansas will receive approximately 71 percent of the original \$6.3 million grant application. She gave an overview of planned activities in 2019. Questions and comments centered on getting communities and families involved, scope of work for contracted partners and the grant period.

**ACTION ON CONSENT ITEMS FOR SUPPORT OF PRESCHOOL DEVELOPMENT GRANT**

**MOTION**  
(02:51:11)

Following the amended agenda recommendation, a vote on consent items 27 M-S (contracts to support the Preschool Development Grant Birth through Five) was conducted separately from the rest of the routine consent items. Mrs. Mah moved to authorize proceeding with the contract requests listed below. Mr. Porter seconded. Discussion followed concerning the "do not exceed" amounts and awarded funding. Motion carried 9-1, with Mrs. Dombrosky in opposition.

- enter into a contract with the University of Kansas Center for Research, Inc. for the purpose of supporting the Preschool Development Grant Birth through Five, in an amount not to exceed \$4,457,996;
- enter into a contract with Wichita State University for the purpose of supporting the Preschool Development Grant Birth through Five, in an amount not to exceed \$185,767;
- enter into a contract with the Kansas Department of Health and Environment for the purpose of supporting the Preschool Development Grant Birth through Five, in an amount not to exceed \$707,586;
- enter into a contract with the Kansas Department for Children and Families for the purpose of supporting the Preschool Development Grant Birth through Five, in an amount not to exceed \$69,694;
- enter into a contract with Kansas Families and Schools Together, Inc. for the purpose of supporting the Preschool Development Grant Birth through Five, in an amount not to exceed \$262,287;
- enter into a modified contract with Utah State University for the purpose of supporting the Preschool Development Grant Birth through Five, in an amount not to exceed \$31,600;
- enter into a contract with the Kansas Children's Cabinet and Trust Fund for the purpose of supporting the Preschool Development Grant Birth through Five, in an amount not to exceed \$508,711.

**BREAK**

Board members took a 10-minute break at 2:45 p.m.

**ACTION ON RECOMMENDATIONS OF THE PROFESSIONAL PRACTICES COMMISSION**

Linda Sieck, Chair of the Professional Practices Commission, participated remotely to bring forth four cases that the PPC recommended for licensure approval. Mr. Roberts moved to adopt the findings of the Professional Practices Commission and its recommendation for the issuance of licenses for Shelby Bucher, Colby Gottschalk, Michael Onderko and Mary Scholl. Mr. Jones seconded. Motion carried 10-0.

**MOTION**  
(02:57:33)

Mrs. Sieck then presented the next set of cases. Dr. Horst moved to adopt the findings of the PPC and its recommendation for the revocation of licenses for Kevin Johnson, Patricia Linn and Christopher Young. Mrs. Waugh seconded. Motion carried 10-0.

**MOTION**  
(02:58:40)

**ACTION ON CHANGE IN OPERATING PROCEDURE FOR PROFESSIONAL PRACTICES COMMISSION**

General Counsel Scott Gordon presented information on behalf of the Professional Practices Commission (PPC) regarding a proposed procedural change for breach of contract cases that come before the PPC. Mr. Porter moved to authorize a change in the operating procedure of the PPC for breach of contract cases, allowing the presiding Hearing Officer to determine whether a settlement provision or liquidated damages clause exists in local policy or in the contract of the employee. Mr. Roberts seconded. Board Attorney Mark Ferguson explained the term liquidated damages and potential consequences for breaking contracts. Motion carried 10-0.

**MOTION**  
(03:04:29)

**INFORMATION ON FEDERAL INVESTMENTS AND PURPOSE REGARDING SPECIAL EDUCATION AND TITLE SERVICES**

The KSDE Special Education and Title Services team utilizes required federal set-aside funds to provide coordinated monitoring and technical assistance to local school districts in order to meet the state's obligations for general supervision oversight under several federal laws. Director Colleen Riley and Assistant Director Tate Toedman described the two federal pieces of legislation that govern work of the agency and support various programs. They gave an overview of responsibilities of the state education agency as well as some of the resources supported by federal investments.

(03:08:23)

**REPORT ON MENTAL HEALTH INTERVENTION PILOT PROGRAM**

Deputy Commissioner Dale Dennis gave introductory remarks. The Mental Health Intervention Program was passed by the 2018 Legislature as a one-year pilot. Nine school districts are participating during the 2018-19 school year. Board members heard presentations from pilot participants about their work to treat and track the behavioral health needs of youth. Community Mental Health Centers, in coordination and cooperation with the participating school districts, are leading these efforts. Highlights included the addition of therapists and social workers, internal referral processes, additional screening resources, and supports to parents. A time for questions and answers followed.

(03:35:20)

**RECEIVE RECOMMENDATIONS FROM SCHOOL MENTAL HEALTH ADVISORY COUNCIL**

Established by the Kansas State Board of Education in July of 2017, the Kansas School Mental Health Advisory Council is a statewide collaborative that coordinates with legislators and stakeholders to identify unmet needs in school mental health within Kansas. Three of the Council members presented information to the Board: Holly Yeager, Bert Moore and Jane Groff. They covered early work of the Council, the focus on suicide awareness and prevention, and consideration for child abuse, sexual abuse and neglect. KSDE Education Program Consultant Myron Melton and Council Chair Kathy Busch assisted with the presentation. The Council's recommendations were outlined, centering on suicide awareness and prevention training, and training for how to conduct mandated reporting. These recommendations will be brought to the Board for action in February. There was Board discussion on delivery of services, resources for smaller school districts and school partners.

(04:08:11)

**BREAK**

There was a 10-minute break at 4:40 p.m.

(04:41:11)

**LEGISLATIVE MATTERS**

Deputy Commissioner Dale Dennis provided a printout of 2019 committee assignments for both the House and Senate. Other legislative matters included arrival of the Governor's budget recommendations, partial federal government shutdown, new meeting time for the K-12 education budget committee and creation of a Senate Select Committee on Education Finance.

(04:49:00)

**CONSENT AGENDA DISCUSSION**

Consent item 27 F. (recommendations of the Evaluation Review Committee) was discussed. Susan Helbert and Catherine Chmidling from the Teacher Licensure and Accreditation team were present to answer questions and provide an overview of the ERC functions. Peer review processes evaluate information to determine accreditation status of the Kansas teacher education units and the teacher education programs which institutions of higher education offer. Recommendations from the ERC are then brought to the State Board. Board members asked for more clarification regarding the review process and terminology. The vote on 27 F. was postponed until the next day.

**MOTION**  
(05:07:17)

**ACTION ON REMAINING CONSENT AGENDA ITEMS**

Mrs. Waugh moved to approve the remaining items on the Consent Agenda, excluding 27 F. until additional information was provided. It was noted that items 27 M-S (contracts to support the Preschool Development Grant Birth through Five) were approved earlier in the meeting. Dr. Horst seconded. Motion carried 10-0. In the Consent Agenda, the Board:

- received the monthly Personnel Report for December.
- confirmed the unclassified personnel appointments of Eric Dehner as Technology Support Consultant on the Information Technology team, effective Dec. 3, 2018, at an annual salary of \$36,108.80; Matthew Preston as Applications Developer on the Information Technology team, effective Dec. 30, 2018, at an annual salary of \$58,198.40.
- approved, with modifications, the in-service education plans for USD 255 South Barber, USD 263 Mulvane, USD 265 Goddard, USD 303 Ness City, USD 335 North Jackson, USD 351 Macksville, USD 383 Manhattan, USD 417 Morris County, USD 465 Winfield.
- issued Calendar Year 2019 licenses to the following recommended commercial Kansas driver training schools: Behind the Wheel Defensive Driving School, Wichita; and Wichita Driving School of Derby, Derby, for the period Jan. 15, 2019 to Dec. 31, 2019.
- accepted the following recommendations for licensure waivers valid for one school year: *Early Childhood Special Education* — Jessica Knox, USD 305; Valerie Lamont, USD 491. *High Incidence Special Education* — Bridget Costello, USD 230; Angela Smith, Sara Johnson, USD 259; Quintin Dougherty, USD 512; Jason Duvall, Megan McGuire, D0707. *Library Media Specialist* — Elizabeth Tackett, USD 259. *Low Incidence Special Education* — Gail Moore, USD 259; Alexia Wells, D0620. *Math - extension on the number of days under an emergency substitute license* — Gwendolyn Mathis, USD 497. *Physical Education — extension on the number of days under an emergency substitute license* — Cierra Hilton, USD 497.
- accepted recommendations of the Licensure Review Committee as follows: *Approved Cases* — 3233 Audrey Green, 3243 Maleca Delao, 3244 Rebekah Stigers, 3245 Brooke Brittain, 3246 Marissa Foore, 3247 Shannon Schlessman, 3248 Kevin Dierks, 3249 Precious Clark, 3251 Eve Orf, 3252 LaMarcus Hunter, 3253 Anne Armitage. *Denied Case* — 3230 Steffany Jaramillo.
- authorized the following districts to hold elections on the question of issuing bonds in excess of the district's general bond debt limitation: USD 205 Bluestem, USD 331 Kingman.

- authorized the following districts to receive capital improvement (bond and interest) state aid as authorized by law: USD 205 Bluestem, USD 331 Kingman.

*authorized the Commissioner of Education to negotiate and*

- enter into updated contracts and data sharing agreements with qualified providers for a cumulative five-year amount not to exceed \$90,945,008 to be paid out of funds received under ESEA and IDEA for the period July 1, 2020 through June 30, 2025;
- enter into a contract with Wichita State University for Mentor Kansas strategic planning in an amount not to exceed \$23,000;
- enter into a contract with the Kansas Association of Education Service Centers for registration for The Kansas Buck Institute, in an amount not to exceed \$15,000.

**CHAIRMAN’S REPORT AND REQUESTS FOR FUTURE AGENDA ITEMS**

**Committee Reports** — Mrs. Mah reported on meetings of the Kansas Learning First Alliance and the Broadband Committee. Mr. Porter updated members on the Dyslexia Task Force and subcommittee work. He briefed members on recommendations to be outlined in the Task Force’s Final Report (i.e. pre-service training, professional learning, screening/evaluation, etc). The State Board will consider accepting the report in February. Mr. McNiece reported on the stakeholder group working to clarify definitions, meaning and interpretation of key words within Emergency Safety Intervention regulation language. These recommendations will be presented to the State Board in February.

(05:08:11)

Those wishing to provide individual Board reports did so in writing.

Chairman Busch reminded members of the Wednesday schedule, including the evening State of the State Address.

**Requests for Future Agenda Items** —

- Early College Academy at Northwest High School (Mr. McNiece)
- Laws regarding school safety drills and State Fire Marshal rules (Mr. Porter)
- Discussion on violations of school bus stop arm law (Mr. Porter)
- Suite 1886 new program at Wyandotte High School for student entrepreneurs (Mrs. Waugh)

**BOARD MEMBER TRAVEL**

Additions to the travel requests were: Mrs. Busch and Mr. Porter — Jan. 30 Governor’s Education Council; Mrs. Mah and Dr. Horst — Feb. 15 KEEN awards luncheon; committee meetings pertaining to new assignments. Mrs. Waugh moved to approve the travel requests and additions. Mr. Porter seconded. Motion carried 10-0.

**RECESS**

At 6:15 p.m., Chairman Busch recessed the meeting until 9 a.m. Wednesday.

\_\_\_\_\_  
Kathy Busch, Chairman

\_\_\_\_\_  
Peggy Hill, Secretary

**MOTION**  
(05:04:11)

**RECESS**



**SERIES OF  
MOTIONS**

program approval for education preparation providers and teacher education programs for institutions of higher education. Mr. McNiece moved to accept the recommendations of the ERC for accreditation of MidAmerica Nazarene University through Dec. 31, 2025. Mrs. Dombrosky seconded. Motion carried 9-0-1 with Mr. Roberts abstaining. Mr. McNiece moved to accept the recommendations of the ERC for accreditation of Washburn University through Dec. 31, 2025. Dr. Horst seconded. Motion carried 9-0-1 with Mr. Roberts abstaining. Board Attorney Mark Ferguson explained the Board's authority in this situation, the need for justifying any decision that departs from the ERC recommendations, and the practice of notice and opportunity. More discussion followed. Mrs. Waugh moved to accept recommendations of the ERC for educator preparation provider accreditation with stipulation for Tabor College, with an amended expiration date of 24 months from Jan. 16, 2019. Mr. McNiece seconded. Motion carried 7-1-1, with Mr. Jones in opposition, Mr. Roberts abstaining, and Mr. Porter absent for the vote. Mrs. Waugh moved to accept the recommendations of the ERC for program approval for Fort Hays State University, Kansas State University, Pittsburg State University and University of Saint Mary. Dr. Horst seconded. Motion carried 9-0-1 with Mr. Roberts abstaining.

**ANNOUNCEMENT OF COMMITTEE ASSIGNMENTS**

Chairman Busch announced the selection of Board members to serve on the various committees with State Board representation. The chart of assignments is attached to the minutes.

**ADJOURNMENT**

The business of the meeting concluded at 11:55 a.m. Afterwards, Board members were guests of the Career Technical Student Organizations at the Capitol Plaza for the annual luncheon and roundtable discussions. Dr. Horst and Mr. Jones attended the recognition lunch for Superintendent of the Year Glen Suppes.

The next State Board meeting is Feb. 12 and 13, 2019 in Topeka.

\_\_\_\_\_  
Kathy Busch, Chairman

\_\_\_\_\_  
Peggy Hill, Secretary

# RESOLUTION

Be It Resolved that:

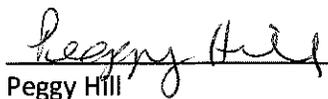
The Kansas State Board of Education will conduct its regular meeting beginning at 10 a.m. on the second Tuesday and 9 a.m. on the second Wednesday of each month with the exception of January, April and October (2019) when said meetings will be held on the third Tuesday and Wednesday of the month. The location is the Landon State Office Building (LSOB), 900 SW Jackson, Ste 102, Topeka, Kansas, unless otherwise noted. Therefore, the Kansas State Board of Education regular meetings and legislative conference calls shall comply with the following schedule:

2019 Dates	Meeting	Location
January 15-16	Regular Board Meeting	LSOB, Topeka
January 25	Legislative Conference Call - 4 p.m.	LSOB, Topeka
February 12-13	Regular Board Meeting	LSOB, Topeka
February 22	Legislative Conference Call – 4 p.m.	LSOB, Topeka
March 12-13	Regular Board Meeting	LSOB, Topeka
March 29	Legislative Conference Call – 4 p.m.	LSOB, Topeka
April 16	Regular Board Meeting	LSOB, Topeka
April 17	Annual visit KS School for Blind / School for Deaf	Kansas City / Olathe
May 14-15	Regular Board Meeting	LSOB, Topeka
June 11-12	Regular Board Meeting	LSOB, Topeka
July 9-10	Regular Board Meeting	LSOB, Topeka
August 13-14	Regular Board Meeting	LSOB, Topeka
September 10-11	Regular Board Meeting	LSOB, Topeka
October 15-16	Regular Board Meeting	LSOB, Topeka
November 12-13	Regular Board Meeting	LSOB, Topeka
December 10-11	Regular Board Meeting	LSOB, Topeka

If the regular meeting date occurs on a legal holiday or on a holiday specified by the Board, such regular meeting shall be held the following day, commencing at the same hour.

**CERTIFICATE**

This is to certify that the above resolution was duly adopted by the Kansas State Board of Education on the 15th day of January, 2019.

  
 \_\_\_\_\_  
 Peggy Hill

Secretary, Kansas State Board of Education

Word/calendars/annual resolution

## 2019-21 State Board of Education Committee Assignments

NAME	ELECTED	APPOINTED
<b>Kathy Busch</b>	Chair	Governor’s Education Council Kansas Alliance for Educational Advocacy School Mental Health Advisory Council School Redesign Advisory Committee Teacher Vacancy and Supply Committee
<b>Jean Clifford</b>	Policy Committee	Interstate Migrant Education Council Teacher Vacancy and Supply Committee
<b>Michelle Dombrosky</b>		Charter and Virtual Education Advisory Council Kansas Learning First Alliance KSD/KNEA Bargaining Team Liaison to Kansas School for the Deaf
<b>Deena Horst</b>	KSHSAA Bd of Directors to 6-30-20 KSHSAA Exec. Board to 6-30-20 Legislative Liaison Policy Committee, Chair	Kansas Prescription Drug & Opioid Advisory Com. Kansas Teacher of the Year / KS Foundation for Excellence
<b>Ben Jones</b>		Agriculture in the Classroom Communications Committee (Board) Kansas Alliance for the Arts in Education Kansas Master Teacher Selection Comm. (ESU) Liaison to Kansas State School for the Blind
<b>Ann Mah</b>	Policy Committee	ESEA / ESSA Advisory Council Kansas Advisory Committee for Career and Technical Education School Redesign Advisory Committee
<b>Jim McNiece</b>	KSHSAA Bd of Directors to 6-30-19	Communications Committee (Board) Education Commission of the States Special Education Advisory Council ex-officio

<b>Jim Porter</b>	Legislative Liaison	Capital Improvement Bond & Interest Review Governor’s Education Council Kansas Fire Marshal Advisory Committee Professional Standards Board Liaison Task Force on ESI (Stakeholders) Transition Work Group addressing underserved populations of adults
<b>Steve Roberts</b>		Kansas Council for Economic Education Kansas Volunteer Commission Legislative Broadband Committee Student Voice Committee (Board)
<b>Janet Waugh</b>	Vice Chair	Confidence in Kansas Public Ed. Task Force Juvenile Justice Oversight Committee Kansas Association for Conservation and Environmental Education

Dsktp/2019-21 Committee Assignments cumulative

**Subject:** Citizens' Open Forum

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.





## Kansas State Department of Education

---

Landon State Office Building  
900 SW Jackson Street, Suite 307  
Topeka, Kansas 66612-1212

(785) 296-3201  
(785) 296-6659 - fax

[www.ksde.org](http://www.ksde.org)

**To:** Commissioner Randy Watson  
**From:** Stephen King  
**Subject:** Receive Kansas model standards for Computer Science

In March, 2018, KSDE brought together a committee of interested parties, including teachers from all grade levels and board districts as well as representatives of business and industry and postsecondary education agencies, to draft Model K-12 Computer Science Standards for Kansas. The committee determined a need to increase that age range to P-12. The result of that committee's efforts, comprising a draft of Model P-12 Computer Science Standards for Kansas, is attached for presentation to the Kansas State Board of Education.





# Kansas Computer Science Standards

Grades P-12

Adopted (DATE)

## About the Kansas P-12 Computer Science Model Standards

To be well-educated citizens in a computing-intensive world and to be prepared for careers in the 21st century, our students must have a clear understanding of the principles and practices of computer science. The Kansas P-12 Computer Science Model Standards delineate a core set of learning objectives designed to provide the foundation for a complete computer science curriculum and its implementation at the P–12 level. To this end, the Standards:

- Introduce the fundamental concepts of computer science to all students, beginning at the primary school level.
- Develop the practices of computational thinking in a sequential progression from pre-kindergarten through high school.
- Encourage schools to offer additional secondary-level computer science courses that will allow interested students to study facets of computer science in more depth and prepare them for entry into the work force or college.
- Increase the availability of rigorous computer science for all students, especially those who are members of underrepresented groups.

The standards have been written by educators to be coherent and comprehensible to teachers, administrators, and policy makers. Grades P-5, middle grades, and secondary L1 are the computer science standards for **all students**. The secondary L2 standards are intended for students who wish to pursue the study of computer science beyond what is expected of all students (specialty or elective courses).

## Connection to the K-12 Computer Science Framework and CSTA Standards

The K–12 Computer Science Framework (k12cs.org) provides overarching, high-level guidance per grade bands, while the standards provide detailed, measurable student performance expectations. The Framework, and the subsequent Computer Science Teachers Association (CSTA) standards document, were considered as primary inputs for the Kansas standards development process.

<b>Concepts</b>	<b>Practices</b>	
1. Computing Systems 2. Networks and the Internet 3. Data Analysis 4. Algorithms and Programming 5. Impacts of Computing	1. Fostering an Inclusive Computing Culture 2. Collaborating Around Computing 3. Recognizing and Defining Computational Problems	4. Developing and Using Abstractions 5. Creating Computational Artifacts 6. Testing and Refining Computational Artifacts 7. Communicating About Computing

## Kansas Computer Science Committee

Information about standards committee formation was shared with the education community via KSDE listservs, meetings, and the State Board of Education. A registration site was developed with the purpose of obtaining nominations for the standards development committees. Individuals could either self-nominate or could recommend someone. The registration site asked for name, address, email, board district, job title, gender, race, education level, committee group interest, and years of work experience. KSDE staff were asked to ensure that committee members for the standards committees consisted of diversity of gender, race, ethnicity, and education level (K-12 and post-secondary). Special care was taken to ensure that every state board district was represented.

In addition to the committee members the computer science standards committee had a “Representative” ad-hoc group which was comprised of postsecondary, business/community, and military representatives. These individuals were interested in the standards review process and their role was to participate in the discussions and provide feedback.

Writing Subcommittee	Review Subcommittee	Representative Group
Chris Holborn, USD 475	Amy Benz, USD 320	Robert Burcham, Business & Industry
Gwen Lehman, USD 495	Tyler Bruce, USD 483	Steven Case, PhD, University of Kansas
Laura Leis, USD 400	Pam Collinge, USD 389	Charmine Chambers, KBOR
Craig Miller, USD 475	Ross Davis, USD 508	Anna Hennes, Business & Industry
Shane Munro, USD 259	David Dennis, USD 259	Chris Issacson, Business & Industry
Matthew Peak, USD 503	Barbra Gonzales, USD 233	David Kaercher, Business & Industry
Kristy Randel, USD 253	Matthew Lewis, USD 259	Meg Knauth, Business & Industry
Gary Richmond, USD 464	Brittney Quelch, USD 475	Jason Knobbe (COL), Military
Bryan Salsgiver, USD 229	Brenda Thompson, USD 373	Alan Lowden, Business & Industry
Samuel Simmons, Sr. USD 500	Lisa Whallon, USD 233	Ryan Weber, Business & Industry
Steven Stoffregen, USD 465	Tyler Wolf, USD 348	Bruce Wellman, NGSS
Jill Thompson, USD 264	Kelley Wyatt, USD 464	
Travis True, USD 501		
Josh Weese, PhD, Kansas State University		
Chris Wyant, Wichita State University		

## Grade PK (Pre-Kindergarten)

### Computing Systems

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
PK.CS.D.01	<p>With guidance, demonstrate how to operate a computing device.</p> <p><i>People use computing devices to perform a variety of tasks accurately and quickly. With guidance, students should be able to select the appropriate app/program to use for tasks they are required to complete. For example, if students are asked to draw a picture, they should be able to open and use a drawing app/program to complete this task.</i></p>	Devices	7. Communicating about computing
PK.CS.HS.01	<p>With guidance, use appropriate terminology to locate and identify common computing devices and components in a variety of environments (e.g. turn on, navigate, open/close programs/apps).</p> <p><i>A computing system is composed of hardware and software. Hardware consists of physical components. With guidance, students should be able to identify and describe the function of external hardware, such as desktop computers, laptop computers, tablet devices, monitors, keyboards, mice, and printers.</i></p>	Hardware and Software	7. Communicating about computing
PK.CS.HS.02	<p>With guidance, correctly use software that controls computing devices (e.g. e.g. programs, browsers, websites, and applications).</p> <p><i>Computer software and apps are programmed and installed on hard drives on various devices utilized by every end user. Software provides code for the programs to compute properly for the created operation. Software apps and programs interact with one another to provide an intended outcome or output. With guidance, students should be able to open, use, and close varying programs, apps, or software.</i></p>	Hardware and Software	1. Fostering an inclusive computing culture
PK.CS.IO.01	<p>With guidance, identify and apply basic input/output skills.</p> <ul style="list-style-type: none"> <li>• Input (keyboarding, mouse, touchscreen, voice, camera, interactive board)</li> <li>• Output (monitor, screen, printer, audio).</li> </ul>	Input and Output	7. Communicating about computing

	<i>Input devices are used to input data for the creation of various digital products. Some input devices a person could use include voice input, touchpad, touchscreen, mouse, keyboarding (Keyboarding - practice locating space bar, enter key, and developmentally appropriate letters.) Output devices are how a computer displays information, which includes the screen, monitor, speaker, or printer.</i>		
PK.CS.T.01	<p>Recognize that computing systems might not work as expected and with guidance can identify simple hardware or software problems (e.g. volume turned down on headphones, monitor turned off).</p> <p><i>Problems with computing systems have different causes. Students at this level do not need to understand those causes, but they should be able to communicate a problem (e.g., when an app or program is not working as expected, a device will not turn on, the sound does not work, etc.). Ideally, students would be able to use simple troubleshooting strategies, including turning on and off the device, turning on speakers, adjusting volume, or plugging in headphones. These are, however, not specified in the standard, because these problems may not occur.</i></p>	Troubleshooting	<p>6. Testing and refining computational artifacts</p> <p>7. Communicating about computing</p>

## Networks & the Internet

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
PK.NI.NCO.01	<p>Recognize that computing devices are connected via wired or wireless networks so that they can communicate with each other.</p> <p><i>Networking and interconnectivity of computing devices are essential in today's society. Through wi-fi, bluetooth, or hard line ethernet connections, the ability of information to be shared with an organized, secure and reliable system, is an integrated range of platforms which uses various software and hardware. Students should have an awareness the device is connected to another device.</i></p>	Network Communication & Organization	7. Communicating about computing
PK.NI.C.01	<p>Recognize that passwords are private and should be kept secret.</p> <p><i>Learning to protect one's device or information from unwanted use by others is an essential first step in learning about cybersecurity.</i></p>	Cybersecurity	7. Communicating about computing

## Data Analysis

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
PK.DA.S.01	<p>Know that the computing device can save information as data that can be searched, modified, and saved or deleted (e.g. save photos, files, or videos).</p> <p><i>All information stored and processed by a computing device is referred to as data. Data can be images, text documents, audio files, software programs or apps, video files, etc. As students use software to complete tasks on a computing device, they will be manipulating data. Students should be aware that information can be found or searched on a device.</i></p>	Storage	4. Developing and using abstractions
PK.DA.C.01	<p>Students understand that data about themselves and the world around them is collected, used, and organized in a meaningful way.</p> <p><i>The collection and use of data about the world around them is a routine part of life and influences how people live.</i></p>	Collection	4. Developing and using abstractions 7. Communicating about computing
PK.DA.CVT.01	<p>Students represent collected data in a visual way. (e.g. charts, graphs, tables).</p> <p><i>Data can be used to make inferences or predictions about the world. Students could analyze a graph or pie chart of the colors in a bag of candy or identify the patterns for which colors are most and least represented, and then make a prediction as to which colors will have most and least in a new bag of candy. Students can explore bar graphs or line graphs to analyze what has more or less. This can be done without a computing device - paper, interactive board, chart paper, class graph, etc.</i></p>	Visualization & Transformation	7. Communicating about computing
PK.DA.IM.01	<p>Students look for patterns in data, make predictions, and make a model (e.g. make predictions on weather data, butterfly life cycle, etc.) and present in a picture graph or pattern.</p> <p><i>Data can be represented in models to portray results and to assist in identifying patterns in the world around us. This type of data is represented in a more visual way outside of lines, bars, and charts. This would include life cycles, weather maps, and processes. Students will</i></p>	Inference and Models	4. Developing and using abstractions

	<i>show data in a pattern. With guidance, students will show what would be next in a basic pattern, or what might be missing from a pattern. This could be a color pattern, number pattern, animal pattern, etc. It can be as basic as ABAB, or ABBABB.</i>		
--	---	--	--

## Algorithms and Programming

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
PK.AP.A.01	<p>With guidance, construct and execute algorithms (set of step-by-step instructions) that includes sequencing and simple loops to accomplish a task, with or without a computing device (e.g. verbally, kinesthetically, with robot devices or a programming language, block coding).</p> <p><i>Algorithmic thinking is the ability to define clear steps to solve a problem. A process to complete a task (such as the steps to tie your shoes), and recipes are examples of algorithms. Expose students to the term algorithm as they are sequencing events or processes like getting ready for school in the morning.</i></p>	Algorithms	4. Developing and using abstractions
PK.AP.V.01	<p>With guidance, understand that numbers represent different types of data using numbers or other symbols (e.g. thumbs up/thumbs down for yes/no color by number, arrows for direction, encoding/decoding a word using numbers or pictographs).</p> <p><i>Information in the real world can be represented in computer programs. Students could use thumbs up/down as representations of yes/no, use arrows when writing algorithms to represent direction, or encode and decode words using numbers, pictographs, or other symbols to represent letters or words.</i></p>	Variables	4. Developing and using abstractions
PK.AP.C.01	<p>With guidance, create programs to accomplish tasks using a programming language, robot device, or unplugged activity that includes sequencing events and simple loops (e.g. emphasizing beginning, middle, and end; collaborative programming).</p> <p><i>Programming is used as a tool to create products that reflect a wide range of interests. Control structures specify the order in which instructions are executed within a program. Emphasize the sequence of events, such as left right, up, down. Get from one point to another on a</i></p>	Control	5. Creating computational artifacts

