# WEDNESDAY, NOVEMBER 9, 2016  
## MEETING AGENDA

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

<table>
<thead>
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<th>Time</th>
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| 10:00 a.m. | 1. Call to Order  
            2. Roll Call  
            3. Mission Statement, Moment of Silence and Pledge of Allegiance  
            (AI) 4. Approval of Agenda  
            (AI) 5. Approval of October Minutes | page 7
| 10:05 a.m. | (IO) 6. Commissioner’s Report | page 25
| 10:30 a.m. | (IO) 7. Citizens’ Open Forum | page 27
| 10:45 a.m. | (AI) 8. Act on recommendations of the Professional Practices Commission | pg 29
| 11:00 a.m. | (RI) 9. Receive Kansas State High School Activities Association Annual Rpt | pg 61
| 11:30 a.m. | (IO) 10. Student artwork presentation and dedication from Caldwell Elementary  
A.R.T.S. After School Program, Wichita Public Schools | page 63
| Noon     | Lunch                                                                                   |
| 1:30 p.m. | (RI) 11. Public Hearing on State Board Regulation 91-31-32 (suicide awareness) | pg 65
| 1:45 p.m. | (IO) 12. Reading for Success program evaluation by Fort Hays State University | pg 71
| 2:45 p.m. | (AI) 13. Act on Higher Education Licensure Program Standards for Biology 6-12,  
Earth and Space Science 6-12, Science 5-8 | page 73
| 2:55 p.m. | (IO) 14. Recognize National Finalists for the Presidential Awards for Excellence in  
Mathematics and Science Teaching | page 133
| 3:25 p.m. | Break                                                                                   |
| 3:35 p.m. | (IO) 15. Report on Gifted Services in Kansas | page 135

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Consent Agenda

Routine Items

16. Consent Agenda

   a. Receive monthly personnel report  
   (RI)  page 137
   b. Act on appointments to unclassified special project positions 
   (AI)  page 139
   c. Act on recommendations for licensure waivers  
   (AI)  page 141
   d. Act on recommendations of the Licensure Review Committee  
   (AI)  page 151
   e. Act on partnership with EducationSuperHighway, KSDE, other state 
   agencies, and Kansas schools to develop and implement a statewide 
   plan to upgrade every school district to affordable high-speed broad-
   band access  
   (AI)  page 155
   f. Act on purchase of postsecondary data from the National Student 
   Clearinghouse to address the State Board’s postsecondary initiative  
   (AI)  page 157
   g. Act on request to contract with College Board to provide Advanced 
   Placement exams  
   (AI)  page 159
   h. Act on request to contract with College Board to provide International 
   Baccalaureate exams  
   (AI)  page 161

17. Executive session for the purpose of consultation with attorney on matters 
    of litigation  
    page 163

18. Possible action on matters of litigation

19. Executive session for the purpose of evaluations of non-elected personnel 
    page 165

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

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<td>(AI) 3. Approval of Agenda</td>
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<tr>
<td>9:05 a.m.</td>
<td>(AI) 4. Act on State Board Regulation 91-31-32 (suicide awareness) - Roll call vote page 169</td>
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<td>9:15 a.m.</td>
<td>(IO) 5. Board Reports &amp; Requests for Future Agenda Items</td>
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<td>10:00 a.m.</td>
<td>(AI) 6. Act on Board Member Travel</td>
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<td>10:10 a.m.</td>
<td>Break</td>
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<td>10:25 a.m.</td>
<td>(DI) 7. Work session on Vision Outcome: postsecondary completion/attendance (working lunch) page 175</td>
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<td>1:00 p.m.</td>
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Next Meeting:  Dec. 13 and 14 in Topeka
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.

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
• Kindergarten readiness
• Individual Plan of Study focused on career interest
• High school graduation rates
• Postsecondary completion/attendance
• Social/emotional growth measured locally
KANSAS STATE BOARD OF EDUCATION
Meeting Minutes
October 18, 2016

CALL TO ORDER
Chairman Jim McNiece called the monthly meeting of the State Board of Education to order at 10 a.m. Tuesday, Oct. 18, 2016, in the Board Room at the Landon State Office Building, 900 SW Jackson St., Topeka, Kansas. He welcomed those in attendance, including participants in the Kansas Educational Leadership Institute program and pre-service teachers from Baker University. He also announced that Lt. Gov. Jeff Colyer would attend a portion of the afternoon meeting.

ROLL CALL
The following Board members were present:
John Bacon
Kathy Busch
Carolyn Wims-Campbell
Sally Cauble
Deena Horst
Jim McNiece
Jim Porter
Janet Waugh
Ken Willard

Board member Steve Roberts was absent.

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

APPROVAL OF AGENDA
Mrs. Cauble moved to approve the day’s agenda as presented. Mr. Willard seconded. Motion carried 9-0.

APPROVAL OF THE SEPTEMBER MEETING MINUTES
Mrs. Horst moved to approve the minutes of the September Board of Education meeting. Ms. Wims-Campbell seconded. Motion carried 9-0.

COMMISSIONER’S REPORT
October 2016 marked the first-year anniversary of the official announcement launching the Kansans CAN vision. In his report to the Board this month, Commissioner Watson recapped specific actions during the past year, all centered on an educational structure to “lead the world in the success of each student.” Actions included adding civic engagement to the definition of a successful Kansas high school graduate and specific work on each of the five adopted vision outcomes. Dr. Watson provided a list of the nearly 140 school districts and 100 organizations that he has visited or spoken to in the past year while sharing news of the vision. Finally, he reminded members that the vision work is a deep commitment, is considered a culture shift and relies on meeting the individual needs of students. Board members noted the importance of reaching teachers with the vision message.

CITIZENS’ OPEN FORUM
Chairman McNiece declared the Citizens’ Forum open at 10:39 a.m. Speakers and their topics were: Leah Fliter, Kansas Association of School Boards — summary of fall summits and invitation to KASB Annual Convention; Ted Hessong, USD 456 Marais Des Cygnes Valley — appreciation to Dr. Watson and Board for a guiding vision; John Richard Schrock, Emporia — seeking reality base of high school graduation rates. Chairman McNiece declared the Citizens’ Forum closed at 10:49 a.m.
RECEIVE BIANNUAL REPORT FROM COALITION OF INNOVATIVE SCHOOL DISTRICTS
The Coalition of Innovative School Districts is required to report twice a year to the State Board of Education. Currently, there are seven districts designated as Innovative. Bill Mullins, Marysville USD 364, serves as Coalition chair. He reviewed waiver requests previously granted to districts and Kansas City Kansas Public Schools’ use of Specialized Teaching Certificates. He explained Coalition changes implemented in 2016, including videoconference meetings, work sessions and increased use of subcommittees. Mr. Mullins touched upon focus areas for 2016-17, particularly work of the subcommittees on assessments, graduation requirements/competency-based credits, and expanded career-tech pathways for smaller schools. Board members commented on ideas related to common social studies assessments and defining social/emotional learning.

BREAK
The Board took a break until 11:22 a.m.

RECEIVE HIGHER EDUCATION LICENSURE PROGRAM STANDARDS FOR BIOLOGY, EARTH AND SPACE SCIENCE, AND SCIENCE
Dr. Scott Myers, Director of Teacher Licensure and Accreditation, introduced committee members who summarized proposed revisions to licensure program standards for the following: Biology 6-12, Earth and Space Science 6-12, and Science 5-8. These content standards help establish what is taught in higher education teacher preparation programs. Presenters were John Rhodes of Friends University, Wendy Elkins of Shawnee Heights High School, and Teresa Woods of Fort Hays State University. Board members received the revised standards for review, the previous standards and a comparison of the two versions. Discussion followed about the process of demonstrating content knowledge, emphasis on pedagogy, the need to make the standards Kansas specific, discussion of multiple theories, possibility of inquiry, and focus on deeper learning. The Board is expected to vote on the standards in November.

LUNCH
At 11:57 a.m., Chairman McNiece recessed the meeting for lunch until 1:30 p.m.

P.M. SESSION
RECEIVE INFORMATION ON E-RATE / EDUCATION SUPER HIGHWAY
The federal E-Rate program helps ensure that schools and libraries can obtain high-speed Internet access and telecommunications at affordable rates. KSDE Director of Information Technology Lane Wiley provided an overview of the E-rate program, its discounts and Kansas specific information. He then introduced Evan Marwell, CEO of EducationSuperHighway, to explain a plan to upgrade the broadband infrastructure for Kansas schools and maximize E-rate funding. The timeliness of improving fiber optic connectivity is aided by changes in the Federal Communications Commission’s temporary suspension of a cap on construction costs. ESH is a non-profit organization working with multiple states to ensure students have high capacity Internet access for digital learning. Currently, there is interest among several Kansas agencies to partner with ESH for helping meet the increased demand for Internet access. Questions arose about funding, capacity levels and benefits to communities.

REPORT ON RECOMMENDATIONS FROM ACCREDITATION ADVISORY COUNCIL
One component of the new Kansas Education Systems Accreditation (KESA) model is use of an objective Outside Validation Team. Each school district or system will organize its own team of education professionals to coach, mentor and support the district for the duration of the five-year accreditation cycle. Dr. Scott Myers, Director of Teacher Licensure and Accreditation, described several elements of the outside validation team including potential composition, regionally based training and responsibilities during the various cycle stages. Board members inquired about the ongoing feedback mechanisms and approval of the team members. An Accreditation Review Council, yet to be determined, was briefly discussed.
RECOGNITION OF NATIONAL PTA SCHOOL OF EXCELLENCE RECIPIENTS FROM KANSAS

Patty Jurich, Kansas PTA Family Engagement Chair, preceded introductions of the 2016-18 National PTA School of Excellence Award recipients from Kansas by describing the family-school partnership program. She shared the selection criteria as well as project highlights from each program. Those recognized were Shawnee Mission North High School and Shawnee Mission North High PTA (USD 512), and Wyandotte High School and Wyandotte High School PTSA (USD 500). Representatives from each school district, the school’s local PTA and the Kansas PTA participated in the award presentation.

Board members took a break from 3:10 to 3:25 p.m.

UPDATE ON KANSAS EDUCATIONAL LEADERSHIP INSTITUTE STATEWIDE PROGRAMS

The Kansas Educational Leadership Institute (KELI) mentors and supports educational leaders. Dr. Rick Doll became Executive Director of KELI in July 2016. He was present to update Board members on participation numbers, mentor training and program challenges. He stressed the importance of supporting school leaders, especially those gaining administrative experience. Established in 2011, KELI has expanded to serve not only first and second-year superintendents and principals, but also assistant superintendents, assistant principals and leaders in special education. In addition to mentoring, the organization coordinates ongoing professional learning opportunities. KELI partners with K-State’s College of Education, Kansas State Department of Education, Kansas Association of School Boards, United School Administrators of Kansas, and Kansas School Superintendents Association.

UPDATE ON SENATE BILL 155 AND INDUSTRY RECOGNIZED CERTIFICATION

Senate Bill 155 was passed into law in 2012 for the purpose of stimulating growth in Career and Technical Education at both the secondary and postsecondary levels in Kansas. Education Program Consultant Martin Kollman explained the multiple parts of SB 155. He reported on the number of certifications high school students earned as well as the number of students earning CTE college credit, tuition free. Data is also now available on non-SB 155 certificates being acquired. He outlined the history of state funding for the tuition reimbursement program and the certification incentive program, which aids high school students in graduating with an industry-recognized certification for high-demand occupations. Board members were concerned about the cut in program funding for transportation, particularly as it affects the rural school districts.

ACT ON 2017 STATE BOARD MEETING DATES

In September, State Board members received a proposed schedule of meeting dates for 2017, following the traditional schedule of meeting the second Tuesday and Wednesday of the month. Discussion prompted recommendations that additional schedules be provided for consideration. Board members discussed potential date conflicts. Mr. Bacon moved to select Option B for meeting the second Tuesday and Wednesday, except for the months of April, September and October. Mr. Willard seconded. During discussion, Mr. Porter suggested setting a two-year calendar beginning in 2018. The vote was 4-4-1, with Mrs. Busch, Mrs. Cauble, Mr. McNiece and Mrs. Waugh in opposition and Ms. Wims-Campbell abstaining. Mrs. Cauble then moved to select Option C for meeting the third Tuesday and Wednesday of the month. Motion died for lack of a second. Mr. McNiece offered a motion for meeting the second Tuesday and Wednesday of each month, except for April and October when the meetings would be the third week. Mr. Bacon seconded. Motion carried 7-1-1, with Mrs. Waugh in opposition and Ms. Wims-Campbell abstaining.

The 2017 schedule is as follows:

- January 10 and 11
- February 14 and 15
- March 14 and 15
- April 18 and 19
- May 9 and 10
- June 13 and 14
- July 11 and 12
- August 8 and 9
- September 12 and 13
- October 17 and 18
- November 14 and 15
- December 12 and 13
CHAIRMAN’S REPORT
Chairman McNiece reminded members that he would be absent the next day because of obligations as president of the National Association of State Boards of Education during the NASBE annual conference. He commented on continued work to establish the Lt. Governor’s Community Service Award as a joint effort with the Kansas Volunteer Commission. Chairman McNiece asked for Board consensus to endorse the award and for him to serve as a liaison. Lt. Gov. Jeff Colyer indicated that funding was secured for the next three years to recognize a high school junior and senior who would be selected by the individual school for outstanding community service. More information on the criteria and specifics was recommended. Mrs. Horst requested data on how many school districts have community service as a graduation requirement and how this is structured.

Continuing his report, Chairman McNiece mentioned the upcoming KSDE Annual Conference and Kansas Teacher of the Year banquet. He briefly acknowledge some of the month’s recognitions and observances that are connected to the Kansans CAN vision. Lastly, he announced that evaluation forms on the Commissioner, Board Attorney and Board Secretary are due to him by Nov. 1.

CONSENT AGENDA
Mrs. Cauble moved to approve the Consent Agenda as presented. Mrs. Horst seconded. Motion carried 9-0. In the Consent Agenda, the Board:

- received the monthly Personnel Report for September.
- confirmed the unclassified special projects personnel appointment of Keith Tatum as Public Service Executive on the Teacher Licensure and Accreditation team effective Sept. 26, 2016 at an annual salary of $43,680.
- accepted the following recommendations for licensure waivers valid for one school year:
  - Early Childhood Special Education -- Amy Spoonts, USD 389; Kayla Cozza, D0602; Audra Rush, Meagan Nelson, Tara Lopeman, D0603.
  - English as a Second Language -- Courtney Hutson, USD 259.
  - Gifted -- Adam Cameron, Jordan Courtney, USD 259; Douglas Davidson, Lee Weber, USD 320; Henry Arkmnecht, Jerald Braun, USD 489; Glenn Garcia, Lisa Wicoff, D0603.
  - High Incidence Special Education -- Bonnie Weinstein, Jennifer Eichkorn, USD 229; Gregory Lies, Tiffani Mack-Bradford, Dennis Tabor, Bekka Bailey, Jessica Clasper, Brian Gomila, Ellen Oberle, Eric Torres, Evan Norris, Jaclyn Hall, Janece Ewart, Kraig Cowles, Audra Turner, Elizabeth Friesen, Julie Wingate, Katelyn Keith, Nicole Margheim, USD 259; Angela Merchant, Carolyn Day, Amy Dempsey, USD 263; Amanda Feldhus, Ashlyn Partridge, Herminia Benitez, USD 308; Casie Wiebe, Penny Graber, USD 320; Jennifer Taylor, Sheila Hooshmand, USD 336; Raechel Bruna, USD 364; Lita Zimmerman, Catherine Robl, USD 405; Tracy Perez, Demetra Johnson, Steven Purgar, Steven Smith, USD 457; Daphne Brown, Kaley Rodriguez, Kelsey Schowengerdt-Marquez, Madison Mall, Amanda Day, Frederick Winter, Sari Legleiter, Zachary Nelson, USD 489;
  - Math -- Extension on number of days on an emergency substitute license -- Nicholas Vogts, USD 419.
  - Low Incidence Special Education -- Jordan Louis, USD 229; Chantel Smith, Nicolina Sptaro, USD 259; Julia Wilson, USD 364; Jerlyn Gormly, USD 409; Angela Holtgraves, Kristen Taylor, Sharon Houser, Aubrey Gilhaus, Dana Kerr, USD 512; Alisha Rutherford, Kaitlyn Dispensa, D0603; Jillian Brock, Thresa Bowman, Victoria Starr, D0607; Adam Sallee, D0609; Helen Robinson, X0758; Aaron Nickelson, Z0032.

MOTION
(04:45:36)

Mrs. Cauble moved to approve the Consent Agenda as presented. Mrs. Horst seconded. Motion carried 9-0. In the Consent Agenda, the Board:

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  - Library Media Specialist -- Deanna Veges, Jamie Dye, USD 259.
  - Life Science -- Extension on number of days on an emergency substitute license -- Nicholas Vogts, USD 419.
  - Low Incidence Special Education -- Jordan Louis, USD 229; Chantel Smith, Nicolina Sptaro, USD 259; Julia Wilson, USD 364; Jerlyn Gormly, USD 409; Angela Holtgraves, Kristen Taylor, Sharon Houser, Aubrey Gilhaus, Dana Kerr, USD 512; Alisha Rutherford, Kaitlyn Dispensa, D0603; Jillian Brock, Thresa Bowman, Victoria Starr, D0607; Adam Sallee, D0609; Helen Robinson, X0758; Aaron Nickelson, Z0032.
  - Math -- Brooke Hollon, Christina Paine, Stephen Houser, USD 259.
  - Math -- Extension on number of days on an emergency substitute license -- James

- accepted the following recommendations of the Evaluation Review Committee for program approval: Baker University — Chemistry (I, 6-12) continuing program through Dec. 31, 2023; Fort Hays State University — Chemistry (I, 6-12), Elementary (I, K-6), Foreign Language I, PreK-12, Health (I, PreK-12), Physical Education (I, PreK-12), Technology (I, 6-12), High Incidence (graduate) (A, PreK-12) all continuing programs through Dec. 31, 2024; Pittsburg State University — Elementary (I, K-6), Family and Consumer Science (I, 6-12), History, Government, Social Studies (I, 5-8), History, Government, Social Studies (I, 6-12), Physical Education (I, PreK-12), Psychology (I, 6-12), Technology (I, 6-12), Building Leadership (A, PreK-12), District Leadership (A, PreK-12), Library Media Specialist (A, PreK-12), Reading Specialist (A, PreK-12), School Counselor (A, PreK-12), School Psychologist (A, PreK-12), High Incidence SPED (A, K-6, 6-12), Low Incidence SPED (A, K-6, 6-12) all continuing programs through Dec. 31, 2024; Wichita State University — Biology (I, 6-12), Chemistry (I, 6-12), Physical Education (I, PreK-12), Science (I, 5-8), Library Media Specialist (A, PreK-12) all continuing programs through Dec. 31, 2024.

authorized the Commissioner of Education to negotiate and
- enter into a contract with a vendor to be selected through the competitive bid process to provide development and ongoing servicing of a system for managing the data requirements of the Migrant Education Program for the period of November 2016 through June 2019 in an amount not to exceed $170,000.

At 4:50 p.m., Chairman McNiece recessed the meeting until 9 a.m. on Wednesday, Oct. 19.

Jim McNiece, Chairman

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KANSAS STATE BOARD OF EDUCATION
Meeting Minutes
October 19, 2016

CALL TO ORDER
Vice Chair Carolyn Wims-Campbell called the Wednesday, Oct. 19, 2016 meeting of the State Board of Education to order at 9 a.m. in the Board Room at the Landon State Office Building, 900 SW Jackson St., Topeka, Kansas.

ROLL CALL
The following Board members were present:
John Bacon                      Jim Porter
Kathy Busch                    Steve Roberts
Carolyn Wims-Campbell          Janet Waugh
Sally Cauble                   Ken Willard
Deena Horst

Chairman Jim McNiece was absent.

APPROVAL OF AGENDA
Mrs. Waugh moved to approve the Wednesday agenda. Mr. Porter seconded. Motion carried 9-0.

INFORMATION ON ANTI-BULLYING AWARENESS
October is National Bullying Prevention Month. In Kansas, Anti-bullying Awareness Week was observed Oct. 3-9. Schools were invited to share ways students, parents and the community incorporated this year’s theme “You are Not Alone.” Education Program Consultant Kent Reed showed several visual examples, including a video produced by the communications team at KSDE. He then addressed several related topics such as risk factor data, a downward trend in the number of reported bullying incidents, distribution of gang-free tool kits to schools and trauma-informed care. His report also included information about social-emotional character development and understanding students with adverse childhood experiences. Board members expressed a desire to learn more about social-emotional growth, which is one of the five Kansans CAN vision outcomes.

REVIEW REQUIREMENTS OF SENATE BILL 367
During the September State Board meeting, questions were raised concerning Senate Bill 367 relating to juvenile justice. There are many sections to the bill, but Deputy Commissioner Dale Dennis focused on the two that outline what’s expected of school districts and the State Board of Education. Section 14 addresses establishing skill development training for responding effectively to misconduct in school while minimizing student exposure to the juvenile justice system and/or law enforcement. Section 58 addresses policies to be developed by the local board of education for reporting information and the requirement of a Memorandum of Understanding with local law enforcement agencies and courts. Mr. Dennis answered questions about challenges and concerns in implementation.

Board members took a break at 10:20 a.m.

BOARD REPORTS & FUTURE AGENDA ITEMS
Board Attorney Mark Ferguson offered to answer questions about his written monthly report.
COMMITEE REPORTS

Communications — Mrs. Cauble noted that ideas are being considered for getting the vision message to new legislators.

Student Voice — Mrs. Busch summarized student responses gathered from questions asked to the student advisory team of the Kansas State High School Activities Association which met with her and Ms. Wims-Campbell. The committee continues to gain student input on education issues and barriers. Mrs. Busch asked for other suggestions of student groups to be contacted.

INDIVIDUAL MEMBER REPORTS (01:30:21)

Individual Board member reports: Mr. Willard attended a school finance formula discussion at the Governor’s office; Mrs. Cauble participated in the Interstate Migrant Education Council meeting in Pittsburg, Pennsylvania and was on a panel at the KU Economic Policy Summit; Mr. Roberts visited teacher classrooms; Mrs. Horst visited three school districts and attended a KASB fall summit; Mrs. Waugh presented to students at the KU Edwards Campus, will be visiting Donnelly College students, and attended meetings of the juvenile justice committee; Ms. Wims-Campbell met with the KSHSAA student advisory team during its all-day session.

Future Agenda Requests: General consensus to recognize this year’s National Schools of Character from Kansas; retreat on social/emotional growth and concerns about mental illness to include positive action examples from Hesston schools, resources available for children identified with adverse childhood experiences, schools impacted by large numbers of students from foster homes, and solutions for lack of mental health resources; Mrs. Waugh requested presentations from both the Kansas Association for Conservation and Environmental Education (KACEE) and the Kansas Council for Economic Education (KCEE).

BOARD MEMBER TRAVEL
Additions to the travel requests were: Ms. Wims-Campbell, Nov. 16 workshop “Leadership in a Trauma-Sensitive Learning Environment” at K-State; Mr. Porter Oct. 27 superintendent meeting at Greenbush and school visits with the Commissioner, Oct. 28 school visits. Mrs. Cauble moved to approve the travel list and additions. Mr. Willard seconded. Motion carried 9-0.

ADJOURNMENT
Ms. Wims-Campbell adjourned the meeting at 11:05 a.m. The next meeting will be Wednesday, Nov. 9, and Thursday, Nov. 10, in Topeka.

Carolyn Wims-Campbell, Vice Chair

Peggy Hill, Secretary
CALL TO ORDER
Chairman Jim McNiece called the monthly meeting of the State Board of Education to order at 10 a.m. Tuesday, Sept. 20, 2016, in the Board Room at the Landon State Office Building, 900 SW Jackson St., Topeka, Kansas. He welcomed those in attendance, including pre-service teachers and faculty from the University of Saint Mary in Leavenworth.

ROLL CALL
All members were present:
John Bacon
Kathy Busch
Carolyn Wims-Campbell
Sally Cauble
Deena Horst
Jim McNiece
Jim Porter
Steve Roberts
Janet Waugh
Ken Willard

STATE BOARD MISSION STATEMENT, MOMENT OF SILENCE AND PLEDGE OF ALLEGIANCE
Chairman McNiece 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
Chairman McNiece announced that a second optional pre-meeting activity would be available on Wednesday and should be noted as an agenda addition. It is for a luncheon discussion organized by the Kansas Association of School Boards and scheduled for 11:30 a.m. in the Board Room of the Landon Building. There is no separate agenda and no action will be taken. Mrs. Horst moved to approve the agenda as amended. Mrs. Busch seconded. Motion carried 9-1 with Mr. Roberts in opposition.

APPROVAL OF THE AUGUST MEETING MINUTES
Ms. Wims-Campbell moved to approve the minutes of the Aug. 4 Special Board of Education meeting to act on district applications for extraordinary need state aid. Mr. Willard seconded. Motion carried 10-0. Mr. Willard moved to approve the minutes of the regular Aug. 8-9 Board meeting. Mr. Porter seconded. Motion carried 10-0.

COMMISSIONER’S REPORT
Dr. Randy Watson’s monthly report focused on agency activities and events, and the latest research data from Georgetown University concerning the job market. More specifically, Dr. Watson:
- informed Board members about the KSDE Annual Conference Oct. 24-26 in Wichita, and encouraged them to invite business leaders to participate in a scheduled roundtable about building partnerships for student internships and job shadowing;
- acknowledged the Kansas Teacher of the Year regional finalists and described the nomination/selection process;
- announced members of the newly formed Teacher Vacancy and Supply Committee, a permanent committee that will make recommendations to the Professional Standards Board and the State Board of Education;
- gave an overview of data released from Georgetown University about changes in workforce composition since the recession and the need for workers with postsecondary credentials;
- shared an inspirational message from a teacher about the Kansans CAN vision.
CITIZENS’ OPEN FORUM

Chairman McNiece declared the Citizens’ Forum open at 10:26 a.m. Speakers and their topics were: Shelly Swartz, Kansas Association for Health, Physical Education, Recreation and Dance — benefits of physical activity as an academic intervention; Terry Collins, Kansas Association of Special Education Administrators — appreciation to the State Board and KSDE for their work with legislative issues and to provide training. Chairman McNiece declared the Citizens’ Forum closed at 10:37 a.m.

ANNUAL CAREER AND TECHNICAL EDUCATION PROGRAM REVIEW

Jay Scott, KSDE Assistant Director for Career and Technical Education, described the essential components of quality career education. He explained how the CTE programs are structured to focus on career success and to better meet the outcomes of the Kansans CAN vision. Recent changes include the addition of a career field for public services and newly revised clusters. Lynette Yevak, chair of the Kansas Advisory Committee for CTE, described the work of this committee. In addition, several of the Education Program Consultants talked about adjustments to CTE pathways. Board members suggested pathways in military service and the aviation industry. Mr. Scott also reported on the progress of implementing Individual Plans of Study in school districts and the future of career advising training. Board members asked for clarification on structure of student internships and work-based learning.

BREAK

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

ACTION ON HISTORY/GOVERNMENT/SOCIAL STUDIES ASSESSMENT PERFORMANCE LEVELS AND CUT SCORES

Beth Fultz, Assistant Director of Career Standards and Assessment Services, reviewed the process for determining assessment cut scores. In August, the Board received cut score recommendations that would be applied to the 2016 spring state assessment in History, Government, Social Studies. She provided a summary comparison of preliminary impact data calculated two ways: (1) student performance level percentages as presented last month, which were weighted differently for each part of the test and grade level, and (2) student performance level percentages calculated on Board member suggestions made during the August Board meeting. The revised chart equalized weighting of the assessment parts across all three grades tested. Mrs. Cauble moved to accept the committee’s recommendation and approve performance levels and cut scores to be applied to the Kansas College and Career Ready Assessments in History, Government, Social Studies as originally presented. Ms. Wims-Campbell seconded. Motion carried 9-1 with Mr. Roberts in opposition.

