



ACTION SUMMARY SHEET

DATE: April 19, 2018

ISSUE: Approval of Agenda

BACKGROUND:

SUGGESTED MOTION/RECOMMENDATION:

To approve the Agenda for the April 19-20, 2018 State Board of Education meeting.

SUPPORTING INFORMATION ATTACHED:

- Agenda

PREPARED BY: Kylie Taylor
Executive Assistant

ACTION TAKEN BY STATE BOARD: _____ **DATE:** _____

COMMENTS:



WYOMING STATE BOARD OF EDUCATION

Wyoming education partners support a student-centered learning system in which all Wyoming students graduate prepared and empowered to create and own their futures.

| April 19, 2018 1000 W. 8 th Street Gillette | | |
|--------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| | Lunch | |
| 11:30 a.m. - 12:00 p.m. | State Board of Education | |
| | <ul style="list-style-type: none"> • Call to Order • Roll Call • Pledge of Allegiance | |
| | <ul style="list-style-type: none"> • Approval of Agenda | Tab A |
| | <ul style="list-style-type: none"> • Minutes - March 22, 2018 | Tab B |
| | <ul style="list-style-type: none"> • Treasurers Report | Tab C |
| 12:00 p.m. - 6:00 p.m. | Board Reports and Updates- <ul style="list-style-type: none"> • State Systems of Support Update • Update on Public Input Received on Proposed Standards for Math, Social Studies, and Science Extended • Coordinator Position - Budget Allocation - Roles/Tasks • Committee Assignments • Update on Chapter 29 Progress | Tab D |
| | | Tab E |
| | | Tab F |
| | | Tab G |
| | | Tab H |
| 6:00 p.m. | Recess the State Board of Education | |
| April 20, 2018 | | |
| 8:00 a.m. - 8:30 a.m. | Presentation from 2018 Wyoming Teacher of the Year | Tab I |
| 8:30 a.m. | Reconvene the State Board of Education | |
| 8:30 a.m. - 9:30 a.m. | Continuation of Board Reports and Updates From Previous Day | |
| 9:30 a.m. - 11:00 a.m. | Coordinator's Report | Tab J |
| 11:00 a.m. - 11:30 a.m. | SBE Committee Reports: | |

| | | |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| | <ul style="list-style-type: none"> • Administrative Committee • Communications Committee | Tab K |
| | | Tab L |
| 11:30 a.m. - 12:30 p.m. | <u>Action Items:</u> <ul style="list-style-type: none"> • Chapter 6 - Accreditation • Chapter 31 - Graduation Requirements • Chapter 10 - State Standards • Coordinator Budget • State Board Meeting Dates for 2018-19 | Tab M |
| | | Tab N |
| | | Tab O |
| | | Tab P |
| | Other issues, concerns, discussion, public comment: | |
| | Adjourn | |
| | Luncheon/Presentation from BOCES at 410 North Miller Avenue | |

DRAFT



ACTION SUMMARY SHEET

DATE: April 19, 2018

ISSUE: Approval of Minutes

BACKGROUND:

SUGGESTED MOTION/RECOMMENDATION:

To approve the minutes from the State Board of Education meeting on March 22, 2018

SUPPORTING INFORMATION ATTACHED:

- Minutes of March 22, 2018

PREPARED BY: Kylie Taylor

Kylie Taylor, Executive Assistant

ACTION TAKEN BY STATE BOARD: _____ **DATE:** _____

COMMENTS:

WYOMING STATE BOARD OF EDUCATION

March 22, 2018
812 E. Murray Street
Rawlins

Wyoming State Board of Education members present: Chairman Wilcox, Sue Belish, Ken Rathbun, Dicky Shanor (proxy for State Superintendent Balow), Ryan Fuhrman, Max Mickelson, Belenda Willson via Zoom, Kathryn Sessions, Robin Schamber, and Nate Breen.

Members absent: Dan McGlade, Scotty Ratliff, Jim Rose, and Dean Ray Reutzel.

Also present: Kylie Taylor, WDE; Dr. Julie Magee, WDE; Kari Eakins, WDE; Mike O'Donnell, Attorney General's Office (AG); and Jim Peters, AG.

March 22, 2018

CALL TO ORDER

Chairman Wilcox called the State Board of Education to order at 8:10 a.m.

New board member Forrest Smith took the oath of office.

Kylie Taylor conducted roll call and established that a quorum was present.

APPROVAL OF AGENDA

Nate Breen moved to approve the agenda as presented, seconded by Max, Dicky Shanor made a motion to move the Computer Science update above the Coordinator's Report of the agenda to accommodate WDE staff travel. Seconded by Kathryn Sessions; the motion carried.

APPROVAL OF MINUTES

Minutes from the February 15-16, 2018 State Board of Education meeting were presented for approval.

Ken Rathbun moved to approve the minutes, seconded by Nate Breen; the motion carried.

TREASURER'S REPORT

SBE Treasurer, Max Mickelson, presented the summary review and expenditures report for the board's budgets, and went over the remaining balances and time left in the current biennium.

Kathryn Sessions moved to approve the presented Treasurer's Report, seconded by Robin Schamber; the motion carried.

State Superintendent's Update

Dicky Shanor gave Superintendent Balow's update on how the 2018 Legislative Budget Session went, the revised accreditation process that was shared with school districts earlier in the month. Dicky also updated the board on the Council of Chief State School Officers Legislative Conference that Superintendent Balow participated on a plenary panel.

Computer Science Update

Laurie Hernandez, WDE, informed the board that Governor Mead signed HEA 48 into law on March 14, 2018 which requires the addition of Computer Science Standards and a couple of changes to the Basket of Goods. The bill requires the SBE to promulgate uniform content and performance standards for computer science by January 1, 2022, to be effective beginning with the 2022-23 school year. Laurie presented the standards review plan to the board.

Coordinator's Report

Kylie Taylor presented the Coordinator's Report on behalf of SBE Coordinator Tom Sachse. Kylie indicated that she, Tom and Kelly Pascal have been working on the Policies of Governance and they are ready for the board's review. Kylie said there is still some changes that need to be made and Tom is hoping to have the board vote on the Policies in April or May.

Kylie updated the board on the legislative session and said that Management Council would be meeting in April to finalize what interim topics JEIC will discuss.

Dr. Julie Magee gave an update on where everything was at with the PJP consultant recommendation and indicated the committee for selecting a consultant came to an agreement and was ready for the board's vote.

Dr. Magee and Mike O'Donnell also updated the board on the first edition of the new Chapter 31 rules that she drafted. Within the rules she has included input from the Governor's Office, Wyoming Association of School Administrators, the Wyoming Curriculum Directors Association, the AG's Office, and respective board members. They indicated that the Chapter 31 rules would be ready to vote on by the board at their April meeting.

Chapter 6

Dr. Magee and Bill Pannell, WDE, presented an update on Chapter 6 Accreditation to the board. A task force comprised of educators from all five regions in the state has been created to make recommendations for the state-led process. Chapter 6 rules define the requirements and process for state-led Accreditation. They have not been revised since 2005 and are currently being updated. Dr. Magee informed the board the 2018-19 school year will be a pilot year for the new Accreditation process.

Sue Belish recommended that a Purpose Statement be added to section two of the rules. Sue also suggested that the section describing the external review be moved into a separate section.

Kathryn Session suggested the family engagement criteria be applied at all grade levels.

Max Mickelson raised the concern of small districts and large districts having the same Accreditation process.

Ryan Fuhrman suggested the Accreditation task force develop an evaluation tool for each district that participates in the pilot to determine what worked well and what needs to be revised.

Dr. Magee will present the Chapter 6 rules for promulgation at the board's April meeting.

Coordinator's Contract

The board discussed options for moving funds to help support the Coordinator's contract through the biennium.

SBE Committee Structure and Representation

Chairman Wilcox said with the change in board members the committees need to be readjusted to have equal representation on each. He said for any board members interested on serving on a specific committee to reach out to him and let him know. Each committee chair gave a brief overview of what their committee does and how often they meet.

Meeting Calendar

Sue Belish presented a draft meeting calendar of potential dates for the SBE to meet through the year and into 2019.

Chairman Wilcox indicated that before the board votes to finalize a meeting calendar, UW board of trustees meeting dates should be taken into consideration.

Dicky Shanor asked the board to consider meeting less often when looking at the future meeting calendar.

COMMITTEE REPORTS AND UPDATES

Administrative Committee

The administrative committee reviewed the draft March agenda, discussed the PJP consultant process, created a draft calendar for SBE meetings, and discussed interim Legislative topics for the JEIC.

Communications Committee

Ryan Fuhrman gave an overview of the last communications committee meeting including an update on the stakeholder communications, website updates, and communication topics the committee is working on.

ACTION ITEMS

Alternative Schedules

The following school districts have submitted all required materials and are requesting approval from the SBE to implement an alternative school schedule.

Ken Rathbun moved to approve the request for an alternative schedule for Carbon County School District #1, seconded by Nate Breen; the motion carried.

Sue Belish moved to approve the request for an alternative schedule for Crook County School District #1, seconded by Robin Schamber; the motion carried. Ken Rathbun abstained from the vote.

Ken Rathbun moved to approve the request for an alternative schedule for Converse County School District #2, seconded by Nate Breen; the motion carried.

Ken Rathbun moved to approve the request for an alternative schedule for Lincoln County School District #2, seconded by Nate Breen; the motion carried.

Sue Belish moved to approve the request for an alternative schedule for Sublette County School District #1, seconded by Max Mickelson; the motion carried. Robin Schamber abstained from the vote.

Selection of Professional Judgement Panel Consultant

Dicky Shanor motioned to go into executive session to discuss the PJP consultant process with SBE attorney. Seconded by Kathryn Sessions; the motion carried.

The board went into executive session at 2:44 p.m.

The board returned from executive session and Sue Belish motioned that the State Board of Education enter into contract negotiations with Beck Evaluations and Testing Associates, Inc. for the Professional Judgement Panel Consultant. Seconded by Dicky Shanor; the motion carried.

NEXT MEETING

The board's next meeting will take place in Gillette on April 19-20, 2018

The State Board of Education adjourned at 3:08 p.m.



ACTION SUMMARY SHEET

DATE: April 19, 2018

ISSUE: Approval of Treasurer's Report

BACKGROUND: The State Board of Education budget summary.

SUGGESTED MOTION/RECOMMENDATION:

To approve the Treasurer's Reports as submitted.

SUPPORTING INFORMATION ATTACHED:

- State Board Budget Summary attached

PREPARED BY: Kylie Taylor
Kylie Taylor, Executive Assistant

ACTION TAKEN BY STATE BOARD: _____ **DATE:** _____

COMMENTS:

WYOMING DEPARTMENT OF EDUCATION

SUMMARY REPORT

State Board of Education

FY17 Budget

30 June 2017 thru 09 April 2018

| <i>DESCRIPTION</i> | <i>BUDGETED</i> | <i>EXPENDED</i> | <i>ENCUMBERED</i> | <i>REMAINING BALANCE</i> | <i>Percentage</i> |
|---------------------------------------|-------------------|------------------|-------------------|------------------------------|-------------------|
| Personal Services (0100 series) | | | | | |
| [App Unit 001] | 60,000.00 | 51,025.29 | | 8,974.71 | 14.96% |
| Supportive Services (0200 series) | | | | | |
| [App Unit 001] | 137,275.00 | 131,815.00 | 3,548.00 | 1,912.00 | 1.39% |
| Data Processing Charges (0400 series) | | | | | |
| [App Unit 001] | 5,737.00 | 4,623.65 | | 1,113.35 | 19.41% |
| Professional Services (0900 series) | | | | | |
| [App Unit 001] | 40,794.00 | 7,586.25 | 7,468.75 | 25,739.00 | 63.10% |
| | 243,806.00 | 195,050.19 | 11,016.75 | 37,739.06 | 15.48% |
| | | | | | |
| <i>DESCRIPTION</i> | <i>BUDGETED</i> | <i>EXPENDED</i> | <i>ENCUMBERED</i> | <i>REMAINING BALANCE</i> | <i>Percentage</i> |
| Professional Services (0900 series) | | | | | |
| [App Unit 009] | 145,848.00 | 21,747.91 | 0.00 | 124,100.09 | 85.09% |
| [App Unit 001] | 84,500.00 | 64,350.94 | 0.00 | 20,149.06 | 23.85% |
| TOTAL | 230,348.00 | 41,166.16 | 3,153.46 | 186,028.41 | 79.98% |



WYOMING
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Jillian Balow

Superintendent of Public Instruction

Dicky Shanor

Chief of Staff

Brent Bacon

Chief Academic Officer

Megan Degenfelder

Chief Policy Officer

Dianne Bailey

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MEMORANDUM

To: State Board of Education
From: Megan Degenfelder, Chief Policy Officer
Subject: Statewide System of Support Update
Date: April 10, 2018

Meeting Date: April 19-20, 2018

Item Type: Action: _____ Informational: X

Background:

The Statewide System of Support, as established by the State Board of Education and managed by the Wyoming Department of Education (WDE), continues to provide programming to schools based on the four pillars of support:

- 1) Educational Leadership;
- 2) Data Analysis and School Improvement Plan Development;
- 3) Assessment Literacy and Formative Assessment Development; and
- 4) Professional Learning Communities Implementation.

In response to school and district feedback contained within the Education Northwest program evaluation report, adjustments to program delivery were made in 2017-2018.

Educational Leadership: The WDE contracted with Joel Dvorak to facilitate the Educational and School Leadership programs offered through the UW ECHO platform. Dr. Dvorak's firsthand knowledge of issues relevant to school and district leadership and his network of professionals has contributed to more robust programming with topics being presented by local education experts.

Data Analysis and School Improvement Planning: Data retreats and school improvement planning workshops have been expanded from one and a half days to two full days. This has provided additional support in the development of the school improvement plan. Follow-up by the WDE table facilitator who supported the school during the retreat has also been implemented.

Assessment Literacy and Formative Assessment Development: Training by Jan Hoegh with Marzano Research is being provided across the state. Workshops on assessment literacy and formative assessment development, instructional strategies for the classroom continue to have registration at capacity. This spring, the WDE piloted two new sessions. Proficiency Scales for

Exceptional Students, and Standards Based Grading were offered as one-day workshops. Both sessions had high registration numbers and positive evaluations.

Professional Learning Communities Implementation: The WDE partnered with WASA to develop and expand the Professional Learning Communities Implementation program that was initiated in 2015. Solution Tree was the successful bidder through the RFP process, and the Professional Learning Communities at Work process is being implemented.

There are two components of this new program:

1. Statewide Training - This is open to all district leadership, school leadership, and teachers. The first training sessions (April 16, 17, 26, 27) will introduce the statewide component of the PLC At Work Program. Next year this training will continue with four one-day sessions, offered in two locations in the state.
2. Cohort of 15 schools - Schools will apply to be part of this comprehensive program. The training includes an on-site needs assessment by Solution Tree, three two-day Leadership Implementation Academies (offered in two locations in the state), web-based consulting, and attendance at the statewide training.

The original program design includes up to three years of support for our schools selected. We will select 15 new schools each year, with a goal of developing a network of Wyoming experts who will support this program.

Our original advisory committee consisted of three WASA members. We have expanded that to include representation from across the state. Superintendents, curriculum and assessment directors, and school principals have agreed to serve on this committee.

Within the WDE, we have established an internal Statewide System of Support Team. This group includes members from the School Support Division, the Individual Learning Division, the Standards and Assessment Division, and the Accountability Division. The goal of this team is to serve as a Department-wide system of support, utilizing all resources more efficiently and effectively to provide more comprehensive programming across the state. An operations manual and a comprehensive SSOS Guidance Document are being developed, and expected to be completed during the summer.

For questions or additional information:

Contact Shelly Andrews at shelly.andrews@wyo.gov or (307)777-3781.



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Superintendent of Public Instruction

Dicky Shanor

Chief of Staff

Brent Bacon

Chief Academic Officer

Megan Degenfelder

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MEMORANDUM

To: State Board of Education
From: Megan Degenfelder, Chief Policy Officer
Laurie Hernandez, Standards/Assessment Director
Date: April 11, 2018
Subject: 2018 Proposed Standards Update
(Math, Science Extended, and Social Studies)

Meeting Date: April 19, 2018

Item Type: Action: X Informational:

Background:

The Board is charged with evaluating and reviewing the uniformity and quality of the educational standards imposed under W.S. 21-9-101 including the student content and performance standards. The Wyoming Department of Education (WDE) Standards Team has been charged with convening three Standards Review Committees to review the standards and make a recommendation to the state board in the content areas of Mathematics, Science Extended, and Social Studies Standards. The WDE Standards Team started the review process by conducting regional community input meetings across Wyoming in early May to inform the public of the standards review process and to gather public input for the Review Committees' consideration.