	<i>map. Explore basic robots that use arrows for direction, or search for lessons on CS unplugged fundamentals.</i>		
PK.AP.M.01	<p>With guidance, decompose (break down) a larger problem into smaller subproblems.</p> <p><i>Decomposition is the act of breaking down tasks into simpler tasks. Students could break down the steps needed to make breakfast, get ready for school, to move a character across the screen. This can be done with or without a computing device.</i></p>	Modularity	3. Recognizing and defining computational problems
PK.AP.PD.01	<p>Create a design document to illustrate thoughts, ideas, and stories in a sequential manner.</p> <p><i>Creating a design document for what a program will do clarifies the steps that will be needed to create a program and can be used to check if a program is correct. Students could create a planning document such as a story map to illustrate what their program will do.</i></p>	Program Development	5. Creating computational artifacts 7. Communicating about computing
PK.AP.PD.02	<p>Recognize that digital items can be owned and that proper credit needs to be given (e.g. using code, music, pictures).</p> <p><i>Using computers comes with a level of responsibility. Students should recognize that artifacts were created by others, such as pictures, music, and code.</i></p>	Program Development	7. Communicating about computing
PK.AP.PD.03	<p>With guidance, construct, execute, and debug (identify and fix) algorithms using a programming language and or an unplugged activity that includes sequencing (e.g. use block based programming).</p> <p><i>Algorithms or programs may not always work correctly. With guidance, students should be able to use various strategies, such as changing the sequence of the steps, following the algorithm in a step-by-step manner, or trial and error to fix problems in algorithms and programs.</i></p>	Program Development	6. Testing and refining computational artifacts
PK.AP.PD.04	<p>With guidance, use correct terminology in the development of an algorithm to solve a simple problem (e.g. beginning, middle, end).</p> <p><i>With guidance, students should be able to talk or write about the goals and expected outcomes of the programs they create and the choices</i></p>	Program Development	7. Communicating about computing

	<i>that they made when creating programs. This could be done through discussions with the teacher or class.</i>		
--	---	--	--

## Impacts of Computing

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
PK.IC.C.01	<p>Understand different ways in which types of technologies are used in your daily life.</p> <p><i>In the past, if students wanted to read about a topic, they needed access to a library to find a book about it. Today, young students can view and read information on the Internet about a topic or they can download e-books about it directly to a device. Such information may be available in more than one language and could be read to a student, allowing for great accessibility. Students should develop an awareness in describing various ways technology can impact their world. (e.g. checking out at a store, buying lunch, using an iPhone or Android device to call in an emergency, or learning through video sharing).</i></p>	Culture	7. Communicating about computing
PK.IC.SI.01	<p>With guidance understand what would be appropriate while participating in an online environment. (Digital Citizenship - focus on Digital Literacy).</p> <p><i>The practice of appropriate online behavior derives from the identification of inappropriate behavior and the identification of what makes someone a poor digital citizen or know what not to do in order to be ethical online. Communicate to students the importance of being safe online by only using sites approved by an adult. Encourage students to tell an adult if they feel uncomfortable or see something they feel is not appropriate. The practice of appropriate online behavior derives from the identification of inappropriate behavior and the identification of what makes someone a poor digital citizen or know what not to do in order to be ethical online. Digital citizenship is described with nine categories, however PreK-2 will focus on 4 of these: Digital Literacy (the ability to use new technology quickly and appropriately), Digital Etiquette (appropriate conduct), Digital Rights and Responsibilities (knowing your rights to free speech and privacy, but handling it responsibly online), and Digital Health and Wellness (caring for your physical and psychological well-being online).</i></p>	Social Interactions	2. Collaborating around computing

PK.IC.H.01	<p>Understand that computing technology has changed and improved the way people live, work, and interact.</p> <p><i>As computers become interconnected in each aspect of society, more powerful, and students become more reliant on them, students will engage in discussions about how they have evolved since their parents were in school and relate the newest devices they have at home.</i></p>	History	7. Communicating about computing
PK.IC.SLE.01	<p>With guidance understand responsible digital citizenship (legal and ethical behaviors) in the use of technology systems and software.</p> <p><i>People use computing technology in ways that can help or hurt themselves or others. Expose students to sharing devices and leaving the device ready for the next user (closing programs, etc.). Explain how passwords or login methods are used and why we protect devices with these.</i></p>	Safety, Law, & Ethics	2. Collaborating around computing
PK.IC.CP.01	<p>Discuss the fact that a wide range of jobs require knowledge or use of computer science.</p> <p><i>Within the inevitable interwoven fabric of society's reliance and innovative machines, students will required to have basic assumable skills when entering the workforce. Students should be able with guidance, picture digital computing devices and word usage necessary to create a modernized mode of everyday activities in the technological age. An example would be for students to list how a bus driver can use GPS, safety features, and indicators to provide safe travel to school.</i></p>	Community Partnerships	7. Communicating about computing

## Grade K (Kindergarten)

### Computing Systems

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
K.CS.D.01	<p>Demonstrate how to operate a variety of computing devices.</p> <p><i>People use computing devices to perform a variety of tasks accurately and quickly. After Instruction, students should be able to select the appropriate app/program to use for tasks they are required to complete, then power down or log off. For example, if students are asked to draw a picture, they should be able to open and use a drawing app/program to complete this task.</i></p>	Devices	7. Communicating about computing
K.CS.HS.01	<p>Use appropriate terminology to locate and identify common computing devices and components in a variety of environments (e.g. turn on, navigate, open/close programs/apps).</p> <p><i>A computing system is composed of hardware and software. Hardware consists of physical components. After instruction, students should be able to identify and describe the function of external hardware, such as desktop computers, laptop computers, tablet devices, monitors, keyboards, mice, and printers.</i></p>	Hardware and Software	7. Communicating about computing
K.CS.HS.02	<p>Identify and use software that controls computing devices (e.g. programs, browsers, websites, and applications).</p> <p><i>Computer software and apps are programmed and installed on hard drives on various devices utilized by every end user. Software provides code for the programs to compute properly for the created operation. Software apps and programs interact with one another to provide an intended outcome or output. With guidance, students should be able to associate the icon with the appropriate program/application and its use, then open, use, and close programs, apps, or software. This could include, but not limited to, district purchased client-based reading or math program software, apps for a specific learning method, or accessing a browser to navigate web based programs.</i></p>	Hardware and Software	1. Fostering an inclusive computing culture
K.CS.IO.01	<p>Identify and apply basic input/output skills.</p> <ul style="list-style-type: none"> <li>• Input (keyboarding, mouse, touchscreen, voice, camera, robotics, interactive board)</li> </ul>	Input and Output	7. Communicating about computing

	<ul style="list-style-type: none"> <li>• Output (monitor, screen, printer, robotics, audio).</li> </ul> <p><i>Input devices are used to input data for the creation of various digital products. Some input devices a person could use include voice input, touchpad, touchscreen, mouse, keyboarding (Keyboarding - practice locating space bar, enter key, and developmentally appropriate letters. Students should understand the left hand is used for the left side of the keyboard, and the right hand is used on the right side. This includes the understanding the general layout of the keys including developmentally appropriate number recognition.) Output devices are how a computer displays information, which includes the screen, monitor, speaker, or printer.</i></p>		
K.CS.T.01	<p>Recognize that computing systems might not work as expected and use accurate terminology to identify simple hardware or software problems (e.g. volume turned down on headphones, monitor turned off).</p> <p><i>Problems with computing systems have different causes. Students at this level do not need to understand those causes, but they should be able to communicate a problem with accurate terminology (e.g., when an app or program is not working as expected, a device will not turn on, the sound does not work, etc.). Ideally, students would be able to use simple troubleshooting strategies, including turning a device off and on to reboot it, closing and reopening an app, turning on speakers, or plugging in headphones. These are, however, not specified in the standard, because these problems may not occur.</i></p>	Troubleshooting	<p>6. Testing and refining computational artifacts</p> <p>7. Communicating about computing</p>

## Networks & the Internet

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
K.NI.NCO.01	<p>Recognize and use computing devices to connect with people or other devices using a network to communicate, access, and share information as a class (e.g. the internet, video conferencing, email, file transfer).</p> <p><i>Networking and interconnectivity of computing devices are essential in today's society. Through wi-fi, bluetooth, or hard line ethernet connections, the ability of information to be shared with an organized, secure and reliable system, is an integrated range of platforms which</i></p>	Network Communication & Organization	7. Communicating about computing

	<i>uses various software and hardware. Students should understand whether information is being sent to the program or device. (e.g., the teacher laptop is being connected to the LCD projector, or if the wi-fi or internet connection is active).</i>		
K.NI.C.01	<p>Use a form of secure access to protect private information and discuss the effects of password misuse (e.g. logging into a device, educational websites, authentication, thumbprint recognition).</p> <p><i>Learning to protect one's device or information from unwanted use by others is an essential first step in learning about cybersecurity. Students should appropriately use and protect the passwords they are required to use.</i></p>	Cybersecurity	7. Communicating about computing

## Data Analysis

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
K.DA.S.01	<p>With guidance, demonstrate that computing devices can save information as data that can be searched, modified, and saved or deleted (e.g. save photos, files, or videos).</p> <p><i>All information stored and processed by a computing device is referred to as data. Data can be images, text documents, audio files, software programs or apps, video files, etc. As students use software to complete tasks on a computing device, they will be manipulating data. With guidance, students will search, save, or delete data. This can be a web search, save and retrieve a photo, take a screenshot, or saving or printing their creations.</i></p>	Storage	4. Developing and using abstractions
K.DA.C.01	<p>Students will learn how data about themselves and the world around them is collected, used, and organized in a meaningful way.</p> <p><i>The collection and use of data about the world around them is a routine part of life and influences how people live. Students could collect data on the weather, such as sunny days versus rainy days, the temperature at the beginning of the school day and end of the school day, or the inches of rain over the course of a storm.</i></p>	Collection	4. Developing and using abstractions 7. Communicating about computing
K.DA.CVT.01	Students represent collected data in a visual way through a computing device (e.g. charts, graphs, tables).	Visualization & Transformation	7. Communicating about computing

	<p><i>Data can be used to make inferences or predictions about the world. Students could analyze a graph or pie chart of the colors in a bag of candy or the averages for colors in multiple bags of candy, identify the patterns for which colors are most and least represented, and then make a prediction as to which colors will have most and least in a new bag of candy. With guidance, students could create charts or graphs in spreadsheet applications, web based programs, or visually in digital drawings to portray data collected. This data could include types of pets, number of siblings, shoe size, etc. This could be done with an interactive board, tablets, or computer.</i></p>		
K.DA.IM.01	<p>Students look for patterns in data, make predictions, make a model, and draw conclusions (e.g. make predictions on weather data, butterfly life cycle, etc.) and present in a picture graph or pattern.</p> <p><i>Data can be represented in models to portray results and to assist in identifying patterns in the world around us. This type of data is represented in a more visual way outside of lines, bars, and charts. This would include life cycles, weather maps, and processes. Students will show data in a pattern. Students will create models to show data which could include pictographs of favorite cookie, fruit, sport, or models also include Students will show what would be next in a pattern, or what might be missing from a pattern. This could be a color pattern, number pattern, animal pattern, etc. It can be as basic as ABAB, or ABBABB.</i></p>	Inference and Models	4. Developing and using abstractions

## Algorithms and Programming

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
K.AP.A.01	<p>Construct and execute algorithms (set of step-by-step instructions) that includes sequencing and simple loops to accomplish a task, both independently, collaboratively, with or without a computing device (e.g. verbally, kinesthetically, with robot devices or a programming language, block coding).</p> <p><i>Algorithmic thinking is the ability to define clear steps to solve a problem. A process to complete a task (such as the steps to tie your</i></p>	Algorithms	4. Developing and using abstractions

	<i>shoes), and recipes are examples of algorithms. Expose students to the term algorithm as they are sequencing events or processes like getting ready for school in the morning. Students should create algorithms (specific steps) to accomplish a task.</i>		
K.AP.V.01	<p>With guidance, recognize that numbers represent different types of data using numbers or other symbols (e.g. thumbs up/thumbs down for yes/no color by number, arrows for direction, encoding/decoding a word using numbers or pictographs).</p> <p><i>Information in the real world can be represented in computer programs. Students could use thumbs up/down as representations of yes/no, use arrows when writing algorithms to represent direction, use emojis that represent emotion, or encode and decode words using numbers, pictographs, or other symbols to represent letters or words.</i></p>	Variables	4. Developing and using abstractions
K.AP.C.01	<p>With guidance, independently or collaboratively create programs to accomplish tasks using a programming language, robot device, or unplugged activity that includes sequencing events and simple loops (e.g. emphasizing beginning, middle, and end; collaborative programming).</p> <p><i>Programming is used as a tool to create products that reflect a wide range of interests. Control structures specify the order in which instructions are executed within a program. Emphasize the sequence of events, such as left right, up, down. Get from one point to another on a map. Explore basic robots that use arrows for direction, or search for lessons on CS unplugged fundamentals.</i></p>	Control	5. Creating computational artifacts
K.AP.M.01	<p>With guidance, decompose (break down) a larger problem into smaller subproblems or combine simple tasks to make something more complex.</p> <p><i>Decomposition is the act of breaking down tasks into simpler tasks. Students could break down the steps needed to make breakfast, get ready for school, to move a character across the screen. Combining tasks could include being given objects to construct sub parts that go together to make a more complex creation (e.g., building structures out</i></p>	Modularity	3. Recognizing and defining computational problems

	<i>of Legos, then combining them into a town or community). This can be done with or without a computing device.</i>		
K.AP.PD.01	<p>Create a design document to illustrate thoughts, ideas and stories in a sequential manner (e.g. storyboard, mindmap, sequential graphic organizer).</p> <p><i>Creating a design document for what a program will do clarifies the steps that will be needed to create a program and can be used to check if a program is correct. Students could create a planning document, such as a story map, a storyboard, or a sequential graphic organizer, to illustrate what their program will do. Students at this stage may complete the planning process with help from their teachers.</i></p>	Program Development	5. Creating computational artifacts 7. Communicating about computing
K.AP.PD.02	<p>With guidance, give credit to ideas, creations, and solutions of others while developing algorithms (e.g. using code, music, pictures).</p> <p><i>Using computers comes with a level of responsibility. With guidance, students should credit artifacts that were created by others, such as pictures, music, and code. Credit could be given orally, if presenting their work to the class, or in writing or orally, if sharing work on a class blog or website. Proper attribution at this stage does not require a formal citation, such as in a bibliography or works cited document.</i></p>	Program Development	7. Communicating about computing
K.AP.PD.03	<p>With guidance, independently or collaboratively construct, execute, and debug (identify and fix) algorithms using a programming language and or an unplugged activity that includes sequencing (e.g. use block based programming).</p> <p><i>Algorithms or programs may not always work correctly. With guidance, students should be able to use various strategies, such as changing the sequence of the steps, following the algorithm in a step-by-step manner, or trial and error to fix problems in algorithms and programs independently or collaboratively.</i></p>	Program Development	6. Testing and refining computational artifacts
K.AP.PD.04	<p>Use correct terminology in the development of an algorithm to solve a simple problem (e.g. beginning, middle, end).</p> <p><i>At this stage, students should be able to talk or write about the goals and expected outcomes of the programs they create and the choices</i></p>	Program Development	7. Communicating about computing

	<i>that they made when creating programs. This could be done using coding journals, discussions with a teacher, or class presentations.</i>		
--	---	--	--

## Impacts of Computing

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
K.IC.C.01	<p>Understand different ways in which types of technologies are used in your daily life.</p> <p><i>In the past, if students wanted to read about a topic, they needed access to a library to find a book about it. Today, students can view and read information on the Internet about a topic or they can download e-books about it directly to a device. Such information may be available in more than one language and could be read to a student, allowing for great accessibility. Students should be able to analyze where and when various ways technology can be used. (e.g., checking out at a store, buying lunch, using an iPhone or Android device to call in an emergency, or learning through video sharing).</i></p>	Culture	7. Communicating about computing
K.IC.SI.01	<p>With guidance identify appropriate manners while participating in an online environment. (Digital Citizenship - focus on Digital Literacy and Digital Etiquette)</p> <p><i>The practice of appropriate online behavior derives from the identification of inappropriate behavior and the identification of what makes someone a poor digital citizen or know what not to do in order to be ethical online. Students practice online safety by only using sites approved by an adult. Encourage students to tell an adult if they feel uncomfortable or see something they feel is not appropriate. Make students aware of the privacy of the digital resources being used in the classroom and who sees what is being posted (social media - the teacher posting class photos, students posting to online platforms such as SeeSaw, data from testing sites such as iStation and Lexia.) Digital citizenship is described with nine categories, however PreK-2 will focus on 4 of these: Digital Literacy (the ability to use new technology quickly and appropriately), Digital Etiquette (appropriate conduct), Digital Rights and Responsibilities (knowing your rights to free speech and privacy, but</i></p>	Social Interactions	2. Collaborating around computing

	<i>handling it responsibly online), and Digital Health and Wellness (caring for your physical and psychological well-being online).</i>		
K.IC.H.01	<p>Discuss examples of how computing technology has changed and improved the way people live, work, and interact.</p> <p><i>As computers become interconnected in each aspect of society, more powerful, and students become more reliant on them, students should be able describe the number of times computers or devices are accessed each day by teachers or peers in class and discuss what life would be like without them.</i></p>	History	7. Communicating about computing
K.IC.SLE.01	<p>Practice responsible digital citizenship (legal and ethical behaviors) in the use of technology systems and software.</p> <p><i>People use computing technology in ways that can help or hurt themselves or others. Teach students about sharing devices and leaving the device ready for the next user (closing programs, logging out, etc.) Use passwords or other log in methods, learning why we protect devices and programs (such as online assessment) with these. Students should understand they should never post as another person (blogs, SeeSaw, etc.).</i></p>	Safety, Law, & Ethics	2. Collaborating around computing
K.IC.CP.01	<p>Understand that a wide range of jobs require knowledge or use of computer science.</p> <p><i>Within the inevitable interwoven fabric of society's reliance and innovative machines, students will required to have basic assumable skills when entering the workforce. Students should be able to identify after initial instruction what digital computing devices and languages are necessary to create a modernized mode of everyday activities in the technological age. An example would be for students to list how a bus driver can use GPS, safety features, and indicators to provide safe travel to school.</i></p>	Community Partnerships	7. Communicating about computing

## First Grade

### Computing Systems

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
1.CS.D.01	<p>With guidance, select and use a computing device to perform a variety of tasks for an intended outcome.</p> <p><i>People use computing devices to perform a variety of tasks accurately and quickly. Students should be able to select the appropriate app/program to use for tasks they are required to complete, then log off or power down. For example, if students are asked to draw a picture, they should be able to open and use a drawing app/program to complete this task, or if they are asked to create a presentation, they should be able to open and use presentation software. In addition, with teacher guidance, students should be aware that different software has the same primary functionality (e.g. Keynote, PowerPoint, Google Slides).</i></p>	Devices	7. Communicating about computing
1.CS.HS.01	<p>Use appropriate terminology in identifying and describing the function of common computing devices and components (e.g., use an app to draw on the screen, use software to write a story or control robots).</p> <p><i>A computing system is composed of hardware and software. Hardware consists of physical components. Software provides a computer a set of instructions to follow. Students should be able to identify and describe the function of software and hardware such as interactive boards, touch screen devices, and robotics.</i></p>	Hardware and Software	7. Communicating about computing
1.CS.HS.02	<p>With guidance select and use appropriate software/apps for an intended outcome (e.g., programs, browsers, websites, and applications).</p> <p><i>Computer software and apps are programmed and installed on hard drives on various devices utilized by every end user. Software provides code for the programs to compute properly for the created operation. Software apps and programs interact with one another to provide an intended outcome or output. Students should be able to identify the application or program required for a desired activity. This could include, but not limited to, district purchased client-based reading or math program software, apps for a specific learning methods Reading Eggs,</i></p>	Hardware and Software	1. Fostering an inclusive computing culture

	<i>iMovie, Google Apps, Seesaw, or accessing a browser to navigate web based programs.</i>		
1.CS.IO.01	<p>Understand and apply basic input/output skills.</p> <ul style="list-style-type: none"> <li>• Input (keyboarding, mouse, touchscreen, voice, camera, robotics, interactive board)</li> <li>• Output (monitor, screen, printer, 3D printer, robotics, audio)</li> </ul> <p><i>Input devices are used to input data for the creation of various digital products. Some input devices a person could use include voice input, touchpad, touchscreen, mouse, keyboarding (Keyboarding - practice locating space bar, enter key, and developmentally appropriate letters. Students should understand the left hand is used for the left side of the keyboard, and the right hand is used on the right side. This includes the understanding that the keyboard is not in alphabetical order and the general layout of the keys including the location of numbers and basic punctuation.) Output devices are how a computer displays information. Student should understand the use of output devices such as audio, video, screen display, robotics, and printers.</i></p>	Input and Output	7. Communicating about computing
1.CS.T.01	<p>Identify and describe basic hardware and software problems using accurate terminology (app or program is not working as expected, no sound is coming from the device, caps lock turned on, wi-fi not working).</p> <p><i>Problems with computing systems have different causes. Students at this level will start to understand those causes, communicate the problem with accurate terminology, and seek solutions to that problem (e.g., when an app or program is not working as expected, a device will not turn on, the sound does not work, etc.). Ideally, students would be able to use simple troubleshooting strategies, including turning a device off and on to reboot it, closing and reopening an app, checking wi-fi, turning on speakers, or plugging in headphones. These are, however, not specified in the standard, because these problems may not occur.</i></p>	Troubleshooting	6. Testing and refining computational artifacts 7. Communicating about computing

## Networks & the Internet

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
1.NI.NCO.01	<p>Recognize that by connecting computing devices together they can share information using a network (e.g. wired or wireless network).</p> <p><i>Networking and interconnectivity of computing devices are essential in today's society. Through wi-fi, bluetooth, or hard line ethernet connections, the ability of information to be shared with an organized, secure and reliable system, is an integrated range of platforms which uses various software and hardware. Students should be able to identify whether information is being sent to the program or device. (e.g., the teacher laptop is being connected to the LCD projector, or if how a bluetooth speaker connection is active.)</i></p>	Network Communication & Organization	7. Communicating about computing
1.NI.C.01	<p>Identify what authentication methods (passwords) are; explain why they are not shared; and discuss what makes a password strong. Independently, use passwords to access technological devices, apps, etc.</p> <p><i>Learning to protect one's device or information from unwanted use by others is an essential first step in learning about cybersecurity. Students are not required to use multiple strong passwords. They should appropriately use and protect the passwords they are required to use.</i></p>	Cybersecurity	7. Communicating about computing

## Data Analysis

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
1.DA.S.01	<p>With guidance locate, open, modify, delete and save an existing file, use appropriate file-naming conventions, and recognize that the file exists within an organizational structure (drive, folder, file).</p> <p><i>All information stored and processed by a computing device is referred to as data. Data can be images, text documents, audio files, software programs or apps, video files, etc. As students use software to complete tasks on a computing device, they will be manipulating data. With guidance, students will search for or retrieve files by name, or organize files. This could include taking photos, opening, and deleting them,</i></p>	Storage	4. Developing and using abstractions

	<i>organizing files or photos into folders on a desktop or on an operating system, and learning to name and save a file before exiting.</i>		
1.DA.C.01	<p>With guidance, collect data and present it two different ways (chart or graph).</p> <p><i>The collection and use of data about the world around them is a routine part of life and influences how people live. Students could collect data on the weather, such as sunny days versus rainy days, the temperature at the beginning of the school day and end of the school day, or the inches of rain over the course of a storm. Students could count the number of pieces of each color of candy in a bag of candy, such as Skittles or M&amp;Ms. Students could create surveys of things that interest them, such as favorite foods, pets, or TV shows, and collect answers to their surveys from their peers and others. The data collected could then be organized into two visualizations, such as a bar graph or pie chart.</i></p>	Collection	<p>4. Developing and using abstractions</p> <p>7. Communicating about computing</p>
1.DA.CVT.01	<p>With guidance, identify and interpret data from a chart or graph (visualization) in order to make a prediction, with or without a computing device.</p> <p><i>Data can be used to make inferences or predictions about the world. Students could analyze a graph or pie chart of the colors in a bag of candy or the averages for colors in multiple bags of candy, identify the patterns for which colors are most and least represented, and then make a prediction as to which colors will have most and least in a new bag of candy. Students could create and analyze charts or graphs in spreadsheet applications, web based programs, or visually in digital drawings to portray data collected. They could create and analyze graphs of temperatures taken at the beginning of the school day and end of the school day, identify the patterns of when temperatures rise and fall, and predict if they think the temperature will rise or fall at a particular time of the day, based on the pattern observed. The focus is making predictions based on data.</i></p>	Visualization & Transformation	7. Communicating about computing
1.DA.IM.01	Create a model of an object or process in order to identify patterns and essential elements. (e.g. water table, butterfly life cycle, seasonal weather patterns).	Inference and Models	4. Developing and using abstractions

	<p><i>Data can be represented in models to portray results and to assist in identifying patterns in the world around us. This type of data is represented in a more visual way outside of lines, bars, and charts. This would include life cycles, weather maps, and processes such as the engineering design process. Students will create models either physically (paper, clay, etc.) or digitally using photos, text and shapes with the intent of understanding patterns and essential steps and information.</i></p>		
--	--	--	--

## Algorithms and Programming

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
1.AP.A.01	<p>With guidance, model daily processes and follow algorithms (sets of step-by-step instructions) for complete tasks verbally, kinesthetically, with robot devices, or a programming language.</p> <p><i>Algorithmic thinking is the ability to define clear steps to solve a problem. Composition is the combination of smaller tasks into more complex tasks. With guidance, students should be able to create and follow algorithms for making simple foods, brushing their teeth, getting ready for school, participating in clean-up time or programming a robotic device to follow a preset path.</i></p>	Algorithms	4. Developing and using abstractions
1.AP.V.01	<p>With guidance, model the way that programs store and manipulate data by using numbers or other symbols to represent information (e.g. thumbs up/thumbs down for yes/no, use arrows when writing algorithms to represent direction, or encode and decode words using numbers, pictographs, or other symbols to represent letters or words).</p> <p><i>Information in the real world can be represented in computer programs. Students could use thumbs up/down as representations of yes/no, use arrows when writing algorithms to represent direction, use emojis that represent emotion, or use common icons and symbols to perform an action (play is a triangle, save button, share button, etc.).</i></p>	Variables	4. Developing and using abstractions
1.AP.C.01	<p>With guidance, independently, or collaboratively construct algorithms (sets of step-by-step instructions) to accomplish tasks using a programming language, robot device, or unplugged activity that includes sequencing and repetition, to express ideas or address a problem.</p>	Control	5. Creating computational artifacts

	<i>Programming is used as a tool to create products that reflect a wide range of interests. Control structures specify the order in which instructions are executed within a program. Emphasize the sequence of events, such as left right, up, down. Get from one point to another on a map. Have students develop the steps and have others follow those steps. Search lessons for CS Unplugged, or CS fundamentals.</i>		
1.AP.M.01	<p>With guidance, decompose (break down) the steps needed to solve a problem into a precise sequence of instructions.</p> <p><i>Decomposition is the act of breaking down tasks into simpler tasks. Students could break down the steps needed to make a peanut butter and jelly sandwich, to brush their teeth, to draw a shape, to move a character across the screen, or to solve a level of a coding app.</i></p>	Modularity	3. Recognizing and defining computational problems
1.AP.PD.01	<p>Independently or with guidance, create a grade-level appropriate artifact to illustrate thoughts, ideas, or stories in a sequential (step-by-step) manner (e.g. story map, storyboard, and sequential graphic organizer).</p> <p><i>Creating a plan for what a program will do clarifies the steps that will be needed to create a program and can be used to check if a program is correct. Students could create a planning document, such as a story map, a storyboard, or a sequential graphic organizer, to illustrate what their program will do. Students at this stage may complete the planning process by themselves, or with help from their teachers.</i></p>	Program Development	5. Creating computational artifacts 7. Communicating about computing
1.AP.PD.02	<p>Independently or with guidance give credit to ideas, creations and solutions of others while writing and/or developing programs.</p> <p><i>Using computers comes with a level of responsibility. Students should credit artifacts that were created by others, such as pictures, music, and code. Credit could be given orally, if presenting their work to the class, or in writing or orally, if sharing work on a class blog or website. Proper attribution at this stage does not require a formal citation, such as in a bibliography or works cited document.</i></p>	Program Development	7. Communicating about computing
1.AP.PD.03	<p>With guidance, independently, or collaboratively construct, execute, and debug (identify and fix) programs using a programming language and/or unplugged activity that includes sequencing and repetition.</p>	Program Development	6. Testing and refining