ACTION TO SUBMIT AMENDED EMERGENCY SAFETY INTERVENTION REGULATIONS TO DEPARTMENT OF ADMINISTRATION & OFFICE OF THE ATTORNEY GENERAL FOR REVIEW

Statutory changes regarding the use of seclusion and restraint in schools necessitate changes to the Kansas State Board of Education’s ESI regulations. Laura Jurgensen of the KSDE Early Childhood, Special Education and Title Services team reviewed amendments to the regulations. K.A.R. 91-42-2 includes language voted on by the State Board at its May 2016 meeting further clarifying that physical escort and time-out are not emergency safety interventions. Mr. Porter moved to approve the submission of amendments to the emergency safety intervention regulations, K.A.R. 91-42-1, 91-42-2, 91-42-4 and 91-42-7, to the Department of Administration and Office of the Attorney General for review. Mrs. Horst seconded. Motion carried 10-0. After those two offices complete their reviews, the State Board will set a public hearing date for comments on the proposed regulations.

LUNCH

Chairman McNiece recessed the meeting for lunch until 1:30 p.m.

INFORMATION ON “AdvancED” ACCREDITATION PROTOCOL AND STANDARDS

AdvancED, formerly North Central Association, is a non-profit organization that conducts on-site external reviews of PreK-12 schools and school systems. Heather Kinsey, Vice President of Business
Development and Project Management for AdvancED, described the work and direction of the organization. She emphasized that the focus is on a school systems’ continuous improvement, not just preparation for an accreditation review. Ms. Kinsey also commented on the process as it aligns to the Kansas Education Systems Accreditation model. It is the State Board of Education’s responsibility to accredit schools. There were questions about duplication of efforts, other school improvement models and flexibility options for districts.

**RECEIVE CURRICULAR STANDARDS FOR LIBRARY/INFORMATION AND TECHNOLOGY**

State Board members were provided a draft of revised Kansas curricular standards for Library/Information and Technology. The recommended changes are part of the cyclical review process for content standards that occurs approximately every seven years. Education Program Consultant Jeannette Nobo and Review Committee Chair Mirah Dow were present to explain the changes and answer questions. These standards are designed to provide a framework for school librarians and other co-teaching partners to design, implement and evaluate inquiry-based instruction. The focus is on what Kansas students should learn about information and technology use.

**INFORMATION ON SCHOOL BUS RIDER TRACKING SYSTEM DEVELOPED BY USD 415**

Dr. Penny Hargrove, Superintendent of Hiawatha USD 415, described the tracking system this district developed for monitoring student bus riders at any point in time. The system was created following a school bus rollover accident in the district in November 2015. District administrators worked with USD 415 Information Technology Specialist Tim Larkin to design a personalized program to identify which students are on a bus at any given time and to determine bus location in real time, which is particularly beneficial in rural, remote areas. The system is used for regular bus routes, athletic routes, field trips and sporting events. Dr. Hargrove and Mr. Larkin demonstrated the system which uses a computer tablet and WiFi connection. Other features include GPS coordinates, emergency contact information and electronic rosters updated daily by school secretaries. USD 415 has received multiple inquires about the tracking system.

Board members took a break from 3:10 to 3:20 p.m.

**UPDATE ON TRANSITION TO COLLEGE ALGEBRA PILOT PROGRAM**

Thirty-nine high schools and 19 postsecondary institutions are currently participating in the Transition to College Algebra Pilot Program. The goal of the pilot initiative is to provide high school seniors one more opportunity to gain the math knowledge necessary to enter credit-bearing math classes at post-secondary institutions across the state. Education Program Consultant Melissa Fast described how the program works using a blended curriculum. She also discussed some of the resources available for districts to help address gaps in student knowledge. Board members requested a report next summer following completion of the pilot year to hear from both educators and students.

**UPDATE ON KANSANS CAN COMMUNICATION TOOLS**

Denise Kahler, Director of Communication at KSDE, provided Board members a packet of materials to help inform others across the state about the Kansans CAN vision and outcomes. The communications toolkit included both printed handouts and links to electronic resources. She noted that the focus is now on reaching teachers, parents, business/industry and newly elected officials with the vision message. Ms. Kahler and Communications Specialist Ann Bush reviewed marketing basics that can be emphasized as year two of the vision work begins. In addition, Board members were encouraged to consider business executives to invite to the KSDE Annual Conference in Wichita Oct. 24-26. There will be time reserved to discuss increasing job shadowing and internship opportunities for Kansas students.
CONSENT AGENDA
Mrs. Cauble moved to approve the Consent Agenda as presented. Mrs. Waugh seconded. Motion carried 9-0-1 with Mr. Roberts abstaining. In the Consent Agenda, the Board:

- received the monthly Personnel Report for August.
- confirmed the unclassified special projects personnel appointments of the following persons on the Teacher Licensure and Accreditation team: Branden Johnson as Education Program Consultant effective Aug. 8, 2016 at an annual salary of $56,118.40; Christa Chesmore as Administrative Specialist effective Aug. 15, 2016 at an annual salary of $29,744; Krista Catron as Program Consultant effective Aug. 15, 2016 at an annual salary of $43,680; and Jamie Crispin as Public Service Executive effective Aug. 16, 2016 at an annual salary of $53,414.40; and the appointment of Laurel Murdie as Director on the Fiscal Auditing team effective Aug. 29, 2016 at an annual salary of $91,125.
- accepted recommendations of the Licensure Review Committee as follows: Approved Cases — 3088 Savannah Johnson (PreK-12 high incidence special education), 3089 Douglas Mowder, 3091 Amanda Painter Ingham, 3092 Ashley Mowder, 3094 Lornette Dallas, 3097 Crystal White, 3101 Carissa McKuin, 3103 Benilda Coyle, 3104 Silva Taylor, 3106 Eric Allenbach. Denied Cases — 3093 Robin Campbell, 3098 Liana Spikes.
- accepted the following recommendations for licensure waivers valid for one school year:
- approved granting a Visiting Scholar license to Andi Christenson and USD 452 Stanton County Schools for junior high science instruction. The license is valid for the 2016-17 school year.
- approved the Education Flexibility Partnership (Ed-Flex) waiver request for USD 497 Lawrence.
- issued a calendar year 2016 license for a commercial driver training school to Legacy Driving School of Andover LLC, Andover.
- approved Kansas in-service education plan for USD 361 Anthony-Harper.
- authorized the following school districts to hold an election on the question of issuing bonds in excess of the district’s general bond debt limitation: USD 310 Fairfield, USD 320 Wamego, USD 500 Kansas City Kansas.
- authorized USD 320 Wamego and USD 500 Kansas City Kansas to receive capital improvement (bond and interest) state aid as authorized by law.

Authorized the Commissioner of Education to negotiate and
- enter into a contract with the Kansas Association of Independent and Religious Schools for the reimbursement of funds for professional development of non-public school teachers and leaders, in an amount not to exceed $26,000;
- enter into a contract with a vendor to be selected through a competitive bid process to implement a statewide system of tiered social/emotional supports framework of College and Career Competencies for the period October 2016 through June 2017 in an amount not to exceed $100,000;
- authorize the Superintendent of the Kansas State Schools for the Deaf and the Blind to renew a contract with Accessible Arts, Inc., for arts-related services for students attending KSSB in
exchange for KSSB facility use and statewide outreach services in the arts for Kansas individuals with disabilities in a contract amount not to exceed $134,000;

- authorize the Superintendent of the Kansas State Schools for the Deaf and the Blind to renew a contract with Baer Wilson and Company, LLC, to provide counseling/evaluation services for students who attend KSSB in a contract amount not to exceed $50,000;

- authorize the Superintendent of the Kansas State Schools for the Deaf and the Blind to renew a contract with Providence Medical Center to provide occupational therapy and physical therapy services for students attending KSSB in a contract amount not to exceed $50,000;

- authorize the Superintendent of the Kansas State Schools for the Deaf and the Blind to enter into a contract with Dr. Linda Lawrence for low vision services and teaching training clinics in an amount not to exceed $18,500.

Chairman McNiece recessed the meeting at 4:16 p.m. He reminded members of two optional activities available prior to resuming the afternoon Board meeting at 1 p.m. Wednesday — oral arguments on the Gannon school finance case at the Kansas Supreme Court and a luncheon presentation with staff of the Kansas Associations of School Boards.

Jim McNiece, Chairman

Peggy Hill, Secretary
KANSAS STATE BOARD OF EDUCATION
Meeting Minutes
September 21, 2016

PRE-MEETING ACTIVITIES
State Board of Education members could attend two optional pre-meeting activities on Sept. 21. The first was the Kansas Supreme Court’s hearing of oral arguments in the Gannon school finance lawsuit. The second was a luncheon presentation by Mark Tallman, Kansas Association of School Boards, to discuss the association’s report card on education in Kansas.

CALL TO ORDER
Chairman Jim McNiece called the Wednesday, Sept. 21, 2016 meeting of the State Board of Education to order at 1 p.m. in the Board Room at the Landon State Office Building, 900 SW Jackson St., Topeka, Kansas.

ROLL CALL
All members were present:
John Bacon Jim McNiece
Kathy Busch Jim Porter
Carolyn Wims-Campbell Steve Roberts
Sally Cauble Janet Waugh
Deena Horst Ken Willard

APPROVAL OF AGENDA
Mrs. Busch moved to approve the Wednesday agenda. Mrs. Waugh seconded. Motion carried 9-0, with Mr. Willard absent for the vote.

ACTION ON RECOMMENDATIONS OF THE PROFESSIONAL PRACTICES COMMISSION
Linda Sieck, chair of the Professional Practices Commission, summarized case 15-PPC-52. Mrs. Busch moved to adopt the findings of the PPC and its recommendation that Gage McGarry’s voluntary surrender of his teaching license not be accepted and that his license and all associated endorsements be revoked. Mrs. Horst seconded. Motion carried 10-0.

Mrs. Sieck then outlined the circumstances in four individual cases and the PPC’s recommendations to grant approval in each instance. Mrs. Cauble moved to adopt the findings of fact and recommendations of the PPC on cases 16-PPC-12 Ryan Nuessen, 16-PPC-18 Jon Sweeney, 16-PPC-19 Caitlyn Ulbrich and 16-PPC-17 Benjamin Hendricks. Mrs. Waugh seconded. Motion carried 10-0.

DISCUSSION ON 2017 BOARD MEETING DATES
Board members were presented a draft calendar of meeting dates for 2017, which follows the traditional format of two-day meetings conducted the second Tuesday and Wednesday of each month. Chairman McNiece opened the discussion by reminding members that five months in 2016 followed a different pattern and that meeting predictability had been lost. Discussion centered on adjusting meeting dates in April, September and October so all Board members could attend. Three variations of a 2017 schedule are to be provided next month for consideration: 1) the current Tuesday/Wednesday format, 2) moving to the third week for April, September and October and 3) moving all meetings to the third week of the month.
BOARD ATTORNEY REPORT
Board Attorney Mark Ferguson summarized the oral arguments presented earlier in the day to the Kansas Supreme Court in the Gannon school finance lawsuit. He also shared some general observations and clarified legal language. Mr. Ferguson mentioned that oral arguments were heard earlier in September in a separate court challenge concerning teacher due process and teacher tenure. His report concluded with information about meetings for state education attorneys that take place at the same time as the NASBE Annual Conference.

BOARD REPORTS & FUTURE AGENDA ITEMS
Legislative — Mrs. Horst reported on the Governor’s press conference to ask for public suggestions for changing school finance law. Mr. Willard stated he was anxious to work with the Governor on the issue.

Communication — Mrs. Cauble expressed appreciation for the marketing plan and materials Denise and Ann provided.

Senate Bill 367 and Juvenile Justice — Mrs. Waugh attended a meeting to discuss rules and regulations related to training required by Senate Bill 367. The hearing on these rules and regulations will be Nov. 17 in the Attorney General’s office. The bill impacts schools as well as the juvenile justice system.

Mr. Roberts left the meeting at 2:25 p.m.

Confidence in Public Education’s Challenge Awards — Mrs. Waugh is a member of the Confidence in Public Education Task Force. The group would like Board members to again make the presentations for Challenge Awards to recipients in their State Board districts. Members agreed to participate in the distribution of the awards.

The Board took a break until 2:40 p.m.

Student Voice — Mrs. Busch reported on the collection of student input as part of the Board’s efforts to engage student voice. She summarized student answers to seven questions presented at a student council leadership workshop in July. The next project is to provide similar questions to the Kansas State High School Activities Association advisory team on Oct. 5.

Coalition of Innovative School Districts — Mrs. Horst commented on the Coalition’s Sept. 15 meeting, crediting the leadership role taken by Chair Bill Mullins to restructure the meetings. Mr. McNiece commented about the work of the Coalition subcommittees. Dates of the upcoming Coalition meetings will be given to Board members.

INDIVIDUAL BOARD MEMBER REPORTS
Individual Board member reports: Mrs. Busch participated in Kansas State High School Activities Association meetings for both the Executive Board and the Board of Directors. She mentioned upcoming regional meetings and ongoing discussions about evaluating district classifications. Mr. Willard attended two Kansas Teacher of the Year (KTOY) regional banquets. Mr. Bacon inquired about instructions schools receive to comply with statutes about flag etiquette and reciting the Pledge of Allegiance. Mrs. Cauble attended a Lions Club meeting in Dodge City, the Kansans CAN Symposium in Manhattan hosted by the service center association, a panel discussion at Smoky Hill Service Center, and will be on the panel at KU’s Economic Policy Conference in October. Ms. Wims-Campbell attended KASB workshops on the topics of youth suicide prevention and transgender students, was at a school foundation meeting in Lawrence, and co-presented with Mrs. Waugh to...
pre-service teachers at Washburn University. Mrs. Waugh reported on additional break-out sessions at the Kansans CAN Symposium. Mr. Porter participated in the Professional Standards Board meeting on Sept. 19 at which time the group began to look at areas identified by the Blue Ribbon Task Force on Teacher Vacancy and Supply. He also attended a kindergarten readiness pilot training. Mrs. Horst attended KTOY regional banquets, the panel discussion at Smoky Hill Service Center and the Kansans CAN Symposium.

In his Chairman’s Report, Mr. McNiece commented on the KTOY regional banquets and the professionalism of the program, distributed literature from a recent visit to the Lowell Milken Center for Unsung Heroes in Fort Scott, and referenced the list of upcoming events in Board members’ folders. The annual evaluation forms for Commissioner, Board Attorney and Board Secretary were distributed and are to be returned to Chairman McNiece by the next meeting.

There were several announcements regarding the National Association of State Boards of Education (NASBE). These included the annual conference in Kansas City Oct. 19-22 and a reminder to complete the NASBE survey. Board members had been asked to read proposed revisions to the NASBE bylaws. Mrs. Cauble made a motion in support of the proposed revisions. Mr. Willard seconded. Motion carried 9-0 with Mr. Roberts absent.

Dr. Watson then talked about the KSDE Annual Conference, which is Oct. 24-26 in Wichita. Mrs. Cauble asked about an invitation or letter to share with businesses.

**Future Agenda Requests:** Presentation of Individual Plan of Study implementation survey results following the collection period; a report from participants upon completion of the Transition to College Algebra pilot; Mrs. Waugh requested a report on Senate Bill 367 and partial restructuring of the juvenile justice system; Mr. Porter requested a presentation on coordination, or lack of, among Kansas PAT, Head Start and school districts to help students be prepared for kindergarten; Mr. Porter also asked for more information about the benefits of using physical activity as an academic intervention and the connection to brain development; Mr. McNiece requested that the Board recognize Security Benefit as a key sponsor for the Kansas Teacher of the Year program.

**BOARD MEMBER TRAVEL**
Additions to the travel requests were: Mrs. Busch Oct. 5 meeting with KSHSAA student advisory team, Oct. 6 KASB Summit in Hutchinson, Oct. 24 KSHSAA regional meeting; Ms. Wims Campbell Oct. 5 meeting with KSHSAA student advisory team; Mrs. Horst Sept. 23 Kansas Foundation for Excellence in Education meeting; Sept. 26 visit to Riley County schools, Sept. 27 visit to Abilene schools, Sept. 29 KASB Summit at Salina and visit to Southeast of Saline schools; Mr. Porter school visits in District 9 with Dr. Watson; Mrs. Waugh Oct. 14 KACEE meeting, and Mr. Willard school visits in District 7 with Dr. Watson. Attendance at the KSDE Annual Conference was also requested by Mrs. Busch, Ms. Wims-Campbell, Mrs. Cauble, Mrs. Horst, Mr. McNiece, Mr. Porter, Mrs. Waugh and Mr. Willard. Mrs. Horst moved to approve the travel list and additions. Mr. Willard seconded. Motion carried 9-0.

**ADJOURNMENT**
Chairman McNiece adjourned the meeting at 4:12 p.m. The next meeting will be Oct. 18 and 19 in Topeka.

________________________________________  ________________
Jim McNiece, Chairman                Peggy Hill, Secretary
The Commissioner’s Report this month will include information regarding the 2015-16 annual report, state assessments, and identification of comprehensive support and improvement schools.
To: Kansas State Board of Education
Subject: Citizens’ Open Forum
Board Goals: Develop active communication and partnerships with families, communities, business stakeholders, constituents and policy partners

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

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

If written material is submitted, 13 copies should be provided.
REQUEST AND RECOMMENDATION FOR BOARD ACTION

Agenda Number: 8 a.

Staff Initiating: Kelli Broers
Director: Scott Gordon
Commissioner: Randy Watson
Meeting Date: 11/9/2016

Item Title:

Act on recommendations of the Professional Practices Commission

Board Goals:

Governmental Responsibility

Recommended Motion:

It is moved that the Kansas State Board of Education adopt the findings of the Professional Practices Commission and its recommendations that Dustin Wiley receive no formal discipline as a result of his conduct and Joseph Banning, Angel Bolen, and Juley Kolterman’s applications for licensure be approved.

Explanation of Situation Requiring Action:

1. Dustin Wiley 16-PPC-04

While licensed, Dustin Wiley entered a diversion agreement after having been charged with a drug-related felony for requesting to buy a small amount of marijuana via cell phone. He was not found to have possessed drugs or used drugs. He successfully completed diversion. An evidentiary hearing was held where the Commission heard testimony regarding Mr. Wiley’s limited past drug use, his otherwise clean criminal record, his valued contributions to his community, and a glowing recommendation from his former principal. Further details are included in the attached Initial Order. The Professional Practices Commission voted 8 – 0 to recommend to the State Board that KSDE’s request that Mr. Wiley’s license be suspended be denied and that no other discipline be imposed.

2. Joseph Banning 16-PPC-25

Joseph Banning applied for an initial teaching license. Prior to holding any teaching license, Mr. Banning entered a diversion agreement after having been charged with providing alcohol to a 17-year-old girl, a misdemeanor. Mr. Banning was 21 years old at the time. He successfully completed diversion. After hearing all the evidence, which is further detailed in the attached Initial Order, the Commission voted 8 - 0 to recommend to the State Board that Mr. Banning’s application for an initial teaching license be granted.

3. Angel Bolen 16-PPC-26

Ms. Bolen applied for an initial teaching license. Prior to holding any teaching license, Ms. Bolen entered into a diversion agreement after having been charged with misdemeanor theft. She successfully completed diversion. Ms. Bolen testified she had a lapse in judgment. She did not and has not engaged in any other criminal behavior. After hearing all the evidence, which is further detailed in the attached

(continued)
Initial Order, the Professional Practices Commission voted 8 - 0 to recommend to the State Board that Ms. Bolen's application for an initial teaching license be granted.

4. Juley Kolterman 16-PPC-29

Ms. Kolterman applied for an emergency substitute teaching license. Prior to holding any teaching license, Ms. Kolterman engaged in felonious criminal behavior related to her addiction issues. At a hearing before the Professional Practices Commission, Ms. Kolterman presented ample evidence of her recovery and sobriety. She has not engaged in any criminal behavior since 2011. She testified she is currently working as a para-educator in her local school district and would like the ability to substitute teach there. Her school principal testified on her behalf. Further details are included in the attached Initial Order. The Professional Practices Commission voted 8 - 0 to recommend to the State Board that Ms. Kolterman's application for an emergency substitute license be granted.
BEFORE THE PROFESSIONAL PRACTICES COMMISSION
KANSAS STATE DEPARTMENT OF EDUCATION

In the Matter of
the License of
Dustin S. Wiley

Case No. 16-PPC-04
OAH No. 16ED0027

INITIAL ORDER

Statement of Case

The above-captioned case comes on for hearing before the Professional Practices Commission (Commission) of the Kansas State Department of Education (KSDE) upon the complaint filed by the KSDE seeking suspension of licensee Dustin S. Wiley’s teaching license and all associated endorsements.

The hearing on this matter was convened on September 23, 2016. Appearing for the Commission were chairperson, Linda Sieck, and members, Dorsey Burgess, Justin Henry, Vicie Jennings, Sylvia Ramirez, Ginger Riddle, Maret Schrader, and Jessica Snider.

Mr. Wiley appeared pro se and testified on his own behalf. Also appearing and testifying on behalf of Mr. Wiley was David P. Elliott, principal at Eugene Ware Elementary, Fort Scott, Kansas, and Mr. Wiley’s wife, Dacia Wiley. Mr. Wiley offered letters from several individuals as evidence.

Kelli Broers appeared as counsel for the KSDE. KSDE offered documents regarding Mr. Wiley’s arrest and diversion as exhibits.
Findings of Fact

1. Mr. Wiley currently holds a professional teaching license and an initial school leadership license. He has been continuously licensed in Kansas since 2012.

2. Mr. Wiley was a physical education teacher at Eugene Ware Elementary from August 2013 to May 2015.

3. On or about March 3, 2015, Mr. Wiley utilized his cell phone to purchase marijuana. The amount he purchased was $20.

4. This conduct resulted in Mr. Wiley being charged on June 17, 2015 with distribution or possession of controlled substances using a communication facility in violation of K.S.A. 21-5707(a)(2), a level 8 nonperson felony in the District Court of Bourbon County, Kansas, Case No. 2015-CR-0190.

5. Mr. Wiley contacted the KSDE after his arrest and reported his criminal misconduct.

6. Mr. Wiley resigned his position as a physical education teacher at Eugene Ware Elementary as a result of his criminal misconduct.

7. On August 5, 2015, Mr. Wiley entered into a diversion agreement wherein he stipulated to violating K.S.A. 21-5707(a)(2).

8. On February 16, 2016, the KSDE filed the complaint seeking suspension of Mr. Wiley’s license and all associated endorsements.

9. Mr. Wiley successfully completed diversion on or about August 17, 2016.
Conclusions of Law
and
Discussion

1. K.A.R. 91-22-1a(a) provides, in pertinent part, that “[a]ny license issued by the state board may be suspended or revoked, or the license holder may be publicly censured by the state board for misconduct or other just cause” including: 1) “conviction of any crime punishable as a felony.”

2. Mr. Wiley was not convicted of a felony, but rather entered into a diversion agreement having purchased $20 of marijuana utilizing his cell phone.

3. In considering whether Mr. Wiley’s license should be suspended, the Commission considered the following factors.

4. While the Commission recognizes that Mr. Wiley was involved in the purchase of marijuana while a licensed educator, there are no other instances of misconduct by Mr. Wiley.

5. Mr. Wiley acknowledged the wrongfulness of his actions as evidenced by the steps he took thereafter.

6. While not obligated to do so, Mr. Wiley contacted the KSDE to report his arrest.

7. Mr. Wiley resigned his position at Eugene Ware Elementary at the end of the 2014-2015 school year. He did not attempt to obtain any other teaching position. This action was essentially a self-surrender of his license.

8. Mr. Wiley successfully completed all of the requirements of the diversion agreement.
9. At the hearing, the Commission found Mr. Wiley’s expression of remorse for his behavior and recognition of the wrongfulness of his conduct sincere. The Commission specifically found Mr. Wiley’s statement evidencing a profound sadness that his conduct had “stained the memory” of what the students thought of him compelling.

10. The Commission also found the testimony of Mr. Elliott, his prior principal, persuasive in that he testified he found Mr. Wiley to be a great role model for both the teachers and the students. He testified that Mr. Wiley was very dedicated and that the students needed him back in the classroom. He also testified that, if it was solely his decision, he would unquestionably rehire Mr. Wiley.

11. The Commission also found each of the letters submitted on Mr. Wiley’s behalf persuasive. The letters were from the Director, Student Diversity Programs, at Pittsburg State University, an administrator in the Fort Scott school district, fellow teachers, and parents of students. In each of the letters, the authors were aware of Mr. Wiley’s criminal misconduct. However, the letters all portrayed Mr. Wiley as an exceptional individual who was an asset to the educational community both as a teacher and a coach. Each was a resounding plea that Mr. Wiley be allowed to continue to teach.

12. Based on the aforementioned, on a unanimous vote of 8-0, the Commission finds Mr. Wiley fit to continue to be a member of the teaching profession. The Commission also finds that because Mr. Wiley’s essentially self-surrendered his license in mid-2015, suspension of his license is not warranted.
IT IS THEREFORE RECOMMENDED by the Professional Practices Commission to the Kansas State Board of Education that the request of KSDE that Mr. Wiley's license be suspended be denied and that no other discipline be imposed.

This Initial Order of the Professional Practices Commission is not a Final Order and is required to be reviewed by the Kansas State Board of Education in accordance with the provisions of the Kansas Administrative Procedure Act.

The licensee may submit to the Kansas State Board of Education for its consideration as a part of its review of the Initial Order, a written brief citing legal authority as to why the above recommendation should not be accepted. The legal brief must be filed with the Secretary of the Professional Practices Commission, Kansas State Department of Education, 900 SW Jackson Street, Topeka, Kansas 66612, within fifteen days after service of the Initial Order for transmittal to the Kansas State Board of Education.

This Initial Order is made and entered this \underline{4} day of October, 2016.

\[Signature\]

Linda Sieck, Chairman
Professional Practices Commission
CERTIFICATE OF SERVICE

I hereby certify that on this 4th day of October, 2016, a true and correct copy of the above and foregoing Initial Order was served on:

Dustin S. Wiley
15280 Kelley Road
Grandview, MO 64030

Kelli Broers, Assistant General Counsel
Kansas State Department of Education
900 SW Jackson St.
Topeka, KS 66612

Gwen Kramer, Secretary
Professional Practices Commission
Kansas State Department of Education
900 SW Jackson St.
Topeka, KS 66612

[Signature]
Staff Person
BEFORE THE KANSAS STATE BOARD OF EDUCATION
PROFESSIONAL PRACTICES COMMISSION

In the Matter of
the Application
of Joseph Banning

16-PPC-25

INITIAL ORDER

The above-captioned case comes on for hearing before the Professional Practices Commission (Commission) of the Kansas State Department of Education (KSDE) upon the application of Joseph Banning for an initial teaching license.

The hearing on this matter convened on September 23, 2016. Appearing for the Commission were chairperson, Linda Sieck, and members, Dorsey Burgess, Justin Henry, John McKinney, Sylvia Ramirez, Ginger Riddle, Maret Schrader, and Jessica Snider.

Kelli Broers appeared as counsel for KSDE.

Joseph Banning appeared in person.

FINDINGS OF FACT


2. Mr. Banning was truthful and forthcoming in disclosing his criminal history. In his application, Joseph Banning disclosed he had entered into a diversion agreement after having been charged with a crime involving a child. He also provided the supporting materials requested.

3. More specifically, the documents Mr. Banning provided showed he had been charged with furnishing alcohol to a minor on September 27, 2014, approximately two years before his hearing date. The charge was a misdemeanor. The documents also showed he received a 6-month diversion term, which he successfully completed on May 26, 2015.
4. Mr. Banning was 21 years old at the time of the offense. He testified he provided alcohol to a 17-year-old friend.

5. Mr. Banning was not licensed as an educator at the time of the offense and he was not a member of any legally recognized profession.