The Math Standards Review Committee (MSRC) reviewed the current 2012 Mathematics Standards and identified areas to revise and enhance the current standards. This committee met, face-to-face over nine days, as well as through video conference, from May – November 2017.

The Science Extended Standards Review Committee (SESRC) reviewed and extended the current 2016 Science Standards, making them accessible to students with the most significant cognitive disabilities. This committee met face-to-face over five days, as well as through video conference, from July – December 2017.

The Social Studies Standards Review Committee (SSSRC) reviewed the current 2014 Social Studies Standards and identified areas to revise and enhance the current standards in order to meet the requirement of 2017 HEA 119, or Indian Ed for All. This committee met face-to-face over four days, as well as through video conference, from November 2017 – February 2018.

The Standards Team hosted regional public input meetings in five (5) locations around the state, March 22 – 30, and collected

public input online from February 23 – April 8. The Team also held an additional meeting on the Social Studies Standards at an event in Fremont County.

Statutory Reference (if applicable):

- W.S. 21-2-304(c)
- Education Rules, Chapter 10: Wyoming Content and Performance Standards

Supporting Documents/Attachments:

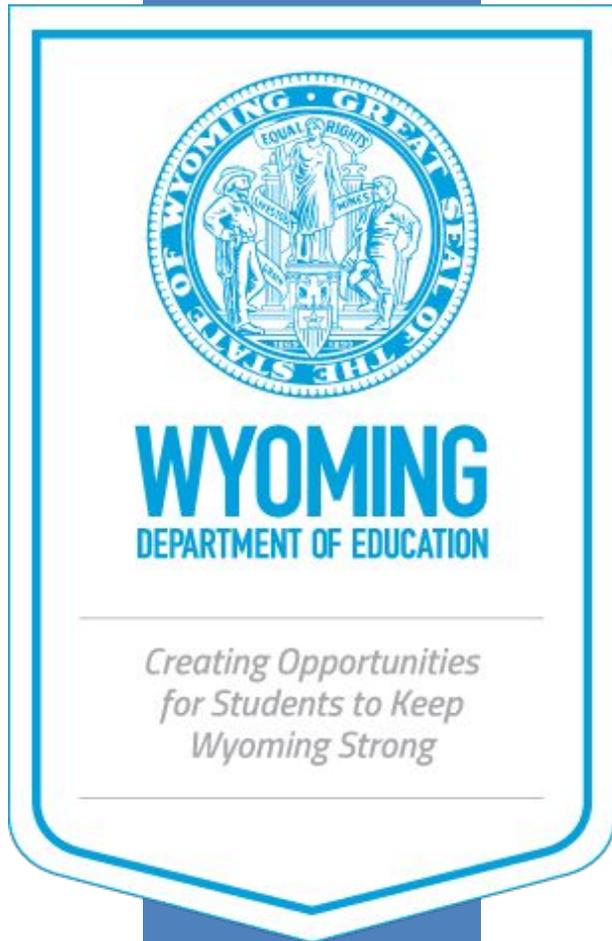
- PPT Presentation: 2018 Standards Update for SBE 04.19.18
- [2018 Proposed Mathematics Standards](#)
- Mathematics Crosswalk from 2012 to 2018
- Plans for Math Standards (Implementation, Communication, and Professional Development)
- [2018 Proposed Science Extended Standards](#)
- Plans for Science Extended Standards (Implementation, Communication, and Professional Development)
- [2018 Revisions to the 2014 Social Studies Standards](#)
- Plans for Social Studies Standards Additions (Implementation, Communication, and Professional Development)
- Ch. 10 Wyoming Content and Performance Standards Statement of Reasons
- Ch. 10 Rules on Wyoming Content and Performance Standards

Proposed Motions:

“I move to promulgate the Chapter 10 Rules for Wyoming Content and Performance Standards.”

For questions or additional information:

Contact Laurie Hernandez at Laurie.Hernandez@wyo.gov or (307)777-3469.



Proposed 2018 Wyoming Content & Performance Standards

State Board of Education
Meeting in Gillette, WY
April 19, 2018

Laurie Hernandez, M.Ed.

Director of S&A Division

Trent Vonburg

Education Consultant

Rob Black

Social Studies Consultant

Overview



- Report on Public Input for 2018 Proposed Standards
 - Mathematics
 - Science Extended
 - 2018 additions to the 2014 Social Studies Standards
- Mathematics Crosswalk
- 4 Year Plans for each Content Area
 - Implementation
 - Communication
 - Professional Development (PD)
- Update on Community Input Meetings for New Computer Science Standards



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Proposed 2018 Wyoming Math Content & Performance Standards

Laurie Hernandez, M.Ed.

Director of Standards &
Assessment Division

Jill Stringer, M.Ed, M.A.

Math/Health Consultant

Jill.Stringer@wyo.gov

307-777-5036



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INPUT FROM PUBLIC HEARINGS and SURVEY

Public Input Received for Math Online and at Public Hearings



| | |
|--------------|----|
| Total | |
| Online | 57 |
| Verbal | 3 |
| Written | 0 |

| Date | Location | # of Verbal Comments | # of Written Comments |
|---------|--------------|----------------------|-----------------------|
| 3/21/18 | Cheyenne | 1 | 0 |
| 3/22/18 | Buffalo | 0 | 0 |
| 3/27/18 | Thermopolis | 2 | 0 |
| 3/28/18 | Lander | 0 | 0 |
| 3/29/18 | Green River | 0 | 0 |
| | TOTAL | 3 | 0 |

Summary of Public Input



Within those 60 comments:

- 34 statements would like the State Board of Education to approve these standards as they are
- 4 statements suggested preferential edits
- 6 statements needed clarifying information
- 4 statements suggested coding changes
- 8 statements preferred to have more examples
- 3 statements suggested not to change the current standards
- 1 statement made suggestions that would need to be reviewed by the Committee (SSRC)

Summary of Public Input

February 21 – April 8, 2018



| Public Input Responses | Request SBE to Adopt | Recommend Minor Edits | Identified Major Concerns |
|------------------------|----------------------|-----------------------|---------------------------|
| Number of Responses | 34 | 23 | 3 |
| Total Input | 60 | 60 | 60 |
| Percent (%) Responses | 57% | 38% | 5% |

Input in Support of Adoption



- “I like how the standards build math fluency and the examples given.”
- “I appreciate the inclusion of cross-content standards.”
- “I appreciate the specific examples and inclusion of the math practices.”
- “I love the layout of the new math standards.”
- “We like the format of the standards, examples, and cross disciplinary connections.”

Input for Minor Edits



- “The benchmark 6.NS.C.3 has an example shown that does not incorporate decimal operations. I think the example should correspond to the benchmark.”
- “Also please make sure your sources are linked to working sites and aren't tied to a pay site. We had one linked to Study.com which is a pay site and the link didn't work.”
- “I don't understand why we're changing the coding and formatting of the standards themselves. By changing the numbering system and giving each benchmark its own page, this document is becoming much too large to be functional. I would leave the formatting as is, make the proposed changes, and approve.”

Input with Major Concerns



- “I'm very concerned about the message being sent about true level and meeting of standards.”
- “We are still in the revision process from implementing the Common Core Standards. I would like to see the previous standards (that we are still working on) stay in place and not have to be revised again until these present standards have been used for several years.”

Input with Major Concerns (cont.)



- “Adding the Mathematical processes into the form in which this new document suggests is crazyiness. The access to these is very clear in the already standards. We are just now beginning to get a grasp of the standards as they are, build our curriculums, and assessments around them and KNOW them. Do not change the whole structure and ask us to add one more thing into our already incredibly hectic data, meetings, follow up, planning and communication. The Math Standards are good as they are. Please do not propose new ones? Why and who is doing this? Truly - we have been working SO hard on all of this for 5 years since Common Core!”



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CROSSWALK

2012 – 2018 Math Crosswalk



| 6th GRADE MATHEMATICS | | | |
|-----------------------|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | 2012 ORIGINAL | COMMITTEE CHANGES | 2018 PROPOSED |
| 6.NS.C.2 | Fluently divide multi-digit numbers using the standard algorithm. | Fluently divide Divide multi-digit numbers using efficient and generalizable procedures including, but not limited to the standard algorithm. Assessment boundary: up to 5-digit dividend, 2-digit divisors (add an example showing long division and add "the standard algorithm" to the glossary or somewhere) | Divide multi-digit numbers using efficient and generalizable procedures including, but not limited to the standard algorithm. Assessment Boundary: Use up to 5-digit dividend, 2-digit divisors. |
| 6.NS.C.3 | Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. | Fluently add Add, subtract, multiply, and divide manageable multi-digit decimals using efficient and generalizable procedures including, but not limited to using the standard algorithm for each operation. (add an example showing all standard algorithms and add "the standard algorithm" to the glossary or somewhere) | Add, subtract, multiply, and divide manageable multi-digit decimals using efficient and generalizable procedures including, but not limited to the standard algorithm for each operation. |

High School Geometry Crosswalk



| High School Geometry | | |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | 2012 Standards | 2018 Standards |
| G.CO.A.1 | Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc. | Apply precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc. |
| G.SRT.E.1 | Understand similarity in terms of similarity transformations. Verify experimentally the properties of dilations given by a center and a scale factor: a. A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged. b. The dilation of a line segment is longer or shorter in the ratio given by the scale factor. | Understand similarity in terms of similarity transformations. Verify heuristically the properties of dilations given by a center and a scale factor. A. A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged. B. The dilation of a line segment is longer or shorter in the ratio given by the scale factor. |
| G.GPE.K.2 | Derive the equation of a parabola given a focus and directrix. | (+) Derive the equation of a parabola given a focus and directrix. |
| G.GPE.L.4 | For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point $(1, \sqrt{3})$ lies on the circle centered at the origin and containing the point $(0, 2)$. | Use coordinates to prove simple geometric theorems algebraically. |



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**PLANS for
IMPLEMENTATION,
PROFESSIONAL
DEVELOPMENT, and
COMMUNICATION**

Implementation Plan



Implementation Plan – 2018 Wyoming Math Content and Performance Standards

State Support – WDE

Phase 1: 2018-19 Awareness/Planning

- ✓ Participate in State Collaborative on Assessment and Student Standards (SCASS) and Association of State Supervisors of Mathematics (ASSM) meeting to collaborate with other states and gather resources to share
- ✓ Provide updates through Edmodo, Facebook, Twitter conferences, memos and newsletter
- ✓ Provide crosswalk and shifts of new standards for mathematics

Phase 2: 2019-20 Transition/Implementation

- ✓ Participate in SCASS/ ASSM meetings and share resources with educators
- ✓ Maintain communication regarding implementation of standards
- ✓ Present new information at WCDA/SBE/ Math and Science Conference, and other PD Events
- ✓ Update WDE website with resources for new standards
- ✓ Develop and provide PD around standards
- ✓ Provide trainings and communicate on the state assessment regarding standards

Phase 3: 2020-21 2nd Yr. Implementation

- ✓ Participate in SCASS/ ASSM meetings and share resources with educators
- ✓ Maintain communication regarding implementation of standards
- ✓ Present new information at WCDA/SBE/ Math and Science Conference, and other PD events
- ✓ Continue to develop and maintain WDE website with resources
- ✓ Develop and provide PD – including cross disciplinary and mathematical practices
- ✓ Provide trainings and communicate on the state assessment regarding standards

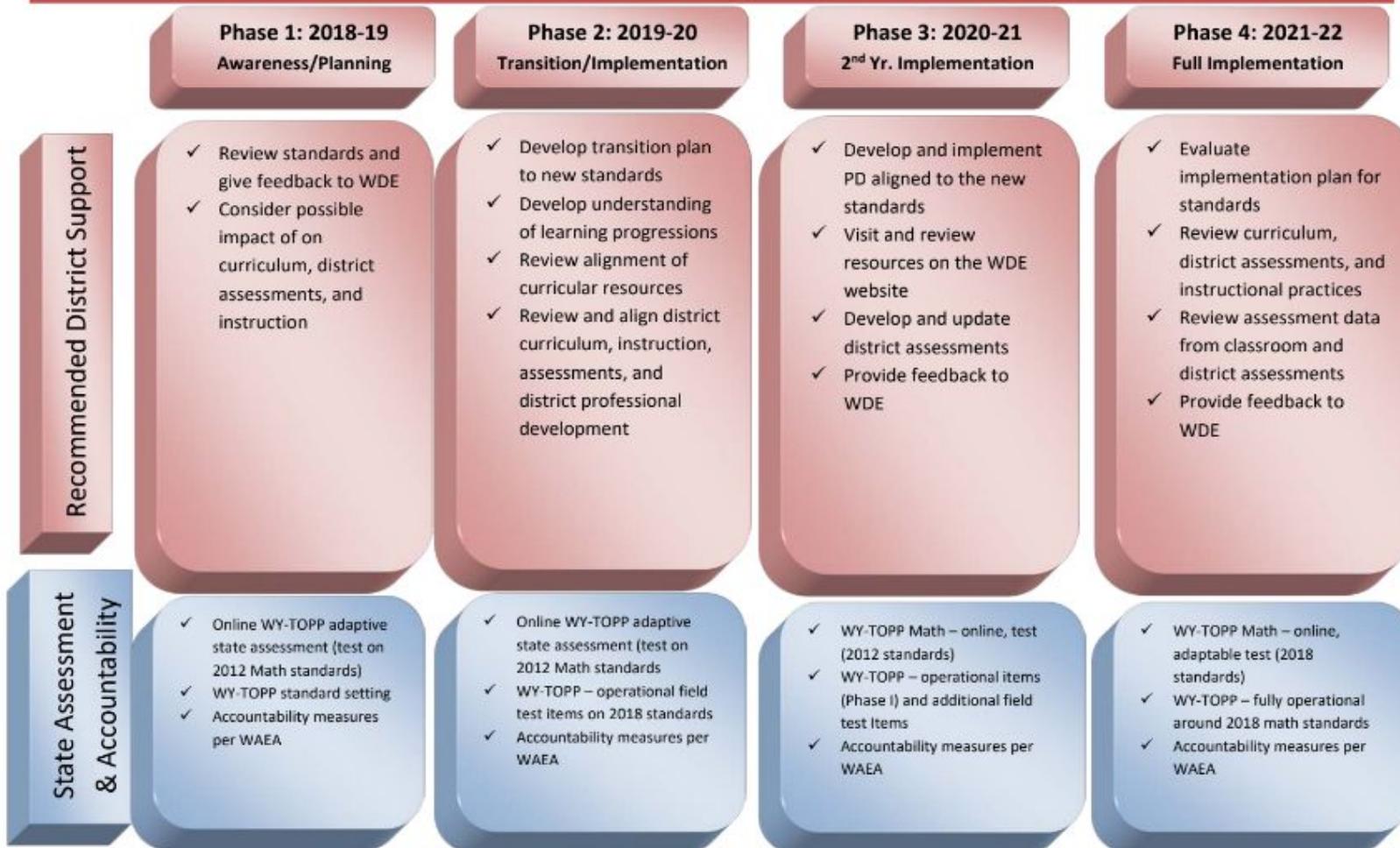
Phase 4: 2021-22 Full Implementation

- ✓ WDE math consultant participate SCASS and ASSM Meetings and share resources with educators
- ✓ Maintain communication regarding implementation of standards
- ✓ Present new information at WCDA/SBE/Legislative Meetings, Math and Science Conference, & other PD events
- ✓ Continue to develop and maintain WDE website with resources
- ✓ Develop and provide PD for math practices, computational thinking, and financial literacy
- ✓ Provide data resources to districts

Implementation Plan



Implementation Plan – 2018 Wyoming Math Content and Performance Standards



Professional Development Plan



Professional Development Plan – 2018 Wyoming Mathematics Content and Performance Standards

State Support – WDE

Phase 1: 2018-19 Awareness/Planning

- ✓ Add new standards, resources, documents, and videos on website
- ✓ Announce PD on social media, WDE newsletter, Edmodo and website
- ✓ Educate on the structure and layout of new standards
- ✓ Communicate instructional shifts with mathematical practices and modeling
- ✓ Provide updated information at content area conferences in Wyoming