	<i>Algorithms or programs may not always work correctly. Students should be able to use various strategies, such as changing the sequence of the steps, following the algorithm in a step-by-step manner, or trial and error to fix problems in algorithms and programs.</i>		computational artifacts
1.AP.PD.04	<p>Use correct terminology (first, second, third) and explain the choices made in the development of an algorithm to solve a simple problem.</p> <p><i>At this stage, students should be able to talk or write about the goals and expected outcomes of the programs they create and the choices that they made when creating programs. This could be done using coding journals, discussions with a teacher, class presentations, or blogs.</i></p>	Program Development	7. Communicating about computing

## Impacts of Computing

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
1.IC.C.01	<p>Identify how people use different types of technologies in their daily work and personal lives.</p> <p><i>Computing technology has changed the way people live and work. In the past, if students wanted to read about a topic, they needed access to a library to find a book about it. Today, students will be able to view and read information on the Internet about a topic or they can download e-books about it directly to a device. Such information may be available in more than one language and could be read to a student, allowing for great accessibility. In personal lives, they are encouraged to engage in computing in a positive learning and encouraging manner.</i></p>	Culture	7. Communicating about computing
1.IC.SI.01	<p>With guidance, identify appropriate and inappropriate behavior. Act responsibly while participating in an online community and know how to report concerns. (Digital Citizenship - review Digital Literacy, but focus on Digital Etiquette and Rights and Responsibilities)</p> <p><i>The practice of appropriate online behavior derives from the identification of inappropriate behavior and the identification of what makes someone a poor digital citizen or know what not to do in order to be ethical online. Students practice online safety by only using sites approved by an adult. Encourage students to tell an adult if they feel</i></p>	Social Interactions	2. Collaborating around computing

	<p><i>uncomfortable or see something they feel is not appropriate. Make students aware of the privacy of the digital resources being used in the classroom and who sees what is being posted (social media - the teacher posting class photos, students posting to online platforms such as SeeSaw, data from testing sites such as iStation and Lexia.) This includes knowing not to disclose personal information such as last name, location, and passwords. Students practice giving positive feedback on other student posts. Digital citizenship is described with nine categories, however PreK-2 will focus on 4 of these: Digital Literacy (the ability to use new technology quickly and appropriately), Digital Etiquette (appropriate conduct), Digital Rights and Responsibilities (knowing your rights to free speech and privacy, but handling it responsibly online), and Digital Health and Wellness (caring for your physical and psychological well-being online).</i></p>		
1.IC.H.01	<p>Compare how people live and work before and after the implementation or adoption of new computing technology.</p> <p><i>As computers become interconnected in each aspect of society, more powerful, and students become more reliant on them, students should be able to identify a list of technologies the school and others have improved in their daily lives. (e.g., ordering devices by voice, financial institutions, household devices management, robotics, cars that drive themselves, and Social Media sharing applications.)</i></p>	History	7. Communicating about computing
1.IC.SLE.01	<p>Practice responsible digital citizenship (legal and ethical behaviors) in the use of technology systems and software. Keep login information private, and log off of devices appropriately.</p> <p><i>People use computing technology in ways that can help or hurt themselves or others. Harmful behaviors, such as sharing private information such as last name, location, and school, as well as leaving public devices logged in or sharing login information should be recognized and avoided. Students should understand they should never post as another person (blogs, SeeSaw, etc.) The concept of copyright and using photos and text with permission should be recognized and practiced with guidance.</i></p>	Safety, Law, & Ethics	2. Collaborating around computing

1.IC.CP.01	<p>Compare and contrast examples of how computing technology has changed and improved the way people live, work, and interact.</p> <p><i>Within the inevitable interwoven fabric of society's reliance and innovative machines, students will required to have basic assumable skills when entering the workforce. Students should be able to identify what digital computing devices and languages are necessary to create a modernized mode of everyday activities in the technological age. An example would be for students to list how a bus driver can use GPS, safety features, and indicators to provide safe travel to school.</i></p>	Community Partnerships	7. Communicating about computing
------------	---	------------------------	----------------------------------

## Second Grade

### Computing Systems

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
2.CS.D.01	<p>Select and use a computing device to perform a variety of tasks for an intended outcome.</p> <p><i>People use computing devices to perform a variety of tasks accurately and quickly. Students should be able to select the appropriate app/program to use for tasks they are required to complete, then log off or power down. For example, if students are asked to draw a picture, they should be able to open and use a drawing app/program to complete this task, or if they are asked to create a presentation, they should be able to open and use presentation software. In addition, with teacher guidance, students should compare and discuss preferences for software with the same primary functionality. Students could compare different web browsers or word processing, presentation, or drawing programs.</i></p>	Devices	7. Communicating about computing
2.CS.HS.01	<p>Model the use of components of a computing system, its basic functions, peripherals, and storage features.(e.g. using the hard drive, memory/storage, printers, scanners, wireless and cabled connections, and cloud storage).</p> <p><i>A computing system is composed of hardware and software. Hardware consists of physical components. Software provides a computer a set of instructions to follow. Students should be able to identify and use the function of software and hardware such as memory/storage, printers, flash drive, cloud storage, etc.</i></p>	Hardware and Software	7. Communicating about computing
2.CS.HS.02	<p>Self-select and use appropriate software/apps for an intended outcome. (e.g., programs, browsers, websites, and applications).</p> <p><i>Computer software and apps are programmed and installed on hard drives on various devices utilized by every end user. Software provides code for the programs to compute properly for the created operation. Software apps and programs interact with one another to provide an intended outcome or output. Students should be able to select an application or program required for a desired activity. This could include,</i></p>	Hardware and Software	1. Fostering an inclusive computing culture

	<i>but not limited to, district purchased client-based reading or math program software, apps for a specific learning methods Reading Eggs, iMovie, Google Apps, Seesaw, or accessing a browser to navigate web based programs.</i>		
2.CS.IO.01	<p>Understand and use varying input/output skills.</p> <ul style="list-style-type: none"> <li>• Input (keyboarding, mouse, touchscreen, voice, voice typing, camera, robotics, interactive board)</li> <li>• Output (monitor, screen, printer, 3D printer, robotics, audio)</li> </ul> <p><i>Input devices are used to input data for the creation of various digital products. Some input devices a person could use include voice typing, touchpad, touchscreen, mouse, and keyboarding. (Keyboarding- use fingers on home row and the spacebar with the thumb, shift key for capital letters, understand that clicking the mouse or tapping the location on the screen makes an insertion point in a document and how to use the mouse to highlight (double-click) a word.</i></p>	Input and Output	7. Communicating about computing
2.CS.T.01	<p>Using accurate terminology, identify and resolve simple hardware and software problems and strategies for solving these problems.</p> <p><i>Problems with computing systems have different causes. Students at this level will start to understand those causes, and should be able to communicate a problem with accurate terminology, and be able to find solutions to that problem (e.g., when an app or program is not working as expected, a device will not turn on, the sound does not work, etc.). Ideally, students would be able to use simple troubleshooting strategies, including turning a device off and on to reboot it, closing and reopening an app, turning on speakers, or plugging in headphones. These are, however, not specified in the standard, because these problems may not occur.</i></p>	Troubleshooting	6. Testing and refining computational artifacts 7. Communicating about computing

## Networks & the Internet

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
2.NI.NCO.01	Use computing devices to share information and communicate with others using a network.	Network Communication & Organization	7. Communicating about computing

	<i>Networking and interconnectivity of computing devices are essential in today's society. Through wi-fi, bluetooth, or hard line ethernet connections, the ability of information to be shared with an organized, secure and reliable system, is an integrated range of platforms which uses various software and hardware. Students should be able to understand and apply the process of sending information to the program or device (e.g., the teacher laptop is being connected to the LCD projector, or if the wi-fi or connection is active via Airplay, screenshare, airdrop, bluetooth speaker or headphones, Google Classroom uploads).</i>		
2.NI.C.01	<p>Demonstrate use of strong authentication methods to access and protect devices and data. Understand the effects of retaining password privacy.</p> <p><i>Learning to protect one's device or information from unwanted use by others is an essential first step in learning about cybersecurity. Students are required to use strong passwords. They should appropriately use and protect the passwords they are required to use.</i></p>	Cybersecurity	7. Communicating about computing

## Data Analysis

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
2.DA.S.01	<p>Manipulate existing files while use appropriate file-naming conventions. With guidance, develop and modify an organizational structure by creating, copying, moving, and deleting files and folders.</p> <p><i>All information stored and processed by a computing device is referred to as data. Data can be images, text documents, audio files, software programs or apps, video files, etc. As students use software to complete tasks on a computing device, they will be manipulating data. Students will organize files or folders and use naming techniques (e.g., sorting content area activities, grouping photos by project, moving files or photos to the trash).</i></p>	Storage	4. Developing and using abstractions
2.DA.C.01	<p>With guidance, collect and present the same data in various visual formats.</p> <p><i>The collection and use of data about the world around them is a routine part of life and influences how people live. Students could collect data</i></p>	Collection	4. Developing and using abstractions 7. Communicating about computing

	<p><i>on the weather, such as sunny days versus rainy days, the temperature at the beginning of the school day and end of the school day, or the inches of rain over the course of a storm. Students could count the number of pieces of each color of candy in a bag of candy, such as Skittles or M&amp;Ms. Students could create surveys of things that interest them, such as favorite foods, pets, or TV shows, and collect answers to their surveys from their peers and others. The data collected could then be organized into two or more visualizations, such as a bar graph, pie chart, or pictograph.</i></p>		
2.DA.CVT.01	<p>Collect data over time and organize it on a chart or graph in order to make a prediction.</p> <p><i>Data can be used to make inferences or predictions about the world. Students could analyze a graph or pie chart of the colors in a bag of candy or the averages for colors in multiple bags of candy, identify the patterns for which colors are most and least represented, and then make a prediction as to which colors will have most and least in a new bag of candy. Students collect data over time, then create and analyze charts or graphs in spreadsheet applications, web based programs, or visually in digital drawings to portray data collected. They could create and analyze graphs of temperatures taken at the beginning of the school day and end of the school day, identify the patterns of when temperatures rise and fall, and predict if they think the temperature will rise or fall at a particular time of the day, based on the pattern observed. The focus is on organizing data and making predictions based on data.</i></p>	Visualization & Transformation	7. Communicating about computing
2.DA.IM.01	<p>Use patterns in data to make inferences or predictions based on data collected from users or simulations.</p> <p><i>Data can be represented in models to portray results and to assist in identifying patterns in the world around us. This includes students collecting their own data or experiencing digital simulations. The intent is to make predictions based on the data collected from participants or from simulations.</i></p>	Inference and Models	4. Developing and using abstractions

## Algorithms and Programming

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
2.AP.A.01	<p>Both independently and collaboratively construct and follow algorithms that include sequencing and simple loops to accomplish a task verbally, kinesthetically, with robot devices, or a programming language.</p> <p><i>Algorithmic thinking is the ability to define clear steps to solve a problem. Composition is the combination of smaller tasks into more complex tasks. With guidance, students should be able to create and follow algorithms for making simple foods, brushing their teeth, getting ready for school, participating in clean-up time or programming a robotic device to follow a preset path. Students should understand that loops repeat the steps of a process.</i></p>	Algorithms	4. Developing and using abstractions
2.AP.V.01	<p>Use and model the way a computer program stores, accesses, and manipulates data that is represented as a variable.</p> <p><i>Information in the real world can be represented in computer programs. Students could use thumbs up/down as representations of yes/no, use arrows when writing algorithms to represent direction, use emojis that represent emotion, or use common icons and symbols to perform an action (play is a triangle, save button, share button, etc.).</i></p>	Variables	4. Developing and using abstractions
2.AP.C.01	<p>Independently and collaboratively create programs to accomplish tasks using a programming language such as block based programming using a robot device, or unplugged activity that includes simple loops, sequencing, and repetition.</p> <p><i>Programming is used as a tool to create products that reflect a wide range of interests. Control structures specify the order in which instructions are executed within a program. Use block based programming, which is found in most robots used in elementary schools, or online resources to learn coding skills.</i></p>	Control	5. Creating computational artifacts
2.AP.M.01	<p>Independently decompose (break down) a larger problem into smaller subproblems and steps needed to solve those problems.</p> <p><i>Decomposition is the act of breaking down tasks into simpler tasks. Students could break down the steps needed to make a peanut butter</i></p>	Modularity	3. Recognizing and defining computational problems

	<i>and jelly sandwich, to brush their teeth, to draw a shape, to move a character across the screen, or to solve a level of a coding app. When coding, including the setting, designing a character, and choosing the actions.</i>		
2.AP.PD.01	<p>Independently create a grade-level appropriate artifact to illustrate thoughts, ideas, or stories in a sequential (step-by- step) manner (e.g., story map, storyboard, and sequential graphic organizer).</p> <p><i>Creating a plan for what a program will do clarifies the steps that will be needed to create a program and can be used to check if a program is correct. Students could create a planning document, such as a story map, a storyboard, or a sequential graphic organizer, to illustrate what their program will do. Students at this stage should be able to complete the planning process by themselves.</i></p>	Program Development	5. Creating computational artifacts 7. Communicating about computing
2.AP.PD.02	<p>Give credit to ideas, creation (such as code, music, or pictures) and solutions of others while writing and developing programs.</p> <p><i>Using computers comes with a level of responsibility. Students should credit artifacts that were created by others, such as pictures, music, and code. Credit could be given orally, if presenting their work to the class, or in writing or orally, if sharing work on a class blog or website. Proper attribution at this stage does not require a formal citation, such as in a bibliography or works cited document.</i></p>	Program Development	7. Communicating about computing
2.AP.PD.03	<p>Independently and collaboratively construct, execute, analyze and debug (fix) an algorithm using a programming language and/or unplugged activity that includes sequencing and simple loops.</p> <p><i>Algorithms or programs may not always work correctly. Students should be able to independently use various strategies, such as changing the sequence of the steps, following the algorithm in a step-by-step manner, or trial and error to fix problems in algorithms and programs.</i></p>	Program Development	6. Testing and refining computational artifacts
2.AP.PD.04	Use correct terminology (debug, program input/output, code) to explain the development of an algorithm to solve a problem in an unplugged activity, hands on manipulatives, or a programming language.	Program Development	7. Communicating about computing

	<p><i>At this stage, students should be able to use correct terminology to discuss or write about the goals and expected outcomes of the programs they create and the choices that they made when creating programs. This could be done using coding journals, discussions with a teacher, class presentations, or blogs.</i></p>		
--	---	--	--

## Impacts of Computing

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
2.IC.C.01	<p>Recognize and describe how different technologies used daily in work and at home are used to solve problems or make work and life easier.</p> <p><i>Computing technology has changed the way people live and work. In the past, if students wanted to read about a topic, they needed access to a library to find a book about it. Today, students will be able to view and read information on the Internet about a topic or they can download e-books about it directly to a device. Such information may be available in more than one language and could be read to a student, allowing for great accessibility. In their personal lives, they should be able to utilize those same technologies to complete life tasks (e.g., ordering food, video-editing, game play, drones, sending emails to family and friends for social interactions, and possibly checking the weather for the next day).</i></p>	Culture	7. Communicating about computing
2.IC.SI.01	<p>Aid in developing an appropriate code of conduct, explain and practice grade-level appropriate behavior and responsibilities while participating in an online community. Identify and report inappropriate behavior (Digital Citizenship - review Digital Literacy and Digital Etiquette, but focus on Rights and Responsibilities and Digital Health and Wellness).</p> <p><i>The practice of appropriate online behavior derives from the identification of inappropriate behavior and the identification of what makes someone a poor digital citizen or know what not to do in order to be ethical online. Students could share their work on blogs or in other collaborative spaces online, taking care to avoid sharing information that is inappropriate or that could personally identify them to others. Students could provide feedback to others on their work in a kind and respectful manner and could tell an adult if others are sharing things they should</i></p>	Social Interactions	2. Collaborating around computing

	<i>not share or are treating others in an unkind or disrespectful manner on online collaborative spaces. Digital citizenship is described with nine categories, however PreK-2 will focus on 4 of these: Digital Literacy (the ability to use new technology quickly and appropriately), Digital Etiquette (appropriate conduct), Digital Rights and Responsibilities (knowing your rights to free speech and privacy, but handling it responsibly online), and Digital Health and Wellness (caring for your physical and psychological well-being online).</i>		
2.IC.H.01	<p>Recognize how technologies have changed the world, and explore how the needs of society have impacted the changes in technology.</p> <p><i>As computers become interconnected in each aspect of society, more powerful, and students become more reliant on them, students should be able to explain or utilize a list of technologies the school and others have improved in their daily lives making connections to real-world problems and solutions. (e.g., ordering devices by voice, financial institutions, medical fields, household devices management, robotics, cars that drive themselves, and Social Media sharing applications.)</i></p>	History	7. Communicating about computing
2.IC.SLE.01	<p>Practice responsible digital citizenship in all technology use. Understand digital data has intellectual property rights (belongs to others) and it cannot be claimed as your own.</p> <p><i>People use computing technology in ways that can help or hurt themselves or others. Harmful behaviors, such as sharing private information or sharing login information should be recognized and avoided. Students should understand they should never post as another person (blogs, SeeSaw, etc.) Students should be aware of the concept of copyright and using photos and text with permission. This could include images online, or asking a friend if it is OK to post their picture before sharing it digitally.</i></p>	Safety, Law, & Ethics	2. Collaborating around computing
2.IC.CP.01	<p>Investigate how computer science has impacted your daily life and the jobs in your community and the world around you.</p> <p><i>Within the inevitable interwoven fabric of society's reliance and innovative machines, students will required to have basic assumable skills when entering the workforce. Students should be able to explain</i></p>	Community Partnerships	7. Communicating about computing

	<p><i>how digital computing devices and languages are necessary to create a modernized mode of everyday activities in the technological age. An example would be for students to create examples and give possible improvements of how a bus driver can use GPS, safety features, and indicators to provide safe travel to school.</i></p>		
--	--	--	--

## Third Grade

### Computing Systems

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
3.CS.D.01	<p>Identify how computing devices can be connected to other devices to extend their capabilities.</p> <p><i>Computing devices often depend on other devices or components. For example, a robot depends on a physically attached light sensor to detect changes in brightness, whereas the light sensor depends on the robot to power. Keyboard input or a mouse click could cause an action to happen or information to be displayed on a screen; this could only happen because the computer has a processor to evaluate what is happening externally and produce corresponding responses. At this stage, students should be able to identify basic connections of a minimum of two components (such as a tablet and charger cable functioning together to charge the device or connect to the computer for sharing data) while learning correct terminology for these devices and components.</i></p>	Devices	7. Communicating about computing
3.CS.HS.01	<p>Model how information flows through hardware and software to accomplish tasks.</p> <p><i>In order for a person to accomplish tasks with a computer, both hardware and software are needed. At this stage, a model should only include basic elements of a computer system, such as input, output, processor, sensors, and storage. Students could draw a model on paper or in a drawing program.</i></p>	Hardware and Software	4. Developing and using abstractions
3.CS.IO.01	<p>Demonstrate proper use of grade level appropriate input devices and produce digital artifacts with a controlled audience.</p> <p><i>Input devices are used to input data for the creation of various digital products. Some input devices a person could use include voice typing, touchpad, touchscreen, mouse, keyboarding (type letters and words at a rate of 5-10 WPM while looking, identify home row, modifier, punctuation, function keys), audio devices, camera. Digital artifacts could be published but within a controlled setting like a closed class blog or website. Examples of digital artifacts could include a slideshow,</i></p>	Input and Output	7. Communicating about computing

	<i>video, prints, 3D prints, audio, programs (robotics), web-based product (controlled audience).</i>		
3.CS.T.01	<p>Identify, using accurate terminology, simple hardware and software problems and strategies for solving these problems.</p> <p><i>Although computing systems may vary, common troubleshooting strategies can be used on all of them. Students should be able to identify solutions to problems such as the device not responding, no power, no network, app crashing, no sound, or password entry not working. Should an error occur, the goal would be that students would identify various strategies, such as rebooting the device, checking for power, checking network availability, closing and reopening applications, making sure the volume is turned up and the headphones are plugged in, and making sure the caps lock key is not on, to solve these problems, when possible. It also becomes crucial for students to start using accurate terminology in describing and discussing their problem with a peer or adult.</i></p>	Troubleshooting	6. Testing and refining computational artifacts

## Networks & the Internet

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
3.NI.NCO.01	<p>Model how a device on a network sends and receives information.</p> <p><i>Information is sent and received over physical or wireless paths. It is broken down into smaller pieces called packets, which are sent independently and reassembled at the destination. Students should demonstrate their understanding of this flow of information, e.g. drawing a model of the way packets are transmitted, programming an animation to show how packets are transmitted, or demonstrating through an unplugged activity which has them act it out in some way.</i></p>	Network Communication & Organization	4. Developing and using abstractions
3.NI.C.01	<p>Identify problems that relate to inappropriate use of computing devices and networks.</p> <p><i>Just as we protect our personal property offline, we also need to protect our devices and the information stored on them. Information can be protected using various security measures. These measures can be physical and/or digital. Students could discuss or use a journaling or</i></p>	Cybersecurity	3. Recognizing and Defining Computational Problems

	<p><i>blogging activity to explain, orally or in writing, about topics that relate to personal cybersecurity issues. Discussion could be based on topics that are applicable to students, such as backing up data to guard against loss, how to create strong passwords and the importance of not sharing passwords. or why we should install and keep anti-virus software updated to protect data and systems..</i></p>		
--	--	--	--

## Data Analysis

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
3.DA.S.01	<p>Compare and contrast the formats and storage requirements for different types of information (e.g., music, video, images, and text).</p> <p><i>Different Software tools used to access data may store the data differently. The type of data being stored and the level of detail represented by that data affect the storage requirements (file size, availability, and available memory). Music, images, video, and text require different amounts of storage. Video will often require more storage than music or images alone because video combines both.</i></p>	Storage	7. Communicating about computing
3.DA.C.01	<p>Gather relevant and reliable data to solve a problem or answer a question.</p> <p><i>People select digital tools for the collection of data based on what is being observed and how the data will be used (e.g., a thermometer is used to measure temperature and GPS sensor is used to track locations). There exists a wide array of digital data collection tools, and only some are appropriate for certain types of data. Tools are chosen based upon the type of measurement they use as well the type of data people wish to observe.</i></p>	Collection	5. Creating Computational Artifacts
3.DA.CVT.01	<p>Create a simple data visualization based on data collected by or provided to student.</p> <p><i>Raw data has little meaning on its own. Data is often sorted or grouped to provide additional clarity. Organizing data can make interpreting and communicating it to others easier. Data points can be clustered by a number of commonalities. The same data could be manipulated in different ways to emphasize particular aspects or parts of the data set</i></p>	Visualization & Transformation	7. Communicating about computing

	<i>(e.g., graphs, charts and infographics). For example, a data set of sports teams could be sorted by wins, points scored, or points allowed, and a data set of weather information could be sorted by high temperatures, low temperatures, or precipitation.</i>		
3.DA.IM.01	<p>Utilize data to make predictions and discuss whether there is adequate data to make reliable predictions.</p> <p><i>The accuracy of data analysis is related to how realistically data is represented. Inferences or predictions based on data are less likely to be accurate if the data is not sufficient or if the data is incorrect in some way. Students should be able to refer to data when communicating an idea. For example, in order to explore the relationship between speed, time, and distance, students could operate a robot at uniform speed, and at increasing time intervals to predict how far the robot travels at that speed. In order to make an accurate prediction, one or two attempts of differing times would not be enough. The robot may also collect temperature data from a sensor, but that data would not be relevant for the task. Students must also make accurate measurements of the distance the robot travels in order to develop a valid prediction. Students could record the temperature at noon each day as a basis to show that temperatures are higher in certain months of the year. If temperatures are not recorded on non-school days or are recorded incorrectly or at different times of the day, the data would be incomplete and the ideas being communicated could be inaccurate. Students may also record the day of the week on which the data was collected, but this would have no relevance to whether temperatures are higher or lower. In order to have sufficient and accurate data on which to communicate the idea, students might want to use data provided by a governmental weather agency.</i></p>	Inference and Models	7. Communicating about computing

### Algorithms and Programming

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
3.AP.A.01	<p>Compare multiple algorithms for the same task.</p> <p><i>Different algorithms can achieve the same result; however, sometimes one algorithm might be more suited for a particular situation. Students should be able to look at different ways to solve the problem or complete</i></p>	Algorithms	3. Recognizing and Defining Computational Problems

	<i>the same task and recognize the differences between the solutions. For example, students could create multiple algorithms that describe how to get ready for school or other tasks like baking cookies.</i>		6. Testing and Refining Computational Artifacts
3.AP.V.01	<p>Utilize simple programs that use variables to store and modify grade level appropriate data.</p> <p><i>Variables are used to store and modify data. At this level, understanding how to use variables is sufficient. For example, students may use mathematical operations to add to the score of a game or subtract from the number of lives available in a game. The use of a variable is a countdown timer is another example.</i></p>	Variables	5. Creating computational artifacts
3.AP.C.01	<p>Create simple programs using a programming language that utilize sequencing, repetition, conditionals, and variables to solve a problem or express ideas independently.</p> <p><i>Control structures specify the order (sequence) in which instructions are executed within a program and can be combined to support the creation of more complex programs. Conditionals allow for the execution of a portion of code in a program when a certain condition is true. For example, students could write a math game that asks for multiplication fact questions and then uses a conditional to check whether or not the answer that was entered is correct. Loops allow for the repetition of a sequence of code multiple times. For example, in a program that produces an animation about a famous historical character, students could use a loop to have the character walk across the screen as they introduce themselves.</i></p>	Control	5. Creating computational artifacts
3.AP.M.01	<p>Decompose (break down) the steps needed to solve a problem into a precise sequence of instructions.</p> <p><i>Students should be able to take a general solution to a problem and break down steps that are too generic. For example, baking a cake could be described in various levels of detail. Many steps, like adding ingredients to a bowl, can be broken down into multiple steps instead of just adding all ingredients at once.</i></p>	Modularity	3. Recognizing and defining computational problems

3.AP.M.02	<p>With grade appropriate complexity, modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features.</p> <p><i>Programs can be broken down into smaller parts, which can be incorporated into new or existing programs. For example, students could modify prewritten code from a single-player game to create a two-player game with slightly different rules, remix and add another scene to an animated story, use code to make a ball bounce from another program in a new basketball game, or modify an image created by another student.</i></p>	Modularity	<p>3. Recognizing and defining computational problems</p> <p>5. Creating computational artifacts</p>
3.AP.PD.01	<p>Create a plan using an iterative process to plan the development of a program while solving simple problems (e.g., storyboard, flowchart, pseudo-code, story map).</p> <p><i>Students should document the plan development as, for example, a storyboard, flowchart, pseudocode, or story map. Students put commands in order (ties into literacy and expository text) (e.g. using block code to drag commands into the correct order to complete the programming task.</i></p>	Program Development	<p>1. Fostering an Inclusive Computing Culture</p> <p>5. Creating computational artifacts</p>
3.AP.PD.02	<p>Use proper citations and document when ideas are borrowed and changed for their own use (e.g., using pictures created by others, using music created by others, remixing programming projects).</p> <p><i>Students should identify instances of remixing, when ideas are borrowed and iterated upon, and credit the original creator. Students should also consider common licenses that place limitations or restrictions on the use of computational artifacts, such as images and music downloaded from the Internet. At this stage, attribution should be written in the format required by the teacher. (e.g. as students begin using resources created by others a first step in writing citations is collecting the website link from where you found your artifact.</i></p>	Program Development	<p>5. Creating computational artifacts</p> <p>7. Communicating about computing</p>
3.AP.PD.03	<p>Analyze and debug (identify/fix errors) a program that includes sequencing, repetition and variables in a programming language.</p>	Program Development	<p>1. Fostering an Inclusive Computing Culture</p>