6. Mr. Banning testified he understood the gravity of his mistake and the wrongfulness of his conduct.

7. Mr. Banning provided proof he completed Drug and Alcohol Information School in March 2015.

8. Mr. Banning provided three letters of recommendation commending his abilities as an educator and recommending him for teaching positions.

CONCLUSIONS OF LAW

1. Under Kansas law, teaching and school administration are considered to be professions with all the similar rights, responsibilities, and privileges accorded other legally recognized professions. K.S.A. 72-8501. An educator is in a position of public trust.

2. The Kansas State Board of Education (State Board) is responsible for the general supervision of education, including the certification and licensure of teachers, in Kansas. K.S.A. 72-7513 and Kan. Const., Art. VI.

3. By order of the State Board, the Commission shall investigate and conduct hearings pertaining to allegations of misconduct. K.S.A. 72-8507; K.A.R. 91-22-1a(h).

4. The Commission, in determining whether to recommend to the State Board that applicant shall receive his license, determines the extent of the person’s efforts at rehabilitation as well as the person’s fitness to be a member of the teaching profession. K.A.R. 91-22-1a(g).

5. The Commission finds Mr. Banning was truthful on his application for a license.
6. The Commission finds Mr. Banning's past behavior has ceased to be a factor in his fitness for licensure.

7. The Commission finds that approximately two years have passed since the criminal conduct occurred and that Mr. Banning has demonstrated increased maturity and decision making abilities in that time. The Commission believes Mr. Banning is rehabilitated.

8. The Commission finds that Mr. Banning has demonstrated his fitness to teach and is suitable to be placed in a position of public trust as a teacher.

THEREFORE the Professional Practices Commission recommends to the State Board, by a vote of 8 - 0, that Mr. Banning's application for an initial teaching license be granted.

This Initial Order is made and entered this September 23, 2016.

PROFESSIONAL PRACTICES COMMISSION

[Signature]
Linda Sieck, Chairperson
Order signed on October 25, 2016.
NOTICE TO LICENSEE/APPLICANT

This Order is not a Final Order and is required to be reviewed by the Kansas State Board of Education in accordance with the provisions of the Kansas Administrative Procedure Act. The State Board will review all issues. Notice of review with the specific date and time will be provided to the parties within 15 days of the review.

You may submit to the State Board for its consideration as part of its review of the Initial Order, a written brief citing legal authority as to why the above recommendation should not be accepted. The brief must be filed with the State Board Secretary at the address indicated below within ten calendar days after service of the Initial Order for transmittal to the State Board. Any request for oral argument must also be made at that time.

Peggy Hill
Secretary, Kansas State Board of Education
900 SW Jackson Street, Suite 600
Topeka, Kansas 66612

Response briefs are due within ten calendar days after service of the legal brief upon the opposing party. Any reply brief is due five calendar days after service of any response brief upon the opposing party. Any response or reply briefs must also be filed with the State Board Secretary at the address indicated above.
CERTIFICATE OF SERVICE

I hereby certify that on this 26th day of October, 2016, a true and correct copy of the above
and foregoing was filed with the Secretary for the Kansas State Board of Education and one (1)
copy was mailed by certified mail, return receipt requested, to:

Joseph Banning
14906 W. 83rd Pl.
Lenexa, Kansas 66215

And via interoffice mail to:

Kelli Broers
Kansas State Department of Education
900 SW Jackson Street, Suite 102
Topeka, Kansas 66612

Sue Kramer
Secretary, Professional Practices Commission
BEFORE THE KANSAS STATE BOARD OF EDUCATION
PROFESSIONAL PRACTICES COMMISSION

In the Matter of
the Application
of Angel Bolen

16-PPC-26

INITIAL ORDER

The above-captioned case comes on for hearing before the Professional Practices
Commission (Commission) of the Kansas State Department of Education (KSDE) upon the
application of Angel Bolen for an initial teaching license.

The hearing on this matter convened on September 23, 2016. Appearing for the
Commission were chairperson, Linda Sieck, and members, Dorsey Burgess, Justin Henry, John
McKinney, Sylvia Ramirez, Ginger Riddle, Maret Schrader, and Jessica Snider.

Kelli Broers appeared as counsel for KSDE.

Angel Bolen appeared in person.

FINDINGS OF FACT

1. Angel Bolen applied for an Initial License on July 1, 2016.

2. In her application, Ms. Bolen disclosed she had entered a diversion agreement
after having been charged with theft. She provided all the relevant documents with her
application.

3. Those documents showed that on November 30, 2014, Ms. Bolen was charged
with misdemeanor theft in Overland Park, Kansas. In late February 2015, she received a one-
year diversion term, which she successfully completed in March 2016, and her case was
dismissed.
4. At no time during the criminal process was Ms. Bolen licensed as an educator or any other legally recognized profession. She was 25 years old at the time she was charged. Two years have passed.

5. Ms. Bolen testified it was not her intent to steal from Kohl’s. Instead, she was shopping late at night, when her blood sugar was low, and she was persuaded by a Kohl’s employee she did not know to pay cash for items at a discounted price. The employee pocketed the cash. Ms. Bolen did not report the employee’s conduct and left the store with her items. She testified that Kohl’s security informed her they had been watching the employee for some time.

6. Ms. Bolen’s mother, father, and sister testified regarding her character, her involvement in church and civic activities, and her passion for teaching.

7. Ms. Bolen provided letters of recommendation from a previous employer where she was employed as a nanny. She also provided letters from educators at a school where she worked as a student teacher and as a paraprofessional. Comments included, “I have been so extremely impressed with Angel’s ambition and work ethic. Her self-reflection and observation always leads to increased success. . . .” and “if I had a child with special needs, I would go out of my way to make sure that he or she had Angel as his or her shepherd throughout the day.”
CONCLUSIONS OF LAW

1. Under Kansas law, teaching and school administration are considered to be professions with all the similar rights, responsibilities, and privileges accorded other legally recognized professions. K.S.A. 72-8501. An educator is in a position of public trust.

2. The Kansas State Board of Education (State Board) is responsible for the general supervision of education, including the certification and licensure of teachers, in Kansas. K.S.A. 72-7513 and Kan. Const., Art. VI.

3. By order of the State Board, the Commission shall investigate and conduct hearings pertaining to allegations of misconduct. K.S.A. 72-8507; K.A.R. 91-22-1a(h).

4. The Commission, in determining whether to recommend to the State Board that applicant shall receive her license, determines the extent of the person’s efforts at rehabilitation as well as the person’s fitness to be a member of the teaching profession. K.A.R. 91-22-1a(g).

5. The Commission finds Ms. Bolen was truthful on her application for a license and in her testimony before the Commission.

6. The Commission finds Ms. Bolen’s past behavior has ceased to be a factor in her fitness for licensure. Additionally, there is no evidence Ms. Bolen has ever engaged in criminal conduct other than the incident named above.

7. The Commission finds that approximately two years have passed since the criminal conduct occurred and that Ms. Bolen demonstrated a present recognition of the wrongfulness of her conduct. The Commission believes Ms. Bolen is rehabilitated.

8. The Commission finds that Ms. Bolen has demonstrated her fitness to teach and is suitable to be placed in a position of public trust as a teacher.
THEREFORE the Professional Practices Commission recommends to the State Board, by a vote of 8 - 0, that Ms. Bolen’s application for an initial teaching license be granted.

This Initial Order is made and entered this September 23, 2016.

PROFESSIONAL PRACTICES COMMISSION

[Signature]
Linda Sieck, Chairperson
Order signed on October 25, 2016.
NOTICE TO LICENSEE/APPLICANT

This Order is not a Final Order and is required to be reviewed by the Kansas State Board of Education in accordance with the provisions of the Kansas Administrative Procedure Act. The State Board will review all issues. Notice of review with the specific date and time will be provided to the parties within 15 days of the review.

You may submit to the State Board for its consideration as part of its review of the Initial Order, a written brief citing legal authority as to why the above recommendation should not be accepted. The brief must be filed with the State Board Secretary at the address indicated below within ten calendar days after service of the Initial Order for transmittal to the State Board.

Any request for oral argument must also be made at that time.

Peggy Hill
Secretary, Kansas State Board of Education
900 SW Jackson Street, Suite 600
Topeka, Kansas 66612

Response briefs are due within ten calendar days after service of the legal brief upon the opposing party. Any reply brief is due five calendar days after service of any response brief upon the opposing party. Any response or reply briefs must also be filed with the State Board Secretary at the address indicated above.
CERTIFICATE OF SERVICE

I hereby certify that on this 26th day of October, 2016, a true and correct copy of the above
and foregoing was filed with the Secretary for the Kansas State Board of Education and one (1)
copy was mailed by certified mail, return receipt requested, to:

Angel Bolen
13431 West 106th Street
Overland Park, Kansas 66215

And via interoffice mail to:

Kelli Broers
Kansas State Department of Education
900 SW Jackson Street, Suite 102
Topeka, Kansas 66612

[Signature]
Gwen Kramer
Secretary, Professional Practices Commission
In the Matter of
the Application
of Juley Kolterman

INITIAL ORDER

The above-captioned case comes on for hearing before the Professional Practices Commission (Commission) of the Kansas State Department of Education (KSDE) upon the application of Juley Kolterman for an emergency substitute license.

The hearing on this matter convened on September 23, 2016. Appearing for the Commission were chairperson, Linda Sieck, and members, Dorsey Burgess, Justin Henry, John McKinney, Sylvia Ramirez, Ginger Riddle, Maret Schrader, and Jessica Snider.

Kelli Broers appeared as counsel for KSDE.

Juley Kolterman appeared in person.

FINDINGS OF FACT

1. Juley Kolterman applied for an emergency substitute license on August 2, 2016. At no time previous did Ms. Kolterman hold a teaching license or any other professional license.

2. In her application, Ms. Kolterman disclosed she had been convicted of a felony and had been convicted of a crime involving theft, drugs, or a child. Ms. Kolterman also supplied supporting documents evidencing her criminal history.

3. Those documents demonstrated an extensive criminal past including, a 2004 conviction for felony possession of depressants/stimulants/hallucinogenics/steroids; a 2007 conviction for felony possession of opiates; a 2010 conviction for felony possession of opiates; a 2011 conviction for misdemeanor theft, a 2011 conviction for misdemeanor forgery, giving
worthless check, and theft by deception; and myriad probation revocations related to those cases through 2011.

4. Ms. Kolterman was aged 23 to 30 years old at the time she engaged in criminal conduct.

5. Ms. Kolterman was forthright in discussing her addiction problem and the consequences of her actions. At one point, she lost custody of her children. She testified she has little recollection of many of those years because of her drug use. She was in and out of custody and treatment facilities.

6. Ms. Kolterman testified she has been sober since 2011. She has regained custody of her children. She attends support meetings every week. She has been employed as a paraprofessional in her community school and would like the opportunity to substitute teach.

7. Ms. Kolterman’s principal, Adam McDaniel, testified on her behalf. He was fully aware of her past and testified he valued her contributions to the community and the district. He supported her receiving her emergency substitute license so the school could expand her role.

8. Ms. Kolterman submitted numerous letters of recommendation from individuals familiar with her past, including the local program manager for the Kansas Reading Roadmap Literacy Program, Becky Nider, who stated, “she has overcome many obstacles in her personal life and has learned . . . from each of those challenges. The school made a great decision to hire her to work with children as her passion and determination will only help these children succeed.” The teacher for whom Ms. Kolterman is assigned as a paraprofessional also recommended her, stating, “she has gone above and beyond to make connections with families who need positive influences in their lives.”
9. Ms. Kolterman was ordered to submit to a five-panel urine analysis test within 7
days of her hearing. She did so and the results were negative.

CONCLUSIONS OF LAW

1. Under Kansas law, teaching and school administration are considered to be
professions with all the similar rights, responsibilities, and privileges accorded other legally
recognized professions. K.S.A. 72-8501. An educator is in a position of public trust.

2. The Kansas State Board of Education (State Board) is responsible for the general
supervision of education, including the certification and licensure of teachers, in Kansas. K.S.A.
72-7513 and Kan. Const., Art. VI.

3. By order of the State Board, the Commission shall investigate and conduct
hearings pertaining to allegations of misconduct. K.S.A. 72-8507; K.A.R. 91-22-1a(h).

4. The Commission, in determining whether to recommend to the State Board that
applicant shall receive her license, determines the extent of the person’s efforts at rehabilitation
as well as the person’s fitness to be a member of the teaching profession. K.A.R. 91-22-1a(g).

5. The Commission finds Ms. Kolterman was truthful on her application for a
license and in her testimony before the Commission.

6. The Commission finds Ms. Kolterman’s past behavior has ceased to be a factor in
her fitness for licensure.

7. The Commission finds that approximately five years have passed since the
criminal conduct occurred and that Ms. Kolterman has demonstrated a commitment to sobriety
and meaningful citizenship since that time. Additionally, it appears that Ms. Kolterman has the
support of her community, her co-workers, and her employer. The Commission believes Ms.
Kolterman is rehabilitated.
8. The Commission finds that Ms. Kolterman has demonstrated her fitness to teach and is suitable to be placed in a position of public trust as a teacher, which is in concert with the opinion of those educators who know her best.

THEREFORE the Professional Practices Commission recommends to the State Board, by a vote of 8 - 0, that Ms. Kolterman's application for an emergency substitute teaching license be granted subject to her reappearing before the Commission prior to the issuance of any other level of teaching license.

This Initial Order is made and entered this September 23, 2016.

PROFESSIONAL PRACTICES COMMISSION

Linda Sieck, Chairperson
Order signed on October 25, 2016.
NOTICE TO LICENSEE/APPLICANT

This Order is not a Final Order and is required to be reviewed by the Kansas State Board of Education in accordance with the provisions of the Kansas Administrative Procedure Act. The State Board will review all issues. Notice of review with the specific date and time will be provided to the parties within 15 days of the review.

You may submit to the State Board for its consideration as part of its review of the Initial Order, a written brief citing legal authority as to why the above recommendation should not be accepted. The brief must be filed with the State Board Secretary at the address indicated below within ten calendar days after service of the Initial Order for transmittal to the State Board.

Any request for oral argument must also be made at that time.

Peggy Hill
Secretary, Kansas State Board of Education
900 SW Jackson Street, Suite 600
Topeka, Kansas 66612

Response briefs are due within ten calendar days after service of the legal brief upon the opposing party. Any reply brief is due five calendar days after service of any response brief upon the opposing party. Any response or reply briefs must also be filed with the State Board Secretary at the address indicated above.
CERTIFICATE OF SERVICE

I hereby certify that on this 26th day of October, 2016, a true and correct copy of the above and foregoing was filed with the Secretary for the Kansas State Board of Education and one (1) copy was mailed by certified mail, return receipt requested, to:

Juley Kolterman  
P.O. Box 284  
Onaga, Kansas 66521

And via interoffice mail to:

Kelli Broers  
Kansas State Department of Education  
900 SW Jackson Street, Suite 102  
Topeka, Kansas 66612

[Signature]

Gwen Kramer  
Secretary, Professional Practices Commission
Item Title:

Act on recommendations of the Professional Practices Commission (Denial)

Board Goals:

Governmental Responsibility

Recommended Motion:

It is moved that the Kansas State Board of Education adopt the findings of the Professional Practices Commission and its recommendations that Louis Emanuel’s application for an emergency substitute license be denied.

Explanation of Situation Requiring Action:

1. Louis Emanuel 16-PPC-21

Mr. Emanuel applied for an emergency substitute teaching license. Mr. Emanuel is ineligible for a Kansas teaching license because he has had a license revoked in another state and he is not yet eligible for re-licensure. Further details are included in the attached Initial Order. The Professional Practices Commission voted 7 - 1 to recommend to the State Board that Mr. Emanuel’s application for an emergency substitute license be denied.
BEFORE THE KANSAS STATE BOARD OF EDUCATION
PROFESSIONAL PRACTICES COMMISSION

In the Matter of
the Application
of Louis Emanuel

16-PPC-21
OAH 17ED0001

AMENDED INITIAL ORDER

The above-captioned case comes on for hearing before the Professional Practices Commission (Commission) of the Kansas State Department of Education (KSDE) upon the complaint seeking denial of Louis Emanuel’s application for a substitute license.

The hearing on this matter convened on September 23, 2016. Appearing for the Commission were chairperson, Linda Sieck, and members, Dorsey Burgess, Justin Henry, John McKinney, Sylvia Ramirez, Ginger Riddle, Maret Schrader, and Jessica Snider.

Kelli Broers appeared as counsel for KSDE.

Louis Emanuel appeared in person.

FINDINGS OF FACT

1. Louis Emanuel applied for a Kansas substitute license.

2. Based on information in the NASDTEC clearinghouse, Mr. Emanuel had teaching licenses revoked/invalidated in Arizona and Minnesota.

3. Mr. Emanuel is not eligible for licensure in Arizona at this time because of his criminal history.

4. Mr. Emanuel failed to disclose his criminal history and adverse licensure history on his application.
CONCLUSIONS OF LAW

1. Under Kansas law, teaching and school administration are considered to be professions with all the similar rights, responsibilities, and privileges accorded other legally recognized professions. K.S.A. 72-8501. An educator is in a position of public trust.

2. The State Board is responsible for the general supervision of education, including the certification and licensure of teachers, in Kansas. K.S.A. 72-7513 and Kan. Const., Art. VI.

3. By order of the State Board, the Professional Practices Commission shall investigate and conduct hearings pertaining to allegations of misconduct. K.S.A. 72-8507; K.A.R. 91-22-1a(h).

4. Mr. Emanuel is not eligible for licensure in Kansas because he has had a license revoked in another state and remains ineligible for licensure in that state. K.A.R. 91-22-1a(f).

5. Mr. Emanuel’s ineligibility for licensure is grounds for denial of his application. K.A.R. 91-22-1a.

THEREFORE the Professional Practices Commission recommends to the State Board, by a vote of 7 - 1, that Mr. Emanuel’s application for a substitute teaching license be denied.

This Initial Order is made and entered this September 23, 2016.

PROFESSIONAL PRACTICES COMMISSION

[Signature]
Linda Sieck, Chairperson
Order signed on October 26, 2016.
NOTICE TO LICENSEE/APPLICANT

This Order is not a Final Order and is required to be reviewed by the Kansas State Board of Education in accordance with the provisions of the Kansas Administrative Procedure Act. The State Board will review all issues. Notice of review with the specific date and time will be provided to the parties within 15 days of the review.

You may submit to the State Board for its consideration as part of its review of the Initial Order, a written brief citing legal authority as to why the above recommendation should not be accepted. The brief must be filed with the State Board Secretary at the address indicated below within ten calendar days after service of the Initial Order for transmittal to the State Board. Any request for oral argument must also be made at that time.

Peggy Hill
Secretary, Kansas State Board of Education
900 SW Jackson Street, Suite 600
Topeka, Kansas 66612

Response briefs are due within ten calendar days after service of the legal brief upon the opposing party. Any reply brief is due five calendar days after service of any response brief upon the opposing party. Any response or reply briefs must also be filed with the State Board Secretary at the address indicated above.
CERTIFICATE OF SERVICE

I hereby certify that on this 26\textsuperscript{th} day of October, 2016, a true and correct copy of the above and foregoing was filed with the Secretary for the Kansas State Board of Education and one (1) copy was mailed by certified mail, return receipt requested, to:

Louis Emanuel
4001 W. 102\textsuperscript{nd} Street
Overland Park, Kansas 66207

And via interoffice mail to:

Kelli Broers
Kansas State Department of Education
900 SW Jackson Street, Suite 102
Topeka, Kansas 66612

[Signature]

Gwen Kramer
Secretary, Professional Practices Commission
To: Board Members

Subject: Kansas State High School Activities Association Annual Report

Date: 10/27/2016

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

Gary Musselman, Executive Director of the Kansas State High School Activities Association (KSHSAA), will present the organization’s annual report to the State Board of Education and answer any questions. Mr. Musselman has also delivered to the Board office copies of KSHSAA materials for the 2015-16 school year as required by statute. These include the audit report, directories, journals, minutes from Board of Directors’ meetings, and synopsis of major changes by the Board.
To: Kansas State Board of Education
Subject: Student Artwork Presentation and Dedication
Date: 10/27/2016
Board Goals: Develop active communication and partnerships with families, communities, business stakeholders, constituents and policy partners

Holly Wilson, 21st Century Grant Program Manager with Wichita Public Schools, reached out to State Board members in her area and to KSDE offering the services of students participating in an after-school fine arts program. Wichita USD 259 was awarded a 21st Century Community Learning Centers grant in the spring of 2013 to operate an after-school fine arts program at 10 schools: Allen, Caldwell, Cessna, Gardiner, Linwood, Stanley, Gordon Parks, Jardine, Curtis and Mead. Last year, they served 1,500 at-risk students in the after-school program and an additional 130 homeless students over the summer. Susan de Wit, a teaching artist with Arts Partners Wichita, assists with the program. Mrs. Wilson, Mrs. de Wit and after-school students from Caldwell Elementary will be at the November meeting to formally present their artwork.
To: Commissioner Randy Watson
From: Scott Gordon
Subject: Public Hearing on K.A.R. 91-31-32
Date: 10/27/2016

Board Goals: Governmental Responsibility

The Kansas State Board of Education will conduct a Public Hearing on the Suicide Prevention regulation. Public notice was given and the hearing will be held at 1:30 p.m. on Wednesday, Nov. 9, 2016 in the Board Room at the Landon State Office Building, 900 SW Jackson St., Suite 102, Topeka, Kansas. The hearing will cover the following regulation: K.A.R. 91-31-32. A copy of the regulation and a copy of the Joint Committee on Administrative Rules and Regulations comments are attached. If no changes are needed, the Board is asked to adopt the regulation on Nov. 10.
Procedures for any Public Hearing of the State Board are as follows:

- Any person having an interest in the subject of the Hearing shall have a right to provide oral and written testimony to the State Board on the subject of the Hearing.
- Any person wishing to speak at the Hearing shall sign in prior to the commencement of the Hearing, by providing his/her name, address, and identifying whether he/she represents an opinion of a group.
- The presiding officer will conduct the Hearing. Speakers shall be recognized according to the order in which they signed in.
- Each speaker will have 5 minutes to make his or her presentation.
- If written testimony is submitted, 13 copies should be provided.
91-31-32. Performance and quality criteria. (a) Each school shall be assigned its accreditation status based upon the extent to which the school has met the performance and quality criteria established by the state board in this regulation.

(b) The performance criteria shall be as follows:

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

(2) having 95% or more of all students and 95% or more of each student subgroup take the state assessments;

(3) having an attendance rate equal to or greater than that prescribed by the state board; and

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

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

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

(2) an external technical assistance team;

(3) locally determined assessments that are aligned with the state standards;

(4) formal training for teachers regarding the state assessments and curriculum standards;
(5) 100% of the teachers assigned to teach in those areas assessed by the state or described as core academic subjects by the United States department of education, and 95% or more of all other faculty, fully certified for the positions they hold;

(6) policies that meet the requirements of S.B.R. 91-31-34;

(7) local graduation requirements that include at least those requirements imposed by the state board;

(8) curricula that allow each student to meet the regent's qualified admissions requirements and the state scholarship program;

(9) programs and services to support student learning and growth at both the elementary and secondary levels, including the following:

   (A) Computer literacy;
   (B) counseling services;
   (C) fine arts;
   (D) language arts;
   (E) library services;
   (F) mathematics;
   (G) physical education, which shall include instruction in health and human sexuality;
   (H) science;
   (I) services for students with special learning needs; and
   (J) history, government, and celebrate freedom week. Each local board of education shall include the following in its history and government curriculum:
(i) Within one of the grades seven through 12, a course of instruction in Kansas history and government. The course of instruction shall be offered for at least nine consecutive weeks. The local board of education shall waive this requirement for any student who transfers into the district at a grade level above that in which the course is taught; and

(ii) for grades kindergarten through eight, instruction concerning the original intent, meaning, and importance of the declaration of independence and the United States constitution, including the bill of rights, in their historical contexts, pursuant to K.S.A. 2015 Supp. 72-1130 and amendments thereto. The study of the declaration of independence shall include the study of the relationship of the ideas expressed in that document to subsequent American history;

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

(A) Business;

(B) family and consumer science;

(C) foreign language; and

(D) industrial and technical education; and

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

(12) programs for all school staff regarding suicide awareness and prevention. Each local board of education shall include the following in its suicide awareness and prevention programs:
(A) At least one hour of training each calendar year based on programs approved by the state board of education. The training requirement may be met through independent self-review of suicide prevention training material; and

(B) a building crisis plan developed for each school building. The building crisis plan shall include the following:

(i) Steps for recognizing suicide ideation;

(ii) appropriate methods of intervention; and

(iii) a crisis recovery plan.

(d) If the grade configuration of a school does not include any of the grades included in the state assessment program, the school shall use an assessment that is aligned with the state standards. (Authorized by and implementing Article 6, Section 2(a) of the Kansas Constitution and K.S.A. 2013 Supp. 72-1130; effective July 1, 2005; amended Jan. 10, 2014; amended P-_____________________.)
To: Commissioner Randy Watson
From: Beth Fultz, Scott Smith
Subject: Reading for Success program evaluation by Fort Hays State University
Date: 10/27/2016

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

Istation will provide a summary report for the 2015-2016 contract. The Kansas Reading for Success goal was to help every child reach his or her full reading potential regardless of background and access to literacy. Istation computer-adaptive assessments pinpoint specific literacy needs for each child. Individualized, appropriate instruction provides each child with a personalized learning path to build foundational reading skills. Istation established a partnership with teachers to aid them in providing data-informed instruction for early intervention and targeted literacy weaknesses for improvement. They also provided a home-to-school connection by giving parents access to their child’s progress data and the Istation program to use at home. As of June 19, 2016, the Istation project included 104,163 students in 144 districts. Final participation data will be provided in their presentation.

Representatives from Fort Hays State University will provide data analysis and evaluation for the 2015-2016 Istation contract,
REQUEST AND RECOMMENDATION FOR BOARD ACTION

Item Title:
Act on Higher Education Licensure Program Standards for Biology (6-12), Earth and Space Science (6-12), and Science (5-8)

Board Goals:
Provide an effective educator in every classroom

Recommended Motion:
It is moved that the Kansas State Board of Education approve the revised educator preparation program standards for Biology (6-12), Earth and Space Science (6-12), and Science (5-8).

Explanation of Situation Requiring Action:
Educator Preparation Program Standards establish program approval requirements to ensure that preparation programs in Kansas provide educator candidates with the opportunity to learn the knowledge and skills educators need for today’s learning context. The Institutions of Higher Education (IHEs) utilize program standards to develop their preparation programs and submit them for approval, and for continuous monitoring and improvement of their programs. The standards also help to establish professional learning requirements for licensure renewal.

Standards revision work groups are completing the task of revising all program standards to ensure they reflect new knowledge and skills educators need for effectiveness in today’s world. In October, these completed sets of revised standards were presented for review: Biology (6-12), Earth and Space Science (6-12), and Science (5-8). Approval of the standards is requested. Once approved, the IHEs have access to develop new programs around the standards or to revise their current programs to align to the updated standards.

The proposed standards, the previous standards and a crosswalk were provided at the October 2016 meeting. Staff and representatives from the respective standards revision committees will be available to answer questions.
Crosswalk: Previous versus New BIOLOGY (6-12) Standards

General Information about this Revision:
» Revisions include alignment with recent editions of the NSTA (National Science Teacher Association) Preservice Science Standards, the InTASC (Interstate Teacher Assessment and Support Consortium) teaching standards and the Next Generation Science Standards (NGSS).
» Whereas the previous Biology (6-12) Teacher Licensure Standards began with biology-specific content understanding (1-8) followed by science teaching knowledge and skills (9-18), the revised standards begin with science teaching knowledge and skills (1-6) aligned with the NSTA Preservice Science Standards, followed by four biology-specific content understanding standards (7-10) aligned with disciplinary core ideas in the NGSS.
» The total number of standards was reduced to enhance standards alignment with assessment tools.