Phase 2: 2019-21 Transition/Implementation

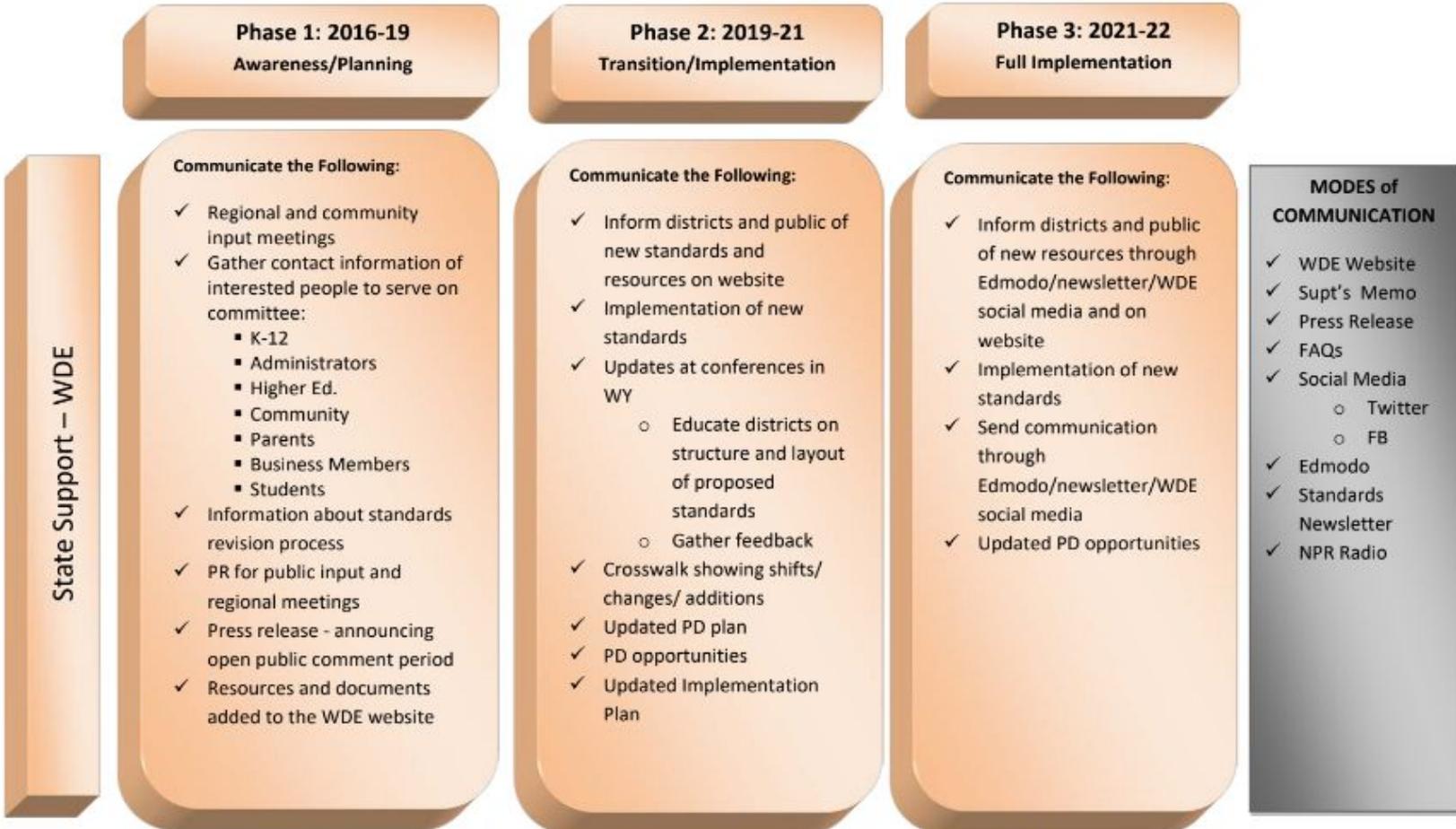
- ✓ Monitor district needs and collect feedback on implementation of new standards
- ✓ Respond to district needs/ requests for PD
- ✓ Announce PD on social media, WDE newsletter, Edmodo and website
- ✓ Provide PD on mathematical practices and modeling
- ✓ Develop and facilitate content-specific PD opportunities (deep dives)
- ✓ Update and maintain content-specific resources on WDE website
- ✓ Update and present new information at state meetings and conferences

Phase 3: 2021-22 Full Implementation

- ✓ Continue to: monitor district needs and collect feedback on implementation of new standards
- ✓ Respond to individual district needs/ requests for PD
- ✓ Announce PD on social media, WDE newsletter, Edmodo and website
- ✓ Prepare and present best practices PD around implementing new standards
- ✓ Facilitate content-specific PD opportunities (deep dives)
- ✓ Update and maintain content-specific resources on WDE website
- ✓ Update and present new information at state meetings and conferences

Communication Plan

Communication Plan – 2018 Wyoming Mathematics Content and Performance Standards



2018 Benchmarks and Revisions



| Grade | # Benchmarks | | Grade | # Benchmarks |
|-------|-----------------|--|-----------------------------|--------------------|
| K | 25 (16 *edited) | | 7 | 51 (23*) |
| 1 | 21 (17*) | | 8 | 32 (24*) |
| 2 | 27 (19*) | | HS Number & Quantities | 9 with 23(+) (1*) |
| 3 | 24 (21*) | | HS Algebra | 30 with 5(+) (12*) |
| 4 | 27 (25*) | | HS Functions | 29 with 7(+) (14*) |
| 5 | 26 (21*) | | HS Geometry | 35 with 7(+) (4*) |
| 6 | 50 (23*) | | HS Statistics & Probability | 9 with 27(+) (17*) |

Percent of Overall Benchmark Revisions from 2012 to 2018 = 51%



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QUESTIONS



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WYOMING
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*Creating Opportunities
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Proposed 2018 Wyoming Science Extended Content & Performance Standards

Trenton Vonburg
Education Consultant



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INPUT FROM PUBLIC HEARINGS and SURVEY

Public Input Received - Science Extended Online and at Public Hearings



| | |
|--------------|----|
| Total | |
| Online | 39 |
| Verbal | 0 |
| Written | 0 |

| Date | Location | # of Verbal Comments | # of Written Comments |
|-----------|--------------|----------------------|-----------------------|
| 3/21/2018 | Cheyenne | 0 | 0 |
| 3/22/2018 | Buffalo | 0 | 0 |
| 3/27/2018 | Thermopolis | 0 | 0 |
| 3/28/2018 | Lander | 0 | 0 |
| 3/29/2018 | Green River | 0 | 0 |
| | TOTAL | 0 | 0 |

Summary of Public Input



- Within those 39 comments:
 - 21 statements were made to approve the adopted 2018 Wyoming Science Extended Standards.
 - 9 statements suggested preferential edits
 - 5 statements needed clarifying information
 - 6 statements made to not approve the Wyoming Science Extended Standards.
 - 1 statement was made to not approve, but then later they made another comment stating they did not realize it was the science extended standards (thought it was general science standards)

Summary of Public Input

February 21 – April 8, 2018



| Public Input Responses | Request SBE to Adopt | Recommend Minor Edits | Identified Major Concerns |
|------------------------|----------------------|-----------------------|---------------------------|
| Number of Responses | 21 | 9 | 5 |
| Total Input | 39 | 39 | 39 |
| Percent (%) Responses | 54% | 23% | 13% |

Input for Edits/Suggestions



- “MS-LS1-7: This concept can be taught in conjunction with photosynthesis but the rearrangement of sugar molecules might be over their heads. MS-LS3-1: I understand this standard is focused on gene mutation but affecting proteins resulting in mutations, when they haven't had anything like this before is too much too fast.”
- “I would also like to see more standards focused on plants and animals, things we can look at and identify with. I would like to see less emphasis on fossil records, embryonic similarities and other concepts that might have a historical base. Rather, I would like to see more life science connections that deal with more tangible concepts.”
- “I would like to adopt the original Next Generation Science Standards.”

Input with Major Concerns



- “Too intense of a science curriculum early on.”
- “My concern is that we are drastically dumbing down the intended rigor of the original standards. Going from "students should make a model" to "students should participate" is going to lower the level of expectation that we hold students to. ”
- “I'm very concerned about the message being sent about true level and meeting of standards. Will these people eventually have different expectations on driving tests, certification tests on other skills (welding, insurance, the bar exam, etc)? Will these people have different limits on when their bills are due? They meet standards or they don't.”
- “Don't need them please get rid of them. It is a waste of time.”



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**PLANS for
IMPLEMENTATION,
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DEVELOPMENT, and
COMMUNICATION**

Implementation Plan



Implementation Plan – 2018 Wyoming Science Extended Content and Performance Standards

State Support – WDE

Phase 1: 2018-19 Awareness / Planning

- ✓ WDE WY-ALT consultant maintains membership & participate in relevant national organizations (e.g., SCASS, CSSS) to collaborate with other states and gather resources to share
- ✓ Provide updates through supt.'s memos
- ✓ Consult with districts to determine if any professional development is needed

Phase 2: 2019-20 Transition/Implementation

- ✓ Develop and provide PD around new extended science
- ✓ Provide trainings and communication around science WY-ALT assessment for grades 4, 8, 10

Phase 3: 2020-21 2nd Yr. Implementation

- ✓ Maintain communication
- ✓ Continue to provide resources on WDE website
- ✓ Provide trainings and communication around science WY-ALT state assessment
- ✓ Collect feedback from districts on implementation

Phase 4: 2021-22 Full Implementation

- ✓ Maintain communication regarding implementation of new science extended standards
- ✓ Continue to provide resources on WDE website
- ✓ Develop and provide PD, including cross disciplinary literacy

Implementation Plan



Implementation Plan – 2018 Wyoming Science Extended Content and Performance Standards

| | Phase 1: 2018-19 Awareness / Planning | Phase 2: 2019-20 Transition/Implementation | Phase 3: 2020-21 2 nd Yr. Implementation | Phase 4: 2021-22 Full Implementation |
|-----------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Recommended District Support | <ul style="list-style-type: none"> ✓ Consult with districts to determine if any professional development is needed ✓ Consider possible impact of new extended standards on curriculum, district assessments, and instruction ✓ Review the WY-ALT User Guide and Manual | <ul style="list-style-type: none"> ✓ Develop understanding of learning progressions of science extended ✓ Review alignment of curricular resources | <ul style="list-style-type: none"> ✓ Maintain and develop further resources, including resources on the WDE website ✓ Identify and select aligned instructional practices | <ul style="list-style-type: none"> ✓ Evaluate implementation of new science extended standards ✓ Review curriculum, district assessments, and instructional practices ✓ Review assessment data from classroom, district, benchmark, and summative assessments |
| State Assessment & Accountability | <ul style="list-style-type: none"> ✓ No change to state test ✓ Accountability measures per WAEA | <ul style="list-style-type: none"> ✓ Operational field test items on WY-ALT on new extended standards ✓ Accountability measures per WAEA | <ul style="list-style-type: none"> ✓ Operational field test items on WY-ALT on new extended standards ✓ Accountability measures per WAEA | <ul style="list-style-type: none"> ✓ Fully operational on WY-ALT on new extended standards ✓ Accountability measures per WAEA |

Professional Development Plan



Professional Development Plan – 2018 Wyoming Science Extended Content and Performance Standards

Phase 1: 2018–2019 Awareness / Planning

- ✓ Introduction of science extended standards on WDE website
- ✓ Educate on the structure & layout of science extended
- ✓ Add resources to WDE website

Phase 2: 2019–2021 Transition

- ✓ Monitor district needs and collect feedback on implementation of new science extended standards
- ✓ Respond to individual district needs and/or requests for PD
- ✓ Update and maintain PD calendar
- ✓ Update and maintain resources on WDE website

Phase 3: 2021–2022 Implementation

- ✓ Monitor district needs on implementation of new science extended standards
- ✓ Respond to individual district needs
- ✓ Update and maintain resources on WDE website, including best practices

State Support – WDE

Communication Plan



Communication Plan – 2018 Wyoming Science Extended Content and Performance Standards

Phase 1: 2017-19 Awareness / Planning

Communicate the Following:

- ✓ Gather contact information of interested people to serve on committee:
 - K-12
 - Administrators
 - Higher Ed.
 - Community
 - Parents
 - Business Members
 - Students
- ✓ Information about extended standards revision process and invite public to observe
- ✓ Press release - announcing open public comment period / hearings
- ✓ Adding resources and documents to the WDE website / toolkit

Phase 2: 2019-21 Transition/Implementation

Communicate the Following:

- ✓ Informing districts and public of standards on website
- ✓ Provide updates at conferences in WY
 - Educate districts on structure and layout of proposed standards
 - Gather feedback
- ✓ Updated PD plan
- ✓ Updated PD opportunities
- ✓ Updated implementation plan

Phase 3: 2021-22 Full Implementation

Communicate the Following:

- ✓ Informing districts and public of new standards and resources on website
- ✓ Implementation of new standards
- ✓ Send communication through Edmodo/newsletter/WDE social media
- ✓ Maintain communication regarding implementation statewide
- ✓ Updated PD opportunities

State Support – WDE

MODES of COMMUNICATION

- ✓ WDE Website
- ✓ Supt's Memo
- ✓ Press Release
- ✓ FAQs
- ✓ Social Media
 - Twitter
 - FB
- ✓ Edmodo
- ✓ Standards Newsletter
- ✓ NPR Radio



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QUESTIONS



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WYOMING
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Proposed 2018 Additions to the Wyoming Social Studies Content & Performance Standards

Rob Black

Social Studies Consultant
Native American Liaison



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INPUT FROM PUBLIC HEARINGS and SURVEY

Public Input Received - Social Studies Online and at Public Hearings



| | |
|--------------|----|
| Total | |
| Online | 42 |
| Verbal | 1 |
| Written | 0 |

| Date | Location | # of Verbal Comments | # of Written Comments |
|---------|--------------|----------------------|-----------------------|
| 3/21/18 | Cheyenne | 1 | 0 |
| 3/22/18 | Buffalo | 0 | 0 |
| 3/26/18 | St. Stephens | 0 | 0 |
| 3/27/18 | Thermopolis | 0 | 0 |
| 3/28/18 | Lander | 0 | 0 |
| 3/29/18 | Green River | 0 | 0 |
| | TOTAL | 1 | 0 |

Summary of Public Input



- Within those 43 comments:
 - 28 statements asked the Board to approve the standards as is
 - 7 statements suggested the changes added too much or too complex information/teachers wouldn't have enough time to implement
 - 5 statements stated too much emphasis was placed on Native Americans and not on other groups
 - 5 statements suggested more resources and materials would be needed

Summary of Public Input

February 21 – April 8, 2018



| Public Input Responses | Request SBE to Adopt | Recommend Minor Edits | Identified Major Concerns |
|------------------------|----------------------|-----------------------|---------------------------|
| Number of Responses | 28 | 5 | 10 |
| Total Input | 43 | 43 | 43 |
| Percent (%) Responses | 65% | 12% | 23% |

Input in Support of Adoption



- “I am glad to see that the history of Native American tribes is being included.”
- “I think it's incredibly important for students to recognize all cultures in the United States. Native American culture is often overlooked and is misconstrued by students.”
- “I don’t think social studies and history always gets a fair shake or as much emphasis as some of the others and I think that’s wrong.”

Input – Concerns on Curriculum



- “The changes to social studies are huge and would require major changes K-12. A lot has been added yet nothing removed- how and when would these additions be implemented given limited instructional time?”
- “One of my concerns with the standards has to do with how complicated and intricate they are. ... [T]hey have so many parts and pieces to them, that my students and I end up getting confused about what is being asked.”
- “The additions add needless and cumbersome additions to the existing standards. .. We should be looking for ways to broaden standards so that students can achieve proficiency ... instead of forcing a state curriculum which is what is happening in this current format.”

Input – Concerns (cont.)



- “Can we find more opportunities to phrase the inclusions regarding Native American issues to include other minority group issues as well such as African Americans, Latino Americans, Asian Americans, etc.?”
- “[S]tandards don't need to be this dominated by tribal references to honor all the people of Wyoming.”
- “They ... prioritize Native Americans over other minority groups. While understanding the Native American experience is important, it shouldn't come at the expense of other groups that are seen by some people as being equally important.”

Input – Concerns on Resources



- “[T]he state department of education has not provided much in the way of social studies support ... leaving social studies teachers to seek out the information on their own--a very time consuming process.”
- “I simply do not have the content knowledge to address the majority of these standards. At this time, these standards are not aligned with UW teacher preparation materials and courses (or other programs that I am not aware of).”
- “I am concerned that many teachers will not have the knowledge or resources to adequately address these standards.”