	<i>As students develop programs they should continuously test those programs to see that they do what was expected and fix (debug), any errors. Students should also be able to assist others in debugging their programs.</i>		2. Collaborating Around Computing 6. Testing and Refining Computational Artifacts
3.AP.PD.04	<p>Communicate and explain your program development using comments, presentations and demonstrations.</p> <p><i>People communicate about their code to help others understand and use their programs. Another purpose of communicating one's design choices is to show an understanding of one's work. These explanations could be in-line code comments or as part of a summative presentation, such as a code walk-through or coding journal.</i></p>	Program Development	2. Collaborating Around Computing 7. Communicating about computing

## Impacts of Computing

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
3.IC.C.01	<p>Identify possible problems and how computing devices have built in features for increasing accessibility to all users.</p> <p><i>Anticipating the needs and wants of diverse end users requires students to purposefully consider potential perspectives of users with different backgrounds, ability levels, points of view, and disabilities. For example, students may consider using both speech and text to convey information in a game. They may also wish to vary the types of programs they create, knowing that not everyone shares their own tastes. When creating something for others, students give options (e.g. speech to text or type, differentiate tasks, adjusting hardware needed/give options because others might not all have the same tools.</i></p>	Culture	4. Developing and Using Abstractions 5. Creating Computational Artifacts 6. Testing and Refining Computational Artifacts
3.IC.SI.01	<p>Develop a code of conduct, explain, and practice grade-level appropriate behavior and responsibilities while participating in an online community. Identify and report inappropriate behavior. (Digital Citizenship - review of all nine components, but focused on Digital Communication and Digital Etiquette.)</p>	Social Interactions	1. Fostering an Inclusive Computing Culture 7. Communicating about Computing

	<p><i>The practice of appropriate online behavior derives from the identification of inappropriate behavior and the identification of what makes someone a poor digital citizen or know what not to do in order to be ethical online. Digital citizenship is described with nine categories: digital access (awareness of materials gained online and being mindful of who does/does not have access), digital commerce (awareness of illegal and legal exchanges online e.g. illegal downloading), digital communication (communicating and collaborating properly online), digital literacy (the ability to use new technology quickly and appropriately), digital etiquette (appropriate conduct), digital law (ethical use of technology e.g. hacking information, downloading illegally, plagiarizing, creating viruses, sending spam, or stealing someone's identify), digital rights and responsibilities (knowing your rights to free speech and privacy, but handling it responsibly online) digital health and wellness (caring for your physical and psychological wellbeing online), digital security (proactive about protecting your devices and identity online e.g., data backup, use of a surge protector, virus protection).</i></p>		
3.IC.S.02	<p>Identify how computational products may be, or have been, improved to incorporate diverse perspectives.</p> <p><i>Computing provides the possibility for collaboration and sharing of ideas and allows the benefit of diverse perspectives. For example, students could seek feedback from other groups in their class or students at another grade level. (e.g., Students could begin by evaluating lesson materials saying, "This assignment would be better if..." You color coded, made this assignment in a table, made it accessible on my mom's phone.")</i></p>	Social Interactions	<ol style="list-style-type: none"> <li>1. Fostering an Inclusive Computing Culture</li> <li>2. Collaborating Around Computing</li> </ol>
3.IC.H.01	<p>Identify computing technologies that have changed the world, and express how those technologies influence, and are influenced by, society.</p> <p><i>Students, with guidance from their teacher, should discuss topics that relate to the history of technology and the changes in the world due to technology. Topics could be based on current news content, such as robotics, wireless Internet, mobile computing devices, GPS systems, wearable computing, or how social media has influenced social and</i></p>	History	<ol style="list-style-type: none"> <li>1. Fostering an Inclusive Computing Culture</li> <li>7. Communicating about Computing</li> </ol>

	<p><i>political changes. (e.g. Google Glasses, Robotics, 3D printers, smart phones, Chromebooks, Precision Ag (lettucebot, GPS tractors, boom cameras) drones, Smart assistants, Students and teacher create a collaborative list of current technology and discuss the impacts those devices have on our lives. Also, discuss why devices are popular/unpopular and why, which is how that device is viewed by society.</i></p>		
3.IC.SLE.01	<p>Identify types of digital data that may have intellectual property rights that prevent copying or require attribution.</p> <p><i>Students should consider the licenses on computational artifacts that they wish to use. For example, the license on a downloaded image on audio file may have restrictions that prohibit modification, require attribution, or prohibit use entirely. Students should have a basic knowledge of items that are restricted. (e.g., online books, music, free music archive, images, creative commons).</i></p>	Safety, Law, & Ethics	5. Creating Computational Artifacts
3.IC.CP.01	<p>Design a visual product depicting the connections between computer science and other fields.</p> <p><i>Explaining the reason why of any computer task will lead students to understand how other professionals within their community might use similar tasks in their occupations. Making correlations and a purpose for tasks makes CS relevant to their lives as they age. Students make a direct correlation to a local business.</i></p>	Community Partnerships	<ul style="list-style-type: none"> <li>1. Fostering an Inclusive Computing Culture</li> <li>2. Collaborating Around Computing</li> <li>7. Communicating about computing</li> </ul>

## Fourth Grade

### Computing Systems

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
4.CS.D.01	<p>Identify and explain how computing devices can be connected to other devices to extend their capabilities.</p> <p><i>Computing devices often depend on other devices or components. For example, a robot depends on a physically attached light sensor to detect changes in brightness, whereas the light sensor depends on the robot to power. Keyboard input or a mouse click could cause an action to happen or information to be displayed on a screen; this could only happen because the computer has a processor to evaluate what is happening externally and produce corresponding responses. Students should be able to identify connections of a minimum of three components (such as a computer charger connected to a computer for power and then connecting to wifi through an access point within the vicinity) and explain how devices and components interact using correct terminology.</i></p>	Devices	7. Communicating about computing
4.CS.HS.01	<p>Explain how information is translated, transmitted, and processed between hardware and software in order to accomplish tasks.</p> <p><i>In order for a person to accomplish tasks with a computer, both hardware and software are needed. At this stage, a model should only include basic elements of a computer system, such as input, output, processor, sensors, and storage. Students could draw a model in a drawing program, program an animation to demonstrate it, or demonstrate it by acting this out in some way.</i></p>	Hardware and Software	4. Developing and using abstractions
4.CS.IO.01	<p>Demonstrate proper use of grade level appropriate input devices and produce digital artifacts with a controlled audience.</p> <p><i>Input devices are used to input data for the creation of various digital products. Some input devices a person could use include voice typing, touchpad, touchscreen, mouse, keyboarding (type letters and words at a rate of 10-15 WPM while increasing the proportion of time looking away from the keyboard, consistent use of home row, modifier, punctuation, function keys), audio devices, camera. Digital artifacts could be</i></p>	Input and Output	7. Communicating about computing

	<i>published but within a controlled setting like a closed class blog or website. Examples of digital artifacts could include a slideshow, video, prints, 3D prints, audio, programs (robotics), web-based product (controlled audience).</i>		
4.CS.T.01	<p>Identify, using accurate terminology, simple hardware and software problems that may occur during everyday use, discuss problems with peers and adults, and apply strategies for solving these problems.</p> <p><i>Although computing systems may vary, common troubleshooting strategies can be used on all of them. Students should be able to identify solutions to problems such as the device not responding, no power, no network, app crashing, no sound, or password entry not working. Should an errors occur, the goal would be that students would not only identify but also use various strategies, such as rebooting the device, checking for power, checking network availability, closing and reopening applications, making sure the volume is turned up and the headphones are plugged in, and making sure the caps lock key is not on, to solve these problems, when possible. Students would continue using and build on accurate terminology in describing and discussing their problem with a peer or adult.</i></p>	Troubleshooting	6. Testing and refining computational artifacts

## Networks & the Internet

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
4.NI.NCO.01	<p>Explain how information is sent and received across physical or wireless paths.</p> <p><i>Information is sent and received over physical or wireless paths. It is broken down into smaller pieces called packets, which are sent independently and reassembled at the destination. Students should demonstrate their understanding of this flow of information, e.g., drawing a model of the way packets are transmitted, programming an animation to show how packets are transmitted, or demonstrating through an unplugged activity which has them act it out in some way.</i></p>	Network Communication & Organization	4. Developing and using abstractions
4.NI.C.01	Identify and explain issues related to responsible use of technology and information, and describe personal consequences of inappropriate use.	Cybersecurity	3. Recognizing and Defining

	<p><i>Just as we protect our personal property offline, we also need to protect our devices and the information stored on them. Information can be protected using various security measures. These measures can be physical and/or digital. Students could discuss or use a journaling or blogging activity to explain, orally or in writing, about topics that relate to personal cybersecurity issues. Discussion topics could be based on current events related to cybersecurity or topics that are applicable to students, such as backing up data to guard against loss, how to create strong passwords and the importance of not sharing passwords. or why we should install and keep anti-virus software updated to protect data and systems.</i></p>		Computational Problems
--	--	--	------------------------

## Data Analysis

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
4.DA.S.01	<p>Classify different storage locations (physical, shared, or cloud) based on the type of file, storage requirements, and sharing requirements.</p> <p><i>Different Software tools used to access data may store the data differently. The type of data being stored and the level of detail represented by that data affect the storage requirements (file size, availability, and available memory). Music, images, video, and text require different amounts of storage. Video will often require more storage than music or images alone because video combines both.</i></p>	Storage	7. Communicating about computing
4.DA.C.01	<p>Gather and manipulate relevant and reliable data using the appropriate digital tool.</p> <p><i>People select digital tools for the collection of data based on what is being observed and how the data will be used (e.g., thermometer is used to measure temperature and GPS sensor is used to track locations). There is a wide array of digital data collection tools, only some are appropriate for certain types of data. Tools are chosen based upon the type of measurement they use as well the type of data people wish to observe.</i></p>	Collection	5. Creating Computational Artifacts
4.DA.CVT.01	Organize and present collected data visually to highlight comparisons.	Visualization & Transformation	7. Communicating about computing

	<p><i>Raw data has little meaning on its own. Data is often sorted or grouped to provide additional clarity. Organizing data can make interpreting and communicating it to others easier. Data points can be clustered by a number of commonalities. The same data could be manipulated in different ways to emphasize particular aspects or parts of the data set (e.g., graphs, charts and infographics). For example, a data set of sports teams could be sorted by wins, points scored, or points allowed, and a data set of weather information could be sorted by high temperatures, low temperatures, or precipitation.</i></p>		
4.DA.IM.01	<p>Determine how the accuracy of conclusions are influenced by the amount and relevance of the data collected.</p> <p><i>The accuracy of data analysis is related to how realistically data is represented. Inferences or predictions based on data are less likely to be accurate if the data is not sufficient or if the data is incorrect in some way. Students should be able to refer to data when communicating an idea. For example, in order to explore the relationship between speed, time, and distance, students could operate a robot at uniform speed, and at increasing time intervals to predict how far the robot travels at that speed. In order to make an accurate prediction, one or two attempts of differing times would not be enough. The robot may also collect temperature data from a sensor, but that data would not be relevant for the task. Students must also make accurate measurements of the distance the robot travels in order to develop a valid prediction. Students could record the temperature at noon each day as a basis to show that temperatures are higher in certain months of the year. If temperatures are not recorded on non-school days or are recorded incorrectly or at different times of the day, the data would be incomplete and the ideas being communicated could be inaccurate. Students may also record the day of the week on which the data was collected, but this would have no relevance to whether temperatures are higher or lower. In order to have sufficient and accurate data on which to communicate the idea, students might want to use data provided by a governmental weather agency.</i></p>	Inference and Models	7. Communicating about computing

## Algorithms and Programming

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
4.AP.A.01	<p>Analyze and refine multiple algorithms for the same task.</p> <p><i>Different algorithms can achieve the same result; however, sometimes one algorithm might be more suited for a particular situation. Students should be able to look at different ways to solve a problem or complete a task and decide which would be the best solution. For example, students could write different algorithms to draw a regular polygon and determine which algorithm would be the easiest to modify or repurpose to draw a different polygon.</i></p>	Algorithms	3. Recognizing and Defining Computational Problems 6. Testing and Refining Computational Artifacts
4.AP.V.01	<p>Utilize, create, and modify programs that use variables, with grade level appropriate data.</p> <p><i>Variables are used to store and modify data. At this level, understanding how to use variables in a variety of ways is sufficient. For example, students may use mathematical operations to add to the score of a game or subtract from the number of lives available in a game. The use of a variable in a countdown timer is another example.</i></p>	Variables	5. Creating computational artifacts
4.AP.C.01	<p>Create programs using a programming language that utilize sequencing, repetition, conditionals and variables to solve a problem or express ideas both independently and collaboratively.</p> <p><i>Control structures specify the order (sequence) in which instructions are executed within a program and can be combined to support the creation of more complex programs. Conditionals allow for the execution of a portion of code in a program when a certain condition is true. For example, students could write a math game that asks for multiplication fact questions and then uses a conditional to check whether or not the answer that was entered is correct. Loops allow for the repetition of a sequence of code multiple times. For example, in a program that produces an animation about a famous historical character, students could use a loop to have the character walk across the screen as they introduce themselves. Students should be able to complete these tasks collaboratively with other students.</i></p>	Control	5. Creating computational artifacts

4.AP.M.01	<p>Decompose (break down) large problems into smaller, manageable subproblems. Then form algorithms to solve each subproblem.</p> <p><i>Decomposition is the act of breaking down tasks into simpler tasks. For example, students could create an animation by separating a story into different scenes. For each scene, they would select a background, place characters, and describe actions.</i></p>	Modularity	3. Recognizing and defining computational problems
4.AP.M.02	<p>With grade appropriate complexity, modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features.</p> <p><i>Programs can be broken down into smaller parts, which can be incorporated into new or existing programs. For example, students could modify prewritten code from a single-player game to create a two-player game with slightly different rules, remix and add another scene to an animated story, use code to make a ball bounce from another program in a new basketball game, or modify an image created by another student.</i></p>	Modularity	3. Recognizing and defining computational problems 5. Creating computational artifacts
4.AP.PD.01	<p>Create a plan using an iterative process to plan the development of a program that includes user preferences while solving simple problems.</p> <p><i>Planning is an important part of the iterative process of program development. Students outline features, time and resource constraints, and user expectations. Students should document the plan as, for example, a storyboard, flowchart, pseudocode, or story map.</i></p>	Program Development	1. Fostering an Inclusive Computing Culture 5. Creating computational artifacts
4.AP.PD.02	<p>Use proper citations and document when ideas are borrowed and changed for their own use (e.g., using pictures created by others, using music created by others, remixing programming projects).</p> <p><i>Students should identify instances of remixing, when ideas are borrowed and iterated upon, and credit the original creator. Students should also consider common licenses that place limitations or restrictions on the use of computational artifacts, such as images and music downloaded from the Internet. At this stage, attribution should be written in the format required by the teacher and should always be included on any programs shared online. Students work through how to create citations for various</i></p>	Program Development	5. Creating computational artifacts 7. Communicating about computing

	<i>borrowed resources. both writing citations manually then introducing websites that assist in citation creation.</i>		
4.AP.PD.03	Analyze, debug (identify/fix errors), and create a program that includes sequencing, repetition and variables in a programming language.  <i>As students develop programs they should continuously test those programs to see that they do what was expected and fix (debug), any errors. Students should also be able to successfully find simple errors in programs created by others.</i>	Program Development	1. Fostering an Inclusive Computing Culture 2. Collaborating Around Computing 6. Testing and Refining Computational Artifacts
4.AP.PD.04	Communicate and explain your program development using comments, presentations and demonstrations.  <i>People communicate about their code to help others understand and use their programs. Another purpose of communicating one's design choices is to show an understanding of one's work. These explanations could manifest themselves as in-line code comments for collaborators and assessors, or as part of a summative presentation, such as a code walk-through or coding journal.</i>	Program Development	2. Collaborating Around Computing 7. Communicating about computing

## Impacts of Computing

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
4.IC.C.01	Brainstorm problems and ways to improve computing devices to increase accessibility to all users.  <i>Anticipating the needs and wants of diverse end users requires students to purposefully consider potential perspectives of users with different backgrounds, ability levels, points of view, and disabilities. For example, students may consider using both speech and text to convey information in a game. They may also wish to vary the types of programs they create, knowing that not everyone shares their own tastes. When creating something for others, students give options (e.g. speech to text or type, differentiate tasks, adjusting hardware needed/give options because others might not all have the same tools.</i>	Culture	4. Developing and Using Abstractions 5. Creating Computational Artifacts 6. Testing and Refining Computational Artifacts

4.IC.SI.01	<p>Develop a code of conduct, explain, and practice grade-level appropriate behavior and responsibilities while participating in an online community. Identify and report inappropriate behavior. (Digital Citizenship - review of all nine components, but focused on Digital Access).</p> <p><i>The practice of appropriate online behavior derives from the identification of inappropriate behavior and the identification of what makes someone a poor digital citizen or know what not to do in order to be ethical online. Digital citizenship is described with nine categories: digital access (awareness of materials gained online and being mindful of who does/does not have access), digital commerce (awareness of illegal and legal exchanges online e.g. illegal downloading), digital communication (communicating and collaborating properly online), digital literacy (the ability to use new technology quickly and appropriately), digital etiquette (appropriate conduct), digital law (ethical use of technology e.g. hacking information, downloading illegally, plagiarizing, creating viruses, sending spam, or stealing someone's identify), digital rights and responsibilities (knowing your rights to free speech and privacy, but handling it responsibly online) digital health and wellness (caring for your physical and psychological wellbeing online), digital security (proactive about protecting your devices and identity online e.g. data backup, use of a surge protector, virus protection).</i></p>	Social Interactions	1. Fostering an Inclusive Computing Culture 7. Communicating about Computing
4.IC.SI.02	<p>As a team, consider each other's' perspectives on improving a computational product.</p> <p><i>Computing provides the possibility for collaboration and sharing of ideas and allows the benefit of diverse perspectives. For example, students could seek feedback from other groups in their class or students at another grade level.</i></p>	Social Interactions	1. Fostering an Inclusive Computing Culture 2. Collaborating Around Computing
4.IC.H.01	<p>Identify and give examples of computing technologies that have changed the world, and express how those technologies influence, and are influenced by, society.</p> <p><i>Students, with guidance from their teacher, should discuss topics that relate to the history of technology and the changes in the world due to</i></p>	History	1. Fostering an Inclusive Computing Culture 7. Communicating about Computing

	<i>technology. Topics could be based on current news content, such as robotics, wireless Internet, mobile computing devices, GPS systems, wearable computing, or how social media has influenced social and political changes. (e.g. a collaborative table with headings - Tech, Reason for the Tech, and Society Changes with this Tech.) This could be a collaborative activity where everyone adds their own ideas.</i>		
4.IC.SLE.01	<p>Discuss the social impact of violating intellectual property rights.</p> <p><i>Students should consider the licenses on computational artifacts that they wish to use. For example, the license on a downloaded image or audio file may have restrictions that prohibit modification, require attribution, or prohibit use entirely. Students should identify an artifact labeled not for reuse and explain why they should not use it and what might happen if they violated those restrictions.</i></p>	Safety, Law, & Ethics	5. Creating Computational Artifacts
4.IC.CP.01	<p>Design a visual product depicting the connections between computer science and other fields.</p> <p><i>Explaining the reason why of any computer task will lead students to understand how other professionals within their community might use similar tasks in their occupations. Making correlations and a purpose for tasks makes CS relevant to their lives as they age. Students make a direct correlation to a local business.</i></p>	Community Partnerships	<ul style="list-style-type: none"> <li>1. Fostering an Inclusive Computing Culture</li> <li>2. Collaborating Around Computing</li> <li>7. Communicating about computing</li> </ul>

## Fifth Grade

### Computing Systems

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
5.CS.D.01	<p>Model and communicate how computing devices can be connected to other devices to extend their capabilities.</p> <p><i>Students should have enough basic knowledge to identify examples of computing devices and components working together. To advance this knowledge, students would now communicate their understanding through a variety of means such as the creation of a slideshow, video, drawing, animation or other digital product depicting new examples of how computing devices can be connected to other devices to extend their capabilities. The intent of the completed student products would be to use them during instruction of the device standard with younger grade levels.</i></p>	Devices	7. Communicating about computing
5.CS.HS.01	<p>Illustrate how information is translated into binary numbers between software and hardware.</p> <p><i>Students should understand that everything on a computer can be reduced to 1's and 0's (binary). That is, information they use and create as part of their programs, on the internet, and other devices are not stored on hardware in their apparent form, but as a series of binary codes. Students should be able to understand basic binary representation and how it can be used to store information. This can start with simple representation of on/off with lights (1/0 for current/no current) and gradually grow into how you can use a series of binary numbers to represent different kinds of information like text or numbers.</i></p>	Hardware and Software	4. Developing and using abstractions
5.CS.IO.01	<p>Demonstrate proper use of grade level appropriate input devices and produce digital artifacts selective publication based on audience/purpose.</p> <p><i>Input devices are used to input data for the creation of various digital products. Some input devices a person could use include voice typing, touchpad, touchscreen, mouse, keyboarding (type letters and words at a rate of 15-20 WPM with 85% accuracy while looking away from the keyboard, consistent use of home row, modifier, punctuation, function</i></p>	Input and Output	7. Communicating about computing

	<i>keys), audio devices, camera. Digital artifacts would be published for the purpose of sharing with the appropriate audience based on the purpose of the artifact. Examples of digital artifacts could include a slideshow, video, prints, 3D prints, audio, programs (robotics), web-based product.</i>		
5.CS.T.01	<p>Using accurate terminology, identify simple hardware and software problems that may occur during everyday use.</p> <p><i>Although computing systems may vary, common troubleshooting strategies can be used on all of them. Students should be able to identify solutions to problems such as the device not responding, no power, no network, app crashing, no sound, or password entry not working. Should an errors occur, the goal would be that students would not only identify but also use various strategies, such as rebooting the device, checking for power, checking network availability, closing and reopening applications, making sure the volume is turned up and the headphones are plugged in, and making sure the caps lock key is not on, to solve these problems, when possible. Students would continue using and build on accurate terminology in discussing their problem with a peer or adult.</i></p>	Troubleshooting	6. Testing and refining computational artifacts

## Networks & the Internet

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
5.NI.NCO.01	<p>Model how information is broken down into smaller pieces and transmitted through multiple devices over networks and the internet, and how these pieces are assembled at the destination.</p> <p><i>Information is sent and received over physical or wireless paths. It is broken down into smaller pieces called packets, which are sent independently and reassembled at the destination. Students should demonstrate their understanding of this flow of information, e.g., drawing a model of the way packets are transmitted, programming an animation to show how packets are transmitted, or demonstrating through an unplugged activity which has them act it out in some way.</i></p>	Network Communication & Organization	4. Developing and using abstractions
5.NI.C.01	Discuss real-world cybersecurity problems and identify strategies for how personal information can be protected.	Cybersecurity	3. Recognizing and Defining

	<p><i>Just as we protect our personal property offline, we also need to protect our devices and the information stored on them. Information can be protected using various security measures. These measures can be physical and/or digital. Students could discuss or use a journaling or blogging activity to explain, orally or in writing, about topics that relate to personal cybersecurity issues. Discussion topics could be based on current events related to cybersecurity or topics that are applicable to students, such as backing up data to guard against loss, how to create strong passwords and the importance of not sharing passwords, or why we should install and keep anti-virus software updated to protect data and systems..</i></p>		Computational Problems
--	---	--	------------------------

### Data Analysis

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
5.DA.S.01	<p>Evaluate trade-offs of file types, storage requirements, and sharing requirements, including comparisons of availability and quality.</p> <p><i>Different software tools used to access data may store the data differently. The type of data being stored and the level of detail represented by that data affect the storage requirements. Music, images, video, and text require different amounts of storage. Video will often require more storage than music or images alone because video combines both. For example, two pictures of the same object can require different amounts of storage based upon their resolution. Different software tools used to access and store data may add additional data about the data (metadata), which results in different storage requirements.</i></p>	Storage	7. Communicating about computing
5.DA.C.01	<p>Select the appropriate tool to collect relevant and reliable data that solves a problem.</p> <p><i>People select digital tools for the collection of data based on what is being observed and how the data will be used (e.g., thermometer is used to measure temperature and GPS sensor is used to track locations). There is a wide array of digital data collection tools, only some are appropriate for certain types of data. Tools are chosen based</i></p>	Collection	5. Creating Computational Artifacts

	<i>upon the type of measurement they use as well the type of data people wish to observe.</i>		
5.DA.CVT.01	<p>Organize and present collected data to highlight comparisons and support a claim.</p> <p><i>Raw data has little meaning on its own. Data is often sorted or grouped to provide additional clarity. Organizing data can make interpreting and communicating it to others easier. Data points can be clustered by a number of commonalities. The same data could be manipulated in different ways to emphasize particular aspects or parts of the data set. For example, a data set of sports teams could be sorted by wins, points scored, or points allowed, and a data set of weather information could be sorted by high temperatures, low temperatures, or precipitation.</i></p>	Visualization & Transformation	7. Communicating about computing
5.DA.IM.01	<p>Use data to discover or propose cause and effect relationships, predict outcomes, or communicate an idea.</p> <p><i>The accuracy of data analysis is related to how realistically data is represented. Inferences or predictions based on data are less likely to be accurate if the data is not sufficient or if the data is incorrect in some way. Students should be able to refer to data when communicating an idea. For example, in order to explore the relationship between speed, time, and distance, students could operate a robot at uniform speed, and at increasing time intervals to predict how far the robot travels at that speed. In order to make an accurate prediction, one or two attempts of differing times would not be enough. The robot may also collect temperature data from a sensor, but that data would not be relevant for the task. Students must also make accurate measurements of the distance the robot travels in order to develop a valid prediction. Students could record the temperature at noon each day as a basis to show that temperatures are higher in certain months of the year. If temperatures are not recorded on non-school days or are recorded incorrectly or at different times of the day, the data would be incomplete and the ideas being communicated could be inaccurate. Students may also record the day of the week on which the data was collected, but this would have no relevance to whether temperatures are higher or lower. In order to have</i></p>	Inference and Models	7. Communicating about computing

	<i>sufficient and accurate data on which to communicate the idea, students might want to use data provided by a governmental weather agency.</i>		
--	--	--	--

## Algorithms and Programming

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
5.AP.A.01	<p>Analyze and refine multiple algorithms for the same task and determine which algorithm is the most efficient.</p> <p><i>Different algorithms can achieve the same result; however, sometimes one algorithm might be more suited for a particular situation. Students should be able to look at different ways to solve a problem or complete a task and decide which would be the best solution. For example, students could create multiple algorithms to plan a route between two points on a map. They could then look at different mapping software to change the route based on something that would be better (i.e. shortest route in miles, time, toll roads, etc.). Students could also compare algorithms that describe how to get ready for school or other daily tasks. This could also bridge into other disciplines. For example, students could write different algorithms to draw a regular polygon and determine which algorithm would be the easiest to modify or repurpose to draw a different polygon and which algorithm would be the most efficient at completing the polygon.</i></p>	Algorithms	<p>3. Recognizing and Defining Computational Problems</p> <p>6. Testing and Refining Computational Artifacts</p>
5.AP.V.01	<p>Utilize, create, and modify programs that use, modify, and combine variables with grade level appropriate data.</p> <p><i>Variables are used to store and modify data. At this level, understanding how to use variables in a variety of ways and change variable values is sufficient. For example, students may use mathematical operations to add to the score of a game or subtract from the number of lives available in a game. Students could also use multiple variables in mathematical equations (even simple addition/subtraction) that stores the results into other variables. The use of a variable is a countdown timer is another example.</i></p>	Variables	5. Creating computational artifacts
5.AP.C.01	<p>Create programs using a programming language that utilize sequencing, repetition, conditionals, event handlers, and variables to solve a problem or express ideas both independently and collaboratively.</p>	Control	5. Creating computational artifacts