<table>
<thead>
<tr>
<th>Standard 1</th>
<th>PREVIOUS STANDARDS</th>
<th>NEW STANDARDS</th>
<th>WHAT CHANGED?</th>
</tr>
</thead>
<tbody>
<tr>
<td>9: The teacher of biology demonstrates an understanding of the nature of inquiry and the ability necessary to help students do scientific inquiry.</td>
<td>1: Content Pedagogy: Effective science teachers understand how students learn and develop science and engineering concepts and practices. They incorporate disciplinary core ideas, scientific and engineering practices, and crosscutting concepts into instruction.</td>
<td>Content pedagogy involves a variety of skills and breadth of knowledge, aligned with multiple standards in the previous draft. Key items include science inquiry, the relationships between science and technology, science as a human endeavor (the history and nature of science), and connections to students’ daily lives.</td>
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<td>10: The teacher of biology demonstrates an understanding of the basic relationships between science and technology.</td>
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<td>11: The teacher of biology demonstrates an understanding of science as a human endeavor, of the nature of science, and of science from historical perspectives.</td>
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<td>12: The teacher of biology demonstrates an understanding of the concepts and processes unifying science domains.</td>
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<tr>
<td>13: The teacher of biology demonstrates an understanding of and an ability to teach science effectively.</td>
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<tr>
<td>15: The teacher of biology understands how to relate science to the daily lives and interests of students and to a larger framework of human endeavor and understanding.</td>
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Standard 2
<table>
<thead>
<tr>
<th>PREVIOUS STANDARDS</th>
<th>NEW STANDARDS</th>
<th>WHAT CHANGED?</th>
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<tbody>
<tr>
<td><strong>Standard 3</strong></td>
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<tr>
<td>9: The teacher of biology demonstrates an understanding of the nature of inquiry and the ability necessary to help students do scientific inquiry.</td>
<td>2: <strong>Learning Environments</strong>: Teachers work with students and others to create and manage environments that support learning.</td>
<td>Designing effective learning environments requires understanding of science inquiry and the relationships between science and technology, and establishing a safe climate in which students can learn science.</td>
</tr>
<tr>
<td>10: The teacher of biology demonstrates an understanding of the basic relationships between science and technology.</td>
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<tr>
<td>13: The teacher of biology demonstrates an understanding of and an ability to teach science effectively.</td>
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<tr>
<td>17: The teacher of biology designs and manages safe and supportive learning environments.</td>
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<tr>
<td><strong>Standard 4</strong></td>
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<tr>
<td>9: The teacher of biology demonstrates an understanding of the nature of inquiry and the ability necessary to help students do scientific inquiry.</td>
<td>3: <strong>Safety</strong>: Effective teachers of science demonstrate and implement safety procedures, material safety practices, and the ethical treatment and use of living organisms (appropriate to their area of licensure).</td>
<td>Safety must be considered when teaching through science inquiry. A safe science learning setting includes both general classroom practices as well as science-specific laboratory protocol.</td>
</tr>
<tr>
<td>13: The teacher of biology demonstrates an understanding of and an ability to teach science effectively.</td>
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<tr>
<td>17: The teacher of biology designs and manages safe and supportive learning environments.</td>
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<tr>
<td><strong>4: Impact on Student Learning</strong>: Science teachers provide evidence that students’ understanding of disciplinary core ideas, science and engineering practices, and crosscutting concepts have increased in sophistication as a result of</td>
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</table>
understanding of and an ability to teach science effectively. 

15: The teacher of biology understands how to relate science to the daily lives and interests of students and to a larger framework of human endeavor and understanding.

16: The teacher of biology assesses students’ educational progress through a variety of methods.

<table>
<thead>
<tr>
<th>Standard 5</th>
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</thead>
<tbody>
<tr>
<td><strong>PREVIOUS STANDARDS</strong></td>
</tr>
<tr>
<td>13: The teacher of biology demonstrates an understanding of and an ability to teach science effectively.</td>
</tr>
<tr>
<td>14: The teacher of biology enacts a science curriculum that integrates content within the sciences and among other disciplines.</td>
</tr>
<tr>
<td>18: The teacher of biology improves teaching through ongoing professional practice.</td>
</tr>
<tr>
<td><strong>NEW STANDARDS</strong></td>
</tr>
<tr>
<td>5: Professional Knowledge and Skills: Effective science teachers are aware of and engage in professional development opportunities to continually improve their knowledge and understanding of science content and pedagogy. They conduct themselves as part of the science education community.</td>
</tr>
<tr>
<td><strong>WHAT CHANGED?</strong></td>
</tr>
<tr>
<td>Effective teachers grow in effectiveness through ongoing review and professional development, as well as connecting science content to other disciplines.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard 6</th>
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<tbody>
<tr>
<td><strong>PREVIOUS STANDARDS</strong></td>
</tr>
<tr>
<td>10: The teacher of biology demonstrates an understanding of the basic relationships between science and technology.</td>
</tr>
<tr>
<td>14: The teacher of biology enacts a science curriculum that integrates content within the sciences and among other disciplines.</td>
</tr>
<tr>
<td>15: The teacher of biology understands how to relate science to the daily lives and interests of students and to a larger framework of human endeavor and understanding.</td>
</tr>
<tr>
<td><strong>NEW STANDARDS</strong></td>
</tr>
<tr>
<td>6: Engineering, Technology, and the Applications of Science: The teacher demonstrates an understanding of concepts and practices of engineering, technology, and the applications of science that can be used in developing instruction for students.</td>
</tr>
<tr>
<td><strong>WHAT CHANGED?</strong></td>
</tr>
<tr>
<td>Integrating science with engineering practices and knowledge involves an understanding of the relationship between science and technology, integration with other disciplines, and connections to students’ daily lives and science as a human endeavor.</td>
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</tbody>
</table>

<p>| Standard 7 |</p>
<table>
<thead>
<tr>
<th>PREVIOUS STANDARDS</th>
<th>NEW STANDARDS</th>
<th>WHAT CHANGED?</th>
</tr>
</thead>
<tbody>
<tr>
<td>1: The teacher of biology demonstrates an understanding of the structure and function of cells.</td>
<td>7: From molecules to organisms: Structures and processes: Effective biology teachers demonstrate an understanding of how organisms live and grow.</td>
<td>An understanding of the structures and processes in life science includes molecular, cellular, and systems structures and processes of organisms.</td>
</tr>
<tr>
<td>6: The teacher of biology demonstrates an understanding of the structure, function, and diversity of organisms.</td>
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<tr>
<td>7: The teacher of biology demonstrates an understanding of the overall functioning of human systems and their interaction with the environment relative to specific mechanisms and processes related to health issues and human sexuality.</td>
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</table>

**Standard 8**

<table>
<thead>
<tr>
<th>PREVIOUS STANDARDS</th>
<th>NEW STANDARDS</th>
<th>WHAT CHANGED?</th>
</tr>
</thead>
<tbody>
<tr>
<td>4: The teacher of biology demonstrates an understanding of the interdependence of organisms and their interaction with the physical environment including energy flow, nutrient cycling, and population dynamics.</td>
<td>8: Ecosystems: Interactions, energy, and dynamics: Effective biology teachers demonstrate an understanding of how and why do organisms interact with their environment, and what are the effects of these interactions.</td>
<td>Understanding the interactions of organisms in their environment involves the interdependence of various organisms and environmental factors, the flow of energy and nutrient cycling, behaviors, and population dynamics.</td>
</tr>
<tr>
<td>5: The teacher of biology demonstrates an understanding of the basic behavior of animals.</td>
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<tr>
<td>8: The teacher of biology demonstrates an understanding of population growth.</td>
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</table>

**Standard 9**

<table>
<thead>
<tr>
<th>PREVIOUS STANDARDS</th>
<th>NEW STANDARDS</th>
<th>WHAT CHANGED?</th>
</tr>
</thead>
<tbody>
<tr>
<td>2: The teacher of biology demonstrates an understanding of chromosomes, genes, and the molecular basis of heredity.</td>
<td>9: Genetics and Heredity: Effective biology teachers demonstrate an understanding of how characteristics of one generation passed to the next and how individuals of the same</td>
<td>Understanding genetics and heredity includes molecular structures and processes and other reproductive systems.</td>
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<td>Standard 10</td>
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<tr>
<td><strong>PREVIOUS STANDARDS</strong></td>
<td><strong>NEW STANDARDS</strong></td>
<td><strong>WHAT CHANGED?</strong></td>
</tr>
<tr>
<td>3: The teacher of biology demonstrates an understanding of major concepts of biological evolution.</td>
<td>10: <strong>Biological Evolution: Unity and diversity:</strong> Effective biology teachers demonstrate an understanding of evolution and evidence shows that different species are related.</td>
<td>An evolutionary model provides a framework from which teachers and students can investigate unifying principles of living things as well as diverse features and functions.</td>
</tr>
<tr>
<td>6: The teacher of biology demonstrates an understanding of the structure, function, and diversity of organisms.</td>
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</table>

species and even siblings have different characteristics.
**PROPOSED**
Kansas Preparation Program Standards for Biology Educators Grades 6-12

***"Learner(s) is defined as children including those with disabilities or exceptionalities, who are gifted, and students who represent diversity based on ethnicity, race, socioeconomic status, gender, language, religion, and geographic origin.***

<table>
<thead>
<tr>
<th>Standard 1: Content Pedagogy: Effective science teachers understand how students learn and develop science and engineering concepts and practices. They incorporate disciplinary core ideas, scientific and engineering practices, and crosscutting concepts into instruction.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function 1: Teacher plans multiple lessons using a variety of inquiry approaches incorporating science and engineering practices.</td>
</tr>
<tr>
<td><strong>Content Knowledge</strong></td>
</tr>
<tr>
<td>1.1.1 CK Knows how to locate resources, design and conduct inquiry-based open-ended science investigations, interpret findings, communicate results, and make judgments based on evidence.</td>
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<table>
<thead>
<tr>
<th>Function 2: Teacher demonstrates knowledge and understanding of how diverse students learn science.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content Knowledge</strong></td>
</tr>
<tr>
<td>1.2.1 CK Knows learning is influenced by cultural and environmental differences of the student and family.</td>
</tr>
<tr>
<td>1.2.2 CK Understands developmentally and chronologically age-appropriate needs and practices of students.</td>
</tr>
<tr>
<td>1.2.3 CK Understands diverse learning styles.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Function 3: The teacher designs instruction and assessment strategies that confront and address naïve concepts/preconceptions.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content Knowledge</strong></td>
</tr>
<tr>
<td>1.3.1 CK The teacher knows learning is influenced by cultural and environmental differences of the student and family.</td>
</tr>
<tr>
<td>1.3.2 CK The teacher understands formative and summative assessment</td>
</tr>
</tbody>
</table>
and how they are used. and design and implement appropriate instruction to address these.

Standard 2: Learning Environments: Teachers work with students and others to create and manage environments that support learning.

Function 1: The teacher supports individual and group learning.

<table>
<thead>
<tr>
<th>Content Knowledge</th>
<th>Professional Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1.1 CK The teacher understands the importance of rigor, respect, and responsibility for the learning environment.</td>
<td>2.1.3 PS The teacher sets and articulates appropriate goals that are consistent with knowledge of how students learn science.</td>
</tr>
<tr>
<td>2.1.2 CK The teacher understands how teacher feedback influences student learning.</td>
<td>2.1.4 PS The teacher sets goals that are aligned with state and other professional standards.</td>
</tr>
<tr>
<td>2.1.5 PS The teacher manages the environment to make learning experiences appropriately challenging.</td>
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</tbody>
</table>

Function 2: The teacher encourages positive social interaction.

<table>
<thead>
<tr>
<th>Content Knowledge</th>
<th>Professional Skill</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.2.1 CK The teacher understands how learner diversity can affect communication and knows how to communicate effectively in differing environments.</td>
<td>2.2.3a PS The teacher plans fair and equitable assessment strategies to analyze student learning and to evaluate if the learning goals are met.</td>
</tr>
<tr>
<td>2.2.2 CK The teacher understands how learning occurs, how learners construct knowledge, acquire skills, and develop disciplined thinking processes and knows how to use instructional strategies that promote student learning.</td>
<td>2.2.3b PS The teacher promotes celebration of learning by providing positive reinforcement and encouraging learners to present work demonstrating their learning and interacting with community members about their work.</td>
</tr>
<tr>
<td>2.2.3c PS The teacher communicates verbally and nonverbally, with families, communities, colleagues, and other professionals, in ways that demonstrate respect for and responsiveness to the cultural backgrounds and differing perspectives learners bring to the learning environment.</td>
<td>2.2.3d PS The teacher knows how to help learners work productively and cooperatively with each other to achieve learning goals.</td>
</tr>
<tr>
<td>2.2.4a PS The teacher develops plans that reflect the nature and social context of science and inquiry.</td>
<td>2.2.4b PS The teacher creates developmentally appropriate instruction that takes into account individual learners' strengths, interests, and needs and that enables each learner to advance and accelerate his/her learning.</td>
</tr>
</tbody>
</table>

Function 3: The teacher promotes active engagement in learning and self-motivation.

<table>
<thead>
<tr>
<th>Content Knowledge</th>
<th>Professional Skill</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.3.1 CK The teacher understands the</td>
<td>2.3.3a PS The teacher shows the ability to use a</td>
</tr>
</tbody>
</table>

81
relationships between motivation, engagement, and self-efficacy, and knows how to design learning experiences using strategies that build learner self direction and ownership of learning.

variety of strategies that demonstrate the candidates' knowledge and understanding of how to select the appropriate teaching and learning activities, including laboratory or field settings and applicable instruments and technology.

2.3.3b PS The teacher incorporates differentiated instruction strategies to engage students with diverse learning needs.

2.3.3c PS The teacher incorporates tools of language development into planning and instruction, including strategies for making content accessible to English language learners and for evaluating and supporting their development of English proficiency.

2.3.2 CK The teacher creates learning environments where students have an opportunity to actively engage in the practices of science and engineering.

2.3.4a PS The teacher will develop lesson plans that include active inquiry lessons where students are collecting, analyzing and interpreting data.

2.3.4b PS The teacher will develop lesson plans that allow students to engage in developing and using models, constructing explanations and designing solutions, engaging in argument from evidence, and evaluating and communicating information.

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### Standard 3: Safety

**Effective teachers of science demonstrate and implement safety procedures, material safety practices, and the ethical treatment and use of living organisms (appropriate to their area of licensure).**

**Function 1:** The teacher implements safe and proper techniques for the preparation, storage, dispensing, supervision, and disposal of all materials.

<table>
<thead>
<tr>
<th>Content Knowledge</th>
<th>Professional Skill</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.1.1 CK The teacher understands safety considerations affecting the purchase, storage, maintenance, and disposal of materials such as minimizing quantities in ordering, tracking usage of materials and production of waste, and keeping current on inventory of materials.</td>
<td>3.1.3 PS The teacher understands, applies, and promotes the maintenance of a safe environment in accordance with the recommendations of the National Science Teachers Association.</td>
</tr>
<tr>
<td>3.1.2 CK The teacher understands proper techniques and precautions for controlling access to materials in the student laboratory including appropriate dispensing, supervision of materials, and handling of waste.</td>
<td>3.1.4 PS The teacher maintains an orderly environment, uses safe and appropriate storage of materials and equipment, and minimizing clutter so as to reduce the potential for accidents.</td>
</tr>
</tbody>
</table>

**Function 2:** The teacher designs and models activities to implement emergency procedures. The teacher understands the maintenance of safety equipment and follows policies and procedures that comply with established state and/or national guidelines. The teacher ensures safe science activities appropriate for the abilities of all students.

<table>
<thead>
<tr>
<th>Content Knowledge</th>
<th>Professional Skill</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.2.1 CK The teacher understands appropriate</td>
<td>3.2.3 PS The teacher designs and implements</td>
</tr>
</tbody>
</table>
emergency procedures and maintenance of safety equipment, policies and procedures that comply with established state and/or national guidelines.

activities that demonstrate emergency procedures and the proper use of safety equipment in accordance with the recommendations of the National Science Teachers Association.

3.2.2 CK The teacher understands how students' developmental levels affect safety in classroom, laboratory and field environments, and considers this in designing activities to maintain a safe environment.

3.2.4 PS The teacher enforces safe science practices in activities appropriate to the abilities of all students.

Function 3: The teacher designs and implements activities that demonstrate ethical decision-making with respect to the treatment of living organisms in and out of the classroom. The teacher emphasizes safe, humane, and ethical treatment of animals and complies with the legal restrictions on the collection, keeping, use, and treatment of living organisms.

Content Knowledge

3.3.1 CK The teacher understands the principles of ethical decision-making with respect to the treatment of living organisms in and out of the classroom.

3.3.4 PS The teacher designs and implements activities that demonstrate ethical decision-making with respect to the treatment of living organisms in and out of the classroom.

3.3.2 CK The teacher knows the legal restrictions on the collection, keeping, use, and treatment of living organisms.

3.3.5 PS The teacher complies with the legal restrictions on the collection, keeping, and use of living organisms.

3.3.3 CK The teacher is aware of hazards from exposure to allergens, toxins, and pathogens in the classroom, laboratory, or field environment.

Standard 4: Impact on Student Learning: Science teachers provide evidence that students’ understanding of disciplinary core ideas, science and engineering practices, and crosscutting concepts have increased in sophistication as a result of instruction. Candidates provide evidence representative of the entire population they teach.

Function 1: Collect, organize, analyze, and reflect on diagnostic, formative and summative evidence of student learning.

Content Knowledge

4.1.1 CK The teacher understands the various methodologies to assess and analyze student learning, and address misconceptions.

4.1.2 PS The teacher utilizes knowledge of appropriate developmental levels within the classroom environment.

4.1.3 PS The teacher reflects on formative and summative assessments, and adjusts instruction appropriately.

Function 2: Provide data to show that students are able to distinguish science from nonscience, understand the evolution and practice of science as a human endeavor, and critically analyze the quality of evidence supporting scientific claims.

Content Knowledge

4.2.1 CK The teacher understands the distinction between science and nonscience, and can distinguish between the two.

4.2.2 CK The teacher understands the history, development and practice of science as a human endeavor.

4.2.4 PS The teacher demonstrates that students are able to understand the distinction between science and nonscience, and can distinguish between the two.

4.2.5 PS The teacher demonstrates that students are able to understand the history, development and practice of science as a human endeavor.
4.2.3 CK The teacher critically analyzes the quality of evidence supporting scientific claims.

4.2.6 PS The teacher demonstrates that students are able to use mathematics to engage in argumentation and critically analyze the quality of evidence supporting scientific claims.

Standard 5: Professional Knowledge and Skills: Effective science teachers are aware of and engage in professional development opportunities to continually improve their knowledge and understanding of science content and pedagogy. They conduct themselves as part of the science education community.

Function 1: Teachers engage in professional development opportunities in their content field such as talks, symposiums, research opportunities, projects within their community, and/or social media.

<table>
<thead>
<tr>
<th>Content Knowledge</th>
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<tbody>
<tr>
<td>5.1.1 CK The teacher demonstrates an awareness of professional organizations in science/education, and professional development available from these organizations.</td>
<td>5.1.2 PS Teachers engage in professional development opportunities such as conferences, research opportunities, projects within their community, and/or social media.</td>
</tr>
</tbody>
</table>

Standard 6: Engineering, Technology, and the Applications of Science: The teacher demonstrates an understanding of concepts and practices of engineering, technology, and the applications of science that can be used in developing instruction for students.

Function 1: The teacher incorporates engineering design in instruction to solve problems. Engineering design includes the iterative processes of defining problems, developing solutions, and optimizing solutions.

<table>
<thead>
<tr>
<th>Content Knowledge</th>
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<tbody>
<tr>
<td>6.1.1 CK The teacher can define and delimit engineering problems with precision, and specify the goals intended to be reached.</td>
<td>6.1.4 PS The teacher develops and implements lessons in which students use engineering design principles (define the problem, develop solutions, and optimize solutions) in applications appropriate to their content area.</td>
</tr>
<tr>
<td>6.1.2 CK The teacher can develop possible solutions for a defined problem.</td>
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<tr>
<td>6.1.3 CK The teacher can systematically evaluate alternative solutions to engineering problems, analyzing data from tests of different solutions, and combining the best ideas into an improved solution.</td>
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Function2: The teacher makes authentic connections among engineering, technology, science, and society.

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<thead>
<tr>
<th>Content Knowledge</th>
<th>Professional Skills</th>
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</thead>
<tbody>
<tr>
<td>6.2.1 CK The teacher understands the interdependence of science, engineering, and technology.</td>
<td>6.2.3 PS The teacher incorporates into instruction examples of the interdependence of science, engineering, and technology. Examples include: 1) advances in scientific understanding in genetics can be translated into medical treatments, and 2) new technology such as advanced telescopes and probes provide new understandings of outer space.</td>
</tr>
<tr>
<td>6.2.2 CK The teacher understands the influences of engineering, technology, and science to the</td>
<td>6.2.4 PS The teacher incorporates into instruction examples of the influences of engineering, technology,</td>
</tr>
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</table>
broader society and environment.

Examples include: 1) how measurement technologies have changed civilizations throughout history, and 2) how the use of natural resources has impacted the natural world.

Standard 7: From molecules to organisms: Structures and processes: Effective biology teachers demonstrate an understanding of how organisms live and grow.

Function 1: Life processes in living systems including organization of matter and energy.

<table>
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<tr>
<th>Content Knowledge</th>
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<tbody>
<tr>
<td>7.1.1 CK Teacher candidate understands and is able to explain the methods and mechanisms by which energy enters and moves through living systems.</td>
<td>7.1.3 PS Teacher candidate models movement of energy and conservation of matter in biological systems.</td>
</tr>
<tr>
<td>7.1.2 CK Teacher candidate demonstrates understanding of biogeochemical cycles, biomolecules, and their relation to energy in systems.</td>
<td>7.1.4 PS Teacher candidate uses models to illustrate that cellular respiration is a chemical process whereby the bonds of food molecules and oxygen molecules are broken and the bonds in new compounds are formed resulting in a net transfer of energy.</td>
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Function 2: Similarities and differences among animals, plants, fungi, microorganisms, and viruses.

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<tr>
<th>Content Knowledge</th>
<th>Professional Skills</th>
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</thead>
<tbody>
<tr>
<td>7.2.1 CK Teacher candidate demonstrates knowledge of characteristic structures and functions used for classification of animals, plants, fungi, microorganisms, and viruses.</td>
<td>7.2.4 PS Teacher candidate can identify structures and explain their functions to learners.</td>
</tr>
<tr>
<td>7.2.2 CK Teacher candidate demonstrates understanding of organ systems, organs, and cellular structures and their functions within plants, animals, fungi, microorganisms, and viruses.</td>
<td>7.2.5 PS Teacher candidate can develop and use a model to illustrate the hierarchical organization of interacting systems of structures that provide specific functions within cellular and multicellular organisms.</td>
</tr>
<tr>
<td>7.2.3 CK Teacher candidate demonstrates understanding of growth and development in multicellular organisms.</td>
<td>7.2.6 PS Teacher candidate can model and explain growth and development of multicellular organisms.</td>
</tr>
</tbody>
</table>

Standard 8: Ecosystems: Interactions, energy, and dynamics: Effective biology teachers demonstrate an understanding of how and why do organisms interact with their environment, and what are the effects of these interactions.

Function 1: Ecological systems including the interrelationships and dependencies of organisms with each other and their environments.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>8.1.1 CK Teacher demonstrates understanding levels and interactions within ecological organization.</td>
<td>8.1.4 PS Teacher classifies biomes according to their biotic and abiotic components.</td>
</tr>
<tr>
<td>8.1.2 CK Teacher demonstrates understanding of energy flow and feeding relationships.</td>
<td>8.1.5 PS Teacher creates a trophic pyramid with organisms placed at an appropriate trophic level.</td>
</tr>
<tr>
<td>8.1.3 CK Teacher demonstrates understanding of</td>
<td>8.1.6 PS Teacher analyzes the impact of one</td>
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</table>
the interrelationships among ecosystems.

Function 2: Population dynamics and the impact of population on its environment.

<table>
<thead>
<tr>
<th>Content Knowledge</th>
<th>Professional Skills</th>
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<tbody>
<tr>
<td>8.2.1 CK Teacher demonstrates understanding of the factors that affect population size and growth rate.</td>
<td>8.2.4 PS Teacher investigates the impact of biotic and abiotic factors on the population size of a featured species.</td>
</tr>
<tr>
<td>8.2.2 CK Teacher demonstrates understanding of different growth population growth rates (zero, exponential, logistic).</td>
<td>8.2.5 PS Teacher collects and analyzes data of a species’ population growth with graphical representation and models.</td>
</tr>
<tr>
<td>8.2.3 CK Teacher demonstrates understanding of population density and its impact on the environment.</td>
<td>8.2.6 PS Teacher evaluates the development of life history patterns of a species and the impact on reproduction and survival.</td>
</tr>
</tbody>
</table>

Function 3: Behavior of organisms and their relationships to social systems.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>8.3.1 CK Teacher demonstrates understanding of interspecific relationships.</td>
<td>8.3.4 PS Teacher categorizes relationships between various species (predation, parasitism, commensalism, mutualism).</td>
</tr>
<tr>
<td>8.3.2 CK Teacher demonstrates understanding of human impact on ecological systems.</td>
<td>8.3.5 PS Teacher investigates and proposes alternative human activities to decrease greenhouse gas production, ozone layer depletion, and deforestation.</td>
</tr>
<tr>
<td>8.3.3 CK Teacher demonstrates understanding of the adaptive value of social behavior.</td>
<td>8.3.6 PS Teacher analyzes advantages and disadvantages of sociality on species populations.</td>
</tr>
</tbody>
</table>

Standard 9: Genetics and Heredity: Effective biology teachers demonstrate an understanding of how characteristics of one generation passed to the next and how individuals of the same species and even siblings have different characteristics.

Function 1: General Concepts of inheritance and variation of traits.

<table>
<thead>
<tr>
<th>Content Knowledge</th>
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</tr>
</thead>
<tbody>
<tr>
<td>9.1.1 CK Teacher demonstrates knowledge of Mendelian genetics and the chromosomal basis of inheritance.</td>
<td>9.1.3 PS Teacher can ask questions, make and defend a claim, and use concepts of probability to explain the genetic variation in a population.</td>
</tr>
<tr>
<td>9.1.2 CK Teacher demonstrate understanding of complex patterns of inheritance and how environment can affect expression.</td>
<td>9.1.5 PS Teacher can demonstrate understanding of why individuals of the same species vary in how they look, function, and behave.</td>
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</table>

Function 2: Molecular genetics and heredity and mechanisms of genetic modification.

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>9.2.1 CK Teacher understands molecular mechanisms of genetic inheritance.</td>
<td>9.2.3 PS Teacher asks questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.</td>
</tr>
<tr>
<td>9.2.2 CK Teacher describes the environmental and genetic causes of gene mutation and the alteration of</td>
<td>9.2.4 PS Teacher can make and defend a claim based on evidence that inheritable genetic</td>
</tr>
</tbody>
</table>
gene expression.

variations may result from (1) new genetic combinations through meiosis and sexual reproduction, (2) viable errors occurring during replications, and/or (3) mutations caused by environmental factors.

**Standard 10: Biological Evolution: Unity and diversity: Effective biology teachers demonstrate an understanding of evolution and evidence shows that different species are related.**

**Function 1: Molecular basis for evolutionary theory and classification.**

<table>
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<tbody>
<tr>
<td>10.1.1 CK Teacher demonstrates an understanding of the idea of common ancestry and biological evolution.</td>
<td>10.1.4 PS Teacher can construct an explanation based on evidence for how natural selection leads to adaptation and genetic change in populations.</td>
</tr>
<tr>
<td>10.1.2 CK Teacher demonstrates knowledge of the factors which influence evolution &amp; evolution rates (environment, genetics, competition, etc.).</td>
<td>10.1.5 PS Teacher can explain the effect of various factors (such as availability of resources) on population survival and competition.</td>
</tr>
<tr>
<td>10.1.3 CK Teacher demonstrates understanding of connections between genetics &amp; the evolutionary process.</td>
<td>10.1.6 PS Teacher can utilize evidence, statistics and probability to support explanations for advantageous traits spreading through populations.</td>
</tr>
</tbody>
</table>
Standard #1 The teacher of biology demonstrates an understanding of the structure and function of cells.