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**PLANS for
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Implementation Plan



Implementation Plan – 2018 Additions to Wyoming Social Studies Content and Performance Standards

Phase 1: 2018-19 Awareness/Planning

- ✓ Participate in State Collaborative on Assessment and Student Standards (SCASS) and Council of State Supervisors of Social Studies (CSSSS) meeting to collaborate with other states and gather resources to share
- ✓ Provide updates through Edmodo, Facebook, Twitter conferences, memos and newsletter

Phase 2: 2019-20 Transition/Implementation

- ✓ Participate SCASS and CSSSS meeting to collaborate with other states and gather resources to share
- ✓ Update WDE website with resources for new standards
- ✓ Develop and provide PD around standards

Phase 3: 2020-21 2nd Yr. Implementation

- ✓ Participate SCASS and CSSSS meeting to collaborate with other states and gather resources to share
- ✓ Maintain communication regarding implementation of standards
- ✓ Present new information at WCDA/SBE/ Math and Science Conference, and other PD events
- ✓ Continue to develop and maintain toolkit on WDE website with resources standards

Phase 4: 2021-22 Full Implementation

- ✓ Maintain membership and participate in Content Area SCASS and CSSS meetings
- ✓ Maintain communication statewide regarding implementation of 2018 additions to social studies standards
- ✓ Continue to develop and maintain WDE website with resources
- ✓ Develop and provide PD – including literacy across content areas

State Support – WDE

Implementation Plan



Implementation Plan –2018 Additions Wyoming to Social Studies Content and Performance Standards

Phase 1: 2018-19 Awareness/Planning

- ✓ Review standards and give feedback to WDE
- ✓ Consider possible impact of 2018 additions on curriculum, district assessments, and instruction

- ✓ Not assessed on state assessment

Phase 2: 2019-20 Transition/Implementation

- ✓ Develop transition plan to new standards
- ✓ Develop understanding of learning progressions
- ✓ Review alignment of curricular resources
- ✓ Review and align district curriculum, instruction, , and professional development

- ✓ Not assessed on state assessment

Phase 3: 2020-21 2nd Yr. Implementation

- ✓ Develop and implement PD aligned to the new standards
- ✓ Maintain and develop resources on the WDE website
- ✓ Develop and update district assessments
- ✓ Provide feedback to WDE on standards

- ✓ Not assessed on state assessment

Phase 4: 2021-22 Full Implementation

- ✓ Evaluate implementation plan for standards
- ✓ Review curriculum, district assessments, and instructional practices
- ✓ Review assessment data from classroom and district assessments
- ✓ Provide Feedback to WDE

- ✓ Not assessed on state assessment
- ✓

Recommended District Support

State Assessment & Accountability

Professional Development Plan



Professional Development Plan – 2018 Additions to Wyoming Social Studies Content and Performance

State Support – WDE

Phase 1: 2018-19 Awareness/Planning

- ✓ Add new standards, resources, documents, and videos on website
- ✓ Announce PD on social media, WDE newsletter, Edmodo and website
- ✓ Educate on the structure and layout of new standards
- ✓ Provide updated information at content area conferences in WY

Phase 2: 2019-21 Transition/Implementation

- ✓ Monitor district needs and collect feedback on implementation of new standards
- ✓ Respond to individual district needs/requests for PD
- ✓ Update and maintain PD on WDE newsletter
- ✓ Develop and facilitate PD
- ✓ Update and maintain content-specific resources on WDE website
- ✓ Update and present new information at state meetings and conferences

Phase 3: 2021-22 Full Implementation

- Continue to:**
- ✓ Monitor district needs and collect feedback on implementation of new standards
 - ✓ Respond to individual district needs/requests for PD
 - ✓ Update and maintain PD on WDE newsletter
 - ✓ Update and maintain content-specific resources on WDE website
 - ✓ Update and present new information at state meetings and conferences

Communication Plan



Communication Plan –2018 Additions to Social Studies Wyoming Content and Performance Standards

Phase 1: 2017-18 Awareness/Planning

Communicate the Following:

- ✓ Gather contact information of interested people to serve on committee:
 - K-12
 - Administrators
 - Higher Ed.
 - Community
 - Parents
 - Business Members
 - Students
- ✓ Information about standards revision process and invite public to observe
- ✓ PR for public input and regional meetings
- ✓ Press release - announcing open public comment period
- ✓ Collaborate with Eastern Shoshone and Northern Arapaho Tribes

Phase 2: 2018-21 Transition/Implementation

Communicate the Following:

- ✓ Informing districts & public of standards on website
- ✓ Provide updates at content conferences in WY
 - To educate districts on structure and layout of proposed standards
 - Gather feedback
- ✓ Adding crosswalk showing shifts/ changes/ additions
- ✓ Updated PD plan
- ✓ PD opportunities
- ✓ Updated Implementation Plan

Phase 3: 2021-22 Full Implementation

Communicate the Following:

- ✓ Inform districts and public of new resources through Edmodo/newsletter/WDE social media and on website
- ✓ Implementation of new standards
- ✓ Send communication through Edmodo/newsletter/WDE social media

State Support – WDE

MODES of COMMUNICATION

- ✓ WDE Website
- ✓ Supt's Memo
- ✓ Press Release
- ✓ FAQs
- ✓ Social Media
 - Twitter
 - FB
- ✓ Edmodo
- ✓ Standards Newsletter
- ✓ NPR Radio



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QUESTIONS



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**WHAT IS NEXT IN
THE PROCESS?**

Changes to Ch. 10 Rules



- Hyperlinking directly to the new standards documents
- Removing past approval dates which are no longer relevant and potentially confusing to readers
- Removing dates which are already explicit on referenced and linked standards documents

Options Following Public Input



1. Proceed with recommending adoption
 - Opens promulgation process which includes a 2nd public comment period
2. Direct the WDE to make minor edits that are not content-related before proceeding with recommending adoption
3. Reconvene the RC to address concerns and bring back revised standards to the SBE

Other SBE Considerations



- Implementation timeline - W.S. 21-2-304(iv)
 - *“the board shall establish a process to ensure district assessment systems are aligned with the refined and revised standards within three (3) full school years following adoption of revised standards.”*
 - Propose: ‘shall be fully implemented on or before the first day of the 2021-2022 school year (3 full SY)’

Rules Promulgation Process



- April 27th – Rules Packet to Governor’s Office
- April 30th- May 11th – Governor’s 10-day Review
- May 15th – Announce Opening of Public Comment Period
- May 15th- July 1st – Open Public Comment Period on WDE Website (48 days)
- Summer 2018 – WDE Brings Public Comment to SBE to Consider Adoption



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Computer Science Wyoming Content & Performance Standards

Laurie Hernandez, M.Ed.

Director of Standards &
Assessment Division

Starting the Process



- Online Survey April 2 - June 3, 2018
- Call for Participants April 2 - May 14, 2018
- Six Community Input Meetings May 14 - May 17, 2018 across the state
- Computer Science Standards Review Committee (CSSRC) will meet in the summer of 2018, with 2-6 days of meetings through the fall, and additional meetings as necessary throughout the next year.

Regional Community Input Meetings



| Date & Time | Location & Address |
|--------------------------------|-----------------------------------------------------------------------------------|
| May 14, 2018 6-8 PM | Sublette #1 Central Admin. Building 665 North Tyler Street, Pinedale |
| May 15, 2018 6-8 PM | Park #1 Support Services Building 245 N. Evarts Street, Powell |
| May 15, 2018 6-8 PM | Sweetwater #1 Central Admin. Building 3500 Foothill Blvd, Rock Springs |
| May 16, 2018 6-8 PM | Sheridan #2 Central Admin Building 201 N. Connor St, Sheridan |
| May 16, 2018 6-8 PM | Laramie #1 Story Gym - Board Room 2811 House Avenue, Cheyenne |
| May 17, 2018 6-8 PM | Natrona #1 Central Services Facility 970 N. Glenn Rd., Casper |



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2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Kindergarten

| | 2012 Standards | 2018 Standards |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| K.CC.A.1 | Count to 100 by ones and by tens. | A. Count to 100 by ones and by tens. B. Count backwards by ones from 20. |
| K.CC.A.3 | Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects). | Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 (Zero) representing a count of no objects). |
| K.CC.B.4 | <p>Understand the relationship between numbers and quantities; connect counting to cardinality.</p> <p>A. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object.</p> <p>B. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted.</p> <p>C. Understand that each successive number name refers to a quantity that is one larger.</p> | <p>Understand the relationship between numbers and quantities; connect counting to cardinality.</p> <p>A. Use one-to-one correspondence when counting objects.</p> <p>B. Understand that the last number name said, tells the number of objects counted regardless of their arrangement.</p> <p>C. Understand that each successive number name refers to a quantity that is one more, and each previous number name refers to a quantity that is one less.</p> |
| K.CC.B.5 | Count to answer “how many?” questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects. | <p>When counting:</p> <p>A. Answer the question "how many?" by counting up to 20 objects arranged in a line, a rectangular array, a circle, or as many as 10 objects in a scattered configuration.</p> <p>B. Given a number from 1-20, count out that many objects.</p> |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Kindergarten

| | 2012 Standards | 2018 Standards |
|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| K.CC.C.6 | Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies. (Include groups with up to ten objects.) | Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group. (Include groups with up to ten objects.) |
| K.OA.D.1 | Represent addition and subtraction with objects, fingers, mental images, drawings (drawings need not show details, but should show the mathematics in the problem), sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. | Model situations that involve representing addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. |
| K.OA.D.2 | Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem. | Solve word problems using objects and drawings to find sums up to 10 and differences within 10. |
| K.OA.D.3 | Decompose numbers less than or equal to 10 into pairs in more than one way, e.g., by using objects or drawings, and record each decomposition by a drawing or equation (e.g., $5 = 2 + 3$ and $5 = 4 + 1$). | Decompose numbers less than or equal to 10 in more than one way. |
| K.OA.D.4 | For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation. | For any number from 1 to 9, find the number that makes 10 when added to the given number. |
| K.NBT.E.1 | Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (such as $18 = 10 + 8$); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. | Describe, explore, and explain how the counting numbers 11 to 19 is: A. Composed of ten ones and more ones. B. Decomposed into ten ones and more ones. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Kindergarten

| | 2012 Standards | 2018 Standards |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| K.MD.F.1 | Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. | Describe several measurable attributes of one or more objects. |
| K.MD.F.2 | Directly compare two objects with a measurable attribute in common, to see which object has “more of”/“less of” the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter. | Make direct comparisons of the length, capacity, weight, and temperature of objects, and recognize which object is shorter/longer, taller, lighter/heavier, warmer/cooler, and which holds more/less. |
| K.MD.G.4 | New Benchmark | Identify U.S. coins by name (pennies, nickels, dimes, and quarters). |
| K.G.H.3 | Identify shapes as two-dimensional (lying in a plane, “flat”) or three-dimensional (“solid”). | Identify shapes as two-dimensional or three-dimensional. |
| K.G.I.4 | Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, parts (e.g., number of sides and vertices/“corners”) and other attributes (e.g., having sides of equal length). | Analyze and compare two- and three-dimensional shapes, using informal language to describe their similarities, differences, and attributes. |
| K.G.I.6 | Compose simple shapes to form larger shapes. For example, “can you join these two triangles with full sides touching to make a rectangle?” | Use simple shapes to compose squares, rectangles, and hexagons. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 1

| | 2012 Standards | 2018 Standards |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.OA.A.1 | Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. | Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, by using objects, drawings, or equations with a symbol for the unknown number to represent the problem. |
| 1.OA.A.2 | Solve word problems that call for addition of three whole numbers whose sum is less than or equal to 20, e.g., by using objects, drawings, and equations with a symbol for the unknown number to represent the problem. | Solve word problems that call for the addition of three whole numbers whose sum is less than or equal to 20, by using objects, drawings, or equations. |
| 1.OA.B.3 | Apply properties of operations as strategies to add and subtract. Examples: If $8 + 3 = 11$ is known, then $3 + 8 = 11$ is also known. (Commutative property of addition.) To add $2 + 6 + 4$, the second two numbers can be added to make a ten, so $2 + 6 + 4 = 2 + 10 = 12$. (Associative property of addition.) (Students need not use formal terms for these properties.) | Apply commutative and associative properties of addition as strategies to add and subtract. |
| 1.OA.B.4 | Understand subtraction as an unknown-addend problem. For example, subtract $10 - 8$ by finding the number that makes 10 when added to 8. | Understand subtraction as an unknown-addend problem. |
| 1.OA.C.5 | Relate counting to addition and subtraction (e.g., by counting on 2 to add 2). | Relate counting to addition and subtraction using strategies, such as, by counting on and back. |
| 1.OA.C.6 | Add and subtract within 20, demonstrating fluency for addition and subtraction within 10. Use strategies such as counting on; making ten (e.g., $8 + 6 = 8 + 2 + 4 = 10 + 4 = 14$); decomposing a number leading to a ten (e.g., $13 - 4 = 13 - 3 - 1 = 10 - 1 = 9$); using the relationship between addition and subtraction (e.g., knowing that $8 + 4 = 12$, one knows $12 - 8 = 4$); and creating equivalent but easier or known sums (e.g., adding $6 + 7$ by creating the known equivalent $6 + 6 + 1 = 12 + 1 = 13$). | Add and subtract within 20, demonstrating fluency in addition and subtraction within 10. Use strategies such as counting on; making ten using the relationship between addition and subtraction. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 1

| | 2012 Standards | 2018 Standards |
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| 1.OA.D.7 | Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. For example, which of the following equations are true and which are false? $6 = 6$, $7 = 8 - 1$, $5 + 2 = 2 + 5$, $4 + 1 = 5 + 2$. | Understand the meaning of the equal sign, and determine if equations involving addition and subtraction are true or false. |
| 1.OA.D.8 | Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations $8 + ? = 11$, $5 = _ - 3$, $6 + 6 = _$. | Determine the unknown whole number in an addition or subtraction equation relating three whole numbers. |
| 1.NBT.E.1 | Count to 120, starting at any number less than 120. In this range, read and write numerals and represent a number of objects with a written numeral. | Extend the number sequences to 120. In this range: A. Count forward and backward, starting at any number less than 12. B. Read numerals. C. Write numerals. D. Represent a number of objects with a written numeral. |
| 1.NBT.F.3 | Compare two two-digit numbers based on meanings of the tens and ones digits, recording the results of comparisons with the symbols $>$, $=$, and $<$. | Compare pairs of two-digit numbers based on the values of the tens digit and the ones digits, recording the results of comparisons with the words "is greater than," "is equal to," "is less than," and with the symbols $>$, $=$, and $<$. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 1

| | 2012 Standards | 2018 Standards |
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| 1.NBT.G.4 | Add within 100, including adding a two-digit number and a one-digit number, and adding a two-digit number and a multiple of 10, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. Understand that in adding two-digit numbers, one adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten. | Add within 100, using concrete models or drawings and strategies based on place value: A. Including adding a two-digit number and a one-digit number. B. Adding a two-digit number and a multiple of 10. C. Understand that in adding two-digit numbers, adds tens and tens, ones and ones; and sometimes it is necessary to compose a ten. D. Relate the strategy to a written method and explain the reasoning used. |
| 1.NBT.G.6 | Subtract multiples of 10 in the range 10-90 from multiples of 10 in the range 10-90 (positive or zero differences), using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used. | Subtract multiples of 10 from an equal or larger multiple of 10 both in the range 10-90, using concrete models, drawings, and strategies based on place value. |
| 1.MD.H.2 | Express the length of an object as a whole number of length units, by laying multiple copies of a shorter object (the length unit) end to end; understand that the length measurement of an object is the number of same-size length units that span it with no gaps or overlaps. Limit to contexts where the object being measured is spanned by a whole number of length units with no gaps or overlaps. | Use nonstandard units to show the length of an object as the number of same size units of length with no gaps or overlaps. |
| 1.MD.I.3 | Tell and write time in hours and half-hours using analog and digital clocks. | A. Tell and write time in hours and half-hours using analog and digital clocks. B. Identify U.S. coins by value (pennies, nickels, dimes, quarters). |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 1