	<p><i>Control structures specify the order (sequence) in which instructions are executed within a program and can be combined to support the creation of more complex programs. Events allow portions of a program to run based on a specific action. For example, students could write a program to explain the water cycle and when a specific component is clicked (event), the program would show information about that part of the water cycle. Conditionals allow for the execution of a portion of code in a program when a certain condition is true. For example, students could write a math game that asks for multiplication fact questions and then uses a conditional to check whether or not the answer that was entered is correct. Loops allow for the repetition of a sequence of code multiple times. For example, in a program that produces an animation about a famous historical character, students could use a loop to have the character walk across the screen as they introduce themselves. Students should be able to complete these tasks collaboratively with other students.</i></p>		
5.AP.M.01	<p>Decompose (break down) large problems into smaller, more manageable subproblems to facilitate the program development process.</p> <p><i>Decomposition is the act of breaking down tasks into simpler tasks. For example, students could create program that tells a story. Students should breakdown creating the program by separating the story into different scenes. For each scene, they would select a background, place characters, and program actions.</i></p>	Modularity	3. Recognizing and defining computational problems
5.AP.M.02	<p>With grade appropriate complexity, modify, remix, or incorporate portions of an existing program into one's own work, to develop something new or add more advanced features.</p> <p><i>Programs can be broken down into smaller parts, which can be incorporated into new or existing programs. For example, students could modify prewritten code from a single-player game to create a two-player game with slightly different rules, remix and add another scene to an animated story, use code to make a ball bounce from another program</i></p>	Modularity	3. Recognizing and defining computational problems 5. Creating computational artifacts

	<i>in a new basketball game, or modify an image created by another student.</i>		
5.AP.PD.01	<p>Create a plan using an iterative process for the development of a program that includes others' perspectives and user preferences while solving simple problems.</p> <p><i>Planning is an important part of the iterative process of program development. Students outline key features, time and resource constraints, and user (and others) expectations. Students should document the plan as, for example, a storyboard, flowchart, pseudocode, or story map.</i></p>	Program Development	<p>1. Fostering an Inclusive Computing Culture</p> <p>5. Creating computational artifacts</p>
5.AP.PD.02	<p>Use proper citations and document when ideas are borrowed and changed for their own use (e.g., using pictures created by others, using music created by others, remixing programming projects).</p> <p><i>Intellectual property rights can vary by country but copyright laws give the creator of a work a set of rights that prevents others from copying the work and using it in ways that they may not like. Students should identify instances of remixing, when ideas are borrowed and iterated upon, and credit the original creator. Students should also consider common licenses that place limitations or restrictions on the use of computational artifacts, such as images and music downloaded from the Internet. At this stage, attribution should be written in the format required by the teacher and should always be included on any programs shared online.</i></p>	Program Development	<p>5. Creating computational artifacts</p> <p>7. Communicating about computing</p>
5.AP.PD.03	<p>Analyze, debug (identify/fix errors), and create a program that includes sequencing, repetition and variables in a programming language.</p> <p><i>As students develop programs they should continuously test those programs to see that they do what was expected and fix (debug), any errors. Students should also be able to successfully debug simple errors in programs created by others.</i></p>	Program Development	<p>1. Fostering an Inclusive Computing Culture</p> <p>2. Collaborating Around Computing</p> <p>6. Testing and Refining Computational Artifacts</p>

5.AP.PD.04	<p>Take on varying roles collaborating with peers to give feedback at different stages of program development, including design and implementation.</p> <p><i>Collaborative computing is the process of performing a computational task by working in pairs or on teams. Because it involves asking for the contributions and feedback of others, effective collaboration can lead to better outcomes than working independently. Students should take turns in different roles during program development, such as note taker, facilitator, program tester, or “driver” of the computer.</i></p>	Program Development	<p>2. Collaborating Around Computing 7. Communicating about computing</p>
------------	---	---------------------	---

## Impacts of Computing

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
5.IC.C.01	<p>Develop, test, and refine digital artifacts to improve accessibility and usability for a computing device or program.</p> <p><i>The development and modification of computing technology are driven by people's needs and wants and can affect groups differently. Anticipating the needs and wants of diverse end users requires students to purposefully consider potential perspectives of users with different backgrounds, ability levels, points of view, and disabilities. For example, students may consider using both speech and text to convey information in a game. They may also wish to vary the types of programs they create, knowing that not everyone shares their own tastes.</i></p>	Culture	<p>4. Developing and Using Abstractions 5. Creating Computational Artifacts 6. Testing and Refining Computational Artifacts</p>
5.IC.SI.01	<p>Develop a code of conduct, explain, and practice grade-level appropriate behavior and responsibilities while participating in an online community. Identify and report inappropriate behavior. (Digital Citizenship - review of all nine components, but focused on Digital Commerce, Digital Law, and Digital Security.)</p> <p><i>The practice of appropriate online behavior derives from the identification of inappropriate behavior and the identification of what makes someone a poor digital citizen or know what not to do in order to be ethical online. Digital citizenship is described with nine categories: digital access (awareness of materials gained online and being mindful of who does/does not have access), digital commerce (awareness of</i></p>	Social Interactions	<p>1. Fostering an Inclusive Computing Culture 7. Communicating about Computing</p>

	<i>illegal and legal exchanges online e.g. illegal downloading), digital communication (communicating and collaborating properly online), digital literacy (the ability to use new technology quickly and appropriately), digital etiquette (appropriate conduct), digital law (ethical use of technology e.g. hacking information, downloading illegally, plagiarizing, creating viruses, sending spam, or stealing someone's identify), digital rights and responsibilities (knowing your rights to free speech and privacy, but handling it responsibly online) digital health and wellness (caring for your physical and psychological wellbeing online), digital security (proactive about protecting your devices and identity online e.g. data backup, use of a surge protector, virus protection).</i>		
5.IC.SI.02	<p>As a team, collaborate with people and resources outside of your normal space to include diverse perspectives to improve computational products.</p> <p><i>Computing provides the possibility for collaboration and sharing of ideas and allows the benefit of diverse perspectives. For example, students could seek feedback from other groups in their class or students at another grade level. Or, with guidance from their teacher, they could use video conferencing tools or other online collaborative spaces, such as blogs, wikis, forums, or website comments to gather feedback from individuals and groups about programming projects.</i></p>	Social Interactions	<ol style="list-style-type: none"> <li>1. Fostering an Inclusive Computing Culture</li> <li>2. Collaborating Around Computing</li> </ol>
5.IC.H.01	<p>Identify and explain the evolution of computing technologies that have changed the world.</p> <p><i>New computing technology is created and existing technologies are modified for many reasons, including to increase their benefits, decrease their risks, and meet societal needs. Students, with guidance from their teacher, should discuss topics that relate to the history of technology and the changes in the world due to technology. Topics could be based on current news content, such as robotics, wireless Internet, mobile computing devices, GPS systems, wearable computing, or how social media has influenced social and political changes.</i></p>	History	<ol style="list-style-type: none"> <li>1. Fostering an Inclusive Computing Culture</li> <li>7. Communicating about Computing</li> </ol>
5.IC.SLE.01	<p>Observe intellectual property rights and give appropriate credit when using resources.</p>	Safety, Law, & Ethics	<ol style="list-style-type: none"> <li>5. Creating Computational Artifacts</li> </ol>

	<p><i>Ethical complications arise from the opportunities provided by computing. The ease of sending and receiving copies of media on the internet such as video, photos, and music, creates the opportunity for unauthorized use, such as online piracy, and disregard of copyrights. Students should consider the licenses on computational artifacts that they wish to use. For example, the license on a downloaded image or audio file may have restrictions that prohibit modification, require attribution, or prohibit use entirely.</i></p>		
5.IC.CP.01	<p>Design a visual product depicting the connections between computer science and other fields.</p> <p><i>Explaining the reason why of any computer task will lead students to understand how other professionals within their community might use similar tasks in their occupations. Making correlations and a purpose for tasks makes CS relevant to their lives as they age. Students make a direct correlation to a local business.</i></p>	Community Partnerships	<ul style="list-style-type: none"> <li>1. Fostering an Inclusive Computing Culture</li> <li>2. Collaborating Around Computing</li> <li>7. Communicating about computing</li> </ul>

## Middle Grades (Grades 6-8)

### Computing Systems

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
MG.CS.D.01	<p>Develop and implement a process to evaluate existing computing devices and recommend improvements to design based on analysis of how other users interact with the device.</p> <p><i>The study of human–computer interaction (HCI) can improve the design of devices, including both hardware and software. Students should make recommendations for existing devices (e.g., a laptop, phone, or tablet) or design their own components or interface (e.g., create their own controllers). Teachers can guide students to consider usability through several lenses, including accessibility, ergonomics, and learnability. For example, assistive devices provide capabilities such as scanning written information and converting it to speech.</i></p>	Devices	3. Recognizing and defining computational problems
MG.CS.HS.01	<p>Model a computing system involving multiple considerations and potential tradeoffs of software and hardware, such as functionality, cost, size, speed, accessibility, and aesthetics</p> <p><i>Collecting and exchanging data involves input, output, storage, and processing. When possible, students should select the hardware and software components for their project designs by considering factors such as functionality, cost, size, speed, accessibility, and aesthetics. For example, components for a mobile app could include accelerometer, GPS, and speech recognition. The choice of a device that connects wirelessly through a Bluetooth connection versus a physical USB connection involves a tradeoff between mobility and the need for an additional power source for the wireless device.</i></p>	Hardware and Software	5. Creating computational artifacts
MG.CS.IO.01	<p>Know and apply grade-level appropriate skills with input and output devices.</p> <p><i>Students can identify and use appropriate in-put devices (i.e. mouse, keyboard, microphone, camera, scanner) and out-put devices (i.e. monitor, printer, 3d-printer, projector, robots, audio devices, VR headsets). Create accurate typed text with speed appropriate for grade level (i.e. keyboarding between 20-30 words per minute with 90%</i></p>	Input and Output	7. Communicating about computing

	<i>accuracy). Typing words and sentences without looking at the keyboard. Access function keys and keyboard shortcuts as needed in software applications. Type at least seven pages of text into an appropriate software program in a single setting.</i>		
MG.CS.T.01	<p>Systematically identify, fix, and document increasingly complex software and hardware problems with computing devices and their components.</p> <p><i>Since a computing device may interact with interconnected devices within a system, problems may not be due to the specific computing device itself but to devices connected to it. Just as pilots use checklists to troubleshoot problems with aircraft systems, students should use a similar, structured process to troubleshoot problems with computing systems and ensure that potential solutions are not overlooked. Examples of troubleshooting strategies include following a troubleshooting flow diagram, making changes to software to see if hardware will work, checking connections and settings, and swapping in working components.</i></p>	Troubleshooting	6. Testing and refining computational artifacts

## Networks & the Internet

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
MG.NI.NCO.01	<p>Explain protocols and their importance to data transmission; model how packets are broken down into smaller pieces and how they are delivered.</p> <p><i>Protocols are rules that define how messages between computers are sent. They determine how quickly and securely information is transmitted across networks and the Internet, as well as how to handle errors in transmission. Students should model how data is sent using protocols to choose the fastest path, to deal with missing information, and to deliver sensitive data securely. For example, students could devise a plan for resending lost information or for interpreting a picture that has missing pieces. The priority at this grade level is understanding the purpose of protocols and how they enable secure and errorless communication. Knowledge of the details of how specific protocols work is not expected.</i></p>	Network Communication & Organization	4. Developing and using abstractions

MG.NI.C.01	<p>Evaluate physical and digital procedures that could be implemented to protect electronic data/information; explain the impacts of hacking, ransomware, scams, fake scans, and ethical/legal concerns.</p> <p><i>Information that is stored online is vulnerable to unwanted access. Examples of physical security measures to protect data include keeping passwords hidden, locking doors, making backup copies on external storage devices, and erasing a storage device before it is reused. Examples of digital security measures include secure router admin passwords, firewalls that limit access to private networks, and the use of a protocol such as HTTPS to ensure secure data transmission, and two-factor authentication.</i></p>	Cybersecurity	7. Communicating about computing
MG.NI.C.02	<p>Compare the advantages and disadvantages of multiple methods of encryption to model the secure transmission of information.</p> <p><i>Encryption can be as simple as letter substitution or as complicated as modern methods used to secure networks and the Internet. Students should encode and decode messages using a variety of encryption methods, and they should understand the different levels of complexity used to hide or secure information. For example, students could secure messages using methods such as Caesar ciphers or steganography (i.e., hiding messages inside a picture or other data). They can also model more complicated methods, such as public key encryption, through unplugged activities.</i></p>	Cybersecurity	4. Developing and using abstractions

## Data Analysis

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
MG.DA.S.01	<p>Analyze multiple methods of representing data and choose the most appropriate method for representing data.</p> <p><i>Data representations occur at multiple levels of abstraction, from the physical storage of bits to the arrangement of information into organized formats (e.g., tables). Students should represent the same data in multiple ways. For example, students could represent the same color using binary, RGB values, hex codes (low-level representations), as</i></p>	Storage	4. Developing and using abstractions

	<i>well as forms understandable by people, including words, symbols, and digital displays of the color (high-level representations).</i>		
MG.DA.C.01	<p>Develop, implement, and refine a process that utilizes computational tools to collect meaningful data.</p> <p><i>Students need to be able to distinguish between different types of data and computational tools and how this affects the accuracy and precision of the data (for example, surveys versus sensor data).</i></p>	Collection	6. Testing and refining computational artifacts
MG.DA.CVT.01	<p>Develop, implement, and refine a process to make data more useful and reliable.</p> <p><i>As students continue to build on their ability to organize and present data visually to support a claim, they will need to understand when and how to transform data for this purpose. Students should transform data to remove errors, highlight or expose relationships, and/or make it easier for computers to process. The cleaning of data is an important transformation for ensuring consistent format and reducing noise and errors (e.g., removing irrelevant responses in a survey). An example of a transformation that highlights a relationship is representing males and females as percentages of a whole instead of as individual counts.</i></p>	Visualization & Transformation	6. Testing and refining computational artifacts
MG.DA.IM.01	<p>Refine computational models based on the data generated by the models.</p> <p><i>A model may be a programmed simulation of events or a representation of how various data is related. In order to refine a model, students need to consider which data points are relevant, how data points relate to each other, and if the data is accurate. For example, students may make a prediction about how far a ball will travel based on a table of data related to the height and angle of a track. The students could then test and refine their model by comparing predicted versus actual results and considering whether other factors are relevant (e.g., size and mass of the ball). Additionally, students could refine game mechanics based on test outcomes in order to make the game more balanced or fair.</i></p>	Inference and Models	4. Developing and using abstractions 5. Creating computational artifacts

## Algorithms and Programming

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
MG.AP.A.01	<p>Design algorithms in natural language, flow and control diagrams, comments within code, and/or pseudocode to solve complex problems.</p> <p><i>Complex problems are problems that would be difficult for students to solve computationally. Students should use pseudocode and/or flowcharts to organize and sequence an algorithm that addresses a complex problem, even though they may not actually program the solutions. For example, students might express an algorithm that produces a recommendation for purchasing sneakers based on inputs such as size, colors, brand, comfort, and cost. Testing the algorithm with a wide range of inputs and users allows students to refine their recommendation algorithm and to identify other inputs they may have initially excluded.</i></p>	Algorithms	4. Developing and using abstractions
MG.AP.V.01	<p>Create programs using variables with purposeful and thoughtful naming conventions for identifiers to improve program readability.</p> <p><i>A variable is like a container with a name, in which the contents may change, but the name (identifier) does not. When planning and developing programs, students should decide when and how to declare and name new variables. Students should use naming conventions to improve program readability. Examples of operations include adding points to the score, combining user input with words to make a sentence, changing the size of a picture, or adding a name to a list of people.</i></p>	Variables	5. Creating computational artifacts
MG.AP.C.01	<p>Develop programs that utilize combinations of nested repetition, compound conditionals, procedures without parameters, and the manipulation of variables representing different data types.</p> <p><i>Control structures can be combined in many ways. Nested loops are loops placed within loops. Compound conditionals combine two or more conditions in a logical relationship (e.g., using AND, OR, and NOT), and nesting conditionals within one another allows the result of one conditional to lead to another. For example, when programming an interactive story, students could use a compound conditional within a</i></p>	Control	5. Creating computational artifacts

	<i>loop to unlock a door only if a character has a key AND is touching the door.</i>		
MG.AP.M.01	<p>Decompose problems and subproblems into parts to facilitate the design, implementation, and review of complex programs.</p> <p><i>Students should break down problems into subproblems, which can be further broken down to smaller parts. Decomposition facilitates aspects of program development by allowing students to focus on one piece at a time (e.g., getting input from the user, processing the data, and displaying the result to the user). Decomposition also enables different students to work on different parts at the same time. For example, animations can be decomposed into multiple scenes, which can be developed independently.</i></p>	Modularity	3. Recognizing and defining computational problems
MG.AP.PD.01	<p>Seek and incorporate feedback from team members and users to refine a solution to a problem that meets the needs of diverse users.</p> <p><i>Development teams that employ user-centered design create solutions (e.g., programs and devices) that can have a large societal impact, such as an app that allows people with speech difficulties to translate hard-to-understand pronunciation into understandable language. Students should begin to seek diverse perspectives throughout the design process to improve their computational artifacts. Considerations of the end-user may include usability, accessibility, age-appropriate content, respectful language, user perspective, pronoun use, color contrast, and ease of use.</i></p>	Program Development	<p>1. Fostering an inclusive computing culture</p> <p>2. Collaborating around computing</p>
MG.AP.PD.02	<p>Incorporate existing code, media, and libraries into original programs of increasing complexity and give attribution.</p> <p><i>Building on the work of others enables students to produce more interesting and powerful creations. Students should use portions of code, algorithms, and/or digital media in their own programs and websites. At this level, they may also import libraries and connect to web application program interfaces (APIs). For example, when creating a side-scrolling game, students may incorporate portions of code that create a realistic jump movement from another person's game, and they may also import Creative Commons-licensed images to use in the</i></p>	Program Development	<p>4. Developing and using abstractions</p> <p>5. Creating computational artifacts</p> <p>7. Communicating about computing</p>

	<i>background. Students should give attribution to the original creators to acknowledge their contributions.</i>		
MG.AP.PD.03	<p>Systematically test and refine programs using a range of student created inputs.</p> <p><i>Use cases and test cases are created and analyzed to better meet the needs of users and to evaluate whether programs function as intended. At this level, testing should become a deliberate process that is more iterative, systematic, and proactive than at lower levels. Students should begin to test programs by considering potential errors, such as what will happen if a user enters invalid input (e.g., negative numbers and 0 instead of positive numbers).</i></p>	Program Development	6. Testing and refining computational artifacts
MG.AP.PD.04	<p>Explain how effective communication between participants is required for successful collaboration when developing computational artifacts.</p> <p><i>Collaboration is a common and crucial practice in programming development. Often, many individuals and groups work on the interdependent parts of a project together. Students should assume pre-defined roles within their teams and manage the project workflow using structured timelines. With teacher guidance, they will begin to create collective goals, expectations, and equitable workloads. For example, students may divide the design stage of a game into planning the storyboard, flowchart, and different parts of the game mechanics. They can then distribute tasks and roles among members of the team, assign deadlines, and track progress towards goals.</i></p>	Program Development	2. Collaborating around computing
MG.AP.PD.05	<p>Document text-based programs of increasing complexity in order to make them easier to follow, test, and debug.</p> <p><i>Documentation allows creators and others to more easily use and understand a program. Students should provide documentation for end users that explains their artifacts and how they function. For example, students could provide a project overview and clear user instructions. They should also incorporate comments in their product and communicate their process using design documents, flowcharts, and presentations.</i></p>	Program Development	7. Communicating about Computing

## Impacts of Computing

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
MG.IC.C.01	<p>Describe the trade-offs associated with computing technologies (e.g. automation), explaining their effects on economies and global societies, and explore careers related to the field of computer science.</p> <p><i>Advancements in computer technology are neither wholly positive nor negative. However, the ways that people use computing technologies have tradeoffs. Students should consider current events related to broad ideas, including privacy, communication, and automation. For example, driverless cars can increase convenience and reduce accidents, but they are also susceptible to hacking. The emerging industry will reduce the number of taxi and shared-ride drivers, but will create more software engineering and cybersecurity jobs.</i></p>	Culture	7. Communicating about computing
MG.IC.C.02	<p>Evaluate and improve the design of existing technologies to meet the needs of diverse users and increase accessibility and usability.</p> <p><i>Students should test and discuss the usability of various technology tools (e.g., apps, games, and devices) with the teacher's guidance. For example, facial recognition software that works better for lighter skin tones was likely developed with a homogeneous testing group and could be improved by sampling a more diverse population. When discussing accessibility, students may notice that allowing a user to change font sizes and colors will not only make an interface usable for people with low vision but also benefits users in various situations, such as in bright daylight or a dark room.</i></p>	Culture	1. Fostering an inclusive computing culture
MG.IC.SI.01	<p>Communicate and publish key ideas and details individually or collaboratively in a way that informs, persuades, and/or entertains using a variety of digital tools and media-rich resources. Describe and use safe, appropriate, and responsible practices (netiquette) when participating in online communities (e.g., discussion groups, blogs, social networking sites).</p> <p><i>Crowdsourcing is gathering services, ideas, or content from a large group of people, especially from the online community. It can be done at the local level (e.g., classroom or school) or global level (e.g., age</i></p>	Social Interactions	2. Collaborating around computing 5. Creating computational artifacts

	<i>appropriate online communities, like Scratch and Minecraft). For example, a group of students could combine animations to create a digital community mosaic. They could also solicit feedback from many people through use of online communities and electronic surveys..</i>		
MG.IC.H.01	<p>Identify and describe how the prominent figures in computer science have impacted and/or progressed the field.</p> <p><i>Students will identify and understand how prominent figures in computer science (i.e. Charles Babbage, Alan Turing, Ada Lovelace, Bill Gates, Tim Berners-Lee) impacted growth and innovation in the field of Computer Science.</i></p>	History	3. Recognizing and defining computational problems
MG.IC.SLE.01	<p>Discuss the social impacts and ethical considerations associated with cybersecurity, including the positive and malicious purposes of hacking.</p> <p><i>Sharing information online can help establish, maintain, and strengthen connections between people. For example, it allows artists and designers to display their talents and reach a broad audience. However, security attacks often start with personal information that is publicly available online. Social engineering is based on tricking people into revealing sensitive information and can be thwarted by being wary of attacks, such as phishing and spoofing.</i></p>	Safety, Law, & Ethics	7. Communicating about computing
MG.IC.CP.01	<p>Formulate a computer-science based solution for a problem or issue by gathering input from local / regional industry members.</p> <p><i>Students will work with local / regional community members to identify and address a need using computer science practices.</i></p>	Community Partnerships	2. Collaborating around computing 5. Creating computational artifacts

## Secondary Grades L1 (Grades 9-12) (All Students)

### Computing Systems

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
L1.CS.D.01	<p>Explain how abstractions hide the underlying implementation details of computing systems embedded in everyday objects.</p> <p><i>Computing devices are often integrated with other systems, including biological, mechanical, and social systems. A medical device can be embedded inside a person to monitor and regulate his or her health, a hearing aid (a type of assistive device) can filter out certain frequencies and magnify others, a monitoring device installed in a motor vehicle can track a person's driving patterns and habits, and a facial recognition device can be integrated into a security system to identify a person. The creation of integrated or embedded systems is not an expectation at this level. Students might select an embedded device such as a car stereo, identify the types of data (radio station presets, volume level) and procedures (increase volume, store/recall saved station, mute) it includes, and explain how the implementation details are hidden from the user.</i></p>	Devices	4. Developing and using abstractions
L1.CS.HS.01	<p>Compare levels of abstraction and interactions between application software, system software, and hardware layers.</p> <p><i>At its most basic level, a computer is composed of physical hardware and electrical impulses. Multiple layers of software are built upon the hardware and interact with the layers above and below them to reduce complexity. System software manages a computing device's resources so that software can interact with hardware. For example, text editing software interacts with the operating system to receive input from the keyboard, convert the input to bits for storage, and interpret the bits as readable text to display on the monitor. System software is used on many different types of devices, such as smart TVs, assistive devices, virtual components, cloud components, and drones. For example, students may explore the progression from voltage to binary signal to logic gates to adders and so on. Knowledge of specific, advanced terms for computer architecture, such as BIOS, kernel, or bus, is not expected at this level.</i></p>	Hardware and Software	4. Developing and using abstractions

L1.CS.HS.02	Compare computer systems and determine advantages and drawbacks of each system.	Hardware and Software	7. Communicating about computing
L1.CS.IO.01	Demonstrate efficient use of input and output devices.  <i>Fluency in educational and industry specific input and output devices including keyboard, mouse, touch screen, microphone, speakers, screen representations, printing, and other specific input and output devices.</i>	Input and Output	7. Communicating about computing
L1.CS.T.01	Develop guidelines that convey systematic troubleshooting strategies that others can use to identify and fix errors.  <i>Troubleshooting complex problems involves the use of multiple sources when researching, evaluating, and implementing potential solutions. Troubleshooting also relies on experience, such as when people recognize that a problem is similar to one they have seen before or adapt solutions that have worked in the past. Examples of complex troubleshooting strategies include resolving connectivity problems, adjusting system configurations and settings, ensuring hardware and software compatibility, and transferring data from one device to another. Students could create a flow chart, a job aid for a help desk employee, or an expert system.</i>	Troubleshooting	6. Testing and refining computational artifacts

## Networks & the Internet

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
L1.NI.NCO.01	Evaluate the scalability and reliability of networks, by describing the relationship between routers, switches, servers, topology, and addressing.  <i>Each device is assigned an address that uniquely identifies it on the network. Routers function by comparing IP addresses to determine the pathways packets should take to reach their destination. Switches function by comparing MAC addresses to determine which computers or network segments will receive frames. Students could use online network simulators to experiment with these factors.</i>	Network Communication & Organization	4. Developing and using abstractions

L1.NI.NCO.02	<p>Compare various security measures, considering tradeoffs between the usability and security of a computing system.</p> <p><i>Security measures may include physical security tokens, two-factor authentication, and biometric verification, but choosing security measures involves tradeoffs between the usability and security of the system. The needs of users and the sensitivity of data determine the level of security implemented. Students might discuss computer security policies in place at the local level that present a tradeoff between usability and security, such as a web filter that prevents access to many educational sites but keeps the campus network safe.</i></p>	Network Communication & Organization	6. Testing and refining computational artifacts
L1.NI.C.01	<p>Recommend security measures to address various scenarios based on factors such as efficiency, feasibility, and ethical impacts.</p> <p><i>Security measures may include physical security tokens, two-factor authentication, and biometric verification. Potential security problems, such as denial-of-service attacks, ransomware, viruses, worms, spyware, and phishing, exemplify why sensitive data should be securely stored and transmitted. The timely and reliable access to data and information services by authorized users, referred to as availability, is ensured through adequate bandwidth, backups, and other measures. Students should systematically evaluate the feasibility of using computational tools to solve given problems or subproblems, such as through a cost-benefit analysis. Eventually, students should include more factors in their evaluations, such as how efficiency affects feasibility or whether a proposed approach raises ethical concerns.</i></p>	Cybersecurity	3. Recognizing and defining computational problems
L1.NI.C.02	<p>Explain tradeoffs when selecting and implementing cybersecurity recommendations.</p> <p><i>Network security depends on a combination of hardware, software, and practices that control access to data and systems. The needs of users and the sensitivity of data determine the level of security implemented. Every security measure involves tradeoffs between the accessibility and security of the system. Students should be able to describe, justify, and document choices they make using terminology appropriate for the intended audience and purpose. Students could debate issues from the</i></p>	Cybersecurity	7. Communicating about computing

	<i>perspective of diverse audiences, including individuals, corporations, privacy advocates, security experts, and government.</i>		
--	--	--	--

## Data Analysis

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
L1.DA.S.01	Analyze storage types and locations.	Storage	4. Developing and using abstractions
L1.DA.S.02	Evaluate the tradeoffs in how data elements are organized and where data is stored.  <i>People make choices about how data elements are organized and where data is stored. These choices affect cost, speed, reliability, accessibility, privacy, and integrity. Students should evaluate whether a chosen solution is most appropriate for a particular problem. Students might consider the cost, speed, reliability, accessibility, privacy, and integrity tradeoffs between storing photo data on a mobile device versus in the cloud.</i>	Storage	3. Recognizing and defining computational problems
L1.DA.C.01	Collect and analyze data.	Collection	4. Developing and using abstractions
L1.DA.CVT.01	Create interactive data visualizations using software tools to help others better understand real-world phenomena.  <i>People transform, generalize, simplify, and present large data sets in different ways to influence how other people interpret and understand the underlying information. Examples include visualization, aggregation, rearrangement, and application of mathematical operations. People use software tools or programming to create powerful, interactive data visualizations and perform a range of mathematical operations to transform and analyze data. Students should model phenomena as systems, with rules governing the interactions within the system and evaluate these models against real-world observations. For example, flocking behaviors, queueing, or life cycles. Google Fusion Tables can provide access to data visualization online.</i>	Visualization & Transformation	4. Developing and using abstractions