**Knowledge**
1. The teacher knows that cells are composed of a variety of specialized structures that carry out specific functions.
2. The teacher knows that cells function and replicate as a result of information stored in DNA and RNA molecules.
3. The teacher knows that some plant cells contain chloroplasts, which are the sites of photosynthesis.
4. The teacher knows that cells can differentiate, thereby enabling complex multicellular organisms to form.

**Performance**
1. The teacher conducts and oversees appropriate lab work related to the structure and function of cells.
2. The teacher can utilize the content in this standard at a substantially greater depth than the level taught to students.

Standard #2 The teacher of biology demonstrates an understanding of chromosomes, genes, and the molecular basis of heredity.

**Knowledge**
1. The teacher understands genetics, including single gene and polygenic traits.
2. The teacher understands how DNA and RNA function as genetic material.
3. The teacher understands how DNA specifies the characteristics of most organisms.
4. The teacher understands the nature of autosomal and sex chromosomes.
5. The teacher understands the consequences of mutations in DNA.

**Performance**
1. The teacher conducts and oversees appropriate lab work related to chromosomes, genes, and the molecular basis of heredity.
2. The teacher can utilize the content in this standard at a substantially greater depth than the level taught to students.

Standard #3 The teacher of biology demonstrates an understanding of major concepts of biological evolution.

**Knowledge**
1. The teacher understands the major concepts of biological evolution.
2. The teacher understands that the theory of evolution is both the descent with modification of different lineages of organisms, including humans, from common ancestors and the ongoing adaptation of organisms to environmental challenges and changes.
3. The teacher knows the primary mechanisms of evolution are natural selection and genetic drift.
4. The teacher knows the sources and biological significance of variation.

**Performance**
1. The teacher can utilize the content in this standard at a substantially greater depth than the level taught to students.
Standard #4  The teacher of biology demonstrates an understanding of the interdependence of organisms and their interaction with the physical environment including energy flow, nutrient cycling, and population dynamics.

Knowledge
1. The teacher knows that atoms and molecules on the earth cycle among the living and nonliving components of the biosphere.
2. The teacher knows that energy flows through ecosystems.
3. The teacher knows that organisms interact in ecosystems.
4. The teacher knows that living organisms have the capacity to produce populations of infinite size, but environments and resources are finite; this fundamental tension has profound effects on the interactions among organisms.
5. The teacher knows that living systems require a continuous input of energy to maintain their chemical and physical organization.
6. The teacher knows that energy for life primarily derives from the sun through the process of photosynthesis.
7. The teacher knows that chemical bonds of food molecules contain energy; this is made available by cellular respiration.
8. The teacher knows that the structure and function of an organism serves to acquire, transform, transport, release, and eliminate the matter and energy used to sustain the organism.
9. The teacher knows that the distribution and abundance of organisms and populations in ecosystems are limited by the availability of matter and energy, and the ability of the ecosystem to recycle materials.
10. The teacher knows that matter and energy flow through different levels of organization of living systems—cells, organs, organisms, communities—and between living systems and the physical environment, chemical elements are recombined in different ways. Each recombination results in the storage of some energy and a dissipation of some energy into the environment as heat.

Performance
1. The teacher conducts and oversees appropriate lab work and/or fieldwork related to organisms and their interaction with the physical environment.
2. The teacher can utilize the content in this standard at a substantially greater depth than the level taught to students.

Standard #5   The teacher of biology demonstrates an understanding of the basic behavior of animals.

Knowledge
1. The teacher knows that animals have behavioral responses to internal changes and to external stimuli.
2. The teacher knows that most multicellular animals have nervous systems that form the basis of behavior.
3. The teacher knows that animal behaviors evolve through natural selection.

Performance
1. The teacher can utilize the content in this standard at a substantially greater depth than the level taught to students.

Standard #6   The teacher of biology demonstrates an understanding of the structure, function, and diversity of organisms.

Knowledge
1. The teacher knows the basic biology, diversity, ecology, and medical effects of microbiological agents, including viruses, bacteria, protists, and prions.
2. The teacher knows the basic biology, diversity, ecology, and medical effects of fungi.
3. The teacher knows the basic biology, diversity, ecology, and human relationships of plants.
4. The teacher knows the basic biology, diversity, anatomy, ecology, and medical effects of major animal groups.

**Performance**
1. The teacher conducts and oversees lab work and/or fieldwork related to the structure, function, and diversity of organisms.
2. The teacher can utilize the content in this standard at a substantially greater depth than the level taught to students.

**Standard #7  The teacher of biology demonstrates an understanding of the overall functioning of human systems and their interaction with the environment relative to specific mechanisms and processes related to health issues and human sexuality.**

**Knowledge**
1. The teacher knows that human anatomy involves complex, soft, wet tissues, and organs that must operate properly as systems.
2. The teacher knows that infections, developmental problems, trauma, and aging result in specific diseases and disorders.
3. The teacher knows the structures and processes of human development and reproduction including human sexuality, including information about sexually transmitted diseases, especially acquired immune deficiency syndrome (AIDS).
4. The teacher understands the overall functioning of human systems and their interaction with the environment relative to specific mechanisms and processes related to health issues.
5. The teacher knows that the severity of disease symptoms is dependent on many factors, such as human resistance and the virulence of the disease-producing organism.
6. The teacher understands that informed personal choices concerning fitness and health involve understanding of chemistry and biology.
7. The teacher knows that the selection of foods and eating patterns determine nutritional balance.
8. The teacher knows that sexuality is a normal part of human development.

**Performance**
1. The teacher can utilize the content in this standard at a substantially greater depth than the level taught to students.

**Standard #8  The teacher of biology demonstrates an understanding of population growth.**

**Knowledge**
1. The teacher knows that the combined effects of birth and death, and emigration and immigration determine the rate of change in populations.
2. The teacher knows that a variety of factors influence birth rates and fertility rates.
3. The teacher knows that populations can reach limits to growth.

**Performance**
1. The teacher can utilize the content in this standard at a substantially greater depth than the level taught to students.

**Standard #9  The teacher of biology demonstrates an understanding of the nature of inquiry and the ability necessary to help students do scientific inquiry.**

**Knowledge**
1. The teacher understands the nature of scientific inquiry.

**Performance**
1. The teacher develops, through experiences, a rich understanding and curiosity of the natural (material) world.
2. The teacher develops questions and demonstrates an understanding of the concepts that guide scientific investigations.
3. The teacher designs and conducts scientific investigations.
4. The teacher uses technology and mathematics to improve investigations and communications.
5. The teacher formulates and revises scientific explanations and models using logic and evidence.
6. The teacher recognizes and analyzes alternative explanations and models.
7. The teacher communicates and defends a scientific argument.
8. The teacher plans and implements activities with different structures for inquiry including inductive (exploratory), correlational and deductive (experimental) studies.
9. The teacher uses questions to encourage inquiry and probe for divergent student responses, encouraging student questions, and responding with questions when appropriate.
10. The teacher encourages productive peer interactions and plans both individual and small group activities to facilitate inquiry.
11. The teacher plans and implements data-based activities requiring students to reflect upon their findings, make inferences, and link new ideas to preexisting knowledge.

Standard #10   The teacher of biology demonstrates an understanding of the basic relationships between science and technology.

Knowledge
1. The teacher understands that creativity, imagination, and a broad knowledge base are all required in the work of science and engineering.
2. The teacher knows that scientists in different disciplines ask different questions, use different methods of investigation, and accept different types of evidence to support their explanations.
3. The teacher knows that progress in science and technology can be affected by social issues and challenges.
4. The teacher knows that science and technology are pursued for different purposes.
5. The teacher knows that science advances new technologies. New technologies open new areas for scientific inquiry.
6. The teacher knows that scientific knowledge is made public through presentation at professional meetings and publications in scientific journals, while technological knowledge is often not shared for a variety of reasons.
7. The teacher knows that science and technology are essential components of modern society. Science and technology indicate what can happen, not what should happen. The latter involves human decisions about the use of knowledge.
8. The teacher understands that basic concepts and principles of science and technology should precede active debate about the economics, policies, politics, and ethics of various challenges related to science and technology.

Performance
1. The teacher can demonstrate the basic relationship between biology and technology.

Standard #11   The teacher of biology demonstrates an understanding of science as a human endeavor, of the nature of science, and of science from historical perspectives.

Knowledge
1. The teacher has first-hand knowledge of how to engage in extended science inquiry in a laboratory setting. Just as preservice teachers need to engage in practice teaching, they need to engage in practicing science.
2. The teacher has an understanding of science as both vocation and avocation.
3. The teacher recognizes the universality of basic science concepts and the influence of personal and cultural beliefs that embed science in society.
4. The teacher recognizes that society helps create the ways of thinking (mindsets) required for scientific advances, both toward training scientists and the education of a populace to utilize benefits of science (e.g., standards of hygiene, attitudes toward forces of nature, etc.).

5. The teacher recognizes society’s role in supporting topics of research and determining institutions where research is conducted.

**Performance**

1. The teacher relates science content to the real world.
2. The teacher links the study of biology to career opportunities.
3. The teacher explains how science uses peer review, replication of methods, and norms of honesty.
4. The teacher demonstrates an understanding of the nature of scientific knowledge and that science is a way of knowing.
5. The teacher explains the rules of evidence and can distinguish characteristics of knowledge in science from rules and knowledge in other disciplines.
6. The teacher explains and provides examples of conventions for research, evidence and explanation, distinguishing laws, theories, and hypotheses.
7. The teacher explains the history of science, including the historical development of current science theories and knowledge.

1. The teacher uses mathematics and statistics to analyze and interpret data in the context of science.
2. The teacher demonstrates an ability to do limited but original research in science.

**Standard #12** The teacher of biology demonstrates an understanding of the concepts and processes unifying science domains.

**Knowledge**

1. The teacher understands how the concepts and processes of system, order and organization; evidence, models and explanation; constancy, change and measurement; patterns of cumulative change; and form and function, unify the various domains of science.
2. The teacher demonstrates a basic understanding of the basic concepts and principles of chemistry, earth and space science, and physics as they relate to understanding biology.

**Performance**

1. The teacher relates science concepts to each other and even to ideas in other academic areas.
2. The teacher understands how the knowledge and mastery of each concept of biology grows and develops across the grade levels and adjusts instruction accordingly.
3. The teacher explains, answers questions, guides inquiry, generalizes accurately, and mentors and guides advanced students who need and benefit from the enrichment of their lessons due to the greater personal knowledge of physics than that expected of students.

**Standard #13** The teacher of biology demonstrates an understanding of and an ability to teach science effectively.

**Knowledge**

1. The teacher understands how students learn science concepts and develop the abilities of science inquiry.
2. The teacher understands the abilities and developmental readiness of students to learn biology content and skills.
3. The teacher understands how to use appropriate applications of advanced technologies in teaching science.

**Performance**
1. The teacher identifies common student misconceptions in science, their source, and an appropriate teaching response.

2. The teacher provides the opportunity for student discovery and application of knowledge.

3. The teacher plans and uses science teaching strategies and models appropriate for learners with diverse backgrounds, abilities, and learning styles.

4. The teacher encourages students to develop scientific reasoning, critical thinking, and problem solving skills.

5. The teacher designs and adapts procedures and protocols for students to plan, execute, and communicate the results of laboratory and field-based studies in biology.

6. The teacher demonstrates the ability to effectively engage students in learning science, both individually and in-group work of various kinds.

7. The teacher facilitates student planned and conducted investigations.

**Standard #14  The teacher of biology enacts a science curriculum that integrates content within the sciences and among other disciplines.**

**Knowledge**

1. The teacher understands national and state standards for science education.

2. The teacher understands the importance of the district and school framework of goals, plans, materials, and resources for enacting quality science instruction.

3. The teacher is familiar with high-quality curricular materials in science.

4. The teacher knows several strategies for developing integrated units with science as the connecting theme.

5. The teacher knows where and how to access appropriate materials for conducting science investigations with students.

**Performance**

1. The teacher relates instructional goals, materials, and actions to state and national science education standards, analyzing strengths and weaknesses in a particular classroom context.

2. The teacher identifies, evaluates, and selects a diverse set of appropriate and potentially useful instructional materials in science from a variety of sources including the World Wide Web.

3. The teacher develops and implements course plans, unit plans, and lesson plans with clear rationales, goals, methods, materials, and assessments.

4. The teacher creates learning experiences that integrate subject matter within the science disciplines and with other subjects using real life problems.

5. The teacher designs and implements learning activities that thematically relate science with other school subjects and community resources.

6. The teacher fosters student development and application of skills in language arts and mathematics in learning science.

7. The teacher demonstrates an awareness of current science curriculum issues and resources.

**Standard #15  The teacher of biology understands how to relate science to the daily lives and interests of students and to a larger framework of human endeavor and understanding.**

**Knowledge**

1. The teacher is aware of social and political issues in the community that are dependent upon an understanding of biology.

2. The teacher understands how biology concepts and processes are used in real life situations.

3. The teacher understands and relates the application of biology concepts to technological, societal, and cultural issues.

**Performance**

1. The teacher engages students in activities and projects in which they examine important social or technological issues related to biology.
2. The teacher engages students in investigating local biology and technological issues.
3. The teacher instructs students in the processes of decision-making about biology and technological issues and applications.
4. The teacher relates biology to the interest of students, to potential careers, and to knowledge in other domains.

**Standard #16** The teacher of biology assesses students’ educational progress through a variety of methods.

**Knowledge**
1. The teacher knows how to align standards, goals, instruction, outcomes, and assessments in biology.
2. The teacher knows a variety of assessment strategies to evaluate the cognitive, psychomotor, social, and personal development of the learner in all aspects of biology.
3. The teacher knows techniques for identifying prior knowledge of biology concepts and abilities that lead students to construct new understandings.

**Performance**
1. The teacher uses the most appropriate methods for gathering information about student learning aligned with instructional goals and based on student characteristics, needs, and abilities.
2. The teacher demonstrates the ability to use multiple strategies to assess teaching and learning authentically consistent with national standards and goals for biology education.

**Standard #17** The teacher of biology designs and manages safe and supportive learning environments.

**Knowledge**
1. The teacher understands the elements of a safe environment in all areas related to biology instruction.
2. The teacher understands liability and negligence, especially as it applies to biology teaching.
3. The teacher understands how to design, adapt, and use physical space, the outdoors, equipment, and resources to establish a positive learning environment.
4. The teacher understands the psychological and social environment conducive to the students’ intellectual, social, and personal growth in biology education.
5. The teacher understands the norms and values of a science learning community.
6. The teacher knows the standards and commendations of the science education community for the safe and ethical use and care of animals for science instruction.

**Performance**
1. The teacher sets up procedures for safe handling, labeling, storage, and disposal of chemicals, electrical equipment, and science materials.
2. The teacher takes appropriate actions to prevent accidents in the laboratory and field.
3. The teacher follows appropriate procedures for reporting an emergency.
4. The teacher establishes the elements of an exciting and stimulating environment for biology.
5. The teacher establishes a productive learning community in the biology classroom.
6. The teacher plans and develops opportunities for students to learn from resources, events, and displays in the environment.
7. The teacher handles and cares for animals in a safe and ethical manner.

**Standard #18** The teacher of biology improves teaching through ongoing professional practice.

**Knowledge**
1. The teacher understands the ethical standards and responsibilities of a professional science teacher.
2. The teacher is aware of the professional organizations and professional development opportunities available to support biology teachers.

**Performance**

1. The teacher accepts responsibility for working collaboratively with students, members of the community, and other educators to improve science education.
2. The teacher develops and states personal goals and philosophy of teaching based on research and contemporary values of the science education community.
3. The teacher becomes involved in professional science education activities and shares knowledge and ideas with colleagues.
Crosswalk: Previous versus New Earth and Space Science (6-12) Standards

General Information about this Revision:
» The structure has changed to include Professional Skills indicators rather than the previous Performance indicators.
» The previous standards only had indicators listed in each standard while the new standards are broken down by Functions and then have the two types of indicators within each Function.
» The new Earth Science standards are significantly different enough from the previous standards that a standard by standard crosswalk is not helpful. In the chart below, the previous standards are presented in the first column for reference purposes. The new standards are presented in the middle column with notations to the right.
» The new Earth Science standards are focused on depth of knowledge of the important topics in Earth and Space Sciences.

<table>
<thead>
<tr>
<th>Standard 1</th>
<th>PREVIOUS STANDARDS</th>
<th>NEW STANDARDS</th>
<th>WHAT CHANGED?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard #1 The teacher of earth and space science demonstrates an understanding of the sources of energy that power the dynamic earth system.</td>
<td>Standard #1 The teacher of earth and space science demonstrates an understanding of the sources of energy that power the dynamic earth system.</td>
<td>Standard 1: Content Pedagogy: Effective science teachers understand how students learn and develop science concepts and practices. They incorporate disciplinary core ideas, scientific and engineering practices, and crosscutting concepts into instruction.</td>
<td>• Old Standard 1 is incorporated in new standard 8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard 2</th>
<th>PREVIOUS STANDARDS</th>
<th>NEW STANDARDS</th>
<th>WHAT CHANGED?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard #2 The teacher of earth and space science demonstrates an understanding of the actions and the interactions of the earth’s subsystems: the geosphere, hydrosphere, atmosphere, and biosphere.</td>
<td>Standard #2 The teacher of earth and space science demonstrates an understanding of the actions and the interactions of the earth’s subsystems: the geosphere, hydrosphere, atmosphere, and biosphere.</td>
<td>Standard 2: Learning Environments: Teachers work with students and others to create and manage environments that support learning.</td>
<td>• Old Standard 2 is incorporated in new standard 8</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Standard 3</th>
<th>PREVIOUS STANDARDS</th>
<th>NEW STANDARDS</th>
<th>WHAT CHANGED?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard #3 The teacher of earth and space science demonstrates an understanding of the origin and evolution of the dynamic earth system.</td>
<td>Standard #3 The teacher of earth and space science demonstrates an understanding of the origin and evolution of the dynamic earth system.</td>
<td>Standard 3: Safety: Effective teachers of science demonstrate and implement safety procedures, material safety practices, and the ethical treatment and use of living organisms (appropriate to their area of licensure).</td>
<td>• Old standard 13 is incorporated in new standard 3</td>
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<tr>
<td></td>
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<td></td>
<td>• New standard 3 focuses on the safety of the physical environment.</td>
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<td>• Old Standard 3 is incorporated in new standard 8</td>
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<td>Standard 4</td>
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<tr>
<td><strong>PREVIOUS STANDARDS</strong></td>
<td><strong>NEW STANDARDS</strong></td>
<td><strong>WHAT CHANGED?</strong></td>
<td></td>
</tr>
<tr>
<td>Standard #4 The teacher of earth and space science demonstrates an understanding of the organization of the universe and its development.</td>
<td>Standard 4: Impact on Student Learning: Science teachers provide evidence that students’ understanding of disciplinary core ideas, science and engineering practices, and crosscutting concepts have increased in sophistication as a result of instruction. Candidates provide evidence representative of the entire population they teach.</td>
<td>• Old Standard 4 is incorporated in new standard 7</td>
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<tr>
<th>Standard 5</th>
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<tbody>
<tr>
<td><strong>PREVIOUS STANDARDS</strong></td>
<td><strong>NEW STANDARDS</strong></td>
<td><strong>WHAT CHANGED?</strong></td>
</tr>
<tr>
<td>Standard #5 The teacher of earth and space science demonstrates an understanding of the nature of inquiry and the ability necessary to help students do scientific inquiry.</td>
<td>Standard 5: Professional Knowledge and Skills: Effective science teachers are aware of and engage in professional development opportunities to continually improve their knowledge and understanding of science content and pedagogy. They conduct themselves as part of the science education community.</td>
<td>• Old Standard 14 is incorporated in new standard 5</td>
</tr>
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<th>Standard 6</th>
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<tbody>
<tr>
<td><strong>PREVIOUS STANDARDS</strong></td>
<td><strong>NEW STANDARDS</strong></td>
<td><strong>WHAT CHANGED?</strong></td>
</tr>
</tbody>
</table>
| Standard #6 The teacher of earth and space science demonstrates an understanding of the basic relationships between science and technology. | Standard 6: Engineering, Technology, and the Applications of Science: The teacher demonstrates an understanding of concepts and practices of engineering, technology, and the applications of science in developing instruction for students. | • Language was updated  
• Engineering and the applications of science were included |

<table>
<thead>
<tr>
<th>Standard 7</th>
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<tbody>
<tr>
<td><strong>PREVIOUS STANDARDS</strong></td>
<td><strong>NEW STANDARDS</strong></td>
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</table>
### Standard #7
The teacher of earth and space science demonstrates an understanding of science as a human endeavor, of the nature of science, and of science from historical perspectives.

Standard 7: Earth’s Place in the Universe: Origin, evolution and properties of the Universe. Effective science teachers demonstrate an understanding of the properties of the Universe, the Earth’s place within the Universe, and origin and evolution of the Universe.

- Old Standard 7 is incorporated in new standard 9

### Standard 8

<table>
<thead>
<tr>
<th>PREVIOUS STANDARDS</th>
<th>NEW STANDARDS</th>
<th>WHAT CHANGED?</th>
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</thead>
</table>
| Standard #8 The teacher of earth and space science demonstrates an understanding of the concepts and processes unifying science domains. | Standard 8: Earth’s Materials and Systems: The teacher of earth and space science demonstrates an understanding of the energy sources, processes and cycles within the Earth System. | - Old Standard 1 is incorporated in new standard 8  
- Old Standard 2 is incorporated in new standard 8 |

### Standard 9

<table>
<thead>
<tr>
<th>PREVIOUS STANDARDS</th>
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</thead>
<tbody>
<tr>
<td>Standard #9 The teacher of earth and space science demonstrates an understanding of and an ability to teach science effectively.</td>
<td>Standard 9: Earth and human activity: The teacher of Earth and Space sciences demonstrates an understanding of society’s interactions with the planet. How Earth’s processes affect humans and human culture, and how humans affect Earth’s systems.</td>
<td>- Old Standard 7 is incorporated in new standard 9</td>
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</table>

### Standard 10

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<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>Standard #10 The teacher of earth and space science enacts a science curriculum that integrates content within the sciences and among other disciplines.</td>
<td>none</td>
<td>- Incorporated into new standards</td>
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</tbody>
</table>

### Standard 11

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<thead>
<tr>
<th>PREVIOUS STANDARDS</th>
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<tr>
<td>Standard #11 The teacher of earth and space science understands how to relate science to the daily lives and interests of students and to a</td>
<td>none</td>
<td>- Incorporated into new standards</td>
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</tbody>
</table>
larger framework of human endeavor and understanding.

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<tr>
<th>Standard 12</th>
<th>PREVIOUS STANDARDS</th>
<th>NEW STANDARDS</th>
<th>WHAT CHANGED?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard #12 The teacher of earth and space science assesses students’ educational progress through a variety of methods.</td>
<td>none</td>
<td></td>
<td>• Incorporated into new standards</td>
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</table>

<table>
<thead>
<tr>
<th>Standard 13</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Standard #13 The teacher of earth and space science designs and manages safe and supportive learning environments.</td>
<td>none</td>
<td></td>
<td>• Old standard 13 is incorporated in new standard 2</td>
</tr>
</tbody>
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<tr>
<th>Standard 14</th>
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<th>WHAT CHANGED?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard #14 The teacher of earth and space science improves teaching through ongoing professional practice.</td>
<td>none</td>
<td></td>
<td>• Incorporated into new standards</td>
</tr>
</tbody>
</table>
**Learner(s) is defined as children including those with disabilities or exceptionalities, who are gifted, and students who represent diversity based on ethnicity, race, socioeconomic status, gender, language, religion, and geographic origin.

<table>
<thead>
<tr>
<th>Standard 1: Content Pedagogy: Effective science teachers understand how students learn and develop science concepts and practices. They incorporate disciplinary core ideas, scientific and engineering practices, and crosscutting concepts into instruction.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function 1: Teacher plans multiple lessons using a variety of inquiry approaches incorporating science and engineering practices.</td>
</tr>
<tr>
<td><strong>Content Knowledge</strong></td>
</tr>
<tr>
<td>1.1.1 CK Knows how to locate resources, design and conduct inquiry-based open-ended science investigations, interpret findings, communicate results, and make judgments based on evidence.</td>
</tr>
<tr>
<td>1.1.3 PS The teacher is able to develop lessons for students that demonstrate knowledge of the practices of science and engineering by questioning, defining problems, modeling, investigating, and analyzing evidence in order to construct explanations and alternative explanations.</td>
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</tbody>
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<thead>
<tr>
<th>Function 2: Teacher demonstrates knowledge and understanding of how diverse students learn science.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content Knowledge</strong></td>
</tr>
<tr>
<td>1.2.1 CK Knows learning is influenced by cultural and environmental differences of the student and family.</td>
</tr>
<tr>
<td>1.2.2 CK Understands developmentally and chronologically age-appropriate needs and practices of students.</td>
</tr>
<tr>
<td>1.2.3 CK Understands diverse learning styles.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Function 3: The teacher designs instruction and assessment strategies that confront and address naïve concepts/preconceptions.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content Knowledge</strong></td>
</tr>
<tr>
<td>1.3.1 CK The teacher knows learning is influenced by cultural and environmental differences of the student and family.</td>
</tr>
<tr>
<td>1.3.2 CK The teacher understands formative and summative assessment and how they are used.</td>
</tr>
</tbody>
</table>
### Standard 2: Learning Environments: Teachers work with students and others to create and manage environments that support learning.

#### Function 1: The teacher supports individual and group learning.

<table>
<thead>
<tr>
<th>Content Knowledge</th>
<th>Professional Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1.1 CK The teacher understands the importance of rigor, respect, and responsibility for the learning environment.</td>
<td>2.1.3 PS The teacher sets and articulates appropriate goals that are consistent with knowledge of how students learn science.</td>
</tr>
<tr>
<td>2.1.2 CK The teacher understands how teacher feedback influences student learning.</td>
<td>2.1.4 PS The teacher sets goals that are aligned with state and other professional standards.</td>
</tr>
<tr>
<td></td>
<td>2.1.5 PS The teacher manages the environment to make learning experiences appropriately challenging.</td>
</tr>
</tbody>
</table>

#### Function 2: The teacher encourages positive social interaction.

<table>
<thead>
<tr>
<th>Content Knowledge</th>
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</tr>
</thead>
<tbody>
<tr>
<td>2.2.1 CK The teacher understands how learner diversity can affect communication and knows how to communicate effectively in differing environments.</td>
<td>2.2.3a PS The teacher plans fair and equitable assessment strategies to analyze student learning and to evaluate if the learning goals are met.</td>
</tr>
<tr>
<td></td>
<td>2.2.3b PS The teacher promotes celebration of learning by providing positive reinforcement and encouraging learners to present work demonstrating their learning and interacting with community members about their work.</td>
</tr>
<tr>
<td></td>
<td>2.2.3c PS The teacher communicates verbally and nonverbally, with families, communities, colleagues, and other professionals, in ways that demonstrate respect for and responsiveness to the cultural backgrounds and differing perspectives learners bring to the learning environment.</td>
</tr>
<tr>
<td></td>
<td>2.2.3d PS The teacher knows how to help learners work productively and cooperatively with each other to achieve learning goals.</td>
</tr>
<tr>
<td>2.2.2 CK The teacher understands how learning occurs, how learners construct knowledge, acquire skills, and develop disciplined thinking processes and knows how to use instructional strategies that promote student learning.</td>
<td>2.2.4a PS The teacher develops plans that reflect the nature and social context of science and inquiry.</td>
</tr>
<tr>
<td></td>
<td>2.2.4b PS The teacher creates developmentally appropriate instruction that takes into account individual learners' strengths, interests, and needs and that enables each learner to advance and accelerate his/her learning.</td>
</tr>
</tbody>
</table>

#### Function 3: The teacher promotes active engagement in learning and self-motivation.

<table>
<thead>
<tr>
<th>Content Knowledge</th>
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</thead>
<tbody>
<tr>
<td>2.3.1 CK The teacher understands the relationships between motivation, engagement, and self-efficacy, and knows how to design learning experiences using strategies that build learner self-direction and ownership of learning.</td>
<td>2.3.3a PS The teacher shows the ability to use a variety of strategies that demonstrate the candidates' knowledge and understanding of how to select the appropriate teaching and learning activities, including laboratory or field settings and applicable instruments and technology.</td>
</tr>
<tr>
<td></td>
<td>2.3.3b PS The teacher incorporates differentiated instruction strategies to engage students with diverse learning needs.</td>
</tr>
</tbody>
</table>
2.3.3c PS The teacher incorporates tools of language development into planning and instruction, including strategies for making content accessible to English language learners and for evaluating and supporting their development of English proficiency.