| | 2012 Standards | 2018 Standards |
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| 1-IMD-1-5 | Removed | |
| 1.G.K.1 | Reason with shapes and their attributes. Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); for a wide variety of shapes; build and draw shapes to possess defining attributes. | Distinguish between defining attributes (e.g., triangles are closed and three-sided) versus non-defining attributes (e.g., color, orientation, overall size); for a wide variety of shapes; build and draw shapes to possess defining attributes. |
| 1.G.K.2 | Compose two-dimensional shapes (rectangles, squares, trapezoids, triangles, half-circles, and quarter-circles) or three-dimensional shapes (cubes, right rectangular prisms, right circular cones, and right circular cylinders) to create a composite shape, and compose new shapes from the composite shape. (Students do not need to learn formal names such as “right rectangular prism.”) | Use two-dimensional shapes (rectangles, squares, trapezoids, rhombuses, and triangles) or three-dimensional shapes (cubes, rectangular prisms, cones, and cylinders) to create a composite figure, and create new figures from the composite figure. |
| 1.G.K.3 | Partition circles and rectangles into two and four equal shares, describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. Describe the whole as two of, or four of the shares. Understand for these examples that decomposing into more equal shares creates smaller shares. | Partition circles and rectangles into two and four equal shares and: A. Describe the shares using the words halves, fourths, and quarters, and use the phrases half of, fourth of, and quarter of. B. Describe the whole as two of, or four of the shares. C. Recognize that decomposing into more equal shares creates smaller shares. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| Grade 2 | | |
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| | 2012 Standards | 2018 Standards |
| 2.OA.B.2 | Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know from memory all sums of two one-digit numbers. | Fluently add and subtract within 20 using mental strategies. By end of Grade 2, know automatically all sums of two one-digit numbers based on strategies. |
| 2.OA.C.3 | Determine whether a group of objects (up to 20) has an odd or even number of members, e.g., by pairing objects or counting them by 2s; write an equation to express an even number as a sum of two equal addends. | Determine whether a group (up to 20) has an odd or even number of objects (i.e. by pairing objects or counting them by 2s). A. If the number of objects is even, then write an equation to express this as the sum of two equal addends. B. If the number of objects group is odd, then write an equation to express this as a sum of a near double (double plus 1). |
| 2.NBT.D.1 | Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; e.g., 706 equals 7 hundreds, 0 tens, and 6 ones. Understand the following as special cases: a. 100 can be thought of as a bundle of ten tens — called a “hundred.” b. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones). | Understand that the three digits of a three-digit number represent amounts of hundreds, tens, and ones; and demonstrate that: A. 100 can be thought of as a bundle of ten tens — called a “hundred.” B. The numbers 100, 200, 300, 400, 500, 600, 700, 800, 900 refer to one, two, three, four, five, six, seven, eight, or nine hundreds (and 0 tens and 0 ones). C. Three-digit numbers can be decomposed in multiple ways (e.g. 524 can be decomposed as 5 hundreds, 2 tens and 4 ones or 4 hundreds, 12 tens, and 4 ones, etc.) |
| 2.NBT.D.2 | Count within 1000; skip-count by 5s, 10s, and 100s. | Skip-count by 10s and 100s within 1000 starting at any given number. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| Grade 2 | | |
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| | 2012 Standards | 2018 Standards |
| 2.NBT.D.4 | Compare two three-digit numbers based on meanings of the hundreds, tens, and ones digits, using $>$, $=$, and $<$ symbols to record the results of comparisons. | Compare pairs of three-digit numbers based on meanings of the hundreds, tens, and ones digits, using the words "is greater than," "is equal to," "is less than" and with the symbols $>$, $=$, and $<$ to record the results of comparisons. |
| 2.NBT.E.5 | Fluently add and subtract within 100 using strategies based on place value, properties of operations, and/or the relationship between addition and subtraction. | Add and subtract within 100 using strategies based on place value, properties of addition, and/or the relationship between addition and subtraction. |
| 2.NBT.E.6 | Add up to four two-digit numbers using strategies based on place value and properties of operations. | Add up to four two-digit numbers using strategies based on place value and/or properties of addition. |
| 2.NBT.E.7 | Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method. Understand that in adding or subtracting three-digit numbers, one adds or subtracts hundreds and hundreds, tens and tens, ones and ones; and sometimes it is necessary to compose or decompose tens or hundreds. | Add and subtract within 1000, using concrete models or drawings and strategies based on place value, properties of addition, and/or the relationship between addition and subtraction: A. Relate the strategy to a written method and explain the reasoning used. B. Understand that in adding or subtracting three-digit numbers, add or subtract hundreds and hundreds, tens and tens, ones and ones. C. Understand that sometimes it is necessary to compose or decompose tens or hundreds. |
| 2.NBT.E.8 | Mentally add 10 or 100 to a given number 100-900, and mentally subtract 10 or 100 from a given number 100-900. | Mentally: A. Add 10 or 100 to a given number 100-900, and B. Subtract 10 or 100 from a given number 100-900. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| Grade 2 | | |
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| | 2012 Standards | 2018 Standards |
| 2.NBT.E.9 | Explain why addition and subtraction strategies work, using place value and the properties of operations. (Explanations may be supported by drawings or objects.) | Explain why addition and subtraction strategies work, using place value and the properties of addition. (Explanations may be supported by drawings, objects, or written form.) |
| 2.MD.F.2 | Measure the length of an object twice, using length units of different lengths for the two measurements; describe how the two measurements relate to the size of the unit chosen. | Measure the same object or distance using a standard unit of one length and then a standard unit of a different length. Explain how the two measurements relate to the size of the unit chosen. |
| 2.MD.F.4 | Measure to determine how much longer one object is than another, expressing the length difference in terms of a standard length unit. | Measure in standard length units to determine how much longer one object is than another. |
| 2.MD.G.5 | Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units, e.g., by using drawings (such as drawings of rulers) and equations with a symbol for the unknown number to represent the problem. | Use addition and subtraction within 100 to solve word problems involving lengths that are given in the same units. |
| 2.MD.G.6 | Represent whole numbers as lengths from 0 on a number line diagram with equally spaced points corresponding to the numbers 0, 1, 2, ... , and represent whole-number sums and differences within 100 on a number line diagram. | Use a number line diagram with equally spaced points to: A. Represent whole-number sums and differences within 100 on a number line diagram. B. Locate the multiple of 10 before and after a given number within 100. |
| 2.MD.H.7 | Tell and write time from analog and digital clocks to the nearest five minutes, using a.m. and p.m. | Tell and write time from analog and digital clocks in five minute increments using a.m. and p.m. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| Grade 2 | | |
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| | 2012 Standards | 2018 Standards |
| 2.MD.H.8 | Solve word problems involving dollar bills, quarters, dimes, nickels, and pennies, using \$ (dollars) and ¢ (cents) symbols appropriately. Example: If you have 2 dimes and 3 pennies, how many cents do you have? | Solve word problems up to \$10 involving dollar bills, quarters, dimes, nickels, and pennies, using \$ (dollars) and ¢ (cents) symbols appropriately. |
| 2.MD.I.9 | Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units. | Generate measurement data based on whole units and show data by making a line plot. |
| 2.MD.I.10 | Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph. | Use data to: A. Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. B. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph. |
| 2.G.J.3 | Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape. | Partition circles and rectangles into two, three, or four equal shares by: A. Describing the shares using the words halves, thirds, half of, a third of, etc. B. Describing the whole as two halves, three thirds, four fourths. C. Recognizing that equal shares of identical wholes need not have the same shape. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 2

2012 Standards

2018 Standards

2.G.J.3

Partition circles and rectangles into two, three, or four equal shares, describe the shares using the words halves, thirds, half of, a third of, etc., and describe the whole as two halves, three thirds, four fourths. Recognize that equal shares of identical wholes need not have the same shape.

Partition circles and rectangles into two, three, or four equal shares by:
A. Describing the shares using the words halves, thirds, half of, a third of, etc.
B. Describing the whole as two halves, three thirds, four fourths.
C. Recognizing that equal shares of identical wholes need not have the same shape.

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| Grade 3 | | |
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| | 2012 Standards | 2018 Standards |
| 3.OA.A.1 | Interpret products of whole numbers, e.g., interpret 5×7 as the total number of objects in 5 groups of 7 objects each. For example, describe a context in which a total number of objects can be expressed as 5×7 . | Represent the concept of multiplication of whole numbers using models including, but not limited to, equal-sized groups ("groups of"), arrays, area models, repeated addition, and equal "jumps" on a number line. |
| 3.OA.A.2 | Interpret whole-number quotients of whole numbers, e.g., interpret $56 \div 8$ as the number of objects in each share when 56 objects are partitioned equally into 8 shares, or as a number of shares when 56 objects are partitioned into equal shares of 8 objects each. For example, describe a context in which a number of shares or a number of groups can be expressed as $56 \div 8$. | Represent the concept of division of whole numbers (resulting in whole number quotients) using models including, but not limited to, partitioning, repeated subtraction, sharing, and inverse of multiplication. |
| 3.OA.A.3 | Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem. | Solve multiplication and division word problems within 100 using appropriate modeling strategies and equations. |
| 3.OA.A.4 | Determine the unknown whole number in a multiplication or division equation relating three whole numbers. For example, determine the unknown number that makes the equation true in each of the equations $8 \times ? = 48$, $5 = _ \div 3$, $6 \times 6 = ?$. | Determine the unknown whole number in a multiplication or division equation relating three whole numbers when the unknown is a missing factor, product, dividend, divisor, or quotient. (Students need not know formal terms.) |
| 3.OA.B.5 | Apply properties of operations as strategies to multiply and divide. Examples: If $6 \times 4 = 24$ is known, then $4 \times 6 = 24$ is also known. (Commutative property of multiplication.) $3 \times 5 \times 2$ can be found by $3 \times 5 = 15$ then $15 \times 2 = 30$, or by $5 \times 2 = 10$ then $3 \times 10 = 30$. (Associative property of multiplication.) Knowing that $8 \times 5 = 40$ and $8 \times 2 = 16$, one can find 8×7 as $8 \times (5 + 2) = (8 \times 5) + (8 \times 2) = 40 + 16 = 56$. (Distributive property.) (Students need not use formal terms for these properties.) | Apply properties of multiplication as strategies to multiply and divide. (Students need not use formal terms for these properties.) |
| 3.OA.B.6 | Understand division as an unknown-factor problem. For example, divide $32 \div 8$ by finding the number that makes 32 when multiplied by 8. | Understand division as an unknown-factor problem. |
| 3.OA.C.7 | Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division (e.g., knowing that $8 \times 5 = 40$, one knows $40 \div 5 = 8$) or properties of operations. By the end of Grade 3, know from memory all products of one-digit numbers. | Fluently multiply and divide with factors 1 - 10 using mental strategies. By end of Grade 3, know automatically all products of one-digit factors based on strategies. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| Grade 3 | | |
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| | 2012 Standards | 2018 Standards |
| 3.OA.D.8 | Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. (This standard is limited to problems posed with whole numbers and having whole-number answers; students should know how to perform operations in the conventional order when there are no parentheses to specify a particular order (Order of Operations).) | Solve two-step word problems (limited to the whole number system) using the four basic operations. Students should apply the Order of Operations when there are no parentheses to specify a particular order. A. Represent these problems using equations with a symbol standing for the unknown quantity. B. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. |
| 3.OA.D.9 | Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations. For example, observe that 4 times a number is always even, and explain why 4 times a number can be decomposed into two equal addends. | Identify arithmetic patterns and explain the relationships using properties of operations. |
| 3.NBT.E.3 | Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9×80 , 5×60) using strategies based on place value and properties of operations. (A range of algorithms may be used.) | Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g., 9×80 , 5×60) using strategies based on place value and properties of multiplication. |
| 3.NF.F.1 | Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$. (Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.) | Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| Grade 3 | | |
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| | 2012 Standards | 2018 Standards |
| 3.NF.F.2 | <p>Understand a fraction as a number on the number line; represent fractions on a number line diagram. (Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.)</p> <p>A. Represent a fraction $\frac{1}{b}$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $\frac{1}{b}$ and that the endpoint of the part based at 0 locates the number $\frac{1}{b}$ on the number line. (Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.)</p> <p>B. Represent a fraction $\frac{a}{b}$ on a number line diagram by marking off a lengths $\frac{1}{b}$ from 0. Recognize that the resulting interval has size $\frac{a}{b}$ and that its endpoint locates the number $\frac{a}{b}$ on the number line. (Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.)</p> | <p>Understand and represent fractions on a number line diagram.</p> <p>A. Represent a fraction $\frac{1}{b}$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $\frac{1}{b}$ and that the endpoint of the part based at 0 locates the number $\frac{1}{b}$ on the number line.</p> <p>B. Represent a fraction $\frac{a}{b}$ on a number line diagram by marking off a lengths $\frac{1}{b}$ from 0. Recognize that the resulting interval has size $\frac{a}{b}$ and that its endpoint locates the number $\frac{a}{b}$ on the number line.</p> |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| Grade 3 | | |
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| | 2012 Standards | 2018 Standards |
| 3.NF.F.3 | <p>Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. (Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.)</p> <p>A. Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line. (Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.)</p> <p>B. Recognize and generate simple equivalent fractions (e.g., $1/2 = 2/4$, $4/6 = 2/3$), Explain why the fractions are equivalent, e.g., by using a visual fraction model. (Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.)</p> <p>C. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. Examples: Express 3 in the form $3 = 3/1$; recognize that $6/1 = 6$; locate $4/4$ and 1 at the same point of a number line diagram. (Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.)</p> <p>D. Compare two fractions with the same numerator or the same denominator, by reasoning about their size, Recognize that valid comparisons rely on the two fractions referring to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model. (Grade 3 expectations in this domain are limited to fractions with denominators 2, 3, 4, 6, and 8.)</p> | <p>Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.</p> <p>A. Understand two fractions as equivalent if they are the same size, or the same point on a number line.</p> <p>B. Recognize and generate simple equivalent fractions. Explain why the fractions are equivalent.</p> <p>Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers.</p> <p>C. Compare two fractions with the same numerator or the same denominator, by reasoning about their size, D. Recognize that valid comparisons rely on the two fractions referring to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions.</p> |
| 3.MD.G.1 | <p>Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.</p> | <p>Use analog clocks to tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes.</p> |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| Grade 3 | | |
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| | 2012 Standards | 2018 Standards |
| 3.MD.G.2 | Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). (Excludes compound units such as cm^3 and finding the geometric volume of a container.) Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem. (Excludes multiplicative comparison problems (problems involving notions of “times as much.”)) | Measure and estimate liquid volumes and masses of objects using grams (g), kilograms (kg), and liters (L). (Excludes compound units such as cm^3 and finding the geometric volume of a container.) Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units. (Excludes multiplicative comparison problems involving notions of “times as much.”) |
| 3.MD.H.3 | Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets. | Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled graphs. |
| 3.MD.H.4 | Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters. | Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Use the data to create a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters. |
| 3.MD.I.5 | Recognize area as an attribute of plane figures and understand concepts of area measurement. a. A square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area, and can be used to measure area. b. A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units. | Understand area as an attribute of plane figures and understand concepts of area measurement, such as square units without gaps or overlaps. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| Grade 3 | | |
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| | 2012 Standards | 2018 Standards |
| 3.MD.I.7 | <p>Relate area to the operations of multiplication and addition.</p> <p>A. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.</p> <p>B. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.</p> <p>C. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.</p> <p>D. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.</p> | <p>Relate area to the operations of multiplication and addition.</p> <p>A. Find the area of a rectangle with whole-number side lengths (dimensions) by multiplying them. Show that this area is the same as when counting unit squares.</p> <p>B. Multiply side lengths to find areas of rectangles with whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.</p> <p>C. Use area models to represent the distributive property in mathematical reasoning. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$.</p> |
| 3.G.K.1 | <p>Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.</p> | <p>Use attributes of quadrilaterals to classify rhombuses, rectangles, and squares. Understand that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.</p> |
| 3.G.K.2 | <p>Partition shapes into parts with equal areas. Express the area of each part as a unit fraction of the whole. For example, partition a shape into 4 parts with equal area, and describe the area of each part is $\frac{1}{4}$ of the area of the shape.</p> | <p>Partition rectangles, regular polygons, and circles into parts with equal areas. Express the area of each part as a unit fraction of the whole.</p> |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 4

| | 2012 Standards | 2018 Standards |
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| 4.OA.A.1 | Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations. | Intentionally removed |
| 4.OA.A.2 | Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison. | Multiply or divide to solve word problems involving multiplicative comparison, by using strategies including, but not limited to, drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison. |
| 4.OA.A.3 | Solve multistep word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. | Solve multi-step word problems posed with whole numbers, including problems in which remainders must be interpreted. A. Represent these problems using equations with a letter standing for the unknown quantity. B. Assess the reasonableness of answers using mental computation and estimation strategies including rounding. |
| 4.OA.B.4 | Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite. | Demonstrate an understanding of factors and multiples. A. Find all factor pairs for a whole number in the range 1-100. B. Recognize that a whole number is a multiple of each of its factors. C. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. D. Determine whether a given whole number in the range 1-100 is prime or composite. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 4

| | 2012 Standards | 2018 Standards |
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| 4.OA.C.5 | Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way. | Given a pattern, explain the rule that the pattern follows and extend the pattern. Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. |
| 4.NBT.D.1 | Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example, recognize that $700 \div 70 = 10$ by applying concepts of place value and division. (Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.) | Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. |
| 4.NBT.D.2 | Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons. (Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.) | Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols. |
| 4.NBT.D.3 | Use place value understanding to round multi-digit whole numbers to any place. (Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.) | Use place value understanding to round multi-digit whole numbers to any place. |
| 4.NBT.E.4 | Fluently add and subtract multi-digit whole numbers using the standard algorithm. (Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000. A range of algorithms may be used.) | Add and subtract multi-digit whole numbers using place value strategies including the standard algorithm. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 4

| | 2012 Standards | 2018 Standards |
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| 4.NBT.E.5 | Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. (Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000. A range of algorithms may be used.) | Use strategies based on place value and the properties of multiplication to: A. Multiply a whole number of up to four digits by a one-digit whole number. B. Multiply a pair of two-digit numbers. C. Use appropriate models to explain the calculation, such as by using equations, rectangular arrays, and/or area models. |
| 4.NBT.E.6 | Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. (Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000. A range of algorithms may be used.) | Use strategies based on place value, the properties of multiplication, and/or the relationship between multiplication and division to find quotients and remainders with up to four-digit dividends and one-digit divisors. Use appropriate models to explain the calculation, such as by using equations, rectangular arrays, and/or area models. |
| 4.NF.F.1 | Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions. (Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.) | Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| Grade 4 | | |
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| | 2012 Standards | 2018 Standards |
| 4.NF.F.2 | <p>Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model. (Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.)</p> | <p>Compare two fractions with different numerators and different denominators by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$.</p> <p>A. Recognize that comparisons are valid only when the two fractions refer to the same whole.</p> <p>B. Record the results of comparisons with symbols $>$, $=$, or $<$.</p> <p>C. Justify the conclusions by using a visual fraction model.</p> |
| 4.NF.G.3 | <p>Understand a fraction $\frac{a}{b}$ with $a > 1$ as a sum of fractions $\frac{1}{b}$. (Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.)</p> <p>A. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.</p> <p>B. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: $\frac{3}{8} = \frac{1}{8} + \frac{1}{8} + \frac{1}{8}$; $\frac{3}{8} = \frac{1}{8} + \frac{2}{8}$; $2 \frac{1}{8} = 1 + 1 + \frac{1}{8} = \frac{8}{8} + \frac{8}{8} + \frac{1}{8}$.</p> <p>C. Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.</p> <p>D. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.</p> | <p>Understand a fraction $\frac{a}{b}$ with $a > 1$ as a sum of unit fractions ($\frac{1}{b}$).</p> <p>A. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole. B. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions by using a visual fraction model.</p> <p>C. Add and subtract mixed numbers with like denominators by replacing each mixed number with an equivalent fraction, and/or by using properties of addition and the relationship between addition and subtraction.</p> <p>D. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators.</p> |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 4