L1.DA.IM.01	<p>Create computational models that represent the relationships among different elements of data collected from a phenomenon or process.</p> <p><i>Computational models make predictions about processes or phenomenon based on selected data and features. The amount, quality, and diversity of data and the features chosen can affect the quality of a model and ability to understand a system. Predictions or inferences are tested to validate models. Students should model phenomena as systems, with rules governing the interactions within the system. Students should analyze and evaluate these models against real-world observations. For example, students might create a simple producer–consumer ecosystem model using a programming tool. Eventually, they could progress to creating more complex and realistic interactions between species, such as predation, competition, or symbiosis, and evaluate the model based on data gathered from nature.</i></p>	Inference and Models	4. Developing and using abstractions
-------------	---	----------------------	--------------------------------------

## Algorithms and Programming

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
L1.AP.A.01	<p>Create prototypes that use algorithms to solve computational problems by leveraging prior student knowledge and personal interests.</p> <p><i>A prototype is a computational artifact that demonstrates the core functionality of a product or process. Prototypes are useful for getting early feedback in the design process, and can yield insight into the feasibility of a product. The process of developing computational artifacts embraces both creative expression and the exploration of ideas to create prototypes and solve computational problems. Students create artifacts that are personally relevant or beneficial to their community and beyond. Students should develop artifacts in response to a task or a computational problem that demonstrate the performance, reusability, and ease of implementation of an algorithm.</i></p>	Algorithms	5. Creating computational artifacts
L1.AP.V.01	<p>Use lists to simplify solutions, generalizing computational problems instead of repeatedly using simple variables.</p>	Variables	4. Developing and using abstractions

	<i>Students should be able to identify common features in multiple segments of code and substitute a single segment that uses lists (arrays) to account for the differences.</i>		
L1.AP.C.01	<p>Justify the selection of specific control structures when tradeoffs involve implementation, readability, and program performance, and explain the benefits and drawbacks of choices made.</p> <p><i>Implementation includes the choice of programming language, which affects the time and effort required to create a program. Readability refers to how clear the program is to other programmers and can be improved through documentation. The discussion of performance is limited to a theoretical understanding of execution time and storage requirements; a quantitative analysis is not expected. Control structures at this level may include conditional statements, loops, event handlers, and recursion. For example, students might compare the readability and program performance of iterative and recursive implementations of procedures that calculate the Fibonacci sequence.</i></p>	Control	5. Creating computational artifacts
L1.AP.C.02	<p>Design and iteratively develop computational artifacts for practical intent, personal expression, or to address a societal issue by using events to initiate instructions.</p> <p><i>In this context, relevant computational artifacts include programs, mobile apps, or web apps. Events can be user-initiated, such as a button press, or system-initiated, such as a timer firing. At previous levels, students have learned to create and call procedures. Here, students design procedures that are called by events. Students might create a mobile app that updates a list of nearby points of interest when the device detects that its location has been changed.</i></p>	Control	5. Creating computational artifacts
L1.AP.C.03	<p>Decompose problems into smaller components through systematic analysis, using constructs such as procedures, modules, and/or objects.</p> <p><i>At this level, students should decompose complex problems into manageable subproblems that could potentially be solved with programs or procedures that already exist. For example, students could create an app to solve a community problem by connecting to an online database through an application programming interface (API).</i></p>	Control	5. Creating computational artifacts

L1.AP.M.01	<p>Create computational artifacts by systematically organizing, manipulating and/or processing data.</p> <p><i>Computational artifacts can be created by combining and modifying existing artifacts or by developing new artifacts. Examples of computational artifacts include programs, simulations, visualizations, digital animations, robotic systems, and apps. Complex programs are designed as systems of interacting modules, each with a specific role, coordinating for a common overall purpose. Modules allow for better management of complex tasks. The focus at this level is understanding a program as a system with relationships between modules. The choice of implementation, such as programming language or paradigm, may vary. Students could incorporate computer vision libraries to increase the capabilities of a robot or leverage open-source JavaScript libraries to expand the functionality of a web application.</i></p>	Modularity	3. Recognizing and defining computational problems
L1.AP.M.02	<p>Systematically design and develop programs for broad audiences by incorporating feedback from users.</p> <p><i>Examples of programs could include games, utilities, and mobile applications. Students at lower levels collect feedback and revise programs. At this level, students should do so through a systematic process that includes feedback from broad audiences. Students might create a user satisfaction survey and brainstorm distribution methods that could yield feedback from a diverse audience, documenting the process they took to incorporate selected feedback in product revisions.</i></p>	Modularity	5. Creating computational artifacts
L1.AP.PD.01	<p>Evaluate licenses that limit or restrict use of computational artifacts when using resources such as libraries.</p> <p><i>Examples of software licenses include copyright, freeware, and the many open-source licensing schemes. At previous levels, students adhered to licensing schemes. At this level, they should consider licensing implications for their own work, especially when incorporating libraries and other resources. Students might consider two software libraries that address a similar need, justifying their choice based on the library that has the least restrictive license.</i></p>	Program Development	7. Communicating about computing

L1.AP.PD.02	<p>Evaluate and refine computational artifacts to make them more usable and accessible.</p> <p><i>Testing and refinement is the deliberate and iterative process of improving a computational artifact. This process includes debugging (identifying and fixing errors) and comparing actual outcomes to intended outcomes. Students should respond to the changing needs and expectations of end users and improve the performance, reliability, usability, and accessibility of artifacts. For example, students could incorporate feedback from a variety of end users to help guide the size and placement of menus and buttons in a user interface.</i></p>	Program Development	6. Testing and refining computational artifacts
L1.AP.PD.03	<p>Design and develop computational artifacts working in team roles using collaborative tools.</p> <p><i>Collaborative tools could be as complex as source code version control system or as simple as a collaborative word processor. Team roles in pair programming are driver and navigator but could be more specialized in larger teams. As programs grow more complex, the choice of resources that aid program development becomes increasingly important and should be made by the students. Students might work as a team to develop a mobile application that addresses a problem relevant to the school or community, selecting appropriate tools to establish and manage the project timeline; design, share, and revise graphical user interface elements; and track planned, in-progress, and completed components.</i></p>	Program Development	2. Collaborating around computing
L1.AP.PD.04	<p>Document design decisions using text, graphics, presentations, and/or demonstrations in the development of complex programs.</p> <p><i>Complex programs are designed as systems of interacting modules, each with a specific role, coordinating for a common overall purpose. These modules can be procedures within a program; combinations of data and procedures; or independent, but interrelated, programs. The development of complex programs is aided by resources such as libraries and tools to edit and manage parts of the program.</i></p>	Program Development	7. Communicating about computing

## Impacts of Computing

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
L1.IC.C.01	<p>Evaluate the ways computing impacts personal, ethical, social, economic, and cultural practices.</p> <p><i>Computing may improve, harm, or maintain practices. Equity deficits, such as minimal exposure to computing, access to education, and training opportunities, are related to larger, systemic problems in society. Students should be able to evaluate the accessibility of a product to a broad group of end users, such as people who lack access to broadband or who have various disabilities. Students should also begin to identify potential bias during the design process to maximize accessibility in product design.</i></p>	Culture	1. Fostering an inclusive computing culture
L1.IC.C.02	<p>Test and refine computational artifacts to reduce bias and equity deficits.</p> <p><i>Biases could include incorrect assumptions developers have made about their user base. Equity deficits include minimal exposure to computing, access to education, and training opportunities. Students should begin to identify potential bias during the design process to maximize accessibility in product design and become aware of professionally accepted accessibility standards to evaluate computational artifacts for accessibility.</i></p>	Culture	1. Fostering an inclusive computing culture
L1.IC.C.03	<p>Demonstrate how a given algorithm applies to problems across disciplines.</p> <p><i>Computation can share features with disciplines such as art and music by algorithmically translating human intention into an artifact. Students should be able to identify real-world problems that span multiple disciplines, such as increasing bike safety with new helmet technology, and that can be solved computationally.</i></p>	Culture	3. Recognizing and defining computational problems
L1.IC.SI.01	Compare and contrast the benefits and drawbacks of social media.	Social Interactions	2. Collaborating around computing
L1.IC.H.01	Hypothesize the impact of the innovations of computing systems for the next decade.	History	7. Communicating about computing

	<i>As computers become interconnected in each aspect of society, more powerful, and students become more reliant on them, students should be able describe the number of times computers or devices are accessed each day by teachers or peers in class and discuss what life would be like without them.</i>		
L1.IC.SLE.01	<p>Explain the beneficial and harmful effects that intellectual property laws can have on innovation.</p> <p><i>Laws govern many aspects of computing, such as privacy, data, property, information, and identity. These laws can have beneficial and harmful effects, such as expediting or delaying advancements in computing and protecting or infringing upon people’s rights. International differences in laws and ethics have implications for computing. For examples, laws that mandate the blocking of some file-sharing websites may reduce online piracy but can restrict the right to access information. Firewalls can be used to block harmful viruses and malware but can also be used for media censorship. Students should be aware of intellectual property laws and be able to explain how they are used to protect the interests of innovators and how patent trolls abuse the laws for financial gain.</i></p>	Safety, Law, & Ethics	7. Communicating about computing
L1.IC.SLE.02	<p>Explain the privacy concerns related to the collection and generation of data through automated processes (e.g., how businesses, social media, and the government collects and uses data) that may not be evident to users.</p> <p><i>Data can be collected and aggregated across millions of people, even when they are not actively engaging with or physically near the data collection devices. This automated and nonevident collection can raise privacy concerns, such as social media sites mining an account even when the user is not online. Other examples include surveillance video used in a store to track customers for security or information about purchase habits or the monitoring of road traffic to change signals in real time to improve road efficiency without drivers being aware. Methods and devices for collecting data can differ by the amount of storage required, level of detail collected, and sampling rates.</i></p>	Safety, Law, & Ethics	7. Communicating about computing

L1.IC.SLE.03	<p>Evaluate the social and economic implications of privacy in the context of safety, law, or ethics.</p> <p><i>Laws govern many aspects of computing, such as privacy, data, property, information, and identity. International differences in laws and ethics have implications for computing. Students might review case studies or current events which present an ethical dilemma when an individual's right to privacy is at odds with the safety, security, or wellbeing of a community.</i></p>	Safety, Law, & Ethics	7. Communicating about computing
L1.IC.CP.01	Explore computing, software, and data storage systems in local industries.	Community Partnerships	7. Communicating about computing

## Secondary Grades L2 (Grades 9-12) (Students who wish to pursue computer science beyond what is expected of all students)

### Computing Systems

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
L2.CS.D.01	Describe how internal and external parts of computing devices function to form a system.	Devices	4. Developing and using abstractions
L2.CS.HS.01	Categorize the roles of operating system software.  <i>Examples of roles could include memory management, data storage/retrieval, processes management, and access control.</i>	Hardware and Software	4. Developing and using abstractions
L2.CS.HS.02	Compare options for building a computer systems and determine advantages and drawbacks of each piece and how it will affect the overall performance.	Hardware and Software	7. Communicating about computing
L2.CS.IO.01	Demonstrate use of course specific advanced input and output devices related to field.  <i>Examples could include robotics, joysticks, motion sensors, movement sensors, GPS, and various other specific to CTE courses.</i>	Input and Output	7. Communicating about computing
L2.CS.T.01	Illustrate ways computing systems implement logic, input, and output through hardware components.  <i>Examples of components could include logic gates and IO pins.</i>	Troubleshooting	6. Testing and refining computational artifacts

### Networks & the Internet

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
L2.NI.NCO.01	Describe the issues that impact network functionality (e.g., bandwidth, load, delay, topology).  <i>Recommend use of free online network simulators to explore how these issues impact network functionality.</i>	Network Communication & Organization	4. Developing and using abstractions

L2.NI.NCO.02	Give examples to illustrate how sensitive data can be affected by malware and other attacks.	Network Communication & Organization	6. Testing and refining computational artifacts
L2.NI.C.01	Compare ways software developers protect devices and information from unauthorized access.  <i>Examples of security concerns to consider: encryption and authentication strategies, secure coding, and safeguarding keys.</i>	Cybersecurity	3. Recognizing and defining computational problems
L2.NI.C.02	Use encryption and decryption algorithms to transmit/ receive an encrypted message.	Cybersecurity	7. Communicating about computing

## Data Analysis

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
L2.DA.S.01	Translate and compare different bit representations of data types, such as characters, numbers, and images.	Storage	4. Developing and using abstractions
L2.DA.S.02	Analyze file systems created for keeping track of files on the hard disk.	Storage	3. Recognizing and defining computational problems
L2.DA.C.01	Select data collection tools and techniques to generate data sets that support a claim or communicate information.	Collection	4. Developing and using abstractions
L2.DA.CVT.01	Use data analysis tools and techniques to identify patterns in data representing complex systems.  <i>For example, identify trends in a dataset representing social media interactions, movie reviews, or shopping patterns.</i>	Visualization & Transformation	4. Developing and using abstractions
L2.DA.IM.01	Evaluate the ability of models and simulations to test and support the refinement of hypotheses. (e.g., flocking behaviors, life cycles, etc.)	Inference and Models	4. Developing and using abstractions

## Algorithms and Programming

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
L2.AP.A.01	Describe how artificial intelligence algorithms drive many software and physical systems (e.g., digital advertising, autonomous robots, computer vision, pattern recognition, text analysis).	Algorithms	5. Creating computational artifacts
L2.AP.A.02	Describe how artificial intelligence drives many software and physical systems.  <i>Examples include digital ad delivery, self-driving cars, and credit card fraud detection.</i>	Algorithms	5. Creating computational artifacts
L2.AP.A.03	Critically examine and trace classic algorithms (e.g., selection sort, insertion sort, binary search, linear search).	Algorithms	5. Creating computational artifacts
L2.AP.A.04	Implement an artificial intelligence algorithm to play a game against a human opponent or solve a problem.  <i>Games do not have to be complex. Simple guessing games, Tic-Tac-Toe, or simple robot commands will be sufficient.</i>	Algorithms	5. Creating computational artifacts
L2.AP.A.05	Use and adapt classic algorithms to solve computational problems.  <i>Examples could include sorting and searching.</i>	Algorithms	5. Creating computational artifacts
L2.AP.A.06	Evaluate algorithms in terms of their efficiency, correctness, and clarity.  <i>Examples could include sorting and searching.</i>	Algorithms	5. Creating computational artifacts
L2.AP.V.01	Compare and contrast simple data structures and their uses to simplify solutions, generalizing computational problems instead of repeatedly using primitive variables.  <i>Examples could include strings, lists, arrays, stacks, and queues.</i>	Variables	4. Developing and using abstractions
L2.AP.C.01	Trace the execution of repetition (e.g., loops, recursion), illustrating output and changes in values of named variables.	Control	5. Creating computational artifacts

L2.AP.M.01	Construct solutions to problems using student-created components, such as procedures, modules and/or objects.	Modularity	3. Recognizing and defining computational problems
L2.AP.M.02	Analyze a large-scale computational problem and identify generalizable patterns that can be applied to a solution.  <i>As students encounter complex, real-world problems that span multiple disciplines or social systems, they should decompose complex problems into manageable subproblems that could potentially be solved with programs or procedures that already exist. For example, students could create an app to solve a community problem by connecting to an online database through an application programming interface (API).</i>	Modularity	5. Creating computational artifacts
L2.AP.M.03	Demonstrate code reuse by creating programming solutions using libraries and APIs.  <i>Libraries and APIs can be student-created or common graphics libraries or maps APIs, for example.</i>	Modularity	5. Creating computational artifacts
L2.AP.PD.01	Plan and develop programs for broad audiences using a software life cycle process.  <i>Processes could include agile, spiral, or waterfall.</i>	Program Development	7. Communicating about computing
L2.AP.PD.02	Explain security issues that might lead to compromised computer programs.  <i>For example, common issues include lack of bounds checking, poor input validation, and circular references.</i>	Program Development	6. Testing and refining computational artifacts
L2.AP.PD.03	Develop programs for multiple computing platforms.  <i>Example platforms could include: computer desktop, web, or mobile.</i>	Program Development	2. Collaborating around computing
L2.AP.PD.04	Use version control systems, integrated development environments (IDEs), and collaborative tools and practices (code documentation) in a group software project.  <i>Group software projects can be assigned or student-selected.</i>	Program Development	7. Communicating about computing

L2.AP.PD.05	Develop and use a series of test cases to verify that a program performs according to its design specifications.  <i>At this level, students are expected to select their own test cases.</i>	Program Development	7. Communicating about computing
L2.AP.PD.06	Modify an existing program to add additional functionality and discuss intended and unintended implications (e.g., breaking other functionality).  <i>For instance, changes made to a method or function signature could break invocations of that method elsewhere in a system.</i>	Program Development	7. Communicating about computing
L2.AP.PD.07	Evaluate key qualities of a program through a process such as a code review.  <i>Examples of qualities could include correctness, usability, readability, efficiency, portability and scalability.</i>	Program Development	7. Communicating about computing
L2.AP.PD.08	Compare multiple programming languages and discuss how their features make them suitable for solving different types of problems.  <i>Examples of features include blocks versus text, indentation versus curly braces, and high-level versus low-level.</i>	Program Development	7. Communicating about computing

## Impacts of Computing

Identifier	Standard and Descriptive Statement	Subconcept	Practice(s)
L2.IC.C.01	Evaluate the beneficial and harmful effects that computational artifacts and innovations have on society.	Culture	1. Fostering an inclusive computing culture
L2.IC.C.02	Evaluate the impact of equity, access, and influence on the distribution of computing resources in a global society.	Culture	1. Fostering an inclusive computing culture
L2.IC.C.03	Design and implement a study that evaluates or predicts how computing has revolutionized an aspect of our culture and how it might evolve (e.g., education, healthcare, art/entertainment, energy).  <i>Areas to consider might include education, healthcare, art/entertainment, and energy.</i>	Culture	3. Recognizing and defining computational problems

L2.IC.SI.01	Use tools and methods for collaboration on a project to increase connectivity of people in different cultures and career fields.	Social Interactions	2. Collaborating around computing
L2.IC.H.01	Analyze trends of computing and how those trends have changed over time.	History	7. Communicating about computing
L2.IC.SLE.01	Debate laws and regulations that impact the development and use of software.	Safety, Law, & Ethics	7. Communicating about computing
L2.IC.SLE.02	Determine ways to test the validity of information located online.	Safety, Law, & Ethics	7. Communicating about computing
L2.IC.SLE.03	Evaluate the social and economic consequences of how law and ethics interact with digital aspects of privacy, data, property, information, and identity.	Safety, Law, & Ethics	7. Communicating about computing
L2.IC.CP.01	Collaborate with local industry partners to design and implement a viable mentorship.	Community Partnerships	2. Collaborating around computing



## Kansas State Department of Education

---

Landon State Office Building  
900 SW Jackson Street, Suite 307  
Topeka, Kansas 66612-1212

(785) 296-3201  
(785) 296-6659 - fax

[www.ksde.org](http://www.ksde.org)

**To:** Commissioner Randy Watson

**Subject:** Discuss Kansans Can state-level outcome: social-emotional growth

Social-emotional growth measured locally is one of the five outcomes for measuring progress of the Kansans Can vision to lead the world in the success of each student. At the March State Board meeting, members will hear from representatives of several professional associations that each play a role in this important area of students' social-emotional growth. The overview will include the Kansas Association for Counselor Education and Supervision, the Kansas School Counselor Association, the School Social Workers Association and the School Psychologists Association.



**REQUEST AND RECOMMENDATION FOR BOARD ACTION**

**Agenda Number: 10**

**Staff Initiating:**

**Director:**

**Commissioner:**

**Meeting Date: 3/12/2019**

Colleen Riley

Colleen Riley

Randy Watson

**Item Title:**

Act to submit proposed amended Emergency Safety Intervention regulations to Department of Administration and Office of Attorney General for review

**Recommended Motion:**

It is moved that the Kansas State Board of Education submit the proposed amendments to the emergency safety intervention regulations to the Department of Administration and Office of the Attorney General for review.

**Explanation of Situation Requiring Action:**

In November 2018, the Special Education Advisory Council took action requesting the State Board chair and State Board-SEAC liaison work with the Technical Assistance System Network (TASN) and other stakeholders to clarify the definition of seclusion within the ESI regulations. The stakeholder group agreed upon proposed changes to the definition of seclusion and SEAC approved these changes at its January 2019 meeting. Staff presented the proposed changes to these regulations to the State Board for review at its February 2019 meeting. The State Board will now determine whether to submit the proposed amendments to the emergency safety intervention regulations to the Department of Administration and Office of the Attorney General for review.



**K.A.R. 91-42-1. Definitions.** As used in this article, each of the following terms shall have the meaning specified in this regulation:

- (a) "Administrative review" means review by the state board upon request of a parent.
- (b) "Chemical restraint" means the use of medication to control a student's violent physical behavior or restrict a student's freedom of movement.
- (c) "Commissioner" means commissioner of education.
- (d) "Complaint" means a written document that a parent files with a local board as provided for in this article.
- (e) "Department" means the state department of education.
- (f) "District" means a school district organized under the laws of this state that is maintaining a public school for a school term pursuant to K.S.A. 72-1106 (K.S.A. 2017 Supp. 72-3115), and amendments thereto. This term shall include the governing body of any accredited nonpublic school.
- (g) "Emergency safety intervention" means the use of seclusion or physical restraint.
- (h) "Enclosed area" means any separate space, regardless of its size, configuration, whether it is a temporary or permanent enclosure, whether the door is left open or closed, or even regardless of whether the area has a door.
- (i) "Hearing officer" means the state board's designee to conduct an administrative review as specified in K.A.R. 91-42-5. The hearing officer shall be an officer or employee of the department.
- (j) "Incident" means each occurrence of the use of an emergency safety intervention.
- (k) "Local board" means the board of education of a district or the governing body of any accredited nonpublic school.
- (l) "Mechanical restraint" means any device or object used to limit a student's movement.
- (m) "Parent" means any of the following:
  - (1) A natural parent;
  - (2) an adoptive parent;
  - (3) a person acting as a parent, as defined in K.S.A. 72-1046 (K.S.A. 2017 Supp. 72-3122) and amendments thereto;
  - (4) a legal guardian;
  - (5) an education advocate for a student with an exceptionality;
  - (6) a foster parent, unless the foster parent's child is a student with an exceptionality; or
  - (7) a student who has reached the age of majority or is an emancipated minor.
- (n) "Physical escort" means the temporary touching or holding the hand, wrist, arm, shoulder, or back of a student who is acting out for the purpose of inducing the student to walk to a safe location.
- (o) "Physical restraint" means bodily force used to substantially limit a student's movement, except that consensual, solicited, or unintentional contact and contact to provide comfort, assistance or instruction shall not be deemed to be physical restraint.
- (p) "Purposefully isolated" means ~~no~~ school personnel ~~is~~are not meaningfully engaging with the student to provide instruction ~~or to assist in the de-escalation of the student during~~and any of the following occur:
  - (1) removal of a student from the learning environment by school personnel;
  - (2) separation from all or most peers and adults from the learning environment by school personnel; or
  - (3) placing the student within an enclosed area ~~of the learning environment~~ by school personnel.
- (q) "School" means any learning environment, including any nonprofit institutional day or residential school or accredited nonpublic school, that receives public funding or which is subject to the regulatory authority of the state board.
- (r) "Seclusion" means placement of a student in a location where all the following conditions are met:
  - (1) The student is placed in an enclosed area by school personnel.
  - (2) The student is purposefully isolated from adults and peers.

(3) The student is prevented from leaving, or the student reasonably believes that the student will be prevented from leaving, the enclosed area.

(s) "State board" means Kansas state board of education.

(t) "Time-out" means a behavioral intervention in which a student is temporarily removed from a learning activity without being secluded. (Authorized by and implementing Article 6, Section 2(a) of the Kansas Constitution; effective April 19, 2013; amended, T-91-2-17-16, Feb. 17, 2016; amended June 10, 2016; amended July 7, 2017, amended \_\_\_\_\_, 2019.)

**K.A.R. 91-42-2. Standards for the use of emergency safety interventions.** (a) An emergency safety intervention shall be used only when a student presents a reasonable and immediate danger of physical harm to the student or others with the present ability to effect such physical harm. Less restrictive alternatives to emergency safety interventions, including positive behavior interventions support, shall be deemed inappropriate or ineffective under the circumstances by the school employee witnessing the student's behavior before the use of any emergency safety interventions. The use of an emergency safety intervention shall cease as soon as the immediate danger of physical harm ceases to exist. Violent action that is destructive of property may necessitate the use of an emergency safety intervention.

(b) Use of an emergency safety intervention for purposes of discipline or punishment or for the convenience of a school employee shall not meet the standard of immediate danger of physical harm.

(c)(1) A student shall not be subjected to an emergency safety intervention if the student is known to have a medical condition that could put the student in mental or physical danger as a result of the emergency safety intervention.

(2) The existence of the medical condition must be indicated in a written statement from the student's licensed health care provider, a copy of which shall be provided to the school and placed in the student's file. The written statement shall include an explanation of the student's diagnosis, a list of any reasons why an emergency safety intervention would put the student in mental or physical danger and any suggested alternatives to the use of emergency safety interventions. (3) Notwithstanding the provisions of this subsection, a student may be subjected to an emergency safety intervention, if not subjecting the student to an emergency safety intervention would result in significant physical harm to the student or others.

(d) Seclusion.

(1) An incident shall be considered Sseclusion if any of the following occurshall consist of one of the following circumstances:

(A) Having the student go to another location;

(B) Removing other students and adults from that student's location; or

(C) Using any method by which a student comes to be in an area where all the other elements of seclusion are met.

(2) When a student is placed in seclusion, a school employee shall be able to see and hear the student at all times.

(3) The mere presence of an adult in the seclusion area or observing the student from outside the seclusion area does not create an exemption from otherwise reporting the incident as seclusion.

(4) When a student is placed in seclusion, the student shall be presumed to reasonably believe the student is prevented from leaving.

(5) (e) If the enclosed area is equipped ~~Each seclusion room equipped~~ with a locking door, such door shall be designed to ensure that the lock automatically disengages when the school employee viewing the student walks away from the seclusion roomenclosed area, or in cases of emergency, including fire or severe weather.

(6) ~~(f)~~ Each ~~seclusion room~~ enclosed area used for seclusion shall be a safe place with proportional and similar characteristics as other rooms where students frequent. Each room shall be free of any condition that could be a danger to the student and shall be well-ventilated and sufficiently lighted.

(e) The following types of restraint shall be prohibited:

(1) Prone, or face-down, physical restraint;

(2) supine, or face-up, physical restraint;

(3) any restraint that obstructs the airway of a student;

(4) any restraint that impacts a student's primary mode of communication;

(5) chemical restraint, except as prescribed treatments for a student's medical or psychiatric condition by a person appropriately licensed to issue these treatments; and

(6) the use of mechanical restraint, except those protective or stabilizing devices either ordered by a person appropriately licensed to issue the order for the device or required by law, any device used by a law enforcement officer in carrying out law enforcement duties, and seatbelts and any other safety equipment when used to secure students during transportation.

(f) The following shall not be deemed an emergency safety intervention, if its use does not otherwise meet the definition of an emergency safety intervention:

(1) Physical escort; and

(2) time-out. (Authorized by and implementing Article 6, Section 2(a) of the Kansas Constitution; effective April 19, 2013; amended, T-91-2-17-16, Feb. 17, 2016; amended June 10, 2016; amended July 7, 2017, amended \_\_\_\_\_, 2019.)



## REQUEST AND RECOMMENDATION FOR BOARD ACTION

Agenda Number: 11

**Staff Initiating:**

Tate Toedman

**Director:**

Colleen Riley

**Commissioner:**

Randy Watson

**Meeting Date: 3/12/2019**

---

### **Item Title:**

Act on recommendations to change requirements for a Kansas paraprofessional to become highly qualified

### **Recommended Motion:**

It is moved that the Kansas State Board of Education approve the recommended changes to the requirements for paraprofessionals to become highly qualified paraprofessionals.

### **Explanation of Situation Requiring Action:**

The Elementary and Secondary Education Act (ESEA) as reauthorized by the Every Student Succeeds Act (ESSA) requires the state of Kansas to have in place requirements for paraprofessionals to be highly qualified to be paid with Title I funds in a Targeted Assistance Title building, or any instructional paraprofessional in a school-wide Title I building. This is a minor, but important change to what has been in place since 2003.