2.3.2 CK The teacher creates learning environments where students have an opportunity to actively engage in the practices of science and engineering.

2.3.4a PS The teacher will develop lesson plans that include active inquiry lessons where students are collecting, analyzing and interpreting data.

2.3.4b PS The teacher will develop lesson plans that allow students to engage in developing and using models, constructing explanations and designing solutions, engaging in argument from evidence, and evaluating and communicating information.

<table>
<thead>
<tr>
<th>Standard 3: Safety: Effective teachers of science demonstrate and implement safety procedures, material safety practices, and the ethical treatment and use of living organisms (appropriate to their area of licensure).</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Function 1:</strong> The teacher implements safe and proper techniques for the preparation, storage, dispensing, supervision, and disposal of all materials.</td>
</tr>
<tr>
<td><strong>Content Knowledge</strong></td>
</tr>
<tr>
<td>3.1.1 CK The teacher understands safety considerations affecting the purchase, storage, maintenance, and disposal of materials such as minimizing quantities in ordering, tracking usage of materials and production of waste, and keeping current on inventory of materials.</td>
</tr>
<tr>
<td><strong>Professional Skill</strong></td>
</tr>
<tr>
<td>3.1.3 PS The teacher understands, applies, and promotes the maintenance of a safe environment in accordance with the recommendations of the National Science Teachers Association.</td>
</tr>
<tr>
<td>3.1.2 CK The teacher understands proper techniques and precautions for controlling access to materials in the student laboratory including appropriate dispensing, supervision of materials, and handling of waste.</td>
</tr>
<tr>
<td>3.1.4 PS The teacher maintains an orderly environment, uses safe and appropriate storage of materials and equipment, and minimizes clutter so as to reduce the potential for accidents.</td>
</tr>
</tbody>
</table>

**Function 2:** The teacher designs and models activities to implement emergency procedures. The teacher understands the maintenance of safety equipment and follows policies and procedures that comply with established state and/or national guidelines. The teacher ensures safe science activities appropriate for the abilities of all students.

| **Content Knowledge** |
| 3.2.1 CK The teacher understands appropriate emergency procedures and maintenance of safety equipment, policies and procedures that comply with established state and/or national guidelines. |
| **Professional Skill** |
| 3.2.3 PS The teacher designs and implements activities that demonstrate emergency procedures and the proper use of safety equipment in accordance with the recommendations of the National Science Teachers Association. |
| 3.2.2 CK The teacher understands how students' developmental levels affect safety in classroom, laboratory and field environments, and considers this in designing activities to maintain a safe environment. |
| 3.2.4 PS The teacher enforces safe science practices in activities appropriate to the abilities of all students. |

**Function 3:** The teacher designs and implements activities that demonstrate ethical decision-making with respect to the treatment of living organisms in and out of the classroom. The teacher emphasizes safe, humane, and ethical treatment of animals and complies with the legal restrictions on the collection, keeping, use, and treatment of living organisms.

| **Content Knowledge** |
| 3.2.3 CK The teacher understands how students' developmental levels affect safety in classroom, laboratory and field environments, and considers this in designing activities to maintain a safe environment. |
| **Professional Skill** |
| 3.2.4 PS The teacher enforces safe science practices in activities appropriate to the abilities of all students. |
3.3.1 CK The teacher understands the principles of ethical decision-making with respect to the treatment of living organisms in and out of the classroom.

3.3.2 CK The teacher knows the legal restrictions on the collection, keeping, use, and treatment of living organisms.

3.3.3 CK The teacher is aware of hazards from exposure to allergens, toxins, and pathogens in the classroom, laboratory, or field environment.

3.3.4 PS The teacher designs and implements activities that demonstrate ethical decision-making with respect to the treatment of living organisms in and out of the classroom.

3.3.5 PS The teacher complies with the legal restrictions on the collection, keeping, and use of living organisms.

### Standard 4: Impact on Student Learning
Science teachers provide evidence that students’ understanding of disciplinary core ideas, science and engineering practices, and crosscutting concepts have increased in sophistication as a result of instruction. Candidates provide evidence representative of the entire population they teach.

#### Function 1: Collect, organize, analyze, and reflect on diagnostic, formative and summative evidence of student learning.

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td>4.1.1 CK The teacher understands the various methodologies to assess and analyze student learning, and address misconceptions.</td>
<td>4.1.2 PS The teachers utilize knowledge of appropriate developmental levels within the classroom environment.</td>
</tr>
<tr>
<td>4.1.3 PS The teacher reflects on formative and summative assessments, and adjusts instruction appropriately.</td>
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</table>

#### Function 2: Provide data to show that students are able to distinguish science from nonscience, understand the evolution and practice of science as a human endeavor, and critically analyze the quality of evidence supporting scientific claims.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>4.2.1 CK The teacher understands the distinction between science and nonscience, and can distinguish between the two.</td>
<td>4.2.4 PS The teacher demonstrates that students are able to understand the distinction between science and nonscience, and can distinguish between the two.</td>
</tr>
<tr>
<td>4.2.2 CK The teacher understands the history, development and practice of science as a human endeavor.</td>
<td>4.2.5 PS The teacher demonstrates that students are able to understand the history, development and practice of science as a human endeavor.</td>
</tr>
<tr>
<td>4.2.3 CK The teacher critically analyzes the quality of evidence supporting scientific claims.</td>
<td>4.2.6 PS The teacher demonstrates that students are able to critically analyze the quality of evidence supporting scientific claims.</td>
</tr>
</tbody>
</table>

### Standard 5: Professional Knowledge and Skills
Effective science teachers are aware of and engage in professional development opportunities to continually improve their knowledge and understanding of science content and pedagogy. They conduct themselves as part of the science education community.

#### Function 1: Teachers engage in professional development opportunities in their content field such as talks, symposiums, research opportunities, projects within their community, and/or social media.

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<tbody>
<tr>
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<tr>
<td>5.1.1 CK</td>
<td>The teacher demonstrates an awareness of professional organizations in science/education, and professional development available from these organizations.</td>
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<tr>
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</tr>
<tr>
<td>5.1.2 PS</td>
<td>Teachers engage in professional development opportunities such as conferences, research opportunities, projects within their community, and/or social media.</td>
</tr>
</tbody>
</table>

**Standard 6: Engineering, Technology, and the Applications of Science:** The teacher demonstrates an understanding of concepts and practices of engineering, technology, and the applications of science in developing instruction for students.

**Function 1:** The teacher incorporates engineering design in instruction to solve problems. Engineering design includes the iterative processes of defining problems, developing solutions, and optimizing solutions.

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<tbody>
<tr>
<td>6.1.1 CK The teacher can define and delimit engineering problems with precision, and specify the goals intended to be reached.</td>
<td>6.1.4 PS The teacher develops and implements lessons in which students use engineering design principles (define the problem, develop solutions, and optimize solutions) in applications appropriate to their content area.</td>
</tr>
<tr>
<td>6.1.2 CK The teacher can develop possible solutions for a defined problem.</td>
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</tr>
<tr>
<td>6.1.3 CK The teacher can systematically evaluate alternative solutions to engineering problems, analyzing data from tests of different solutions, and combining the best ideas into an improved solution.</td>
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**Function 2:** The teacher makes authentic connections among engineering, technology, science, and society.

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<tbody>
<tr>
<td>6.2.1 CK The teacher understands the interdependence of science, engineering, and technology.</td>
<td>6.2.3 PS The teacher incorporates into instruction examples of the interdependence of science, engineering, and technology. Examples include: 1) advances in scientific understanding in genetics can be translated into medical treatments, and 2) new technology such as advanced telescopes and probes provide new understandings of outer space.</td>
</tr>
<tr>
<td>6.2.2 CK The teacher understands the influences of engineering, technology, and science to the broader society and environment.</td>
<td>6.2.4 PS The teacher incorporates into instruction examples of the influences of engineering, technology, and science to the broader society and environment. Examples include: 1) how measurement technologies have changed civilizations throughout history, and 2) how the use of natural resources has impacted the natural world.</td>
</tr>
</tbody>
</table>

**Standard 7: Earth’s Place in the Universe:** Origin, evolution and properties of the Universe. Effective science teachers demonstrate an understanding of the properties of the Universe, the Earth’s place within the Universe, and origin and evolution of the Universe.

**Function 1:** Properties of the Universe: The teacher understands and can convey to grades 6-12 students the laws of motion, lifecycles of stars and the Universe, Earth-Sun-Moon relationships, and physical properties of the Universe.

<table>
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<tbody>
<tr>
<td>7.1.1 CK Teacher demonstrates an understanding of the Sun and its lifecycle.</td>
<td>7.1.5 PS Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun’s core to release energy that eventually reaches Earth in the form of radiation.</td>
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</tbody>
</table>
7.1.2 CK Teacher demonstrates knowledge of Nuclear fusion, light spectra and compositional elements.

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<tbody>
<tr>
<td>7.1.6 PS Teacher can communicate scientific ideas about the way stars, over their life cycle, produce elements.</td>
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7.1.3 CK Teacher demonstrates an understanding of the movement of galaxies, composition of stars, non-stellar gasses, and background radiation.

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<tbody>
<tr>
<td>7.1.7 PS Communicate scientific ideas about the way stars, over their life cycle, produce elements.</td>
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</table>

7.1.4 CK Teacher demonstrates an understanding of Star Processes - processes for forming the elements.

Function 2: The teacher understands and can convey to grades 6-12 students the Earth’s Place within the Universe

<table>
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<tr>
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<tbody>
<tr>
<td>7.2.1 CK Teacher demonstrates an understanding of Earth-Sun-Moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.</td>
<td></td>
</tr>
<tr>
<td>7.2.3 PS Teacher can develop and use a model of the Earth-Sun-Moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.</td>
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<tr>
<td>7.2.2 CK Teacher demonstrates an understanding of Laws of motions and orbiting objects.</td>
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<tr>
<td>7.2.4 PS The teacher can use mathematical or computational representations to predict the motion of orbiting objects in the solar system.</td>
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Function 3: The teacher understands and can convey to grades 6-12 students the Origin and Evolution of the Universe

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<thead>
<tr>
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<tbody>
<tr>
<td>7.3.1 CK The teacher understands the Big Bang Theory.</td>
<td></td>
</tr>
<tr>
<td>7.3.3 PS Teacher can construct an explanation of the Big Bang theory based on astronomical evidence of light spectra, motion of distant galaxies, and composition of matter in the universe.</td>
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</tr>
<tr>
<td>7.3.2 CK The teacher understands supporting evidence for the formation of the Earth and our solar system.</td>
<td></td>
</tr>
<tr>
<td>7.3.4 PS Teacher can apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth’s formation and early history.</td>
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Standard 8: Earth’s Materials and Systems: The teacher of earth and space science demonstrates an understanding of the energy sources, processes and cycles within the Earth System.

Function 1: The teacher understands and can convey to grades 6-12 students the cyclic nature of earth processes

<table>
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<tr>
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<tbody>
<tr>
<td>8.1.1 CK Teacher demonstrates an understanding of the rock cycle.</td>
<td></td>
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<tr>
<td>8.1.5 PS The teacher can describe the processes involved in the formation of rocks that included sedimentary, igneous and metamorphic rocks.</td>
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</tr>
<tr>
<td>8.1.2 CK Teacher demonstrates an understanding of the carbon cycle.</td>
<td></td>
</tr>
<tr>
<td>8.1.6 PS The teacher can describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.</td>
<td></td>
</tr>
<tr>
<td>8.1.3 CK Teacher demonstrates an understanding of the hydrologic cycle.</td>
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</tr>
<tr>
<td>8.1.7 PS The teacher can explain the cyclic nature of water in the Earth-system, that includes the properties of water and its effects on Earth materials and surface processes.</td>
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</tr>
<tr>
<td>8.1.4 CK Teacher demonstrates an understanding of the Geological Time Scale.</td>
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<tr>
<td>8.1.8 PS The teacher can convey a scientific explanation based on evidence from rock strata for how the geologic timescale is used to organize Earth’s 4.6-billion-year-old history.</td>
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</table>

Function 2: The teacher understands and can convey to grades 6-12 students the source of energy driving Earth processes.
<table>
<thead>
<tr>
<th>Content Knowledge</th>
<th>Professional Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.2.1 CK Teacher demonstrates an understanding of the Internal and External earth energy.</td>
<td>8.2.2 PS Teacher can illustrate how Earth’s internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.</td>
</tr>
<tr>
<td><strong>Function 3: The teacher understands and can convey to grades 6-12 students the transfer of energy between systems.</strong></td>
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<tr>
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</thead>
<tbody>
<tr>
<td>8.3.1 CK Teacher demonstrates an understanding of the Conduction, Convection/Advection and Radiation.</td>
<td>8.3.2 PS Teacher can develop a model based on evidence of Earth’s interior to describe the cycling of matter by thermal convection.</td>
</tr>
<tr>
<td><strong>Function 4: The teacher understands and can convey to grades 6-12 students Plate Tectonics and Large-Scale System Interactions.</strong></td>
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<tr>
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<tbody>
<tr>
<td>8.4.1 CK The radioactive decay of unstable isotopes continually generates new energy within Earth’s crust and mantle, providing the primary source of the heat that drives mantle convection. Plate tectonics can be viewed as the surface expression of mantle convection.</td>
<td>8.4.2 PS Teacher can illustrate how Earth’s internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.</td>
</tr>
<tr>
<td><strong>Standard 9: Earth and human activity: The teacher of Earth and Space sciences demonstrates an understanding of society’s interactions with the planet. How Earth’s processes affect humans and human culture, and how humans affect Earth’s systems.</strong></td>
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<tr>
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<tbody>
<tr>
<td>9.1.1 CK Teacher demonstrates an understanding of the causes of disasters; how to identify and mitigate the impact of disasters such as volcanoes, earthquakes, mass-wasting, hurricanes, floods, tornadoes.</td>
<td>9.1.3 PS Teacher can construct an explanation based on evidence for how the availability of natural resources, occurrence of natural hazards, and changes in climate have influenced human activity. (NGSS HS-ESS3-1)</td>
</tr>
<tr>
<td>9.1.2 CK Teacher demonstrates an understanding of hazards that impact human society.</td>
<td>9.1.4 PS Teacher can construct an explanation based on evidence for how natural hazards have influenced human activity. (NGSS HS-ESS3-1)</td>
</tr>
<tr>
<td><strong>Function 2: The teacher understands and can convey to grades 6-12 students the concepts of Atmospheric &amp; Climate Changes.</strong></td>
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<tr>
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<tbody>
<tr>
<td>9.2.1 CK Teacher demonstrates an understanding of weather and climate effects on humans, global climate change, and oceanic effects on hydrologic/atmospheric systems.</td>
<td>9.2.2 PS Teacher can construct an explanation based on evidence for how changes in climate have influenced human activity.</td>
</tr>
<tr>
<td>9.2.3 PS Teacher can incorporate into instruction geoscience data and results from global climate models to make evidence-based forecasts of the current rate of global or regional climate change and associated future impacts to Earth’s system.</td>
<td><strong>Function 3: The teacher understands and can convey to grades 6-12 students the concept of Natural Resources.</strong></td>
</tr>
<tr>
<td>9.3.1 CK Teacher demonstrates an understanding of Water, fossil fuels, ores, industrial uses, solar, wind</td>
<td>9.3.3 PS Teacher can construct an explanation based on evidence for how the availability of natural resources have influenced human activity.</td>
</tr>
<tr>
<td>9.3.2 CK The teacher demonstrated an understanding of the impacts of human activity on natural systems.</td>
<td>9.3.4 PS Teacher can explain design solutions for developing, managing, and utilizing energy and mineral resources.</td>
</tr>
<tr>
<td>9.3.5 PS Teacher can illustrate the relationships among the management of natural resources, the sustainability of human populations, and biodiversity.</td>
<td></td>
</tr>
</tbody>
</table>
Standard #1  The teacher of earth and space science demonstrates an understanding of the sources of energy that power the dynamic earth system.

Knowledge
1. The teacher understands that essentially all energy on earth traces ultimately to the sun and radioactivity in the earth’s interior.
2. The teacher understands that the convection circulation in the mantle is driven by the outward transfer of the earth’s internal heat.
3. The teacher understands that movable continental and oceanic plates make up the earth’s surface; the hot, convecting mantle is the energy source for plate movement.
4. The teacher understands that energy from the sun heats the oceans and the atmosphere and affects oceanic and atmospheric circulation.
5. The teacher understands that energy flow determines global climate and, in turn, is influenced by geographic features, cloud cover, and the earth’s rotation.
6. The teacher knows that the systems at the earth’s surface are powered principally by the sun and contain an essentially fixed amount of each stable chemical atom or element.

Performance
1. The teacher can utilize the content in this standard at a substantially greater depth than the level taught to students.

Standard #2  The teacher of earth and space science demonstrates an understanding of the actions and the interactions of the earth’s subsystems: the geosphere, hydrosphere, atmosphere, and biosphere.

Knowledge
1. The teacher understands the processes of the carbon, rock, and water cycles.
2. The teacher understands water, glaciers, winds, waves, and gravity as weathering and erosion agents.
3. The teacher understands the earth’s motions and seasons.
4. The teacher knows the composition and structure of the earth’s atmosphere.
5. The teacher understands severe storms and safety precautions.
6. The teacher understands basic weather forecasting, weather maps, fronts, and pressure systems.

Performance
1. The teacher can utilize the content in this standard at a substantially greater depth than the level taught to students.

Standard #3  The teacher of earth and space science demonstrates an understanding of the origin and evolution of the dynamic earth system.

Knowledge
1. The teacher knows the earth’s history on the geologic time scale.
2. The teacher knows rock sequences, fossils and radioactive decay and how they are used to estimate the time rocks were formed.
3. The teacher understands earth’s changes as short term (during a human’s lifetime) such as earthquakes and volcanic eruptions, and as long term (over a geological time scale) such as mountain building and plate movements.

4. The teacher understands the dramatic changes in the earth’s atmosphere (i.e., introduction of O₂) which were affected by the emergence of life on earth.

5. The teacher understands the formation of minerals and rocks by way of the rock cycle.

Performance

1. The teacher can utilize the content in this standard at a substantially greater depth than the level taught to students.

Standard #4 The teacher of earth and space science demonstrates an understanding of the organization of the universe and its development.

Knowledge

1. The teacher understands the expansion of the universe from a hot dense early state.
2. The teacher understands the organization and development of stars, solar systems, and planets.
3. The teacher understands the general methods of and importance of the exploration of our solar system and space.

Performance

1. The teacher can utilize the content in this standard at a substantially greater depth than the level taught to students.

Standard #5 The teacher of earth and space science demonstrates an understanding of the nature of inquiry and the ability necessary to help students do scientific inquiry.

Knowledge

1. The teacher understands the nature of scientific inquiry.

Performance

1. The teacher develops, through experiences, a rich understanding and curiosity of the natural (material) world.
2. The teacher develops questions and demonstrates an understanding of the concepts that guide scientific investigations.
3. The teacher designs and conducts scientific investigations.
4. The teacher uses technology and mathematics to improve investigations and communications.
5. The teacher formulates and revises scientific explanations and models using logic and evidence.
6. The teacher recognizes and analyzes alternative explanations and models.
7. The teacher communicates and defends a scientific argument.
8. The teacher plans and implements activities with different structures for inquiry including inductive (exploratory), correlational and deductive (experimental) studies.
9. The teacher uses questions to encourage inquiry and probe for divergent student responses, encouraging student questions, and responding with questions when appropriate.
10. The teacher encourages productive peer interactions and plans both individual and small group activities to facilitate inquiry.
11. The teacher plans and implements data-based activities requiring students to reflect upon their findings, make inferences, and link new ideas to preexisting knowledge.

Standard #6 The teacher of earth and space science demonstrates an understanding of the basic relationships between science and technology.
Knowledge
1. The teacher understands that creativity, imagination, and a broad knowledge base are all required in the work of science and engineering.
2. The teacher knows that scientists in different disciplines ask different questions, use different methods of investigation, and accept different types of evidence to support their explanations.
3. The teacher knows that progress in science and technology can be affected by social issues and challenges.
4. The teacher knows that science and technology are pursued for different purposes.
5. The teacher knows that science advances new technologies. New technologies open new areas for scientific inquiry.
6. The teacher knows that scientific knowledge is made public through presentation at professional meetings and publications in scientific journals, while technological knowledge is often not shared for a variety of reasons.
7. The teacher knows that science and technology are essential components of modern society. Science and technology indicate what can happen, not what should happen. The latter involves human decisions about the use of knowledge.
8. The teacher understands that basic concepts and principles of science and technology should precede active debate about the economics, policies, politics, and ethics of various challenges related to science and technology.

Performance
1. The teacher can demonstrate the basic relationship between earth and space science and technology.

Standard #7 The teacher of earth and space science demonstrates an understanding of science as a human endeavor, of the nature of science, and of science from historical perspectives.

Knowledge
1. The teacher has first-hand knowledge of how to engage in extended science inquiry in a laboratory setting. Just as preservice teachers need to engage in practice teaching, they need to engage in practicing science.
2. The teacher has an understanding of science as both vocation and avocation.
3. The teacher recognizes the universality of basic science concepts and the influence of personal and cultural beliefs that embed science in society.
4. The teacher recognizes that society helps create the ways of thinking (mindsets) required for scientific advances, both toward training scientists and the education of a populace to utilize benefits of science (e.g., standards of hygiene, attitudes toward forces of nature, etc.).
5. The teacher recognizes society’s role in supporting topics of research and determining institutions where research is conducted.

Performance
1. The teacher relates science content to the real world.
2. The teacher links the study of earth and space science to career opportunities.
3. The teacher explains how science uses peer review, replication of methods, and norms of honesty.
4. The teacher demonstrates an understanding of the nature of scientific knowledge and that science is a way of knowing.
5. The teacher explains the rules of evidence and can distinguish characteristics of knowledge in science from rules and knowledge in other disciplines.
6. The teacher explains and provides examples of conventions for research, evidence and explanation, distinguishing laws, theories, and hypotheses.
7. The teacher explains the history of science, including the historical development of current science theories and knowledge.
8. The teacher uses mathematics and statistics to analyze and interpret data in the context of science.
9. The teacher demonstrates an ability to do limited but original research in science.

Standard #8 The teacher of earth and space science demonstrates an understanding of the concepts and processes unifying science domains.

Knowledge
1. The teacher understands how the concepts and processes of system, order and organization; evidence, models and explanation; constancy, change and measurement; patterns of cumulative change; and form and function, unify the various domains of science.
2. The teacher has a basic understanding of the basic concepts and principles of biology, chemistry, and physics as they relate to understanding earth and space science.

Performance
1. The teacher relates science concepts to each other and even to ideas in other academic areas.
2. The teacher understands how the knowledge and mastery of each concept of earth and space science grows and develops across the grade levels and adjusts instruction accordingly.
3. The teacher explains, answers questions, guides inquiry, generalizes accurately, and mentors and guides advanced students who need and benefit from the enrichment of their lessons due to the greater personal knowledge of earth and space science than that expected of students.

Standard #9 The teacher of earth and space science demonstrates an understanding of and an ability to teach science effectively.

Knowledge
1. The teacher understands how students learn science concepts and develop the abilities of science inquiry.
2. The teacher understands the abilities and developmental readiness of students to learn earth and space science content and skills.
3. The teacher understands how to use appropriate applications of advanced technologies in teaching science.

Performance
1. The teacher identifies common student misconceptions in science, their source, and an appropriate teaching response.
2. The teacher provides the opportunity for student discovery and application of knowledge.
3. The teacher plans and uses science teaching strategies and models appropriate for learners with diverse backgrounds, abilities, and learning styles.
4. The teacher encourages students to develop scientific reasoning, critical thinking, and problem solving skills.
5. The teacher designs and adapts procedures and protocols for students to plan, execute, and communicate the results of laboratory and field-based studies in earth and space science.
6. The teacher demonstrates the ability to effectively engage students in learning science, both individually and in-group work of various kinds.
7. The teacher facilitates student planned and conducted investigations.

Standard #10 The teacher of earth and space science enacts a science curriculum that integrates content within the sciences and among other disciplines.

Knowledge
1. The teacher understands national and state standards for science education.
2. The teacher understands the importance of the district and school framework of goals, plans, materials, and resources for enacting quality science instruction.
3. The teacher is familiar with high-quality curricular materials in science.
4. The teacher knows several strategies for developing integrated units with science as the connecting theme.
5. The teacher knows where and how to access appropriate materials for conducting science investigations with students.

**Performance**
1. The teacher relates instructional goals, materials, and actions to state and national science education standards, analyzing strengths and weaknesses in a particular classroom context.
2. The teacher identifies, evaluates, and selects a diverse set of appropriate and potentially useful instructional materials in science from a variety of sources including the World Wide Web.
3. The teacher develops and implements course plans, unit plans, and lesson plans with clear rationales, goals, methods, materials, and assessments.
4. The teacher creates learning experiences that integrate subject matter within the science disciplines and with other subjects using real life problems.
5. The teacher designs and implements learning activities that thematically relate science with other school subjects and community resources.
6. The teacher fosters student development and application of skills in language arts and mathematics in learning science.
7. The teacher demonstrates an awareness of current science curriculum issues and resources.

**Standard #11** The teacher of earth and space science understands how to relate science to the daily lives and interests of students and to a larger framework of human endeavor and understanding.

**Knowledge**
1. The teacher is aware of social and political issues in the community that are dependent upon an understanding of earth and space science.
2. The teacher understands how earth and space science concepts and processes are used in real life situations.
3. The teacher understands and relates the application of earth and space science concepts to technological, societal, and cultural issues.

**Performance**
1. The teacher engages students in activities and projects in which they examine important social or technological issues related to earth and space science.
2. The teacher engages students in investigating local earth and space science and technological issues.
3. The teacher instructs students in the processes of decision-making about earth and space science and technological issues and applications.
4. The teacher relates earth and space science to the interest of students, to potential careers, and to knowledge in other domains.

**Standard #12** The teacher of earth and space science assesses students’ educational progress through a variety of methods.

**Knowledge**
1. The teacher knows how to align standards, goals, instruction, outcomes, and assessments in earth and space science.
2. The teacher knows a variety of assessment strategies to evaluate the cognitive, psychomotor, social, and personal development of the learner in all aspects of earth and space science.
3. The teacher knows techniques for identifying prior knowledge of earth and space science concepts and abilities that lead students to construct new understandings.

**Performance**
1. The teacher uses the most appropriate methods for gathering information about student learning aligned with instructional goals and based on student characteristics, needs, and abilities.
2. The teacher demonstrates the ability to use multiple strategies to assess teaching and learning authentically consistent with national standards and goals for earth and space science education.