2012 Standards

2018 Standards

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| 4.NF.G.4 | <p>Apply and extend previous understandings of multiplication to multiply a fraction by a whole number. (Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.)</p> <p>A. Understand a fraction a/b as a multiple of $1/b$. For example, use a visual fraction model to represent $5/4$ as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.</p> <p>B. Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number. For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as $6/5$. (In general, $n \times (a/b) = (n \times a)/b$.)</p> <p>C. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. For example, if each person at a party will eat $3/8$ of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?</p> | <p>Apply and extend an understanding of multiplication by multiplying a whole number and a fraction.</p> <p>A. Understand a fraction a/b as a multiple of $1/b$.</p> <p>B. Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number.</p> <p>C. Solve real-world problems involving multiplication of a fraction by a whole number, using visual fraction models and equations to represent the problem.</p> |
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2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| Grade 4 | | |
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| | 2012 Standards | 2018 Standards |
| 4.NF.H.5 | Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example, express $\frac{3}{10}$ as $\frac{30}{100}$ and add $\frac{3}{10} + \frac{4}{100} = \frac{34}{100}$. (Students who can generate equivalent fractions can develop strategies for adding fractions with unlike denominators in general. But addition and subtraction with unlike denominators in general is not a requirement at this grade.) (Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.) | Express a fraction with denominator 10 as an equivalent fraction with denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. |
| 4.NF.H.6 | Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as $\frac{62}{100}$; describe a length as 0.62 meters; locate 0.62 on a number line diagram. (Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.) | Use decimal notation for fractions with denominators 10 or 100. |
| 4.NF.H.7 | Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual model. (Grade 4 expectations in this domain are limited to fractions with denominators 2, 3, 4, 5, 6, 8, 10, 12, and 100.) | Compare and order decimal numbers to hundredths and justify by using concrete and visual models. Record the results of comparisons with the words "is greater than," "is equal to," "is less than," and with the symbols $>$, $=$, and $<$. |
| 4.MD.I.1 | Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. For example: Know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), | Know relative sizes of measurement units within one system of units including, but not limited to, km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec; ft, in., gal., qt. pt., c., . Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two-column table. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 4

| | 2012 Standards | 2018 Standards |
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| 4.MD.I.2 | Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. | Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale. Assessment Boundary: Use denominators of 2, 4, 8 and decimals up to hundredths. |
| 4.MD.I.3 | Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor. | Apply the area and perimeter formulas for rectangles in real world and mathematical problems. |
| 4.MD.J.4 | Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection. | Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 4

| | 2012 Standards | 2018 Standards |
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| 4.MD.K.5 | Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement: a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $\frac{1}{360}$ of a circle is called a “one-degree angle,” and can be used to measure angles. b. An angle that turns through n one-degree angles is said to have an angle measure of n degrees. | Regarding angles: A. Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint. B. Understand concepts of angle measurement. An angle is measured with reference to a circle with its center at the common endpoint of the rays. |
| 4.MD.K.7 | Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure. | Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems. |
| 4.G.L.3 | Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry. | Identify line-symmetric figures. Recognize and draw lines of symmetry for two-dimensional figures. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| Grade 5 | | |
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| | 2012 Standards | 2018 Standards |
| 5.OA.A.2 | Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation “add 8 and 7, then multiply by 2” as $2 \times (8 + 7)$. Recognize that $3 \times (18932 + 921)$ is three times as large as $18932 + 921$, without having to calculate the indicated sum or product. | Write simple expressions requiring parentheses that record calculations with numbers, and interpret numerical expressions without evaluating them. |
| 5.OA.B.3 | Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule “Add 3” and the starting number 0, and given the rule “Add 6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so. | Generate two numerical patterns with each pattern having its own rule. Explain informally the relationship(s) between corresponding terms in the two patterns. A. Form ordered pairs consisting of corresponding terms from the two patterns. B. Graph the ordered pairs on a coordinate plane. |
| 5.NBT.C.3 | Read, write, and compare decimals to thousandths. A. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$. B. Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons. | Read, write, and compare decimals to thousandths. A. Read and write decimals to thousandths using base-ten numerals, number names, and expanded form. B. Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols. |
| 5.NBT.C.4 | Use place value understanding to round decimals to any place. | Use place value understanding to round decimals to any place to a given place. Assessment Boundary: Given place value to the thousandths. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| Grade 5 | | |
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| | 2012 Standards | 2018 Standards |
| 5.NBT.D.5 | Fluently multiply multi-digit whole numbers using the standard algorithm. | Multiply multi-digit whole numbers using place value strategies including the standard algorithm. |
| 5.NBT.D.6 | Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. | Find whole-number quotients with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of multiplication, and/or the relationship between multiplication and division, including the standard algorithm. Use appropriate models to illustrate and explain the calculation, such as equations, rectangular arrays, and/or area models. Assessment Boundary: The standard algorithm for division will not be assessed. |
| 5.NF.E.1 | Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, $\frac{2}{3} + \frac{5}{4} = \frac{8}{12} + \frac{15}{12} = \frac{23}{12}$. (In general, $\frac{a}{b} + \frac{c}{d} = \frac{ad + bc}{bd}$.) | Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. |
| 5.NF.E.2 | Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. For example, recognize an incorrect result $\frac{2}{5} + \frac{1}{2} = \frac{3}{7}$ by observing that $\frac{3}{7} < \frac{1}{2}$. | Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators, e.g., by using visual fraction models or equations to represent the problem. Use benchmark fractions and number sense of fractions to estimate mentally and assess the reasonableness of answers. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 5

2012 Standards

2018 Standards

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| 5.NF.F.3 | <p>Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers, e.g., by using visual fraction models or equations to represent the problem. For example, interpret $3/4$ as the result of dividing 3 by 4, noting that $3/4$ multiplied by 4 equals 3 and that when 3 wholes are shared equally among 4 people each person has a share of size $3/4$. If 9 people want to share a 50-pound sack of rice equally by weight, how many pounds of rice should each person get? Between what two whole numbers does your answer lie?</p> | <p>Interpret a fraction as division of the numerator by the denominator ($a/b = a \div b$). Solve word problems involving division of whole numbers leading to answers in the form of fractions or mixed numbers by using visual fraction models or equations to represent the problem.</p> |
| 5.NF.F.4 | <p>Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.</p> <p>A. Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. For example, use a visual fraction model to show $(2/3) \times 4 = 8/3$, and create a story context for this equation. Do the same with $(2/3) \times (4/5) = 8/15$. (In general, $(a/b) \times (c/d) = ac/bd$.)</p> <p>B. Find the area of a rectangle with fractional side lengths by tiling it with unit squares of the appropriate unit fraction side lengths, and show that the area is the same as would be found by multiplying the side lengths. Multiply fractional side lengths to find areas of rectangles, and represent fraction products as rectangular areas.</p> | <p>Extend the concept of multiplication to multiply a fraction or whole number by a fraction.</p> <p>A. Recognize the relationship between multiplying fractions and finding the areas of rectangles with fractional side lengths.</p> <p>B. Interpret multiplication of a fraction by a whole number and a whole number by a fraction and compute the product.</p> <p>C. Interpret multiplication in which both factors are fractions less than one and compute the product.</p> |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 5

2012 Standards

2018 Standards

5.NF.F.5

Interpret multiplication as scaling (resizing) by: **a.** Comparing the size of a product to the size of one factor on the basis of the size of the other factor, without performing the indicated multiplication. **b.** Explaining why multiplying a given number by a fraction greater than 1 results in a product greater than the given number (recognizing multiplication by whole numbers greater than 1 as a familiar case); explaining why multiplying a given number by a fraction less than 1 results in a product smaller than the given number; and relating the principle of fraction equivalence $a/b = (n \times a) / (n \times b)$ to the effect of multiplying a/b by 1.

Justify the reasonableness of a product when multiplying with fractions.

- A. Estimate the size of the product based on the size of the two factors.
- B. Explain why multiplying a given number by a number greater than 1 (improper fractions, mixed numbers, whole numbers) results in a product larger than the given number.
- C. Explain why multiplying a given number by a fraction less than 1 results in a product smaller than the given number.
- D. Explain why multiplying the numerator and denominator by the same number has the same effect as multiplying the fraction by 1.

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 5

| | 2012 Standards | 2018 Standards |
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| 5.NF.F.7 | <p>Apply and extend previous understandings of division to divide unit fractions by whole numbers and whole numbers by unit fractions. (Students able to multiply fractions in general can develop strategies to divide fractions in general, by reasoning about the relationship between multiplication and division. But division of a fraction by a fraction is not a requirement at this grade.)</p> <p>A. Interpret division of a unit fraction by a non-zero whole number, and compute such quotients. For example, create a story context for $(1/3) \div 4$ and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $(1/3) \div 4 = 1/12$ because $(1/12) \times 4 = 1/3$.</p> <p>B. Interpret division of a whole number by a unit fraction, and compute such quotients. For example, create a story context for $4 \div (1/5)$ and use a visual fraction model to show the quotient. Use the relationship between multiplication and division to explain that $4 \div (1/5) = 20$ because $20 \times (1/5) = 4$.</p> <p>C. Solve real-world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions, e.g., by using visual fraction models and equations to represent the problem. For example, how much chocolate will each person get if 3 people share $1/2$ lb of chocolate equally? How many $1/3$-cup servings are in 2 cups of raisins?</p> | <p>Extend the concept of division to divide unit fractions and whole numbers by using visual fraction models and equations.</p> <p>A. Interpret division of a unit fraction by a non-zero whole number and compute the quotient.</p> <p>B. Interpret division of a whole number by a unit fraction and compute the quotient.</p> <p>C. Solve real-world problems involving division of unit fractions by non-zero whole numbers and division of whole numbers by unit fractions by using visual fraction models and equations to represent the problem.</p> |
| 5.MD.G.1 | <p>Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step real world problems.</p> | <p>Solve multi-step real world problems by converting among different-sized standard measurement units within a given measurement system.</p> |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 5

| | 2012 Standards | 2018 Standards |
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| 5.MD.H.2 | Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Use operations on fractions for this grade to solve problems involving information presented in line plots. For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally. | Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Use operations on fractions to solve problems involving information presented in line plots. |
| 5.MD.I.3 | Recognize volume as an attribute of solid figures and understand concepts of volume measurement. a. A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume. b. A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units. | Recognize volume as an attribute of three-dimensional figures and understand concepts of volume measurement such as “unit cube” and a volume of n cubic units. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 5

2012 Standards

2018 Standards

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| 5.MD.I.5 | <p>Relate volume to the operations of multiplication and addition and solve real world and mathematical problems involving volume.</p> <p>A. Find the volume of a right rectangular prism with whole-number side lengths by packing it with unit cubes, and show that the volume is the same as would be found by multiplying the edge lengths, equivalently by multiplying the height by the area of the base. Represent three-fold whole-number products as volumes, e.g., to represent the associative property of multiplication.</p> <p>B. Apply the formulas $V = (l)(w)(h)$ and $V = (b)(h)$ for rectangular prisms to find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems.</p> <p>C. Recognize volume as additive. Find volumes of solid figures composed of two non-overlapping right rectangular prisms by adding the volumes of the non-overlapping parts, applying this technique to solve real world problems.</p> | <p>Relate volume to the operations of multiplication and solve real world and mathematical problems involving volume.</p> <p>A. Find the volume of a right rectangular prism with whole number dimensions by multiplying them. Show that this volume is the same as when counting unit cubes.</p> <p>B. Find volumes of right rectangular prisms with whole-number edge lengths in the context of solving real world and mathematical problems given the formulas $V = (l)(w)(h)$ and $V = (B)(h)$ for rectangular prisms.</p> |
| | 5.G.J.1 | <p>Use a pair of perpendicular number lines, called axes, to define a coordinate system, with the intersection of the lines (the origin) arranged to coincide with the 0 on each line and a given point in the plane located by using an ordered pair of numbers, called its coordinates. Understand that the first number indicates how far to travel from the origin in the direction of one axis, and the second number indicates how far to travel in the direction of the second axis, with the convention that the names of the two axes and the coordinates correspond (e.g., x-axis and x-coordinate, y-axis and y-coordinate).</p> |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| Grade 5 | | |
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| | 2012 Standards | 2018 Standards |
| 5.G.J.2 | Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation. | Plot and interpret points in the first quadrant of the coordinate plane to represent real-world and mathematical situations. |
| 5.G.K.3 | Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles. | Understand that attributes belonging to a category of two-dimensional figures also belong to all subcategories of that category. Assessment Boundary: Use polygons only. |
| 5.G.K.4 | Classify two-dimensional figures in a hierarchy based on properties. | Classify polygons in a hierarchy based on properties. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| Grade 6 | | |
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| | 2012 Standards | 2018 Standards |
| 6.NS.C.2 | Fluently divide multi-digit numbers using the standard algorithm. | Divide multi-digit numbers using efficient and generalizable procedures including, but not limited to the standard algorithm. Assessment Boundary: Use up to 5-digit dividend, 2-digit divisors. |
| 6.NS.C.3 | Fluently add, subtract, multiply, and divide multi-digit decimals using the standard algorithm for each operation. | Add, subtract, multiply, and divide manageable multi-digit decimals using efficient and generalizable procedures including, but not limited to the standard algorithm for each operation. |
| 6.NS.C.4 | Find the greatest common factor of two whole numbers less than or equal to 100 and the least common multiple of two whole numbers less than or equal to 12. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. For example, express $36 + 8$ as $4(9 + 2)$. | Find common factors and multiples using two whole numbers. A. Find the greatest common factor of two whole numbers less than or equal to 100. B. Find the least common multiple of two whole numbers less than or equal to 12. C. Use the distributive property to express a sum of two whole numbers 1–100 with a common factor as a multiple of a sum of two whole numbers with no common factor. |
| 6.NS.D.5 | Understand that positive and negative numbers are used together to describe quantities having opposite directions or values (e.g., temperature above/below zero, elevation above/below sea level, debits/credits, positive/negative electric charge); use positive and negative numbers to represent quantities in real-world contexts, explaining the meaning of 0 in each situation. | Understand that positive and negative numbers are used together to describe quantities having opposite directions or values and use them to represent quantities in real-world contexts, explaining the meaning of 0 in each situation. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 6