Kansas currently has the following in place for this requirement:

- Have a high school diploma or a GED certificate **AND**
- Complete 48 hours at an institution of higher education\* **OR**
- Obtain an associate's (or higher) degree **OR**
- Pass a state approved assessment that assesses the ability to assist in instructing reading, writing, and mathematics (or reading, writing, mathematics readiness).

The three tests are the ParaPro Assessment, ParaEducator PD Now! and the WorkKeys by ACT, Inc. The previous requirements in Kansas under the WorkKeys test need to be updated based on changes made by ACT. KSDE is recommending the following updated requirements for paraprofessionals to become highly qualified using the WorkKeys test to be the following:

- Workplace Documents (Level 4 score to pass)
- Applied Math (Level 4 score to pass)
- Graphic Literacy (Level 3 to pass)





## Kansas State Department of Education

---

Landon State Office Building  
900 SW Jackson Street, Suite 307  
Topeka, Kansas 66612-1212

(785) 296-3201  
(785) 296-6659 - fax

[www.ksde.org](http://www.ksde.org)

**To:** Commissioner Randy Watson

**Subject:** Presentation on human trafficking education and outreach in Kansas

The presentation will address sex trafficking and labor trafficking, including Kansas-specific statistics. Presenter Jennifer Montgomery, Director for Human Trafficking Education and Outreach with the Office of Kansas Attorney General, will also address these topics:

- characteristics of victims and of traffickers
- risk/vulnerability factors in the youth population
- recruitment techniques used by traffickers
- red flags and indicators of human trafficking
- information about how to report human trafficking





## Kansas State Department of Education

Landon State Office Building  
900 SW Jackson Street, Suite 307  
Topeka, Kansas 66612-1212

(785) 296-3201  
(785) 296-6659 - fax

[www.ksde.org](http://www.ksde.org)

**To:** Commissioner Randy Watson  
**From:** Denise Kahler  
**Subject:** Recognition of 2018 Milken Educator

At its March meeting, the Kansas State Board of Education will have the opportunity to hear from Linda Dishman, the 2018 Milken Educator Award recipient. Ms. Dishman is an educator at Berryton Elementary School, Shawnee Heights USD 450. She will receive an unrestricted cash award of \$25,000.

Ms. Dishman will share some of the innovative programs and strategies she uses to foster student achievement at Berryton Elementary School. She also will be available to respond to questions from the Board.

The Milken Family Foundation, in cooperation with the Kansas State Department of Education, sponsors the Milken Educator Award program in Kansas, which alternates annually between elementary school educators and secondary school educators. The program recognizes, celebrates, and rewards teachers and principals who have made and continue to make significant contributions to the education of children.





## Kansas State Department of Education

Landon State Office Building  
900 SW Jackson Street, Suite 307  
Topeka, Kansas 66612-1212

(785) 296-3201  
(785) 296-6659 - fax

[www.ksde.org](http://www.ksde.org)

**To:** Commissioner Randy Watson  
**From:** Stacy Smith  
**Subject:** Update on federal Strengthening Career and Technical Education Act (Perkins V) transition plan with Kansas Board of Regents

KSDE staff will present an update on the implementation of the Federal Strengthening Career and Technical Education Act (Perkins V). The federal grant supports state efforts for approved pathways in career and technical education. KSDE and the Kansas Board of Regents have developed a transition plan to be implemented for the 2019-2020 school year creating seamless pathways for workplace learning. During this year, the two agencies will work together to develop the new five-year state plan for implementation in 2020-2021.



**REQUEST AND RECOMMENDATION FOR BOARD ACTION**

Agenda Number: 15

**Staff Initiating:**

**Director:**

**Commissioner:**

**Meeting Date: 3/12/2019**

Leah Zeller

Mischel Miller

Randy Watson

**Item Title:**

Act on new appointment to the Professional Practices Commission

**Recommended Motion:**

It is moved that the Kansas State Board of Education act to appoint \_\_\_\_\_ (Scott Kessler or Stan Ruff) to complete a partial term on the Professional Practices Commission representing public elementary school principals, effective from the date of appointment through June 30, 2020.

**Explanation of Situation Requiring Action:**

It is requested that the Kansas State Board of Education appoint members of the Professional Practices Commission (PPC) as stipulated under K.S.A. 72-8505, which states: "members 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."

Nomination forms and resumes are provided for the individuals who were nominated to fill a vacancy on the PPC for public elementary school principal. At the completion of the partial term in 2020, the new appointee would be eligible for his first full three-year term.

The nominees are:

- Scott Kessler, Principal, Anthony Elementary, Leavenworth USD 453; SBOE District 1
- Stan Ruff, Principal, Skelly Elementary, El Dorado USD 490; SBOE District 9

The current membership roster is also provided.





# Nominees for Professional Practices Commission

Teacher Licensure & Accreditation | KSDE | Landon State Office Building | 900 SW Jackson Street, Suite 106 | Topeka, Kansas 66612-1212 |  
Phone: 785-296-2288 | [www.ksde.org](http://www.ksde.org)

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

**NAME OF BOARD/COMMISSION/COMMITTEE:** Professional Practices Commission

Nominated by (organization,  
individual or State Board  
member)

Laura Batson

Date

11/2/2018

Nominee's Name Scott Kessler

Occupational Title Principal

Place of employment (Facility) Anthony Elementary

Address 570 Evergreen St.

City Leavenworth

State KS

Zip - 66048

Home address 921 Village Street

City Leavenworth

State KS

Zip - 66048

Home e-mail kessler9205@gmail.com

Work e-mail scott.kessler@lvpioneers.org

Work Phone (913) - 684-1500

Home Phone (913) - 406-9452

Fax Number (913) - 684-1503

State Board District (that you work in): District 1

### 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 Kansas, have at least five years' professional educational experience, and have been in active practice the immediately preceding three years and at the time of appointment.**

Starting in July of 2018, I became the head principal of Anthony Elementary School. Prior to this position, I was the assistant principal of Anthony Elementary School from July 2016-July 2018. Before I came to Leavenworth School District, I taught fifth grade in the Blue Valley School District for five years, from August 2011 to May 2016.

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

Prior to my educational career, I was an infantry officer in the Kansas Army National Guard, which included a tour in Iraq in 2005-2006.

Throughout my National Guard service, I worked in law enforcement for various locales and municipalities. My educational background includes a BA in Criminal Justice from Park University (1999), a MA in Management from Webster University (2002), a BA in Elementary Ed from the Univ. of Saint Mary's (2011) and a MS in Educational Leadership from Emporia State University (2015).

### Nominee represents school district 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: KSDE General Counsel, Office of General Counsel, KSDE, Landon State Office Building, 900 SW Jackson, Suite 102, Topeka, KS 66612-1212, (785) 296-3204.

## Scott Michael Kessler

921 Village Street  
Leavenworth, KS 66048  
(913) 406-9452

[scott.kessler@lvpioneers.org](mailto:scott.kessler@lvpioneers.org)

---

### Education

- **Master of Science-Educational Administration (2015)**  
Emporia State University, Emporia, KS-Cumulative GPA: 4.0
  - **Bachelor of Science-Elementary Education (2011)**  
University of Saint Mary, Leavenworth, KS-Dean's List, Cumulative GPA: 4.0
  - **Master of Arts-Management (2002)**  
Webster University, Saint Louis, MO-Honor Roll, Cumulative GPA: 3.83
  - **Bachelor of Arts-Criminal Justice (1999)**  
Park University, Parkville, MO-Honor Roll, Cumulative GPA: 3.55
  - **High School Diploma (1994)**  
Washington High School, Kansas City, KS-Honor Roll, National Honor Society
- 

### Certifications/Licensure

- Kansas Building Leadership License (PreK-12) Expires: 1/27/2023
  - Kansas Professional Elementary License (K-6) Expires: 1/27/2023
- 

### Awards/Nominations

2015-Nominated for GLI National History Teacher of the Year (district nominated)

2014-Nominated for Kindest Kansas Citian (student nominated)

2012-Nominated for Kansas New Horizons Teaching Award (principal nominated)

---

### Professional Experience in Education

**Leavenworth School District, Leavenworth, KS**

**July 2016-Present**

*Principal at Anthony Elementary School July 2018-Present*

*Assistant Elementary Principal at Anthony Elementary School July 2016-July 2018*

As the principal, I support the district strategic plan by helping to create a culture of improvement and academic success at Anthony Elementary School.

Responsibilities/Training include the following:

- Classified/Certified Evaluations
- ESI (Seclusion/Restraint) Documentation and State Reporting
- PLC Facilitation
- Building Budget
- Professional Development Planning and Implementation
- Serve as LEA for 504 Plans, IEP's, and ED IEP's
- Building Leadership Team, SIT Team Leader, and District Leadership Team
- School-Wide Discipline/Behavior Management
- Emergency Management Team Facilitator
- Building State Testing Coordinator
- KESA Team Member/OVT Member Certified

I utilized differentiated instruction, cooperative learning, and integrated technology.

Responsibilities/Training included the following:

- Morse Elementary School Site Based Leadership Team 2014-2016
- Blue Valley/Morse Elementary Innovations Spaces Teacher 2014-2016
- Morse Elementary School Leadership Team 2013-2016
- Blue Valley Elementary Science Leadership Committee 2014-2015
- Morse Elementary School Building Writing Assessment Representative 2014
- Morse Elementary School Fifth Grade Student Council Co-Sponsor 2013-2015
- Blue Valley Social Studies Scope and Sequence Committee 2013
- Blue Valley Teacher Leadership Academy 2012-2013
- Blue Valley Summer School Training/Teacher 2012

---

### **Professional Organizations**

- Association for Supervision and Curriculum Development (ASCD)
- United School Administrators of Kansas (USA-Kansas)
- The Honor Society of Phi Kappa Phi
- Veterans of Foreign Wars (VFW)

---

### Educational Professional Development Includes:

Creating a Culture of Improvement	KELI Mentoring and Induction Program
Teaching and Engaging with Poverty in Mind	Trauma Sensitive Schools Summit
The Summit on PLC's at Work	Responsive Classroom
B.I.S.T. Building Leadership Conference	MANDT Certification
AIMSweb	Multigenerational
SAMR Knowledge	Cultures and Religions
Gifted and Differentiation	Dyslexia

---

### **Military Service**

Kansas Army National Guard 2000-2007

- Honorable Discharge March 2007
- **Active duty in support of Operation Iraqi Freedom from August 2005 to October 2006**
- Highest Rank: 1st Lieutenant
- Military Awards Include: Combat Infantryman Badge, Army Commendation Medal, Army Achievement Medal, National Defense Service Medal, Global War on Terrorism Service Medal, Iraq Campaign Medal, Army Service Ribbon, Overseas Service Ribbon, and Armed Forces Reserve Medal w/M Device.

---

### **Insurance Work 2006-2009 (\*while going back to school for education degree)**

Farmers Insurance Company-Personal Lines Underwriter/Commercial Claims Representative

### **Kansas Law Enforcement 2000-2006**

Certified Law Enforcement Officer-Johnson County Sheriff's Office, Johnson County Park Police, Blue Valley Campus Police, KCKCC Campus Police





# Nominees for Professional Practices Commission

Teacher Licensure & Accreditation | KSDE | Landon State Office Building | 900 SW Jackson Street, Suite 106 | Topeka, Kansas 66612-1212 | Phone: 785-296-2288 | [www.ksde.org](http://www.ksde.org)

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

NAME OF BOARD/COMMISSION/COMMITTEE: Professional Practices Commission

Nominated by (organization, individual or State Board member)

SUE GIVENSON

Date 12-3-18

Nominee's Name STAN RUFF Occupational Title ELEM. PRINCIPAL

Place of employment (Facility) SKELLY ELEMENTARY Address 951 SKELLY ST.

City ELDORADO State KS Zip 67042

Home address 915 RIM ROCK RD.

City ELDORADO State KS Zip 67042

Home e-mail sruff@eldoradoschools.org Work e-mail sruff@eldoradoschools.org

Work Phone (316) 322-4860 Home Phone (316) 323-3343

Fax Number (316) 322-4861

State Board District (that you work in): 9

### 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 Kansas, have at least five years' professional educational experience, and have been in active practice the immediately preceding three years and at the time of appointment.**

STAN RUFF HAS BEEN LICENSED & EMPLOYED AS BOTH TEACHER & ADMINISTRATOR IN KANSAS FOR 30 YEARS. FOR THE PAST DECADE, HE HAS SERVED AS AN ELEMENTARY PRINCIPAL.

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

MR. RUFF HAS MENTORED NEW TEACHERS & ADMINISTRATORS AT ALL LEVELS. HE HAS DEMONSTRATED THE ABILITY TO BRING GROUPS TO CONSENSUS.

Nominee represents school district 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: KSDE General Counsel, Office of General Counsel, KSDE, Landon State Office Building, 900 SW Jackson, Suite 102, Topeka, KS 66612-1212, (785) 296-3204.



<b>Position</b>	<b>Name</b>	<b>Work Address</b>	<b>Term(s)</b>	<b>Board District</b>
District Public School Administrator	Reed, Nathan	Fairfield, USD 310 16115 S. Langdon Rd Langdon, KS 67583	First full 3 year term 7/1/18 to 6/30/21	5 7
Junior High/Middle Level Public School Principal	Filippi, Eric	Coleman Middle School, USD 259 1544 N Gouverneur Wichita, KS 67206	Partial Term 7/1/18 to 6/30/19 First full 3 year term 7/1/19 to 6/30/22	7 8 10
Senior High Public School Principal	Anderson, William	Sterling, USD 376 308 E Washington Sterling, KS 67579	First full 3 year term 7/1/18 to 6/30/21	5 7
Elementary Public School Teacher	Holt, Jennifer	Kansas City Kansas Public Schools, USD 500 2010 N 59 <sup>th</sup> Street Kansas City, KS 66104	First full 3 year term 7/1/18 to 6/30/21	1
Middle Level Public School Teacher	Ramirez, Sylvia	Horace Good Middle School, USD 457 1412 N Main Street Garden City, KS 67846	First full 3 year term 7/1/16 to 6/30/19	5
Senior High Public School Teacher	Edwards, Aaron	Lansing High School, USD 469 1412 147 <sup>th</sup> Street Lansing, KS 66043	First full 3 year term 7/1/18 to 6/30/21	1
Senior High Public School Teacher	Schrader, Maret	Seaman High School, USD 345 4850 NW Rochester Rd Topeka, KS 66617-1398	First full 3 year term 7/1/16 to 6/30/19	4
High School Classroom Teacher	Sieck, Linda	Shawnee Mission East High, USD 512 7500 Mission Rd Shawnee Mission KS 66208-4298	Additional 3 year appointment to expire 6/30/2020	1 2 3
<b>Elementary Public School Principal</b>	<b>Vacant</b>			





## Kansas State Department of Education

Landon State Office Building  
900 SW Jackson Street, Suite 307  
Topeka, Kansas 66612-1212

(785) 296-3201  
(785) 296-6659 - fax

[www.ksde.org](http://www.ksde.org)

**To:** Commissioner Randy Watson  
**From:** Candi Brown, Wendy Fritz  
**Subject:** Personnel Report

	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June
<b>Total New Hires</b>	4	2	3	5	2	2	1	1				
Unclassified	3	2	3	5	2	2	1	1				
Unclassified Regular (leadership)	1	0	0	0	0	0	0	0				
<b>Total Separations</b>	7	1	1	1	2	2	0	1				
Classified	0	0	0	0	0	0	0	0				
Unclassified	7	1	1	1	2	2	0	1				
Unclassified Regular (leadership)	0	0	0	0	0	0	0	0				
<b>Recruiting (data on 1st day of month)</b>	11	11	6	4	5	4	2	3				
Unclassified	11	11	6	4	5	4	2	3				
Unclassified Regular (leadership)	0	0	0	0	0	0	0	0				

Total employees 247 as of pay period ending 2/09/2019. Count does not include Board members. It also excludes classified temporaries and agency relocations, 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**

Agenda Number: 16 b.

**Staff Initiating:****Director:****Commissioner:****Meeting Date: 3/12/2019**

Candi Brown

Wendy Fritz

Randy Watson

---

**Item Title:**

Act on personnel appointments to unclassified positions

**Recommended Motion:**

It is moved that the Kansas State Board of Education confirm the personnel appointments of individuals to unclassified positions at the Kansas State Department of Education as presented.

**Explanation of Situation Requiring Action:**

The personnel appointment presented this month is:

- Makayla Auldridge to the position of Administrative Specialist on the Fiscal Auditing Team, effective Feb. 4, 2019, at an annual salary of \$ 31,824.00. This position is funded by the School Food Service Fund and the State General Fund.



## REQUEST AND RECOMMENDATION FOR BOARD ACTION

Agenda Number: 16 c.

**Staff Initiating:**

Susan Helbert

**Director:**

Mischel Miller

**Commissioner:**

Randy Watson

**Meeting Date:** 3/12/2019

---

### **Item Title:**

Act on recommendations for Licensure Waivers

### **Recommended Motion:**

It is moved that the Kansas State Board of Education accept the attached recommendations for licensure waivers.

### **Explanation of Situation Requiring Action:**

SBR 91-31-42 allows any school district to request a waiver from one or more of their accreditation requirements imposed by the State Board. Requests by schools to waive school accreditation regulation SBR 91-31-34 (appropriate certification/licensure of staff) are reviewed by the staff of Teacher Licensure and Accreditation. The district(s) must submit an application verifying that the individual teacher for whom they are requesting the waiver is currently working toward achieving the appropriate endorsement on his/her license. A review of the waiver application is completed before the waiver is recommended for approval.

The attached requests have been reviewed by the Teacher Licensure and Accreditation staff and are being forwarded to the State Board of Education for action. If approved, school districts will be able to use the individuals in an area outside the endorsement on their license, and in the area for which they have submitted an approved plan of study. The waiver is valid for one school year.

## Licensure Waivers

District	Dist Name	First	Last	Subject	Recomm.
D0115	Nemaha Central	Julie	Lueger	High Incidence Special Ed.	Approved*
D0229	Blue Valley	Michelle	Stack	High Incidence Special Ed.	Approved*
D0253	Emporia	Elizabeth	Moore	Early Childhood Special Ed.	Approved
D0259	Wichita	Kelly	Casey	Early Childhood Special Ed.	Approved
D0259	Wichita	Gary	Rochester	Low Incidence Special Ed.	Approved
D0259	Wichita	Bret	Eckert	High Incidence Special Ed.	Approved
D0259	Wichita	Cindi	Cox	High Incidence Special Ed.	Approved
D0260	Derby	Justin	Carruthers	High Incidence Special Ed.	Approved
D0261	Haysville	Erica	Bunton	Early Childhood Special Ed.	Approved
D0290	Ottawa	Jennifer	Stogsdill	High Incidence Special Ed.	Approved*
D0343	Perry Public Schools	Tammy	Foster	Low Incidence Special Ed. -extension on the number of days under an emergency substitute license	Approved
D0368	Paola	Melissa	Wheeler	High Incidence Special Ed.	Approved*
D0383	Manhattan-Ogden	Mary	Pace	Low Incidence Special Ed.	Approved
D0383	Manhattan-Ogden	Mika	Maples	Low Incidence Special Ed.	Approved
D0385	Andover	Breanna	Olds	High Incidence Special Ed. -extension on the number of days under an emergency substitute license	Approved
D0402	Augusta	Kristen	Martin	Library Media Specialist	Approved**
D0407	Russell County	Kari	Karst	High Incidence Special Ed.	Approved
D0453	Leavenworth	John	Darrow	High Incidence Special Ed.	Approved
D0453	Leavenworth	Kaitlin	Smith	High Incidence Special Ed.	Approved*
D0457	Garden City	Rebecka	McMillan	High Incidence Special Ed.	Approved**
D0464	Tonganoxie	Nicolas	Butler	Low Incidence Special Ed. -extension on the number of days under an emergency substitute license	Approved
D0469	Lansing	Madison	Workman	Low Incidence Special Ed.	Approved
D0475	Geary Co. Schools	Jillian	Kay	Gifted	Approved
D0475	Geary Co. Schools	Samantha	Whitcomb	Early Childhood Special Ed.	Approved
D0475	Geary Co. Schools	Bailee	Flaming	High Incidence Special Ed.	Approved
D0495	Ft Larned	Jennifer	Mick	High Incidence Special Ed.	Approved
D0497	Lawrence	Lauren	Colman	High Incidence Special Ed.	Approved
D0497	Lawrence	Erin	Weinmaster	High Incidence Special Ed.	Approved
D0497	Lawrence	Ian	Weaver	Speech/Speech Communications - extension on the number of days under an emergency substitute license	Approved
D0497	Lawrence	Courtney	Miles	Low Incidence Special Ed.	Approved
D0497	Lawrence	Isabella	Pullos	Spanish - extension on the number of days under an emergency substitute	Approved
D0500	Kansas City	Dawnyel	McCollum	High Incidence Special Ed.	Approved
D0500	Kansas City	Elizabeth	Czamanske	Early Childhood Special Ed.	Approved
		* First Renewal		**Final Renewal	

					Page 2
D0500	Kansas City	Lisa	O'Neill	Early Childhood Special Ed.	Approved
D0500	Kansas City	Kristine	Klaas	High Incidence Special Ed.	Approved
D0500	Kansas City	Lacy	Davison-Symmonds	High Incidence Special Ed.	Approved
D0500	Kansas City	Easton	Roye	High Incidence Special Ed.	Approved
D0500	Kansas City	Rosanne	Lawler	Gifted	Approved
D0501	Topeka Public Schools	James	Dreasher	High Incidence Special Ed.	Approved*
D0501	Topeka Public Schools	Neil	Trottier	High Incidence Special Ed.	Approved
D0501	Topeka Public Schools	Diane	Bernheimer	High Incidence Special Ed. - extension on the number of days under an emergency substitute license	Approved
D0501	Topeka Public Schools	Lynne	Christ	High Incidence Special Ed.	Approved
D0501	Topeka Public Schools	Nancy	Johnson	High Incidence Special Ed. - extension on the number of days under an emergency substitute license	Approved
D0512	Shawnee Mission Public Schools	Kathleen	Lynch	Low Incidence Special Ed.	Approved*
D0512	Shawnee Mission Public Schools	Jessica	Rinkes	Early Childhood Special Ed.	Approved*
D0512	Shawnee Mission Public Schools	Michelle	Langton	Low Incidence Special Ed.	Approved*
D0602	Northwest KS Educational Serv Cntr	Mindy	Christensen	Early Childhood Special Ed.	Approved
D0602	Northwest KS Educational Serv Cntr	April	Farr	High Incidence Special Ed.	Approved
D0602	Northwest KS Educational Serv Cntr	Emily	Molstad	High Incidence Special Ed.	Approved*
D0602	Northwest KS Educational Serv Cntr	Erica	Smith	High Incidence Special Ed.	Approved**
D0602	Northwest KS Educational Serv Cntr	Erica	Carter	High Incidence Special Ed.	Approved
D0605	South Central KS Spec Ed Coop	Lauren	Walker	High Incidence Special Ed.	Approved
D0605	South Central KS Spec Ed Coop	Randall	Pugh	High Incidence Special Ed.	Approved
D0613	Southwest Kansas Area Cooperative	Deann	Jones	Early Childhood Special Ed.	Approved
D0613	Southwest Kansas Area Cooperative	Hannah	Elliott	High Incidence Special Ed.	Approved**
D0613	Southwest Kansas Area Cooperative	Daniel	Kliger	High Incidence Special Ed.	Approved
D0613	Southwest Kansas Area Cooperative	Joann	Cline	High Incidence Special Ed.	Approved**
D0614	East Central KS Coop in Educ	Travis	Olson	High Incidence Special Ed.	Approved**
D0614	East Central KS Coop in Educ	Amanda	Shockley	High Incidence Special Ed.	Approved
		* First Renewal		**Final Renewal	

					Page 3
D0618	Sedgwick Co Area Educational Servs	Helen	White	Low Incidence Special Ed.	Approved*
D0618	Sedgwick Co Area Educational Servs	Janette	Dillon	High Incidence Special Ed. - extension on the number of days under an emergency substitute license	Approved
D0618	Sedgwick Co Area Educational Servs	Larisa	Lawrence	Early Childhood Special Ed. - extension on the number of days under an emergency substitute license	Approved
D0618	Sedgwick Co Area Educational Servs	Shawn	Stoehr	High Incidence Special Ed. - extension on the number of days under an emergency substitute license	Approved
D0618	Sedgwick Co Area Educational Servs	Kirstyn	Linares	Low Incidence Special Ed. - extension on the number of days under an emergency substitute license	Approved
D0620	Three Lakes Educational Coop	Krystal	Elias	Early Childhood/Pre-School	Approved
D0638	Butler Co Special Education Interlocal	Josh	Griffis	High Incidence Special Ed.	Approved
D0700	Beloit Special Education Coop	Susan	Durham	High Incidence Special Ed.	Approved**
D0700	Beloit Special Education Coop	Samantha	Toombs	High Incidence Special Ed.	Approved*
D0707	Barton Co Coop. Program of Special Services	Tammy	Cline	High Incidence Special Ed.	Approved
D0718	Harvey Co. Sp. Ed. Coop.	Rebecca	Haines	Low Incidence Special Ed.	Approved*
		* First Renewal		**Final Renewal	

**REQUEST AND RECOMMENDATION FOR BOARD ACTION**

Agenda Number: 16 d.

**Staff Initiating:**

**Director:**

**Commissioner:**

**Meeting Date: 3/12/2019**

Leah Zeller

Mischel Miller

Randy Watson

---

**Item Title:**

Act on recommendations of the Licensure Review Committee

**Recommended Motion:**

It is moved that the Kansas State Board of Education accept the recommendations of the Licensure Review Committee as presented.

**Explanation of Situation Requiring Action:**

Recommendations of the Licensure Review Committee need the approval of the State Board of Education. Certificates/Licenses will be issued to those applicants whose appeals are granted.

KANSAS STATE BOARD OF EDUCATION  
LICENSURE REVIEW COMMITTEE  
Board Recommendations  
March 2019

**Case 3250**

Lyza Bowers requested the addition of an endorsement for K-6 elementary education to a valid Kansas license. Gwen McDonald made a motion to recommend approval of this request based on achievement of certification in South Carolina through meeting minimum state requirements and clarification of education background and teaching experience. Heidi Bolt seconded the motion and the Licensure Review Committee approved the motion unanimously.

**Case 3254**

Michael Dickerson requested an initial Kansas license for middle level 5-8 social studies. Heidi Bolt made a motion to recommend approval of this license based on achievement of certification in Florida through an alternative route, educational background, and teaching experience. Gwen McDonald seconded the motion and the Licensure Review Committee approved the motion unanimously.

**Case 3255**

LaDawn Pieczonka requested an initial Kansas license for secondary 6-12 social studies. Marc Williams made a motion to recommend approval of this license based on achievement of certification in Florida through an alternative route, educational background, and teaching experience. Gwen McDonald seconded the motion and the Licensure Review Committee approved the motion unanimously.

**Case 3257**

Lee Fryer requested the addition of an endorsement for K-6 elementary education to a valid Kansas license. Gwen McDonald made a motion to recommend approval of this request based on achievement of certification in Missouri through meeting minimum state requirements, educational background, and teaching experience. Ashlie Jack seconded the motion and the Licensure Review Committee approved the motion unanimously.

**Case 3259**

Rachel Seuell requested the renewal of a restricted teaching license for secondary 6-12 biology. Ruth Schneider made a motion to recommend approval of this request based on the extenuating circumstances presented. The Committee recommended the renewal be effective 1/17/19 and expire 6/30/19; as long as progress is made the spring 2019 semester the restricted license can be extended through 6/30/20. Gwen McDonald seconded the motion and the License Review Committee approved the motion unanimously.

## REQUEST AND RECOMMENDATION FOR BOARD ACTION

Agenda Number: 16. e

**Staff Initiating:**

Catherine Chmidling

**Director:**

Mischel Miller

**Commissioner:**

Randy Watson

**Meeting Date: 3/12/2019**

---

**Item Title:**

Act on recommendations of the Evaluation Review Committee for higher education program reviews

**Recommended Motion:**

It is moved that the Kansas State Board of Education accept the following recommendations of the Evaluation Review Committee for "Program Approval" for Emporia State University, Kansas Independent College Association, Sterling College, and University of Saint Mary.