**Standard #13  The teacher of earth and space science designs and manages safe and supportive learning environments.**

**Knowledge**
1. The teacher understands the elements of a safe environment in all areas related to earth and space science instruction.
2. The teacher understands liability and negligence, especially as it applies to earth and space science teaching.
3. The teacher understands how to design, adapt, and use physical space, the outdoors, equipment, and resources to establish a positive learning environment.
4. The teacher understands the psychological and social environment conducive to the students’ intellectual, social, and personal growth in earth and space science education.
5. The teacher understands the norms and values of a science learning community.

**Performance**
1. The teacher sets up procedures for safe handling, labeling, storage, and disposal of chemicals, electrical equipment, and science materials.
2. The teacher takes appropriate actions to prevent accidents in the laboratory and field.
3. The teacher follows appropriate procedures for reporting an emergency.
4. The teacher establishes the elements of an exciting and stimulating environment for earth and space science.
5. The teacher establishes a productive learning community in the earth and space science classroom.
6. The teacher plans and develops opportunities for students to learn from resources, events, and displays in the environment.

**Standard #14  The teacher of earth and space science improves teaching through ongoing professional practice.**

**Knowledge**
1. The teacher understands the ethical standards and responsibilities of a professional science teacher.
2. The teacher is aware of the professional organizations and professional development opportunities available to support earth and space science teachers.

**Performance**
1. The teacher accepts responsibility for working collaboratively with students, members of the community, and other educators to improve science education.
2. The teacher develops and states personal goals and philosophy of teaching based on research and contemporary values of the science education community.
3. The teacher becomes involved in professional science education activities and shares knowledge and ideas with colleagues.
Crosswalk: Previous versus New Science (5-8) Standards

**General Information about this Revision:**
- Added detail and demonstration of application of knowledge.
- Previous 14 standards were consolidated into 11 new standards.
- Standards were updated to reflect the elements detailed in the new Kansas College and Career Ready Science Standards, including: 1) science and engineering practices, 2) disciplinary core ideas, and 3) crosscutting concepts.
- Standards were updated to emphasize teaching science for conceptual understanding.
- The new science education standards are significantly different enough from previous standards that a direct standard to standard crosswalk is not helpful. In the chart below, the previous standards are presented in the first column for reference purposes. The new standards are presented in the middle column with notations to the right.

<table>
<thead>
<tr>
<th>PREVIOUS STANDARDS</th>
<th>NEW STANDARDS</th>
<th>WHAT CHANGED?</th>
</tr>
</thead>
<tbody>
<tr>
<td>The teacher of science demonstrates an understanding of the nature of inquiry and</td>
<td><strong>Standard 1: Content Pedagogy:</strong> Effective science teachers understand how</td>
<td>• Added clarity to the nature of scientific inquiry by detailing specific practices and concepts.</td>
</tr>
<tr>
<td>the ability necessary to help students do scientific inquiry. (Previous Standard 4)</td>
<td>students learn and develop science and engineering concepts and practices. They</td>
<td>• Added significant detail in aligning effective instruction of scientific inquiry for diverse students.</td>
</tr>
<tr>
<td>The teacher of science demonstrates an understanding of and an ability to teach</td>
<td>incorporate disciplinary core ideas, scientific and engineering practices, and</td>
<td>• Added detail in emphasizing student construction of knowledge.</td>
</tr>
<tr>
<td>science effectively. (Previous Standard 9)</td>
<td>crosscutting concepts into instruction.</td>
<td>• Separated “safe” and “supportive” elements of learning environments (see new Standard 3 below).</td>
</tr>
<tr>
<td>The teacher of science enacts a science curriculum that integrates content within</td>
<td><strong>Standard 2: Learning Environments:</strong> Teachers work with students and others</td>
<td></td>
</tr>
<tr>
<td>the sciences and among other disciplines. (Previous Standard 10)</td>
<td>to create and manage environments that support learning.</td>
<td></td>
</tr>
<tr>
<td>The teacher of science designs and manages safe and supportive learning</td>
<td><strong>Standard 3: Safety:</strong> Effective teachers of science demonstrate and implement</td>
<td>• Focus on safety, with added detail.</td>
</tr>
<tr>
<td>environments. (Previous Standard 13)</td>
<td>safety procedures, material safety practices, and the</td>
<td></td>
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<tr>
<td>The teacher of science improves teaching through ongoing professional practice.</td>
<td></td>
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<tr>
<td>(Previous Standard 14)</td>
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</table>
environment. (Previous Standard 13)

<table>
<thead>
<tr>
<th>environments. (Previous Standard 13)</th>
<th>ethical treatment and use of living organisms (appropriate to their area of licensure).</th>
</tr>
</thead>
<tbody>
<tr>
<td>The teacher of science assesses students’ educational progress through a variety of methods. (Previous Standard 12)</td>
<td>Standard 4: Impact on Student Learning: Science teachers provide evidence that students’ understanding of disciplinary core ideas, science and engineering practices, and crosscutting concepts have increased in sophistication as a result of instruction. Candidates provide evidence representative of the entire population they teach.</td>
</tr>
<tr>
<td>The teacher of science demonstrates an understanding of science as a human endeavor, of the nature of science, and of science from historical perspectives. (Previous Standard 6)</td>
<td>• Emphasis on formative and summative assessments.</td>
</tr>
<tr>
<td>The teacher of science improves teaching through ongoing professional practice. (Previous Standard 14)</td>
<td>• Emphasis on aligning student learning with the practices of science as a human endeavor.</td>
</tr>
</tbody>
</table>

The teacher of science understands how to relate science to the daily lives and interests of students and to a larger framework of human endeavor and understanding. (Previous Standard 11)

The teacher of science demonstrates an understanding of the basic relationships between science and technology and the knowledge of when and how technology can be used to solve problems. (Previous Standard 5)

The teacher of science demonstrates an understanding of science as a human endeavor, of the nature of science, and of science from historical perspectives. (Previous Standard 6)

| Standard 5: Professional Knowledge and Skills: Effective science teachers are aware of and engage in professional development opportunities to continually improve their knowledge and understanding of science content and pedagogy. They conduct themselves as part of the science education community. |
| Standard 6: Engineering, Technology, and the Applications of Science: The teacher demonstrates an understanding of concepts and practices of engineering, technology, and the applications of science in developing instruction for students. |
| • Highlights engineering design and applied science to solve problems. |
| • Emphasis on making authentic connections among engineering, technology, science, and society |
The teacher of science demonstrates an understanding of science in personal and social perspectives. *(Previous Standard 8)*

<table>
<thead>
<tr>
<th>PREVIOUS STANDARDS</th>
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</table>
| The teacher of science demonstrates an understanding of physical science. *(Previous Standard 1)* | **Standard 7: Middle Level Physical Science:** The teacher of middle school science can demonstrate an understanding of concepts and practices of physical science in developing instruction for students, including knowledge of atomic structure, molecular structure, states of matter, chemical reactions, energy, motion and stability of objects, forces, and waves. | • Includes integration of physical science concepts with science and engineering practices, and with crosscutting concepts. 
• Additional detail added to Content Knowledge and Professional Skills indicators. |
| The teacher of science demonstrates an understanding of life science. *(Previous Standard 2)* | **Standard 8: Middle Level Life Science:** The teacher of middle school science can demonstrate an understanding of concepts and practices of biological science in developing instruction for students, including knowledge of cell theory, structure and function of organisms, populations of organisms, biodiversity, ecosystems, genetics, and evolution. | • Includes integration of life science concepts with science and engineering practices, and with crosscutting concepts. 
• Additional detail added to Content Knowledge and Professional Skills indicators. |
| The teacher of science demonstrates an understanding of earth and space science. *(Previous Standard 3)* | **Standard 9: Middle Level Earth and Space Science:** The teacher of middle school science can demonstrate an understanding of concepts and practices of earth and space science in developing instruction for students, including knowledge of the universe and solar system, Earth’s geologic history and processes, Earth’s structure and processes, water cycle, weather and climate, natural resources, natural hazards and catastrophes, and human influences on Earth’s systems. | • Includes integration of earth and space science concepts with science and engineering practices, and with crosscutting concepts. 
• Additional detail added to Content Knowledge and Professional Skills indicators. |
| The teacher of science demonstrates an understanding of the concepts and processes unifying science domains. *(Previous Standard 7)*  
The teacher of science demonstrates an understanding of science as a human endeavor, of the nature of science, and of science from historical perspectives. *(Previous Standard 6)*  
The teacher of science enacts a science curriculum that integrates content within the sciences and among other disciplines. *(Previous Standard 10)* | **Standard 10: Middle Level Unifying Concepts / Interdisciplinary Perspectives:** The teacher of middle school science can demonstrate an understanding and be able to infuse into science teaching the crosscutting concepts of science and the interdisciplinary perspectives among the sciences. |
PROPOSED
Kansas Preparation Program Standards for Science Educators Grades 5-8

**"Learner(s) is defined as children including those with disabilities or exceptionalities, who are gifted, and students who represent diversity based on ethnicity, race, socioeconomic status, gender, language, religion, and geographic origin.**

<table>
<thead>
<tr>
<th>Standard 1: Content Pedagogy: Effective science teachers understand how students learn and develop science and engineering concepts and practices. They incorporate disciplinary core ideas, scientific and engineering practices, and crosscutting concepts into instruction.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function 1: Teacher plans multiple lessons that use a variety of inquiry approaches incorporating science and engineering practices.</td>
</tr>
<tr>
<td><strong>Content Knowledge</strong></td>
</tr>
<tr>
<td>1.1.1 CK Knows how to locate resources, design and conduct inquiry-based open-ended science investigations, interpret findings, communicate results, and make judgments based on evidence.</td>
</tr>
<tr>
<td>1.1.3 PS The teacher is able to develop lessons for students that demonstrate knowledge of the practices of science and engineering by questioning, defining problems, modeling, investigating, and analyzing evidence in order to construct explanations and alternative explanations.</td>
</tr>
</tbody>
</table>

| Function 2: Teacher demonstrates knowledge and understanding of how diverse students learn science. |
| **Content Knowledge** | **Professional Skills** |
| 1.2.1 CK Knows learning is influenced by cultural and environmental differences of the student and family. | 1.2.4 PS Gains and values information about the family's culture and environment and uses it to understand individual development and learning. |
| 1.2.2 CK Understands developmentally and chronologically age-appropriate needs and practices of students. | 1.2.5 PS Promotes developmentally and chronologically age-appropriate educational experiences to meet the learning abilities, strengths, needs, and preferences of students. |
| 1.2.3 CK Understands diverse learning styles. | |

| Function 3: The teacher designs instruction and assessment strategies that confront and address naïve concepts/preconceptions. |
| **Content Knowledge** | **Professional Skills** |
| 1.3.1 CK The teacher knows learning is influenced by cultural and environmental differences of the student and family. | 1.3.3 PS The teacher uses appropriate formal and informal evaluation/assessment instruments to identify learning needs of students. |
| 1.3.2 CK The teacher understands formative and summative assessment and how they are used. | 1.3.4 PS The teacher is able to identify common student misconceptions and naïve understandings |
and design and implement appropriate instruction to address these.

**Standard 2: Learning Environments: Teachers work with students and others to create and manage environments that support learning.**

**Function 1: The teacher supports individual and group learning.**

<table>
<thead>
<tr>
<th>Content Knowledge</th>
<th>Professional Skills</th>
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<tbody>
<tr>
<td>2.1.1 CK The teacher understands the importance of rigor, respect, and responsibility for the learning environment.</td>
<td>2.1.3 PS The teacher sets and articulates appropriate goals that are consistent with knowledge of how students learn science.</td>
</tr>
<tr>
<td>2.1.2 CK The teacher understands how teacher feedback influences student learning.</td>
<td>2.1.4 PS The teacher sets goals that are aligned with state and other professional standards.</td>
</tr>
<tr>
<td>2.1.5 PS The teacher manages the environment to make learning experiences appropriately challenging.</td>
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</table>

**Function 2: The teacher encourages positive social interaction.**

<table>
<thead>
<tr>
<th>Content Knowledge</th>
<th>Professional Skill</th>
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</thead>
<tbody>
<tr>
<td>2.2.1 CK The teacher understands how learner diversity can affect communication and knows how to communicate effectively in differing environments.</td>
<td>2.2.3a PS The teacher plans fair and equitable assessment strategies to analyze student learning and to evaluate if the learning goals are met.</td>
</tr>
<tr>
<td>2.2.2 CK The teacher understands how learning occurs, how learners construct knowledge, acquire skills, and develop disciplined thinking processes and knows how to use instructional strategies that promote student learning.</td>
<td>2.2.3b PS The teacher promotes celebration of learning by providing positive reinforcement and encouraging learners to present work demonstrating their learning and interacting with community members about their work.</td>
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<tr>
<td></td>
<td>2.2.3c PS The teacher communicates verbally and nonverbally, with families, communities, colleagues, and other professionals, in ways that demonstrate respect for and responsiveness to the cultural backgrounds and differing perspectives learners bring to the learning environment.</td>
</tr>
<tr>
<td></td>
<td>2.2.3d PS The teacher knows how to help learners work productively and cooperatively with each other to achieve learning goals.</td>
</tr>
<tr>
<td>2.2.4a PS The teacher develops plans that reflect the nature and social context of science and inquiry.</td>
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</tr>
<tr>
<td>2.2.4b PS The teacher creates developmentally appropriate instruction that takes into account individual learners' strengths, interests, and needs and that enables each learner to advance and accelerate his/her learning.</td>
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</table>

**Function 3: The teacher promotes active engagement in learning and self-motivation.**

<table>
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<tr>
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<tbody>
<tr>
<td>2.3.1 CK The teacher understands the relationships between motivation, engagement, and self-efficacy.</td>
<td>2.3.3a PS The teacher shows the ability to use a variety of strategies that demonstrate the candidates'</td>
</tr>
</tbody>
</table>
and knows how to design learning experiences using strategies that build learner self-direction and ownership of learning.

knowledge and understanding of how to select the appropriate teaching and learning activities, including laboratory or field settings and applicable instruments and technology.

2.3.3b PS The teacher incorporates differentiated instruction strategies to engage students with diverse learning needs.

2.3.3c PS The teacher incorporates tools of language development into planning and instruction, including strategies for making content accessible to English language learners and for evaluating and supporting their development of English proficiency.

2.3.2 CK The teacher creates learning environments where students have an opportunity to actively engage in the practices of science and engineering.

2.3.4a PS The teacher will develop lesson plans that include active inquiry lessons where students are collecting, analyzing and interpreting data.

2.3.4b PS The teacher will develop lesson plans that allow students to engage in developing and using models, constructing explanations and designing solutions, engaging in argument from evidence, and evaluating and communicating information.

Standard 3: Safety: Effective teachers of science demonstrate and implement safety procedures, material safety practices, and the ethical treatment and use of living organisms (appropriate to their area of licensure).

Function 1: The teacher implements safe and proper techniques for the preparation, storage, dispensing, supervision, and disposal of all materials.

<table>
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<tr>
<th>Content Knowledge</th>
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<tbody>
<tr>
<td>3.1.1 CK The teacher understands safety considerations affecting the purchase, storage, maintenance, and disposal of materials such as minimizing quantities in ordering, tracking usage of materials and production of waste, and keeping current on inventory of materials.</td>
<td>3.1.3 PS The teacher understands, applies, and promotes the maintenance of a safe environment in accordance with the recommendations of the National Science Teachers Association.</td>
</tr>
<tr>
<td>3.1.2 CK The teacher understands proper techniques and precautions for controlling access to materials in the student laboratory including appropriate dispensing, supervision of materials, and handling of waste.</td>
<td>3.1.4 PS The teacher maintains an orderly environment, uses safe and appropriate storage of materials and equipment, and minimizing clutter so as to reduce the potential for accidents.</td>
</tr>
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</table>

Function 2: The teacher designs and models activities to implement emergency procedures. The teacher understands the maintenance of safety equipment and follows policies and procedures that comply with established state and/or national guidelines. The teacher ensures safe science activities appropriate for the abilities of all students.

<table>
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<tr>
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</thead>
<tbody>
<tr>
<td>3.2.1 CK The teacher understands appropriate emergency procedures and maintenance of safety</td>
<td></td>
</tr>
<tr>
<td>3.2.3 PS The teacher designs and implements activities that demonstrate emergency procedures and the proper use of safety equipment in</td>
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</table>
equipment, policies and procedures that comply with established state and/or national guidelines.

3.2.2 CK The teacher understands how students' developmental levels affect safety in classroom, laboratory and field environments, and considers this in designing activities to maintain a safe environment.

3.2.4 PS The teacher enforces safe science practices in activities appropriate to the abilities of all students.

Function 3: The teacher designs and implements activities that demonstrate ethical decision-making with respect to the treatment of living organisms in and out of the classroom. The teacher emphasizes safe, humane, and ethical treatment of animals and complies with the legal restrictions on the collection, keeping, use, and treatment of living organisms.

<table>
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<tr>
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<tbody>
<tr>
<td>3.3.1 CK The teacher understands the principles of ethical decision-making with respect to the treatment of living organisms in and out of the classroom.</td>
<td>3.3.4 PS The teacher designs and implements activities that demonstrate ethical decision-making with respect to the treatment of living organisms in and out of the classroom.</td>
</tr>
<tr>
<td>3.3.2 CK The teacher knows the legal restrictions on the collection, keeping, use, and treatment of living organisms.</td>
<td>3.3.5 PS The teacher complies with the legal restrictions on the collection, keeping, and use of living organisms.</td>
</tr>
<tr>
<td>3.3.3 CK The teacher is aware of hazards from exposure to allergens, toxins, and pathogens in the classroom, laboratory, or field environment.</td>
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</table>

Standard 4: Impact on Student Learning: Science teachers provide evidence that students’ understanding of disciplinary core ideas, science and engineering practices, and crosscutting concepts have increased in sophistication as a result of instruction. Candidates provide evidence representative of the entire population they teach.

Function 1: Collect, organize, analyze, and reflect on diagnostic, formative and summative evidence of student learning.

<table>
<thead>
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<tbody>
<tr>
<td>4.1.1 CK The teacher understands the various methodologies to assess and analyze student learning, and address misconceptions.</td>
<td>4.1.2 PS The teacher utilizes knowledge of appropriate developmental levels within the classroom environment.</td>
</tr>
<tr>
<td>4.1.3 PS The teacher reflects on formative and summative assessments, and adjusts instruction appropriately.</td>
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</table>

Function 2: Provide data to show that students are able to distinguish science from nonscience, understand the evolution and practice of science as a human endeavor, and critically analyze the quality of evidence supporting scientific claims.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>4.2.1 CK The teacher understands the distinction between science and nonscience, and can distinguish between the two.</td>
<td>4.2.4 PS The teacher demonstrates that students are able to understand the distinction between science and nonscience, and can distinguish between the two.</td>
</tr>
<tr>
<td>4.2.2 CK The teacher understands the history, development and practice of science as a human endeavor.</td>
<td>4.2.5 PS The teacher demonstrates that students are able to understand the history, development and practice of science as a human endeavor.</td>
</tr>
<tr>
<td>4.2.3 CK The teacher critically analyzes the quality of evidence supporting scientific claims.</td>
<td>4.2.6 PS The teacher demonstrates that students are able to critically analyze the quality of evidence supporting scientific claims.</td>
</tr>
</tbody>
</table>
**Standard 5: Professional Knowledge and Skills:** Effective science teachers are aware of and engage in professional development opportunities to continually improve their knowledge and understanding of science content and pedagogy. They conduct themselves as part of the science education community.

**Function 1:** Teachers engage in professional development opportunities in their content field such as talks, symposiums, research opportunities, projects within their community, and/or social media.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>5.1.1 CK The teacher demonstrates an awareness of professional organizations in science/education, and professional development available from these organizations.</td>
<td>5.1.2 PS Teachers engage in professional development opportunities such as conferences, research opportunities, projects within their community, and/or social media.</td>
</tr>
</tbody>
</table>

**Standard 6: Engineering, Technology, and the Applications of Science:** The teacher demonstrates an understanding of concepts and practices of engineering, technology, and the applications of science in developing instruction for students.

**Function 1:** The teacher incorporates engineering design in instruction to solve problems. Engineering design includes the iterative processes of defining problems, developing solutions, and optimizing solutions.

<table>
<thead>
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<tbody>
<tr>
<td>6.1.1 CK The teacher can define and delimit engineering problems with precision, and specify the goals intended to be reached.</td>
<td>6.1.4 PS The teacher develops and implements lessons in which students use engineering design principles (define the problem, develop solutions, and optimize solutions) in applications appropriate to their content area.</td>
</tr>
<tr>
<td>6.1.2 CK The teacher can develop possible solutions for a defined problem.</td>
<td></td>
</tr>
<tr>
<td>6.1.3 CK The teacher can systematically evaluate alternative solutions to engineering problems, analyzing data from tests of different solutions, and combining the best ideas into an improved solution.</td>
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</table>

**Function 2:** The teacher makes authentic connections among engineering, technology, science, and society.

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>6.2.1 CK The teacher understands the interdependence of science, engineering, and technology.</td>
<td>6.2.3 PS The teacher incorporates into instruction examples of the interdependence of science, engineering, and technology. Examples include: 1) advances in scientific understanding in genetics can be translated into medical treatments, and 2) new technology such as advanced telescopes and probes provide new understandings of outer space.</td>
</tr>
<tr>
<td>6.2.2 CK The teacher understands the influences of engineering, technology, and science to the broader society and environment.</td>
<td>6.2.4 PS The teacher incorporates into instruction examples of the influences of engineering, technology, and science to the broader society and environment. Examples include: 1) how measurement technologies have changed civilizations throughout history, and 2) how the use of natural resources has impacted the natural world.</td>
</tr>
</tbody>
</table>
**Standard 7: Middle Level Physical Science:** The teacher of middle school science can demonstrate an understanding of concepts and practices of physical science in developing instruction for students, including knowledge of atomic structure, molecular structure, states of matter, chemical reactions, energy, motion and stability of objects, forces, and waves.

**Function 1: Physical Concepts and Practices**

<table>
<thead>
<tr>
<th>Content Knowledge</th>
<th>Professional Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1.1 CK The teacher can explain what occurs at atomic and molecular levels relating to the different states of matter and changes between the states of matter.</td>
<td>7.1.8 PS The teacher is able to develop lessons for students that demonstrate knowledge of the practices of Physical Science by questioning, defining problems, modeling, investigating, and analyzing evidence in order to construct explanations and alternative explanations.</td>
</tr>
<tr>
<td>7.1.2 CK The teacher can use models to represent what occurs during chemical reactions, including concepts of conservation of mass, formation of new molecules from existing atoms, and energy transformation.</td>
<td>7.1.9 PS The teacher is able to identify common student misconceptions and naïve understandings of physical science.</td>
</tr>
<tr>
<td>7.1.3 CK The teacher can describe how thermal energy affects particles and the relationship of kinetic and potential energy to the total energy of a system.</td>
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<tr>
<td>7.1.4 CK Teachers can explain motion and stability of objects using Newton’s First, Second and Third Laws of Motion.</td>
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<tr>
<td>7.1.5 CK Teachers can demonstrate that some materials are attracted to each other while others are not using concepts of gravity, electrical, and magnetic forces.</td>
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<tr>
<td>7.1.6 CK Teachers will explain how energy can be transferred from one object or system to another using concepts of energy conservation and transfer.</td>
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<tr>
<td>7.1.7 CK Teachers can describe properties of waves and how they can be used, reflected, absorbed, or transmitted through various materials.</td>
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</table>

**Standard 8: Middle Level Life Science:** The teacher of middle school science can demonstrate an understanding of concepts and practices of biological science in developing instruction for students, including knowledge of cell theory, structure and function of organisms, populations of organisms, biodiversity, ecosystems, genetics, and evolution.

**Function 1: Life Sciences Concepts and Practices**

<table>
<thead>
<tr>
<th>Content Knowledge</th>
<th>Professional Skills</th>
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</thead>
<tbody>
<tr>
<td>8.1.1 CK The teacher can apply knowledge that all living things are made of one or more cells, that cells have specific structures and functions, that they are the basis of organismal subsystems, and that they communicate with each other.</td>
<td>8.1.1 PS The teacher is able to develop lessons for students that demonstrate knowledge of the practices of Life Science by questioning, defining problems, modeling, investigating, and analyzing evidence in order to construct explanations and alternative explanations.</td>
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<tr>
<td>Standard 9: Middle Level Earth and Space Science: The teacher of middle school science can demonstrate an understanding of concepts and practices of earth and space science in developing instruction for students, including knowledge of the universe and solar system, Earth’s geologic history and processes, Earth’s structure and processes, water cycle, weather and climate, natural resources, natural hazards and catastrophes, and human influences on Earth’s systems.</td>
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<td><strong>Function 1: Earth and Space Science Content and Practices</strong></td>
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<tr>
<td><strong>Content Knowledge</strong></td>
<td><strong>Professional Skills</strong></td>
</tr>
<tr>
<td>9.1.1 CK The teacher can apply knowledge of the universe and solar system to explain phenomena that include but are not limited to Earth’s place in the universe, motions and scale of celestial objects, forces such as gravitational pull, and seasons.</td>
<td>9.1.9 PS The teacher is able to develop lessons for students that demonstrate knowledge of the practices of Earth and Space Science by questioning, defining problems, modeling, investigating, and analyzing evidence in order to construct explanations and alternative explanations.</td>
</tr>
<tr>
<td>9.1.2 CK The teacher can interpret evidence from Earth's rock strata and fossil record to explain geologic history and processes.</td>
<td>9.1.10 PS The teacher is able to identify common student misconceptions and naïve understandings of earth and space science.</td>
</tr>
<tr>
<td>9.1.3 CK The teacher can apply knowledge of plate tectonics, and energy and material cycles to explain and model Earth's structures and dynamic processes.</td>
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</tbody>
</table>
9.1.5 CK The teacher can apply knowledge of how sunlight, oceans, atmosphere, ice, landforms, living things, and position on earth influence weather and climate.

9.1.6 CK The teacher can apply knowledge of renewable and nonrenewable natural resources that are distributed unevenly across Earth.

9.1.7 CK The teacher can apply knowledge of the changing influences of human populations on Earth's natural resources, environments, and systems.

9.1.8 CK The teacher can apply knowledge of how data can be used to forecast and mitigate natural hazards and catastrophes.

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**Standard 10: Middle Level Unifying Concepts/Interdisciplinary Perspectives:** The teacher of middle school science can demonstrate an understanding and be able to infuse into science teaching the crosscutting concepts of science and the interdisciplinary perspectives among the sciences.

**Function 1: Unifying Concepts and Interdisciplinary Perspectives**

<table>
<thead>
<tr>
<th>Content Knowledge</th>
<th>Professional Skills</th>
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</thead>
<tbody>
<tr>
<td><strong>10.1.1 CK</strong> The teacher identifies <em>patterns</em> across the life and physical sciences that are clues to natural or man-made organization as opposed to random phenomena. For example, crystalline structures of snowflakes and NaCl suggest that the shape of a molecule determines a pattern of organization in a snowflake or halite.</td>
<td><strong>10.1.8 PS</strong> The teacher is able to develop lessons for students that demonstrate knowledge of the unifying concepts by questioning, defining problems, modeling, investigating, and analyzing evidence in order to construct explanations and alternative explanations.</td>
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<tr>
<td><strong>10.1.2 CK</strong> The teacher provides examples of <em>cause and effect</em> across the life and physical sciences, and can explain the concept of correlation versus cause. For example, the Black Plague had biological causes but was correlated with certain social conditions (that did not cause the disease).</td>
<td><strong>10.1.9 PS</strong> The teacher is able to identify common student misconceptions and naïve understandings regarding unifying concepts.</td>
</tr>
<tr>
<td><strong>10.1.3 CK</strong> The teacher provides examples of <em>scale, proportion and quantity</em> across the life and physical sciences using models to study systems that are too large or too small. For example, a paper model of the solar system can be described using simple distance measurements as well as ratios and proportions.</td>
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<tr>
<td><strong>10.1.4 CK</strong> The teacher provides examples of <em>system models</em> across the life and physical sciences. Examples include (1) mathematical evidence that supports the claim that gravitational attraction depends on the masses of interacting objects, and (2) an ecosystem model in which a great many other systems are nested (populations, nutrient cycles, etc.).</td>
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<tr>
<td><strong>10.1.5 CK</strong> The teacher provides examples of ways that different forms of <em>energy</em> drive the motion and/or cycling of <em>matter</em> across the life and physical</td>
<td></td>
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</tbody>
</table>
sciences. For example, the cycling of water through Earth’s systems is driven by energy from the sun and the force of gravity.