2012 Standards

2018 Standards

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| 6.NS.D.6 | <p>Understand a rational number as a point on the number line. Extend number line diagrams and coordinate axes familiar from previous grades to represent points on the line and in the plane with negative number coordinates.</p> <p>A. Recognize opposite signs of numbers as indicating locations on opposite sides of 0 on the number line; recognize that the opposite of the opposite of a number is the number itself, e.g., $-(-3) = 3$, and that 0 is its own opposite.</p> <p>B. Understand signs of numbers in ordered pairs as indicating locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.</p> <p>C. Find and position integers and other rational numbers on a horizontal or vertical number line diagram; find and position pairs of integers and other rational numbers on a coordinate plane.</p> | <p>Extend the understanding of the number line to include all rational numbers and apply this concept to the coordinate plane.</p> <p>A. Understand the concept of opposite numbers, including zero, and their relative locations on the number line.</p> <p>B. Understand that signs of numbers in ordered pairs indicate locations in quadrants of the coordinate plane; recognize that when two ordered pairs differ only by signs, the locations of the points are related by reflections across one or both axes.</p> <p>C. Find and position rational numbers on a horizontal or vertical number line diagram; find and position pairs of rational numbers on a coordinate plane.</p> |
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2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| Grade 6 | | |
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| 6.NS.D.7 | <p>Understand ordering and absolute value of rational numbers.</p> <p>A. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram. For example, interpret $-3 > -7$ as a statement that -3 is located to the right of -7 on a number line oriented from left to right.</p> <p>B. Write, interpret, and explain statements of order for rational numbers in real-world contexts. For example, write $-3^{\circ}\text{C} > -7^{\circ}\text{C}$ to express the fact that -3°C is warmer than -7°C.</p> <p>C. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation. For example, for an account balance of -30 dollars, write $-30 = 30$ to describe the size of the debt in dollars.</p> <p>D. Distinguish comparisons of absolute value from statements about order. For example, recognize that an account balance less than -30 dollars represents a debt greater than 30 dollars.</p> | <p>Understand ordering and absolute value of rational numbers.</p> <p>A. Interpret statements of inequality as statements about the relative position of two numbers on a number line diagram.</p> <p>B. Write, interpret, and explain statements of order for rational numbers in real-world contexts.</p> <p>C. Understand the absolute value of a rational number as its distance from 0 on the number line; interpret absolute value as magnitude for a positive or negative quantity in a real-world situation.</p> <p>D. Distinguish comparisons of absolute value from statements about order.</p> |
| 6.NS.D.8 | <p>Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Include use of coordinates and absolute value to find distances between points with the same first coordinate or the same second coordinate.</p> | <p>Solve real-world and mathematical problems by graphing points in all four quadrants of the coordinate plane. Find distances between points with the same first coordinate or the same second coordinate; relate absolute value and distance.</p> |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| Grade 6 | | |
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| | 2012 Standards | 2018 Standards |
| 6.EE.E.2 | <p>Write, read, and evaluate expressions in which letters stand for numbers.</p> <p>A. Write expressions that record operations with numbers and with letters standing for numbers. For example, express the calculation “Subtract y from 5” as $5 - y$.</p> <p>B. Identify parts of an expression using mathematical terms (sum, term, product, factor, quotient, coefficient); view one or more parts of an expression as a single entity. For example, describe the expression $2(8 + 7)$ as a product of two factors; view $(8 + 7)$ as both a single entity and a sum of two terms.</p> <p>C. Evaluate expressions at specific values for their variables. Include expressions that arise from formulas in real-world problems. Perform arithmetic operations, including those involving whole-number exponents, in the conventional order when there are no parentheses to specify a particular order (Order of Operations). For example, use the formulas $V = s^3$ and $A = 6s^2$ to find the volume and surface area of a cube with sides of length $s = \frac{1}{2}$.</p> | <p>Write, read, and evaluate expressions in which letters stand for numbers.</p> <p>A. Write expressions that record operations with numbers and with letters standing for numbers.</p> <p>B. Identify parts of an expression using mathematical terms (sum, difference, term, product, factor, quotient, coefficient, constant).</p> <p>C. Use Order of Operations to evaluate algebraic expressions at using positive rational numbers and whole-number exponents. Include expressions that arise from formulas in real-world problems.</p> |
| 6.EE.E.3 | <p>Apply the properties of operations to generate equivalent expressions. For example, apply the distributive property to the expression $3(2 + x)$ to produce the equivalent expression $6 + 3x$; apply the distributive property to the expression $24x + 18y$ to produce the equivalent expression $6(4x + 3y)$; apply properties of operations to $y + y + y$ to produce the equivalent expression $3y$.</p> | <p>Apply the properties of operations to generate equivalent expressions.</p> |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| Grade 6 | | |
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| | 2012 Standards | 2018 Standards |
| 6.EE.E.4 | Identify when two expressions are equivalent (i.e., when the two expressions name the same number regardless of which value is substituted into them). For example, the expressions $y + y + y$ and $3y$ are equivalent because they name the same number regardless of which number y stands for. | Identify when two expressions are equivalent |
| 6.EE.F.5 | Understand solving an equation or inequality as a process of answering a question: which values from a specified set, if any, make the equation or inequality true? Use substitution to determine whether a given number in a specified set makes an equation or inequality true. | Understand a solution to an equation or an inequality makes the equation or inequality true. Use substitution to determine whether a given number in a specified set makes an equation or inequality true. |
| 6.EE.F.6 | Use variables to represent numbers and write expressions when solving a real-world or mathematical problem; understand that a variable can represent an unknown number, or, depending on the purpose at hand, any number in a specified set. | Use variables to represent unknown numbers and write expressions when solving a real-world or mathematical problem. |
| 6.EE.F.7 | Solve real-world and mathematical problems by writing and solving equations of the form $x + p = q$ and $px = q$ for cases in which p , q and x are all nonnegative rational numbers. | Write and solve real-world and mathematical problems in the form of one-step, linear equations involving nonnegative rational numbers. |
| 6.EE.G.9 | Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity, thought of as the dependent variable, in terms of the other quantity, thought of as the independent variable. Analyze the relationship between the dependent and independent variables using graphs and tables, and relate these to the equation. For example, in a problem involving motion at constant speed, list and graph ordered pairs of distances and times, and write the equation $d = 65t$ to represent the relationship between distance and time. | Use variables to represent two quantities in a real-world problem that change in relationship to one another; write an equation to express one quantity (dependent variable), in terms of the other quantity (independent variable). Analyze their relationship using graphs and tables, and relate these to the equation. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| Grade 6 | | |
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| | 2012 Standards | 2018 Standards |
| 6.G.H.2 | Find the volume of a right rectangular prism with fractional edge lengths by packing it with unit cubes of the appropriate unit fraction edge lengths, and show that the volume is the same as would be found by multiplying the edge lengths of the prism. Apply the formulas $V = l w h$ and $V = b h$ to find volumes of right rectangular prisms with fractional edge lengths in the context of solving real-world and mathematical problems. | Find the volume of a right rectangular prism with fractional edge lengths in the context of solving real-world and mathematical problems by applying the formulas $V = (l)(w)(h)$ and $V = (B)(h)$, and label with appropriate units. |
| 6.G.H.4 | Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures. Apply these techniques in the context of solving real-world and mathematical problems. | Represent three-dimensional figures using nets made up of rectangles and triangles, and use the nets to find the surface area of these figures in the context of solving real-world and mathematical problems. |
| 6.SP.I.1 | Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. For example, “How old am I?” is not a statistical question, but “How old are the students in my school?” is a statistical question because one anticipates variability in students’ ages. | Recognize a statistical question as one that anticipates variability in the data related to the question and accounts for it in the answers. |
| 6.SP.J.4 | Display numerical data in plots on a number line, including dot plots, histograms, and box plots. | Display numerical data in plots on a number line, including dot plots, stem-and-leaf plots, histograms, and box plots. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 6

2012 Standards

2018 Standards

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| 6.SP.J.5 | <p>Summarize numerical data sets in relation to their context, such as by:</p> <p>A. Reporting the number of observations.</p> <p>B. Describing the nature of the attribute under investigation, including how it was measured and its units of measurement.</p> <p>C. Giving quantitative measures of center (median and/or mean) and variability (interquartile range and/or mean absolute deviation), as well as describing any overall pattern and any striking deviations from the overall pattern with reference to the context in which the data was gathered.</p> <p>D. Relating the choice of measures of center and variability to the shape of the data distribution and the context in which the data was gathered.</p> | <p>Summarize numerical data sets in relation to their real-world context.</p> <p>A. Report the sample size.</p> <p>B. Describe the context of the data under investigation, including how it was measured and its units of measurement.</p> <p>C. Find quantitative measures of center (median, mode and mean) and variability (range and interquartile range). Describe any overall pattern (including outliers, clusters, and distribution), with reference to the context in which the data was gathered.</p> <p>D. Justify the choice of measures of center (median, mode, or mean) based on the shape of the data distribution and the context in which the data was gathered.</p> |
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2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 7

| | 2012 Standards | 2018 Standards |
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| 7.RP.A.1 | <p>Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. For example, if a person walks $\frac{1}{2}$ mile in each $\frac{1}{4}$ hour, compute the unit rate as the complex fraction $(\frac{1}{2})/(\frac{1}{4})$ miles per hour, equivalently 2 miles per hour.</p> | <p>Compute unit rates, including those involving complex fractions, with like or different units.</p> |
| 7.RP.A.2 | <p>Recognize and represent proportional relationships between quantities.</p> <p>A. Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.</p> <p>B. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.</p> <p>C. Represent proportional relationships by equations. For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as $t = pn$.</p> <p>D. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate.</p> | <p>Recognize and represent proportional relationships between quantities.</p> <p>A. Decide whether two quantities in a table or graph are in a proportional relationship.</p> <p>B. Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.</p> <p>C. Represent proportional relationships with equations.</p> <p>D. Explain what a point (x, y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points $(0, 0)$ and $(1, r)$ where r is the unit rate.</p> |
| 7.RP.A.3 | <p>Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.</p> | <p>Solve multistep real world and mathematical problems involving ratios and percentages.</p> |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 7

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| 7.NS.B.1 | | <p>Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers; represent addition and subtraction on a horizontal or vertical number line diagram.</p> <p>A. Describe situations in which opposite quantities combine to make 0. For example, a hydrogen atom has 0 charge because its two constituents are oppositely charged.</p> <p>B. Understand $p + q$ as the number located a distance q from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.</p> <p>C. Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.</p> <p>D. Apply properties of operations as strategies to add and subtract rational numbers.</p> | <p>Apply and extend previous understandings of addition and subtraction to add and subtract rational numbers.</p> <p>A. Describe situations in which opposite quantities combine to make zero (the additive identity).</p> <p>B. Understand that $p + q$ represents the distance q from p whose placement is determined by the sign of q. Interpret sums of rational numbers by describing real-world contexts.</p> <p>C. Show that a number and its opposite have a sum of 0 (are additive inverses).</p> <p>Understand subtraction of rational numbers as adding the additive inverse, $p - q = p + (-q)$. Apply this principle in real-world contexts.</p> <p>D. Apply properties of addition as strategies to add and subtract rational numbers.</p> |
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2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| Grade 7 | | |
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| 7.NS.B.2 | <p>Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.</p> <p>A. Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as $(-1)(-1) = 1$ and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.</p> <p>B. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts.</p> <p>C. Apply properties of operations as strategies to multiply and divide rational numbers.</p> <p>D. Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.</p> | <p>Apply and extend previous understandings of multiplication and division and of fractions to multiply and divide rational numbers.</p> <p>A. 1. Understand that the multiplicative inverse of a number is its reciprocal and their product is equal to one (the multiplicative identity) 2. Understand positive and negative sign rules for multiplying rational numbers. Interpret products of rational numbers by describing real-world contexts.</p> <p>B. Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers is a rational number. Recognize that if p and q are integers then $-(p/q) = (-p)/q = p/(-q)$. Interpret quotients of rational numbers by describing real-world contexts.</p> <p>C. Apply properties of multiplication (commutative, associative, distributive, or properties of identity and inverse elements) to multiply and divide rational numbers.</p> <p>D. Convert a rational number to a decimal. Recognize that rational numbers can be written as fractions or decimal numbers that terminate or repeat.</p> |
| 7.NS.B.3 | <p>Solve real-world and mathematical problems involving the four operations with rational numbers. (Computations with rational numbers extend the rules for manipulating fractions to complex fractions.)</p> | <p>Solve real-world and mathematical problems involving the four arithmetic operations with rational numbers. (Computations with rational numbers extend the rules for manipulating fractions to complex fractions.)</p> |
| 7.EE.C.1 | <p>Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.</p> | <p>Describe several measurable attributes of one or more objects.</p> |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| Grade 7 | | |
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| | 2012 Standards | 2018 Standards |
| 7.EE.C.2 | Understand that rewriting an expression in different forms in a problem context can shed light on the problem and how the quantities in it are related. For example, $a + 0.05a = 1.05a$ means that “increase by 5%” is the same as “multiply by 1.05.” | Recognize that algebraic expressions may have a variety of equivalent forms that reveal different information, and determine an appropriate form for a given real-world situation. |
| 7.EE.D.3 | Solve multi-step real-life and mathematical problems posed with positive and negative rational numbers in any form (whole numbers, fractions, and decimals), using tools strategically. Apply properties of operations as strategies to calculate with numbers in any form; convert between forms as appropriate; and assess the reasonableness of answers using mental computation and estimation strategies. For example: If a woman making \$25 an hour gets a 10% raise, she will make an additional $\frac{1}{10}$ of her salary an hour, or \$2.50, for a new salary of \$27.50. If you want to place a towel bar $9\frac{3}{4}$ inches long in the center of a door that is $27\frac{1}{2}$ inches wide, you will need to place the bar about 9 inches from each edge; this estimate can be used as a check on the exact computation. | Solve multi-step real-world and mathematical problems involving rational numbers. Include fraction bars as a grouping symbol. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 7