**Explanation of Situation Requiring Action:**

Following the institutional application and receipt of a complete institutional report, a review team of trained evaluators was appointed to review the education preparation provider or teacher education programs (as appropriate) for the above institutions based on adopted State Board policies, procedures and regulations. These are available for review by any member or members of the State Board. Each review team's report and each institution's response to the report, along with the institutional reports, were submitted to the Evaluation Review Committee (ERC) of the Teaching and School Administration Professional Standards Advisory Board. The ERC, in accordance with procedures adopted by the State Board, prepared written initial recommendations regarding the appropriate status to be assigned to each education preparation provider or teacher education program.

The initial recommendation was submitted to the teacher education institution and the institution was given 30 days to request a hearing to appeal the initial recommendation. If requested, the ERC conducted a hearing and prepared a written final recommendation regarding the appropriate status to be assigned to the teacher education program. If a request for a hearing was not submitted, the initial recommendation became the final recommendation. These final recommendations have been submitted to appropriate representatives of the teacher education institutions and are now submitted to the State Board, as attached, for consideration and approval of the ERC recommendations for accreditation and program approval status.

A copy of the regulations covering this process is also attached. Staff will be on hand to answer any questions.

If approved, new programs are assigned the status of "new program approved with stipulation." New programs must be operationalized within two years, after which they submit a new program progress report, and if recommended, are added to the institution's continuing program review schedule.



February 12, 2019

To: Dr. Randy Watson, Commissioner

From: Evaluation Review Committee

Subject: Final Recommendation for program approvals for Emporia State University

**Introductory Statement:**

On January 25, 2019, the Evaluation Review Committee reviewed the application for program approvals for Emporia State University.

Documents that were received and considered include the Institutional Program Reports, KSDE Team Reports, and Institutional Rejoinders to the KSDE Team Reports.

**PROGRAM APPROVAL RECOMMENDATION**

**Recommend “Approved” for the following programs through December 31, 2024.**

**Speech/Theatre 6-12 continuing**

Areas for Improvement:

**Standards 1-6**

None

February 12, 2019

To: Dr. Randy Watson, Commissioner  
From: Evaluation Review Committee  
Subject: Final Recommendations for new program approvals for Kansas Independent College Association

**Introductory Statement:**

On January 25, 2019, the Evaluation Review Committee reviewed an application for new program approvals for Kansas Independent College Association.

Documents that were received and considered include the Institutional Program Report, KSDE Team Report, and Institutional Rejoinder to the KSDE Team Report.

**PROGRAM APPROVAL RECOMMENDATION**

**Recommend “New Program Approved with Stipulation” for the following programs through June 30, 2021.**

**High Incidence K-6, 6-12, PreK-12 Program NEW undergraduate**

Areas for Improvement:

**Standards 1-8**

None

**High Incidence K-6, 6-12, PreK-12 Program NEW graduate**

Areas for Improvement:

**Standards 1-8**

None

**New programs may be given the status of ‘New program approved with stipulation,’ or ‘Not approved.’ New programs may be approved-with-stipulation for 2 years during which they are operationalized and submit a Progress report to address the new program stipulation.**

February 12, 2019

To: Dr. Randy Watson, Commissioner

From: Evaluation Review Committee

Subject: Final Recommendations for program approvals for Sterling College

**Introductory Statement:**

On January 25, 2019, the Evaluation Review Committee reviewed applications for program approvals for Sterling College.

Documents that were received and considered include the Institutional Program Reports, KSDE Team Reports, and any Institutional Rejoinders to the KSDE Team Reports.

**PROGRAM APPROVAL RECOMMENDATION**

**Recommend “Approved” for the following programs through December 31, 2025.**

**Elementary K-6 continuing**

Areas for Improvement:

**Standards 1-7**

None

**Mathematics 6-12 continuing**

Areas for Improvement:

**Standards 1-7**

None

February 12, 2019

To: Dr. Randy Watson, Commissioner

From: Evaluation Review Committee

Subject: Final Recommendation for program approval for University of Saint Mary

**Introductory Statement:**

On January 25, 2019, the Evaluation Review Committee reviewed an application for new program approval for University of Saint Mary.

Documents that were received and considered include the Institutional Program Report, KSDE Team Report, and Institutional Rejoinder to the KSDE Team Report.

**PROGRAM APPROVAL RECOMMENDATION**

**Recommend “Approved” for the following program through December 31, 2024.**

**History Government Social Studies 6-12 continuing**

Areas for Improvement:

**Standards 1-10**

None

## **PROGRAM REVIEW PROCESS**

The responsibilities of the Commissioner and State Board regarding unit accreditation under regulations 91-1-231(d), 91-1-232b and 91-1-70a are as follows:

KSDE's Evaluation Review Committee (ERC) renders program approval recommendations for the initial teacher preparation and advanced program levels of the unit.

### **PROGRAM DECISIONS**

New program approval decisions are:

- New Program Approved with Stipulation
- Not Approved.

Renewal program decisions are:

- Approved
- Approved with Stipulation
- Not Approved.

The responsibilities of the Commissioner and State Board regarding program approval are under regulations 91-1-235 and 91-1-236.

### **91-1-235. Procedures for initial approval of teacher education programs.**

(a) Application.

(1) Each teacher education institution that desires to have any new program approved by the state board shall submit an application for program approval to the commissioner. The application shall be submitted at least 12 months before the date of implementation.

(2) Each institution shall submit with its application a program report containing a detailed description of each proposed program, including program coursework based on standards approved by the state board, and the performance-based assessment system that will be utilized to collect performance data on candidates' knowledge and skills. Each program report shall be in the form and shall contain the information prescribed by the commissioner. The program report shall include confirmation that the candidates in the program will be required to complete the following successfully:

- (A) Coursework that constitutes a major in the subject at the institution or that is equivalent to a major;
- (B) at least 12 weeks of student teaching; and
- (C) a validated preservice candidate work sample.

(b) Review team. Upon receipt of a program report, a review team shall be appointed by the commissioner to analyze the program report. The chairperson of the review team shall be designated by the commissioner. The number of review team members shall be determined by the commissioner, based upon the scope of the program to be reviewed. Any institution may challenge the appointment of a review team member. The institution's challenge shall be submitted in writing and received by the commissioner no later than 30 days after the notification of review team appointments is sent to the institution. Each challenge to the appointment of a review team member shall be only on the basis of a conflict of interest.

(c) Program review process.

(1) In accordance with procedures adopted by the state board, a review team shall examine and analyze the proposed program report and shall prepare a report expressing the findings and conclusions of the review team. The review team's report shall be submitted to the commissioner. The report shall be forwarded by the commissioner to an appropriate representative designated by the teacher education institution.

(2) Any institution may prepare a response to the review team's report. This response shall be prepared and submitted to the commissioner no later than 45 days of receipt of the review team's report. Receipt of the review team's report shall be presumed to occur three days after mailing. The review team's report,

any response by the institution, and any other supporting documentation shall be forwarded to the evaluation review committee by the commissioner.

(d) Initial recommendation. The evaluation review committee, in accordance with procedures adopted by the state board, shall prepare a written initial recommendation regarding the appropriate status to be assigned to the proposed program, which shall include a statement of the findings and conclusions of the evaluation review committee. The recommendation shall be submitted to an appropriate representative designated by the teacher education institution and to the commissioner.

(e) Request for hearing.

(1) Within 30 days of receipt of an initial recommendation of the evaluation review committee, the teacher education institution may submit a written request by certified mail to the evaluation review committee for a hearing before the committee to appeal the initial recommendation. Receipt of the initial recommendation of the evaluation review committee shall be presumed to occur three days after mailing. This request shall specify, in detail, the basis for the appeal, including an identification of each item disputed by the institution.

(2) If a request for a hearing is submitted, the evaluation review committee shall conduct a hearing. The committee shall then prepare a written final recommendation regarding the appropriate status to be assigned to the proposed program, which shall include a statement of the findings and conclusions of the evaluation review committee. The final recommendation shall be submitted to an appropriate representative designated by the teacher education institution and to the commissioner. The final recommendation shall be submitted by the commissioner to the state board for its consideration and determination.

(3) If a request for a hearing is not submitted by certified mail within the time allowed under paragraph (e) (1), the initial recommendation of the evaluation review committee shall become the final recommendation of the review committee. The committee's final recommendation shall be submitted by the commissioner to the state board for its consideration and determination.

(f) Approval status. Each new program shall be approved with stipulation or not approved.

(g) Annual report.

(1) If a new program is approved with stipulation, the institution shall submit a progress report to the commissioner within 60 days after completion of the second semester of operation of the program and thereafter in each of the institution's annual reports that are due on or before July 30.

(2) Each progress report shall be submitted by the commissioner to the evaluation review committee for its examination and analysis. Following review of the progress report, the evaluation review committee may remove any areas for improvement and change the status to approved until the institution's next program review.

(h) Change of approval status.

(1) At any time, the approval status of a teacher education program may be changed by the state board if, after providing an opportunity for a hearing, the state board finds that the institution either has failed to meet substantially the program standards or has materially changed the program. For just cause, the duration of the approval status of a program may be extended by the state board. The duration of the current approval status of a program shall be extended automatically if the program is in the process of being reevaluated by the state board. This extension shall be counted as part of any subsequent approval period of a program.

(2) At the time of an institution's next on-site visit, the new program shall be reviewed pursuant to K.A.R. 91-1-236.

(3) For licensure purposes, each teacher education program that is approved with stipulation shall be considered to be approved. (Authorized by and implementing Article 6, Section 2(a) of the Kansas Constitution; effective Aug. 6, 2004; amended Aug. 12, 2011; amended July 7, 2017.)

### **91-1-236. Procedures for renewing approval of teacher education program.**

(a) Application for program renewal.

(1) Each teacher education institution that desires to have the state board renew the approval status of one or more of its teacher education programs shall submit to the commissioner an application for program renewal. The application shall be submitted at least 12 months before the expiration of the current approval period of the program or programs.

(2) Each institution shall also submit a program report, which shall be in the form and shall contain the information prescribed by the commissioner. The program report shall be submitted at least six months before the expiration of the current approval period of the program or programs. The program report shall include confirmation that the candidates in the program will be required to complete the following:

(A) Coursework that constitutes a major in the subject at the institution or that is equivalent to a major; and

(B) at least 12 weeks of student teaching.

(b) Review team. Upon receipt of a complete program report, a review team shall be appointed by the commissioner to analyze the program report. The chairperson of the review team shall be designated by the commissioner. The number of review team members shall be determined by the commissioner, based upon the scope of the program or programs to be reviewed. An institution may challenge the appointment of a review team member only on the basis of a conflict of interest.

(c) Program review process.

(1) In accordance with procedures adopted by the state board, each review team shall examine and analyze the program report and prepare a review report expressing the findings and conclusions of the review team. The review team's report shall be submitted to the commissioner. The report shall be forwarded by the commissioner to an appropriate representative of the teacher education institution.

(2) Any institution may prepare a written response to the review team's report. Each response shall be prepared and submitted to the commissioner within 45 days of receipt of the review team's report. The review team's report, any response filed by the institution, and any other supporting documentation shall be forwarded by the commissioner to the evaluation review committee.

(d) Initial recommendation. The evaluation review committee, in accordance with procedures adopted by the state board, shall prepare a written initial recommendation regarding the appropriate status to be assigned to the program or programs, which shall include a statement of the findings and conclusions of the evaluation review committee. The recommendation shall be submitted to an appropriate representative of the teacher education institution and to the commissioner.

(e) Request for hearing.

(1) Within 30 days of the receipt of an initial recommendation of the evaluation review committee, the teacher education institution may submit a written request to the commissioner for a hearing before the evaluation review committee to appeal the initial recommendation of the committee. This request shall specify, in detail, the basis for the appeal, including an identification of each item disputed by the institution.

(2) If a request for a hearing is submitted, the evaluation review committee shall conduct a hearing. The committee shall then prepare a written final recommendation regarding the appropriate status to be assigned to the program or programs, which shall include a statement of the findings and conclusions of the evaluation review committee. The final recommendation shall be submitted to an appropriate representative of the teacher education institution and to the commissioner. The final recommendation shall be submitted by the commissioner to the state board for its consideration and determination of program approval status according to paragraph (f)(1).

(3) If a request for a hearing is not submitted within the time allowed under paragraph (1) of this subsection, the initial recommendation of the evaluation review committee shall become the final recommendation of the review committee. The committee's final recommendation shall be submitted by the commissioner to the state board for its consideration and determination.

(f) Approval status.

(1) The status assigned to any teacher education program specified in this regulation shall be approved, approved with stipulation, or not approved.

(2) Subject to subsequent action by the state board, the assignment of approved status to a teacher education program shall be effective for seven academic years. However, the state board, at any time, may change the approval status of a program if, after providing an opportunity for a hearing, the state board finds that the institution either has failed to meet substantially the program standards adopted by the state board or has made a material change in a program. For just cause, the duration of the approval status of a program may be extended by the state board. The duration of the approval status of a program shall be extended automatically if the program is in the process of being reevaluated by the state board.

(3) (A) If a program is approved with stipulation, that status shall be effective for the period of time specified by the state board, which shall not exceed seven years.

(B) If any program of a teacher education institution is approved with stipulation, the institution shall include in an upgrade report to the commissioner the steps that the institution has taken and the progress that the institution has made during the previous academic year to address the deficiencies that were identified in the initial program review.

(C) The upgrade report shall be submitted by the commissioner to the evaluation review committee for its examination and analysis. After this examination and analysis, the evaluation review committee shall prepare a written recommendation regarding the status to be assigned to the teacher education program for the succeeding academic years. The recommendation shall include a statement of the findings and conclusions of the evaluation review committee. The recommendation shall be submitted to an appropriate representative of the teacher education institution and to the commissioner. If the institution does not agree with this recommendation, the institution may request a hearing according to the provisions in subsection (e).

(D) For licensure purposes, each teacher education program that is approved with stipulation shall be considered to be approved.

(4) Students shall be allowed two full, consecutive, regular semesters following the notification of final action by the state board to complete a program that is not approved. Summers and interterms shall not be counted as part of the two regular semesters. Students who finish within these two regular semesters may be recommended for licensure by the college or university. (Authorized by and implementing Article 6, Section 2(a) of the Kansas Constitution; effective Aug. 6, 2004; amended Aug. 12, 2011.)

## REQUEST AND RECOMMENDATION FOR BOARD ACTION

Agenda Number: 16 f.

Staff Initiating:

Deputy Commissioner:

Commissioner:

Meeting Date: 3/12/2019

Dale Dennis

Dale Dennis

Randy Watson

### **Item Title:**

Act on request from USD 286, Chautauqua County, Chautauqua County, to hold a bond election

### **Recommended Motion:**

It is moved that the Kansas State Board of Education issue an Order authorizing USD 286, Chautauqua County, Chautauqua 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 286, Chautauqua County, Chautauqua 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 286 plans to use the bond proceeds to: construct, furnish, equip and acquire improvements at district buildings including (1) classrooms and storm shelter addition, new secure entrance and security improvements at the elementary school; (2) new secure entrance and security improvements at the junior-senior high school; (3) roof replacement and improvements at the high school gymnasium; and (4) HVAC replacements and energy waste reduction improvements.

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 vote to submit the bond application 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 to Allow Local Vote on Exceeding Debt Limit

<b>Unified School District 286-Chautauqua County</b>	<b>County: Chautauqua</b>
--	---------------------------

1. Current equalized assessed tangible valuation *	<u>\$22,502,051</u>
2. Percentage of bond debt limit	<u>14.00%</u>
3. Amount of bond debt limit	<u>\$3,150,287</u>
4. State Aid Percentage	<u>22%</u>

\* Includes assessed valuation of motor vehicle

		Percent of Equalized Assessed Valuation - Current Year
5. Amount of bond indebtedness at present time	<u>\$0</u>	<u>0.0</u>
6. Amount of bond indebtedness requested	<u>\$6,240,000</u>	<u>27.7</u>
7. Total amount of bond indebtedness if request approved (Lines 5 + 6)	<u>\$6,240,000</u>	<u>27.7</u>
8. Estimated amount of bond indebtedness authorized without approval	<u>\$3,150,287</u>	<u>14.0</u>
9. Amount of bond indebtedness above bond debt limit requested	<u>\$3,089,713</u>	<u>13.7</u>

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

February 15, 2019  
Date

February 15, 2019  
Date

Craig Neuenswander  
Director, School Finance

Dale M. Dennis  
Deputy Commissioner

**REQUEST AND RECOMMENDATION FOR BOARD ACTION**

Agenda Number: 16 g.

**Staff Initiating:****Deputy Commissioner:****Commissioner:****Meeting Date: 3/12/2019**

Dale Dennis

Dale Dennis

Randy Watson

---

**Item Title:**

Act on request from USD 286, Chautauqua County, Chautauqua County, to receive Capital Improvement (Bond and Interest) State Aid

**Recommended Motion:**

It is moved that the Kansas State Board of Education issue an Order authorizing USD 286, Chautauqua County, Chautauqua County, to receive capital improvement (bond and interest) state aid as authorized by law.

**Explanation of Situation Requiring Action:**

Under KSA 75-72-5461 et seq., as amended by 2018 Substitute for Senate Bill 423, a school district may request that the State Board of Education authorize the district to receive capital improvement (bond and interest) state aid. USD 286, Chautauqua County, Chautauqua County, has made such a request. If approved, the district would receive capital improvement (bond and interest) state aid as provided by law. If the request is not approved, the district will not receive any capital improvement state aid.

USD 286 plans to use the bond proceeds to: construct, furnish, equip and acquire improvements at district buildings including (1) classrooms and storm shelter addition, new secure entrance and security improvements at the elementary school; (2) new secure entrance and security improvements at the junior-senior high school; (3) roof replacement and improvements at the high school gymnasium; and (4) HVAC replacements and energy waste reduction improvements.

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 vote to submit the bond application 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**

<b>Unified School District 286-Chautauqua County</b>	<b>County: Chautauqua</b>
--	---------------------------

1. Current equalized assessed tangible valuation *	<u>\$22,502,051</u>
2. Percentage of bond debt limit	<u>14.00%</u>
3. Amount of bond debt limit	<u>\$3,150,287</u>
4. State Aid Percentage	<u>22%</u>

\* Includes assessed valuation of motor vehicle

		Percent of Equalized Assessed Valuation - Current Year
5. Amount of bond indebtedness at present time	<u>\$0</u>	<u>0.0</u>
6. Amount of bond indebtedness requested	<u>\$6,240,000</u>	<u>27.7</u>
7. Total amount of bond indebtedness if request approved (Lines 5 + 6)	<u>\$6,240,000</u>	<u>27.7</u>
8. Estimated amount of bond indebtedness authorized without approval	<u>\$3,150,287</u>	<u>14.0</u>
9. Amount of bond indebtedness above bond debt limit requested	<u>\$3,089,713</u>	<u>13.7</u>

<b>Forms Requested</b>	
(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

February 15, 2019  
Date

Craig Neuenswander  
Director, School Finance

February 15, 2019  
Date

Dale M. Dennis  
Deputy Commissioner

## REQUEST AND RECOMMENDATION FOR BOARD ACTION

Agenda Number: 16 h.

**Staff Initiating:**

Colleen Riley

**Director:**

Colleen Riley

**Commissioner:**

Randy Watson

**Meeting Date: 3/12/2019**

---

### **Item Title:**

Act on request to amend a contract award for the Southwest Plains Regional Service Center

### **Recommended Motion:**

It is moved that the Kansas State Board of Education authorize the Commissioner of Education to amend KSDE Contract 652-15-1869 with Southwest Plains Regional Service Center to provide an additional amount of services not to exceed \$8,500,000.

### **Explanation of Situation Requiring Action:**

Kansas Learning Network (KLN) services are provided through a five-year contract with Southwest Plains Service Center. That contract began in July 2015 to meet the needs of schools identified under the Elementary and Secondary Education Act (ESEA), and will expire in June 2020.

The Every Student Succeeds Act (ESSA), which amended the ESEA, was subsequently enacted by Congress in December 2015. The ESSA amended the rules and requirements for identifying and supporting schools through the ESEA.

In December 2018, the Kansas State Department of Education identified the first, full cohort of Comprehensive Support and Improvement (CSI), Targeted Support and Improvement (TSI), and Additional Targeted Support (ATS) schools under the updated ESSA requirements. This increased the number of districts requiring KLN support from 3 to 48.

In order to meet the increased needs of these newly identified schools, and in order to enable Southwest Plains Regional Service Center to provide resources aligned with ESSA, the existing contract must be amended to provide services aligned with ESSA and to increase the total amount not to exceed from \$3,746,824 to \$12,243,824.



## REQUEST AND RECOMMENDATION FOR BOARD ACTION

Agenda Number: 16 i.

**Staff Initiating:**

Tierney Kirtdoll

**Director:**

Scott Smith

**Commissioner:**

Randy Watson

**Meeting Date: 3/12/2019**

---

### **Item Title:**

Act on no-cost extension for use of Enhanced Learning Maps as an organizing structure for formative assessment

### **Recommended Motion:**

It is moved that the Kansas State Board of Education authorize the Commissioner of Education to amend a contract with the University of Kansas Center for Research to extend the length of the contract from Sept. 30, 2019 to March 30, 2020 at no additional cost.

### **Explanation of Situation Requiring Action:**

In 2015 the United States Department of Education awarded the Kansas State Department of Education a four-year \$5.8 million dollar Enhanced Assessment Grant to investigate the use of organized learning models to link curriculum, instruction and formative assessment. These learning models, or enhanced learning maps, have been generated for math and English language arts to aid teachers for grades 2-8. The award provided for collaboration between the University of Kansas Center for Research and KSDE to develop and refine the learning maps and instructionally relevant activities to support effective assessments. Project outcomes will include an open source web-hosting solution for making these learning maps available to educators.

The contract was originally scheduled to end Sept. 30, 2019. The additional six months will allow adequate time for research and 2018-2019 assessment data to be collected from Kansas and the partner states of Alaska, Missouri and Wisconsin during the summer of 2019. During the fall of 2019, data analysis will be conducted. Preparation of final research will take place by December 2019. McREL International, the grant's external evaluator, will then prepare a final summative evaluation by Jan. 30, 2020. A final report will be submitted to the U.S. Department of Education by March 30, 2020. The U.S. Department of Education has already approved this six-month no cost extension.



**REQUEST AND RECOMMENDATION FOR BOARD ACTION**

Agenda Number: 16 j.

**Staff Initiating:****Deputy Commissioner:****Commissioner:****Meeting Date: 3/12/2019**

Brad Neuenswander

Brad Neuenswander

Randy Watson

---

**Item Title:**

Act on request to allocate Federal Title II funds for the purpose of providing project-based learning professional development to Kansans Can Redesign schools

**Recommended Motion:**

It is moved that the Kansas State Board of Education authorize the Commissioner of Education to allocate Federal Title II funds, in an amount not to exceed \$180,000, for the purpose of providing project-based learning professional development to Kansans Can Redesign schools.

**Explanation of Situation Requiring Action:**

The Kansas Association of Service Centers is hosting a summer Project-Based Learning conference in June, 2019. It is the plan of the Kansas State Department of Education to allocate prior year unspent Federal Title II funds to participating Redesign schools to offset the cost of registrations for this conference. A total of 47 Redesign districts will be able to register up to five educators to attend the conference for free, accessing Title II funds to cover the cost of registration.



**REQUEST AND RECOMMENDATION FOR BOARD ACTION**

Agenda Number: 16 k.

**Staff Initiating:**

**Director:**

**Commissioner:**

**Meeting Date: 3/12/2019**

Kathi Grossenbacher

Kathi Grossenbacher

Randy Watson

**Item Title:**

Act on a request to contract with eScholar LLC to continue to provide maintenance and support of the Uniq-ID for Staff System

**Recommended Motion:**

It is moved that the Kansas State Board of Education authorize the Commissioner of Education to negotiate a contract with eScholar LLC for renewal of maintenance and support for generation and tracking Teacher IDs in an amount not to exceed \$99,000 over a three-year period (June 15, 2019 - June 14, 2022).

**Explanation of Situation Requiring Action:**

In April of 2007, KSDE requested and received sole source approval to purchase software through eScholar LLC which generated a unique identifier for each educator. This is used to track and to identify that individual. That software, Uniq-ID for Staff System, has been tightly integrated into numerous KSDE data collection and reporting systems. Every year there is renewal of the maintenance and support fee, plus any adjustment in the Consumer Price Index. This contract will address the required yearly fee.



**REQUEST AND RECOMMENDATION FOR BOARD ACTION**

Agenda Number: 16 I.

**Staff Initiating:**

**Director:**

**Commissioner:**

**Meeting Date: 3/12/2019**

Kathi Grossenbacher

Kathi Grossenbacher

Randy Watson

**Item Title:**

Act on a request to contract with eScholar LLC to continue to provide renewal of software license, maintenance and support for Uniq-ID PK-12 for students.

**Recommended Motion:**

It is moved that the Kansas State Board of Education authorize the Commissioner of Education to negotiate a contract with eScholar LLC for the renewal of software license, maintenance and support in an amount not to exceed \$222,000 over a three-year period (May 1, 2019 - April 30, 2022).

**Explanation of Situation Requiring Action:**

In November 2004, KSDE requested and received sole source approval to purchase software through eScholar which assigns and manages unique student identification numbers to trace individual student performance as required by federal law. That software, Uniq-ID PK-12 for Students, has been tightly integrated into numerous KSDE data collection and reporting systems. Every year there is renewal of the software license in addition to the maintenance and support fee, plus any adjustment in the Consumer Price Index. This contract will address the required yearly fee.





Great students. Great teachers. Great leaders. Great citizens.

Janet Waugh <i>District 1</i>	Steve Roberts <i>District 2</i>	Michelle Dombrosky <i>District 3</i>	Ann Mah <i>District 4</i>	Jean Clifford <i>District 5</i>
Deena Horst <i>District 6</i>	Ben Jones <i>District 7</i>	Kathy Busch <i>District 8</i>	Jim Porter <i>District 9</i>	Jim McNiece <i>District 10</i>

**To:** Kansas State Board of Education  
**Subject:** Chair's Report & Requests for Future Agenda Items

These updates will include:

- a. Committee Reports
- b. Board Attorney's Report
- c. Requests for Future Agenda Items

Note: Individual Board Member Reports are to be submitted in writing.





## Kansas State Department of Education

---

Landon State Office Building  
900 SW Jackson Street, Suite 307  
Topeka, Kansas 66612-1212

(785) 296-3201  
(785) 296-6659 - fax

[www.ksde.org](http://www.ksde.org)

**To:** Commissioner Randy Watson  
**From:** Dale Dennis  
**Subject:** Legislative Matters

### REVIEW EDUCATION LEGISLATION

An update on education bills still alive will be reviewed with the State Board.





Great students. Great teachers. Great leaders. Great citizens.

Janet Waugh  
District 1

Steve Roberts  
District 2

Michelle Dombrosky  
District 3

Ann Mah  
District 4

Jean Clifford  
District 5

Deena Horst  
District 6

Ben Jones  
District 7

Kathy Busch  
District 8

Jim Porter  
District 9

Jim McNiece  
District 10

**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:

Pay Period Begins	Pay Period Ends	Deadline to Report	Pay Date
2/24/2019	3/09/2019	3/07/2019	3/22/2019
3/10/2019	3/23/2019	3/21/2019	4/05/2019
3/24/2019	4/06/2019	4/04/2019	4/19/2019



**WEDNESDAY, MARCH 13, 2019**  
**RETREAT AGENDA**

**Location:** Kansas State High School Activities Association, 601 SW Commerce Place, Topeka

**Work session is a public meeting, but will not be live streamed**

**9:00 a.m.**

1. Call to Order
2. Roll Call
3. Approval of Agenda

**9:05 a.m.**

4. Retreat topic: Kansans Can vision progress to date and direction for 2019

**Noon**

**ADJOURN**





Great students. Great teachers. Great leaders. Great citizens.

Janet Waugh  
*District 1*

Steve Roberts  
*District 2*

Michelle Dombrosky  
*District 3*

Ann Mah  
*District 4*

Jean Clifford  
*District 5*

Deena Horst  
*District 6*

Ben Jones  
*District 7*

Kathy Busch  
*District 8*

Jim Porter  
*District 9*

Jim McNiece  
*District 10*

**Subject:** Board Retreat: Kansans Can vision progress to date and direction for 2019

**Location:** Kansas State High School Activities Association, 601 SW Commerce Place, Topeka

Commissioner of Education Randy Watson will review progress on the Kansans Can vision to lead the world in the success of each student plus facilitate discussions on Board goals and objectives for 2019.