10.1.6 CK The teacher provides examples of and/or model the relationship of *structure and function* across the life and physical sciences. For example, illustrate the way that surface area for chemical reactions is gained in the chloroplast, fish gills, and clay particles.

10.1.7 CK The teacher provides examples of *stability and change* across the life and physical sciences. For example, the process of succession in an ecosystem involves changes in both the living community and the physical environment (soil, landscape, microclimate) until a state of equilibrium is reached (theoretically). Many disturbances can disrupt ecosystem stability. Homeostasis in living organisms is another example.
Standard #1  The teacher of science demonstrates an understanding of physical science.

**Knowledge**

1. The teacher knows the properties of matter, and how to observe, compare, and classify the properties of matter.
2. The teacher understands the variety of possible changes in the properties of matter, and how to observe, measure, infer, and classify changes in properties of matter.
3. The teacher knows about motion and forces, and knows how to investigate the relationship between motions and forces.
4. The teacher understands and knows how to demonstrate energy, the forms of energy, the conservation of mass/energy, and the transfer of energy.

**Performance**

1. The teacher can utilize the knowledge of physical science at a substantially greater depth than the level taught to students.

Standard #2  The teacher of science demonstrates an understanding of life science.

**Knowledge**

1. The teacher knows the basic structure of organisms and can relate structure and function at various levels in organisms.
2. The teacher understands the role of reproduction and heredity for all living things, including the structures and processes of human development, reproduction, and sexuality to include information about sexually transmitted diseases, especially acquired immune deficiency syndrome (AIDS).
3. The teacher understands the effects of a changing external environment on the regulation/balance of internal conditions and processes of organisms.
4. The teacher can describe and relate interactions of populations of organisms within an ecosystem.
5. The teacher can describe the diversity of living things and relate their adaptations to their survival or extinction.

**Performance**

1. The teacher understands and can utilize the knowledge of life science at a substantially greater depth than the level taught to students.

Standard #3  The teacher of science demonstrates an understanding of earth and space science.

**Knowledge**

1. The teacher understands that the structure of the earth’s system is constantly changing due to the earth’s physical and chemical processes.
2. The teacher knows the earth processes and understands that past and present earth processes are similar.
3. The teacher knows and can classify planets and other solar system components.
4. The teacher understands the motions and forces that explain earth phenomena.

**Performance**

1. The teacher understands and can utilize the knowledge of earth and space science at a substantially greater depth than the level taught to students.
Standard #4  The teacher of science demonstrates an understanding of the nature of inquiry and the ability necessary to help students do scientific inquiry.

Knowledge
1. The teacher understands the nature of scientific inquiry.

Performance
1. The teacher develops, through experiences, a rich understanding and curiosity of the natural (material) world.
2. The teacher develops questions and demonstrates an understanding of the concepts that guide scientific investigations.
3. The teacher designs and conducts scientific investigations.
4. The teacher uses technology and mathematics to improve investigations and communications.
5. The teacher formulates and revises scientific explanations and models using logic and evidence.
6. The teacher recognizes and analyzes alternative explanations and models.
7. The teacher communicates and defends a scientific argument.
8. The teacher plans and implements activities with different structures for inquiry including inductive (exploratory), correlational and deductive (experimental) studies.
9. The teacher uses questions to encourage inquiry and probe for divergent student responses, encouraging student questions, and responding with questions when appropriate.
10. The teacher encourages productive peer interactions and plans both individual and small group activities to facilitate inquiry.
11. The teacher plans and implements data-based activities requiring students to reflect upon their findings, make inferences, and link new ideas to preexisting knowledge.

Standard #5  The teacher of science demonstrates an understanding of the basic relationships between science and technology and the knowledge of when and how technology can be used to solve problems.

Knowledge
1. The teacher understands that creativity, imagination, and a broad knowledge base are all required in the work of science and engineering.
2. The teacher knows that progress in science and technology can be affected by social issues and challenges.
3. The teacher knows that science and technology are pursued for different purposes.
4. The teacher knows that science advances new technologies. New technologies open new areas for scientific inquiry.
5. The teacher knows that scientific knowledge is made public through presentation at professional meetings and publications in scientific journals, while technological knowledge is often not shared for a variety of reasons.
6. The teacher knows that science and technology are essential components of modern society. Science and technology indicate what can happen, not what should happen. The latter involves human decisions about the use of knowledge.
7. The teacher understands that basic concepts and principles of science and technology should precede active debate about the economics, policies, politics, and ethics of various challenges related to science and technology.

Performance
1. The teacher provides students with appropriate opportunities to design and implement technological solutions to problems.
Standard #6  The teacher of science demonstrates an understanding of science as a human endeavor, of the nature of science, and of science from historical perspectives.

**Knowledge**

1. The teacher has first-hand knowledge of how to engage in extended science inquiry in a laboratory setting. Just as preservice teachers need to engage in practice teaching, they need to engage in practicing science.
2. The teacher recognizes that society helps create the ways of thinking (mindsets) required for scientific advances, both toward training scientists and the education of a populace to utilize benefits of science (e.g., standards of hygiene, attitudes toward forces of nature, etc.).
3. The teacher recognizes society’s role in supporting topics of research and determining institutions where research is conducted.
4. The teacher demonstrates an understanding of the nature of scientific knowledge and that science is a way of knowing.

**Performance**

3. The teacher relates science content to the real world.
4. The teacher explains how science uses peer review, replication of methods, and norms of honesty.
5. The teacher recognizes the universality of basic science concepts and the influence of personal and cultural beliefs that embed science in society.
6. The teacher demonstrates and understands the rules of evidence and can distinguish characteristics of knowledge in science from rules and knowledge in other disciplines.
7. The teacher explains and provides examples of conventions for research, evidence and explanation, distinguishing laws, theories, and hypotheses.
8. The teacher demonstrates an understanding of the history of science, including the historical development of current science theories and knowledge.
9. The teacher demonstrates an understanding of how to use mathematics and statistics to analyze and interpret data in the context of science.

Standard #7  The teacher of science demonstrates an understanding of the concepts and processes unifying science domains.

**Knowledge**

1. The teacher understands how the concepts and processes of system, order and organization; evidence, models and explanation; constancy, change and measurement; patterns of cumulative change; and form and function, unify the various domains of science.

**Performance**

1. The teacher relates science concepts to each other and to ideas in other academic areas.

Standard #8  The teacher of science demonstrates an understanding of science in personal and social perspectives.

**Knowledge**

1. The teacher understands the impact of human activity on resources and the environment.
2. The teacher understands that natural hazards are dynamic examples of earth processes that cause us to evaluate risks.

**Performance**

1. The teacher provides opportunities for students to make decisions based on scientific understanding of personal health.
2. The teacher relates science content to the real world.
3. The teacher links the study of science to career opportunities.

Standard #9   The teacher of science demonstrates an understanding of and an ability to teach science effectively.

**Knowledge**
1. The teacher understands how students learn science concepts and develop the abilities of science inquiry.
2. The teacher understands the abilities and developmental readiness of students to learn science content and skills.
3. The teacher understands how to use appropriate applications of advanced technologies in teaching science.

**Performance**

1. The teacher identifies common student misconceptions in science, their source, and an appropriate teaching response.
2. The teacher provides the opportunity for student discovery and application of knowledge.
3. The teacher plans and uses science teaching strategies and models appropriate for learners with diverse backgrounds, abilities, and learning styles.
4. The teacher encourages students to develop scientific reasoning, critical thinking, and problem solving skills.
5. The teacher designs and adapts procedures and protocols for students to plan, execute, and communicate the results of laboratory and field-based studies in science.
6. The teacher demonstrates the ability to effectively engage students in learning science, both individually and in-group work of various kinds.
7. The teacher facilitates student planned and conducted investigations.

**Standard #10** The teacher of science enacts a science curriculum that integrates content within the sciences and among other disciplines.

**Knowledge**

1. The teacher understands national and state standards for science education.
2. The teacher understands the importance of the district and school framework of goals, plans, materials, and resources for enacting quality science instruction.
3. The teacher is familiar with high-quality curricular materials in science.
4. The teacher knows several strategies for developing integrated units with science as the connecting theme.
5. The teacher knows where and how to access appropriate materials for conducting science investigations with students.

**Performance**

1. The teacher relates instructional goals, materials, and actions to state and national science education standards, analyzing strengths and weaknesses in a particular classroom context.
2. The teacher identifies, evaluates, and selects a diverse set of appropriate and potentially useful instructional materials in science from a variety of sources including the World Wide Web.
3. The teacher develops and implements course plans, unit plans, and lesson plans with clear rationales, goals, methods, materials, and assessments.
4. The teacher creates learning experiences that integrate subject matter within the science disciplines and with other subjects using real life problems.
5. The teacher designs and implements learning activities that thematically relate science with other school subjects and community resources.
6. The teacher fosters student development and application of skills in language arts and mathematics in learning science.
7. The teacher demonstrates an awareness of current science curriculum issues and resources.

**Standard #11** The teacher of science understands how to relate science to the daily lives and interests of students and to a larger framework of human endeavor and understanding.

**Knowledge**
1. The teacher is aware of social and political issues in the community that are dependent upon an understanding of science.
2. The teacher understands how science concepts and processes are used in real life situations.
3. The teacher understands and relates the application of science concepts to technological, societal, and cultural issues.

**Performance**
1. The teacher engages students in activities and projects in which they examine important social or technological issues related to science.
2. The teacher engages students in investigating local science and technological issues.
3. The teacher instructs students in the processes of decision-making about science and technological issues and applications.
4. The teacher relates science to the interest of students, to potential careers, and to knowledge in other domains.

**Standard #12** The teacher of science assesses students' educational progress through a variety of methods.

**Knowledge**
1. The teacher knows how to align standards, goals, instruction, outcomes, and assessments in science.
2. The teacher knows a variety of assessment strategies to evaluate the cognitive, psychomotor, social, and personal development of the learner in all aspects of science.
3. The teacher knows techniques for identifying prior knowledge of science concepts and abilities that lead students to construct new understandings.

**Performance**
1. The teacher uses the most appropriate methods for gathering information about student learning aligned with instructional goals and based on student characteristics, needs, and abilities.
2. The teacher demonstrates the ability to use multiple strategies to assess teaching and learning authentically consistent with national standards and goals for science education.

**Standard #13** The teacher of science designs and manages safe and supportive learning environments.

**Knowledge**
1. The teacher understands the elements of a safe environment in all areas related to science instruction.
2. The teacher understands liability and negligence, especially as it applies to science teaching.
3. The teacher understands how to design, adapt, and use physical space, the outdoors, equipment, and resources to establish a positive learning environment.
4. The teacher understands the psychological and social environment conducive to the students' intellectual, social, and personal growth in science education.
5. The teacher understands the norms and values of a science learning community.
6. The teacher knows the standards and recommendations of the science education community for the safe and ethical use and care of animals for science instruction.

**Performance**
1. The teacher sets up procedures for safe handling, labeling, storage, and disposal of chemicals, electrical equipment, and science materials.
2. The teacher takes appropriate actions to prevent accidents in the laboratory and field.
3. The teacher follows appropriate procedures for reporting an emergency.
4. The teacher handles and cares for animals in a safe and ethical manner.
5. The teacher establishes the elements of an exciting and stimulating science learning environment.
6. The teacher establishes a productive science learning community in the classroom.
7. The teacher plans and develops opportunities for students to learn from resources, events, and displays in the environment.

Standard #14 The teacher of science improves teaching through ongoing professional practice.

Knowledge
1. The teacher understands the ethical standards and responsibilities of a professional science teacher.
2. The teacher is aware of the professional organizations and professional development opportunities available to support science teachers.

Performance
1. The teacher accepts responsibility for working collaboratively with students, members of the community, and other educators to improve science education.
2. The teacher develops and states personal goals and philosophy of teaching based on research and contemporary values of the science education community.
3. The teacher becomes involved in professional science education activities and shares knowledge and ideas with colleagues.
To: Commissioner Randy Watson
From: Denise Kahler
Subject: Recognition of National Finalists for the Presidential Awards for Excellence in Mathematics and Science Teaching
Date: 10/19/2016

Board Goals: Provide an effective educator in every classroom

At its November meeting, the Kansas State Board of Education will have the opportunity to hear from the 2014 and 2015 National Finalists for the Presidential Awards for Excellence in Mathematics and Science Teaching. Each Kansas finalist received a $10,000 unrestricted award from the National Science Foundation, as well as a week-long conference in Washington, D.C., where they had the opportunity to network with finalists from other states.

The 2014 recipients are Michelle Kelly, a kindergarten and 1st grade teacher at Basehor Elementary School, USD 458 Basehor-Linwood, and Brandi Leggett, an instructional coach at Rosehill Elementary School, USD 512 Shawnee Mission.

The 2015 recipients are Trissa McCabe, who teaches 8th grade mathematics at Reno Valley Middle School, USD 309 Nickerson, and Denise Scribner, who teaches grades 9-12 biology at Eisenhower High School, USD 265 Goddard.

Each recipient will share some of the innovative programs used in mathematics/science instruction to foster student achievement. They will be available to respond to questions from the Board following the presentation.
To: Commissioner Randy Watson
From: Diana Stanfill
Subject: Report on Gifted Services in Kansas
Date: 10/27/2016

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

KSDE staff and guest speakers, who are gifted facilitators, will provide information on Gifted Services in Kansas. The presentation will include a brief history of gifted services, information and data about facilitators and students in the state, as well as the purpose and eligibility criteria for services.
To: Commissioner Randy Watson  
From: Gwen Kramer, Wendy Fritz  
Subject: Personnel Report  
Date: 10/28/2016  
Board Goals: Governmental Responsibility

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*Excludes classified temporaries and agency reallocations, promotions, demotions, and transfers. Includes employees terminating to go to a different state agency (which are not included in annual turnover rate calculations).
REQUEST AND RECOMMENDATION FOR BOARD ACTION

Item Title:
Act on appointments of persons to Unclassified Special Projects Positions

Board Goals:
Governmental Responsibility

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

Michelle Irvine to the position of Senior Administrative Assistant on the Child Nutrition and Wellness team, effective Oct. 24, 2016, at an annual salary of $28,308.80. This position is funded by SAE Federal, TNT, KHF PE, Health Curriculum.

Explanation of Situation Requiring Action:

Michelle Irvine will manage support for the entire Child Nutrition & Wellness team. This position is the lead administrative support for the School Nutrition Programs (SNP). This employee serves SNP participants (over 400 sponsors) in the National School Lunch Program, School Breakfast Program, Special Milk Program, After School Care Snack Program, Fresh Fruit & Vegetable Program and the Body Venture health education exhibit. The person in this position also provides administrative support for awarded grants. The position is also the primary back-up to the Senior Administrative Assistant for the Child & Adult Care Food Program and Summer Food Service Program.
Item Title:
Act on recommendations for Licensure Waivers

Board Goals:
Provide an effective educator in every classroom

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 certificate/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.
<table>
<thead>
<tr>
<th>District</th>
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REQUEST AND RECOMMENDATION FOR BOARD ACTION

Item Title:
Act on recommendations of the Licensure Review Committee

Board Goals:
Provide an effective educator in every classroom

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

Explanation of Situation Requiring Action:
Recommendations of the Licensure Review Committee need approval of the State Board of Education. Certificates/licenses will be issued to those applicants whose appeals are granted.
Case 3087
Hye Jung Lee requested initial Kansas licensure for K-6 elementary education. Bruce Major made a motion to recommend approval of an initial Kansas license for PreK-12 music based clarification of educational background and teaching experience. The Committee also recommends approval of a provisional license for K-6 elementary education with full licensure contingent upon completion of a college course in methods of teaching mathematics in the elementary school and methods of teaching science in the elementary school through a Kansas college to meet the deficient elementary education standards identified by the Committee. The motion was seconded by Heidi Bolt and the License Review Committee approved the motion unanimously.

Case 3102
Douglas Bliss requested initial Kansas licensure for secondary 6-12 and middle level 5-8 social studies. Dale Jean Probst made a motion to recommend approval of a provisional license for middle level 5-8 social studies with full licensure contingent upon completion of a college course in the exceptional child, assessment in the classroom, and methods of teaching middle level social studies through a Kansas college to meet the deficient professional education standards identified by the Committee; and a college course in Kansas history through a Kansas college to meet the deficient middle level social studies standard identified by the Committee. The appeal for secondary 6-12 social studies has been dropped. The motion was seconded by Heidi Bolt and the License Review Committee approved the motion unanimously.

Case 3105
Edna Springer requested initial Kansas licensure for PreK-3 early childhood education, EC-EC early childhood handicapped, and PreK-12 ESOL. Dale Jean Probst made a motion to recommend approval of an initial Kansas license for PreK-3 early childhood education and EC-EC early childhood handicapped based on achievement of certification in Florida through an alternative route and clarification of education background and teaching experience. The appeal for PreK-12 ESOL has been dropped. The motion was seconded by Bruce Major and the Licensure Review Committee approved the motion unanimously.

Case 3107
Zachary Conrad requested the addition of an endorsement for K-6 elementary education to a valid Kansas license. Dale Jean Probst made a motion to recommend approval of an endorsement for K-6 elementary education to a valid Kansas license contingent upon completion of a college course in teaching reading in the elementary school through a Kansas college to meet the deficient elementary education standard identified by the Committee. The motion was seconded by Jan Wilson and the Licensure Review Committee approved the motion unanimously.

Case 3108
Melody Witt requested Kansas licensure for PreK-12 building leadership. Bruce Major made a motion to recommend approval of this license based on achievement of certification in Texas through an alternative route, educational background, and accredited experience as a building leader. The motion was seconded Heidi Bolt and the Licensure Review Committee approved the motion unanimously.

Case 3109
Linda Bell requested the addition of an endorsement for 6-12 high-incidence special education to a valid Kansas license. Heidi Bolt made a motion to recommend approval of the extension of a provisional license for 1 calendar year to complete the 6-12 high-incidence program through Washburn University. The motion was seconded by Jan Wilson and the Licensure Review Committee approved the motion unanimously.
**Case 3110**
Wendelin Flesner requested initial Kansas licensure for K-6 elementary education. Heidi Bolt made a motion to recommend approval of this license based on achievement of certification in Arizona through an approved program in Arizona, educational background, and teaching experience. The motion was seconded by Bruce Major and the Licensure Review Committee approved the motion unanimously.

**Case 3114**
Mick Williams requested a professional level Kansas license for PreK-12 library media and secondary 6-12 social studies. Heidi Bolt made a motion to recommend approval of this license based on achievement of certification in New York through an approved teacher education program, completion of an approved library media specialist program, and unaccredited library media specialist experience to substitute for the regulatory requirements of accredited experience to be issued a professional level license. The motion was seconded by Jan Wilson and the Licensure Review Committee approved the motion unanimously.

**Case 3115**
Leah Wisdom requested initial Kansas school leadership licensure for PreK-12 district leadership. Dale Jean Probst made a motion to recommend waiving the 3.25 GPA required by regulation based on extenuating circumstances. The motion was seconded by Heidi Bolt and the Licensure Review Committee approved the motion unanimously.

**Case 3116**
Wade Ahlvers requested initial Kansas licensure for middle level 5-8 mathematics. Bruce Major made a motion to recommend approval of a 1-year provisional license for secondary 6-12 mathematics based on completion of an approved secondary 6-12 mathematics program with full licensure contingent upon completion of the Kansas required Praxis content test for secondary mathematics. The motion was seconded by Dale Jean Probst and the Licensure Review Committee approved the motion unanimously.

**Case 3118**
Alyssa Lada requested the renewal of a two-year provisional license for PreK-12 instrumental music. Bruce Major made a motion to recommend approval of this renewal based on completion of half of the semester credit hours listed on the plan of study. The motion was seconded by Dale Jean Probst and the Licensure Review Committee approved the motion unanimously.
**Item Title:**

Act on a request to partner with EducationSuperHighway, Department of Administration, and Governor’s office to develop/implement a plan to upgrade every school district to affordable high-speed broadband access

**Board Goals:**

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

**Recommended Motion:**

It is moved that the Kansas State Board of Education authorize the Commissioner of Education to negotiate and enter into an agreement with EducationSuperHighway, Department of Administration, and the Governor’s office to develop and implement a statewide plan to upgrade every school district to affordable high-speed broadband access.

**Explanation of Situation Requiring Action:**

The Kansas State Board of Education received a report from KSDE Director of Information Technology Lane Wiley and representatives from the EducationSuperHighway at the October meeting. ESH has reached out to the Governor’s office and KSDE offering to assist Kansas schools with resources, support, data cleaning, data analysis, and technical expertise to ensure Kansas is providing the best possible connectivity at the best prices, which will ultimately enhance digital learning in our state via the E-rate program. The recommendation is for the Board of Education to support this initiative.
REQUEST AND RECOMMENDATION FOR BOARD ACTION

Item Title:

Act on contract with the National Student Clearinghouse

Board Goals:

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

Recommended Motion:

It is moved that the Kansas State Board of Education authorize the Commissioner of Education to enter into a contract not to exceed a total of $150,000 covering a five-year period with the National Student Clearinghouse for core postsecondary data.

Explanation of Situation Requiring Action:

The proposed contract is for purchase of National Student Clearinghouse core postsecondary data. This student data is the most complete data available. The data will be available for timely reporting and will provide longitudinal data dating back to 2009. KSDE will retain control over the data’s use. The data will allow for aggregate use for state and federal reporting. The data set will support the Kansans Can initiative insofar as it will provide metrics for: (1) high school graduation, (2) postsecondary enrollment, (3) part-and full-time postsecondary enrollment status, and (4) postsecondary persistence rates.
REQUEST AND RECOMMENDATION FOR BOARD ACTION

Staff Initiating:  Director:  Commissioner:  Meeting Date:  11/9/2016
Kent Reed  Scott Smith  Randy Watson

Item Title:
Act on request to contract with College Board to provide Advanced Placement exams

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

Recommended Motion:
It is moved that the Kansas State Board of Education authorize the Commissioner of Education to continue a contract with College Board to provide for Advanced Placement exam fees for qualified students in an amount not to exceed $93,024.

Explanation of Situation Requiring Action:
The Advanced Placement Fee Reduction Grant is a federal grant that allows low SES students (based on free and reduced lunch status) to participate in Advanced Placement courses by covering the cost of the exams. KSDE has received this grant for the past 13 years. KSDE annually applies for the grant based on the number of anticipated exams. The grant pays for qualified (low SES) student AP exams administered at the end of the courses (College Board certified) offered at participating schools. The exams are typically taken at the end of the school year. Schools send their invoices to College Board which then in turn invoices KSDE for the qualified student exams.

Offering AP courses aligns with the Board of Education's College and Career Readiness goals and objectives. This grant allows students who otherwise could not afford AP courses the opportunity to earn dual credit (both local and college credit).

This request is to pay for 2,448 exams that 71 schools administered to qualified students for the 2015-16 school year. The agreement with the College Board is that the grant will pay for $38 toward the cost of each exam ($38 x 2,448) for a total cost of $93,024.
REQUEST AND RECOMMENDATION FOR BOARD ACTION

Item Title:

Act on request to contract with College Board to provide International Baccalaureate exams

Board Goals:

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

Recommended Motion:

It is moved that the Kansas State Board of Education authorize the Commissioner of Education to continue a contract with International Baccalaureate schools to provide for IB exam fees for qualified students in an amount not to exceed $67,620.

Explanation of Situation Requiring Action:

The Advanced Placement Fee Reduction Grant is a federal grant that allows low SES students (based on free and reduced lunch status) to participate in Advanced Placement or International Baccalaureate courses by covering the cost of the exams. KSDE has received this grant for the past 13 years. KSDE annually applies for the grant based on the number of anticipated exams. The grant pays for qualified (low SES) student AP/IB exams administered at the end of the courses (College Board/IB certified) offered at participating schools. The exams are typically taken at the end of the school year. Schools send their invoices to College Board which then in turn invoices KSDE for the qualified student exams.

Offering AP/IB courses aligns with the Board of Education's College and Career Readiness goals and objectives. This grant allows students who otherwise could not afford AP courses the opportunity to earn dual credit (both local and college credit).

This request is to pay for 690 exams that IB schools administered to qualified students for the 2015-16 school year. The agreement with the IB schools is that the grant will pay for $98 toward the cost of each exam ($98 x 690) for a total cost of up to $67,620.
REQUEST FOR EXECUTIVE SESSION

Meeting Date: 11/9/2016

Item Title:

Executive Session #1

Board Goals:

Governmental Responsibility

Recommended Motion:

It is moved that the Kansas State Board of Education recess into Executive Session for the purpose of consultation with an attorney which would be deemed privileged in the attorney-client relationship, in order to protect the privilege and the Board’s communications with its attorney on legal matters.
REQUEST FOR EXECUTIVE SESSION

Meeting Date: 11/9/2016

Item Title:
Executive Session #2

Board Goals:
Governmental Responsibility

Recommended Motion:
It is moved that the Kansas State Board of Education recess into Executive Session for the purpose of discussing personnel matters of non-elected personnel in order to protect the privacy interests of the individual(s) to be discussed.
THURSDAY, NOVEMBER 10, 2016
MEETING AGENDA

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

1. Call to Order
2. Roll Call
3. Approval of Agenda
4. Act on State Board Regulation 91-31-32 (suicide awareness) - Roll call vote
5. Board Reports & Requests for Future Agenda Items
6. Act on Board Member Travel
7. Work session on Vision Outcome: postsecondary completion/attendance (working lunch)

ADJOURN

Next Meeting: Dec. 13 and 14 in Topeka
REQUEST AND RECOMMENDATION FOR BOARD ACTION

Staff Initiating: Scott Gordon
Director: Scott Gordon
Commissioner: Randy Watson
Meeting Date: 11/10/2016

Item Title:
Act to Adopt K.A.R. 91-31-32

Board Goals:
Governmental Responsibility

Recommended Motion:
It is moved that the Kansas State Board of Education adopt proposed Suicide Prevention regulation 91-31-32. *(Roll call vote required)*

Explanation of Situation Requiring Action:
A public hearing was held on Wednesday, Nov. 9, 2016. KSDE General Counsel Scott Gordon will provide the staff response to public hearing testimony.

If modifications are required as a result of comments received at the public hearing, staff will make the appropriate modifications. The modifications will be resubmitted to the Department of Administration and the Attorney General for approval before the final regulations can be adopted by the State Board of Education.
To: Kansas State Board of Education
Subject: Monthly Board Reports & Requests for Future Agenda Items

These updates will include:

1. Committee Reports
2. Board Attorney’s Report
3. Individual Board Member Reports and Requests for Future Agenda Items
4. Chairman’s Report
To: Board Members
From: Peggy Hill
Subject: Board Member Travel

Travel requests submitted prior to the meeting, and any announced changes, will be considered for approval by the Board.

Upcoming deadlines for reporting salary/payroll information to the Board office are:

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<th>Pay Period Begins</th>
<th>Pay Period Ends</th>
<th>Deadline to Report</th>
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<td>12/03/2016</td>
<td>12/01/2016</td>
<td>12/16/2016</td>
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To: Kansas State Board of Education

Subject: Work session on Vision Outcome: Postsecondary completion/attendance

Time has been reserved until 1 p.m. for more in-depth discussions on the Kansans CAN vision outcome: postsecondary completion/attendance. The format will be similar to previous work sessions/retreats dedicated to each of the five vision outcomes.

The work session, which continues through lunch, will take place in the Board Room, Ste 102 of Landon.