| | 2012 Standards | 2018 Standards |
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| 7.EE.D.4 | <p>Use variables to represent quantities in a real-world or mathematical problem, and construct simple equations and inequalities to solve problems by reasoning about the quantities.</p> <p>A. Solve word problems leading to equations of the form $px + q = r$ and $p(x + q) = r$, where p, q, and r are specific rational numbers. Solve equations of these forms fluently. Compare an algebraic solution to an arithmetic solution, identifying the sequence of the operations used in each approach. For example, The perimeter of a rectangle is 54 cm. Its length is 6 cm. What is its width?</p> <p>B. Solve word problems leading to inequalities of the form $px + q > r$ or $px + q < r$, where p, q, and r are specific rational numbers. Graph the solution set of the inequality and interpret it in the context of the problem. For example, As a salesperson, you are paid \$50 per week plus \$3 per sale. This week you want your pay to be at least \$100. Write an inequality for the number of sales you need to make, and describe the solutions.</p> | <p>Apply the concepts of linear equations and inequalities in one variable to real-world and mathematical situations.</p> <p>A. Write and fluently solve linear equations of the form $ax + b = c$ and $a(x + b) = c$ where a, b, and c are rational numbers.</p> <p>B. Write and solve multi-step linear equations that include the use of the distributive property and combining like terms. Exclude equations that contain variables on both sides.</p> <p>C. Write and solve two-step linear inequalities. Graph the solution set on a number line and interpret its meaning.</p> <p>D. Identify and justify the steps for solving multi-step linear equations and two-step linear inequalities.</p> |
| 7.G.E.1 | <p>Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing and reproducing a scale drawing at a different scale.</p> | <p>Solve problems involving scale drawings of geometric figures, including computing actual lengths and areas from a scale drawing.</p> |
| 7.G.E.2 | <p>Draw (freehand, with ruler and protractor, and with technology) geometric shapes with given conditions. Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.</p> | <p>Draw geometric shapes with given conditions using a variety of tools (e.g., ruler and protractor, or technology). Focus on constructing triangles from three measures of angles or sides, noticing when the conditions determine a unique triangle, more than one triangle, or no triangle.</p> |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| Grade 7 | | |
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| | 2012 Standards | 2018 Standards |
| 7.G.E.3 | Describe the two-dimensional figures that result from slicing three-dimensional figures, as in plane sections of right rectangular prisms and right rectangular pyramids. | Describe the two-dimensional figures that result from slicing three-dimensional figures parallel to the base, as in plane sections of right rectangular prisms and right rectangular pyramids. |
| 7.G.F.4 | Know the formulas for the area and circumference of a circle and use them to solve problems; give an informal derivation of the relationship between the circumference and area of a circle. | Investigate the concept of circles. A. Demonstrate an understanding of the proportional relationships between diameter, radius, and circumference of a circle. B. Understand that pi is defined by the constant of proportionality between the circumference and diameter. C. Given the formulas for circumference and area of circles, solve real-world and mathematical problems. |
| 7.G.F.6 | Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. | Solve real-world and mathematical problems involving area, volume and surface area of two- and three-dimensional objects composed of triangles, quadrilaterals, polygons, cubes, and right prisms. |
| 7.SP.G.1 | Understand that statistics can be used to gain information about a population by examining a sample of the population; generalizations about a population from a sample are valid only if the sample is representative of that population. Understand that random sampling tends to produce representative samples and support valid inferences. | Solve real-world and mathematical problems involving: A. Understand that a sample is a subset of a population. B. Differentiate between random and non-random sampling. C. Understand that generalizations from a sample are valid only if the sample is representative of the population. D. Understand that random sampling is used to gather a representative sample and tends to support valid inferences about the population. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| Grade 7 | | |
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| | 2012 Standards | 2018 Standards |
| 7.SP.G.2 | Use data from a random sample to draw inferences about a population with an unknown characteristic of interest. Generate multiple samples (or simulated samples) of the same size to gauge the variation in estimates or predictions. For example, estimate the mean word length in a book by randomly sampling words from the book; predict the winner of a school election based on randomly sampled survey data. Gauge how far off the estimate or prediction might be. | Draw inferences about a population by collecting multiple random samples of the same size to investigate variability in estimates of the characteristic of interest. |
| 7.SP.H.3 | Informally assess the degree of visual overlap of two numerical data distributions with similar variabilities, measuring the difference between the centers by expressing it as a multiple of a measure of variability. For example, the mean height of players on the basketball team is 10 cm greater than the mean height of players on the soccer team, about twice the variability (mean absolute deviation) on either team; on a dot plot, the separation between the two distributions of heights is noticeable. | Visually compare the centers, spreads, and overlap of two displays of data (e.g., back-to-back stem and leaf plots, dot plots, histograms, box plots) that are graphed on the same scale and draw inferences about this data. |
| 7.SP.H.4 | Use measures of center and measures of variability for numerical data from random samples to draw informal comparative inferences about two populations. For example, decide whether the words in a chapter of a seventh-grade science book are generally longer than the words in a chapter of a fourth-grade science book. | Given measures of center and variability (mean, median and/or mode; range, interquartile range, and/or standard deviation), for numerical data from random samples, draw appropriate informal comparative inferences about two populations. |
| 7.SP.I.5 | Understand that the probability of a chance event is a number between 0 and 1 that expresses the likelihood of the event occurring. Larger numbers indicate greater likelihood. A probability near 0 indicates an unlikely event, a probability around 1/2 indicates an event that is neither unlikely nor likely, and a probability near 1 indicates a likely event. | Find and interpret the probability of a random event. Understand that the probability of a random event is a number between, and including, 0 and 1 that expresses the likelihood of the event occurring. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| Grade 7 | | |
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| 7.SP.I.6 | Approximate the probability of a chance event by collecting data on the chance process that produces it and observing its long-run relative frequency, and predict the approximate relative frequency given the probability. For example, when rolling a number cube 600 times, predict that a 3 or 6 would be rolled roughly 200 times, but probably not exactly 200 times. | Collect multiple samples to compare the relationship between theoretical and experimental probabilities for simple events. |
| 7.SP.I.7 | <p>Develop a probability model and use it to find probabilities of events. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancy.</p> <p>A. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events. For example, if a student is selected at random from a class, find the probability that Jane will be selected and the probability that a girl will be selected.</p> <p>B. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process. For example, find the approximate probability that a spinning penny will land heads up or that a tossed paper cup will land open-end down. Do the outcomes for the spinning penny appear to be equally likely based on the observed frequencies?</p> | <p>Apply the concepts of theoretical and experimental probabilities for simple events.</p> <p>A. Develop a uniform probability model by assigning equal probability to all outcomes, and use the model to determine probabilities of events.</p> <p>B. Develop a probability model (which may not be uniform) by observing frequencies in data generated from a chance process.</p> <p>C. Compare probabilities from a model to observed frequencies; if the agreement is not good, explain possible sources of the discrepancies</p> |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 7

2012 Standards

2018 Standards

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| 7.SP.I.8 | <p>Find probabilities of compound events using organized lists, tables, tree diagrams, and simulation.</p> <p>A. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.</p> <p>B. Represent sample spaces for compound events using methods such as organized lists, tables and tree diagrams. For an event described in everyday language (e.g., “rolling double sixes”), identify the outcomes in the sample space which compose the event.</p> <p>C. Design and use a simulation to generate frequencies for compound events. For example, use random digits as a simulation tool to approximate the answer to the question: If 40% of donors have type A blood, what is the probability that it will take at least 4 donors to find one with type A blood?</p> | <p>Find probabilities of compound events using organized lists, tables, and tree diagrams.</p> <p>A. Understand that, just as with simple events, the probability of a compound event is the fraction of outcomes in the sample space for which the compound event occurs.</p> <p>B. Represent sample spaces for compound events using methods such as organized lists, tables, and tree diagrams. For an event described in everyday language (e.g., “rolling double sixes”), identify the outcomes in the sample space which compose the event.</p> |
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2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 8

| | 2012 Standards | 2018 Standards |
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| 8.NS.A.1 | <p>Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; the rational numbers are those with decimal expansions that terminate in 0's or eventually repeat. Know that other numbers are call irrational.</p> | <p>Know that numbers that are not rational are called irrational. Understand informally that every number has a decimal expansion; for rational numbers show that the decimal expansion repeats eventually, and convert a decimal expansion which repeats eventually into a rational number. Explore the real number system and its appropriate usage in real-world situations.</p> <p>A. Make comparisons between rational and irrational numbers. B. Understand that all real numbers have a decimal expansion. C. Model the hierarchy of the real number system, including natural, whole, integer, rational, and irrational numbers. D. Convert repeating decimals to fractions.</p> |
| 8.NS.A.2 | <p>Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions (e.g., π^2). For example, by truncating the decimal expansion of $\sqrt{2}$, show that $\sqrt{2}$ is between 1 and 2, then between 1.4 and 1.5, and explain how to continue on to get better approximations.</p> | <p>Use rational approximations of irrational numbers to compare the size of irrational numbers, locate them approximately on a number line diagram, and estimate the value of expressions.</p> |
| 8.EE.B.1 | <p>Know and apply the properties of integer exponents to generate equivalent numerical expressions. For example, $3^2 \times 3^{-5} = 3^{-3} = 1/(3^3) = 1/27$.</p> | <p>Understand and apply the laws of exponents (i.e. product rule, quotient rule, power to a power, product to a power, quotient to a power, zero power property, negative exponents) to generate equivalent numerical expressions limited to integer exponents.</p> |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 8

| | 2012 Standards | 2018 Standards |
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| 8.EE.B.2 | Use square root and cube root symbols to represent solutions to equations of the form $x^2 = p$ and $x^3 = p$, where p is a positive rational number. Evaluate square roots of small perfect squares and cube roots of small perfect cubes. Know that $\sqrt{2}$ is irrational. | <p>Investigate concepts of square and cube roots.</p> <p>A. Use radical notation, if applicable, to represent the exact solutions to equations of the form $x^2 = p$ and $x^3 = q$ where p is a positive rational number and q is any rational number.</p> <p>B. Evaluate square roots of small perfect squares and cube roots of small perfect cubes.</p> <p>C. Recognize that square roots of non-perfect squares and the cube roots of non-perfect cubes are irrational.</p> <p>Assessment boundary: Include perfect squares up to 144 and perfect cubes up to 125.</p> |
| 8.EE.B.3 | Use numbers expressed in the form of a single digit times an integer power of 10 to estimate very large or very small quantities, and to express how many times as much one is than the other. For example, estimate the population of the United States as 3×10^8 and the population of the world as 7×10^9 , and determine that the world population is more than 20 times larger. | <p>Explore the relationship between quantities in decimal and scientific notation.</p> <p>A. Express very large and very small quantities, p, in scientific notation in the form $a \times 10^b = p$ where 1 is less than or equal to a and a is less than 10 and b is an integer.</p> <p>B. Translate between decimal notation and scientific notation.</p> <p>C. Estimate and compare the relative size of two quantities in scientific notation</p> |
| 8.EE.B.4 | Perform operations with numbers expressed in scientific notation, including problems where both decimal and scientific notation are used. Use scientific notation and choose units of appropriate size for measurements of very large or very small quantities (e.g., use millimeters per year for seafloor spreading). Interpret scientific notation that has been generated by technology. | <p>Apply the concepts of decimal and scientific notation to real-world and mathematical problems.</p> <p>A. Select appropriate units of measure when representing answers in scientific notation.</p> <p>B. Interpret scientific notation that has been generated by a variety of technologies</p> |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 8

| | 2012 Standards | 2018 Standards |
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| 8.EE.C.5 | Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed. | Graph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. |
| 8.EE.C.6 | Use similar triangles to explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at b . | Explain why the slope m is the same between any two distinct points on a non-vertical line in the coordinate plane; derive the equation $y = mx$ for a line through the origin and the equation $y = mx + b$ for a line intercepting the vertical axis at $(0,b)$. |
| 8.EE.D.7 | <p>Solve linear equations in one variable.</p> <p>A. Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form $x = a$, $a = a$, or $a = b$ results (where a and b are different numbers).</p> <p>B. Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.</p> | <p>Extend concepts of linear equations and inequalities in one variable to more complex multi-step equations and inequalities in real-world and mathematical situations.</p> <p>A. Solve linear equations and inequalities with rational number coefficients that include the use of the distributive property, combining like terms, and variable terms on both sides.</p> <p>B. Recognize the three types of solutions to linear equations: one solution, infinitely many solutions, or no solutions.</p> <p>C. Generate linear equations with the three types of solutions.</p> <p>G. Justify why linear equations have a specific type of solution.</p> |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 8

| | 2012 Standards | 2018 Standards |
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| 8.EE.D.8 | <p>Analyze and solve pairs of simultaneous linear equations.</p> <p>A. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.</p> <p>B. Solve systems of two linear equations in two variables algebraically, and estimate solutions by graphing the equations. Solve simple cases by inspection. For example, $3x + 2y = 5$ and $3x + 2y = 6$ have no solution because $3x + 2y$ cannot simultaneously be 5 and 6.</p> <p>C. Solve real-world and mathematical problems leading to two linear equations in two variables. For example, given coordinates for two pairs of points, determine whether the line through the first pair of points intersects the line through the second pair.</p> | <p>Analyze and solve pairs of simultaneous linear equations.</p> <p>A. Understand that solutions to a system of two linear equations in two variables correspond to points of intersection of their graphs, because points of intersection satisfy both equations simultaneously.</p> <p>B. Solve systems of two linear equations in two variables with integer solutions by graphing the equations.</p> <p>C. Solve simple real-world and mathematical problems leading to two linear equations in two variables given $y = mx + b$ form with integer solutions.</p> |
| 8.F.E.2 | <p>Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.</p> | <p>Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions).</p> |
| 8.F.E.3 | <p>Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. For example, the function $A = s^2$ giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.</p> | <p>Interpret the equation $y = mx + b$ as defining a linear function, whose graph is a straight line; give examples of functions that are not linear.</p> |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 8

| | 2012 Standards | 2018 Standards |
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| 8.F.F.4 | Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x, y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values. | Apply the concepts of linear functions to real-world and mathematical situations. A. Understand that the slope is the constant rate of change and the y-intercept is the point where $x = 0$. B. Determine the slope and the y-intercept of a linear function given multiple representations, including two points, tables, graphs, equations, and verbal descriptions. C. Construct a function in slope-intercept form that models a linear relationship between two quantities. D. Interpret the meaning of the slope and the y-intercept of a linear function in the context of the situation. |
| 8.F.F.5 | Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally. | Describe qualitatively the functional relationship between two quantities by analyzing a graph where the function is increasing, decreasing, constant, linear, or nonlinear. Sketch a graph that exhibits the qualitative features of a function that has been described verbally. |
| 8.G.G.1 | Verify experimentally the properties of rotations, reflections, and translations: a. Lines are taken to lines, and line segments to line segments of the same length. b. Angles are taken to angles of the same measure. c. Parallel lines are taken to parallel lines. | Verify experimentally the properties of rotations, reflections, and translations. A. Lines are taken to lines, and line segments to line segments of the same length. B. Angles are taken to angles of the same measure. C. Parallel lines are taken to parallel lines. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 8

| | 2012 Standards | 2018 Standards |
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| 8.G.G.2 | Understand that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them. | Recognize through visual comparison that a two-dimensional figure is congruent to another if the second can be obtained from the first by a sequence of rotations, reflections, and translations; given two congruent figures, describe a sequence that exhibits the congruence between them. |
| 8.G.G.4 | Understand that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them. | Recognize through visual comparison that a two-dimensional figure is similar to another if the second can be obtained from the first by a sequence of rotations, reflections, translations, and dilations; given two similar two-dimensional figures, describe a sequence that exhibits the similarity between them. |
| 8.G.G.5 | Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. For example, arrange three copies of the same triangle so that the three angles appear to form a line, and give an argument in terms of transversals why this is so. | Use informal arguments to establish facts about the angle sum and exterior angle of triangles, about the angles created when parallel lines are cut by a transversal, and the angle-angle criterion for similarity of triangles. |
| 8.G.H.6 | Explain a proof of the Pythagorean Theorem and its converse. | Use models or diagrams to explain the Pythagorean Theorem and its converse. |
| 8.G.H.7 | Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions. | Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems. |
| 8.G.I.9 | Know the formulas for the volume of cones, cylinders, and spheres and use them to solve real-world and mathematical problems. | Given the formulas, solve real-world and mathematical problems involving volume and surface area of cylinders. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

Grade 8

| | 2012 Standards | 2018 Standards |
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| 8.SP.J.1 | Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe patterns such as clustering, outliers, positive or negative association, linear association, and nonlinear association. | Construct and interpret scatter plots for bivariate measurement data to investigate patterns of association between two quantities. Describe the association by form (linear / nonlinear), direction (positive / negative), strength (correlation), and unusual features. |
| 8.SP.J.3 | Use the equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. For example, in a linear model for a biology experiment, interpret a slope of 1.5 cm/hr as meaning that an additional hour of sunlight each day is associated with an additional 1.5 cm in mature plant height. | Use an equation of a linear model to solve problems in the context of bivariate measurement data, interpreting the slope and intercept. |
| 8.SP.J.4 | Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. For example, collect data from students in your class on whether or not they have a curfew on school nights and whether or not they have assigned chores at home. Is there evidence that those who have a curfew also tend to have chores? | Understand that patterns of association can also be seen in bivariate categorical data by displaying frequencies and relative frequencies in a two-way table. A. Construct and interpret a two-way table summarizing data on two categorical variables collected from the same subjects. B. Use relative frequencies calculated for rows or columns to describe possible association between the two variables. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

High School Number & Quantity

| | 2012 Standards | 2018 Standards |
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| N.RN.A.1 | <p>Explain how the definition of the meaning of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents. For example, we define $5^{1/3}$ to be the cube root of 5 because we want $[5^{1/3}]^3 = 5^{[(1/3) \times 3]}$ to hold, so $[5^{1/3}]^3$ must equal 5.</p> | <p>Explain how the meaning of the definition of rational exponents follows from extending the properties of integer exponents to those values, allowing for a notation for radicals in terms of rational exponents.</p> |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

High School Algebra

| | 2012 Standards | 2018 Standards |
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| A.SSE.A.2 | Use the structure of an expression to identify ways to rewrite it. For example, see $x^4 - y^4$ as $(x^2)^2 - (y^2)^2$, thus recognizing it as a difference of squares that can be factored as $(x^2 - y^2)(x^2 + y^2)$. | Use the structure of an expression to identify ways to rewrite it. |
| A.SSE.B.3 | <p>Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.*</p> <p>A. Factor a quadratic expression to reveal the zeros of the function it defines.*</p> <p>B. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.*</p> <p>C. Use the properties of exponents to transform expressions for exponential functions. For example the expression 1.15^t can be rewritten as $[1.15^{(1/12)}]^{(12t)} \approx 1.012^{(12t)}$ to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.*</p> | <p>Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.</p> <p>A. Factor a quadratic expression to reveal the zeros of the function it defines .</p> <p>B. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.</p> <p>C. Use the properties of exponents to transform expressions for exponential functions. Apply the concepts of decimal and scientific notation to solve real-world and mathematical problems.</p> <p>I. Multiply and divide numbers expressed in both decimal and scientific notation.</p> <p>II. Add and subtract numbers in scientific notation with the same integer exponent.</p> |
| A.APR.E.4 | Prove polynomial identities and use them to describe numerical relationships. For example, the polynomial identity $(x^2 + y^2)^2 = (x^2 - y^2)^2 + (2xy)^2$ can be used to generate Pythagorean triples. | Prove polynomial identities and use them to describe numerical relationships. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

High School Algebra

| | 2012 Standards | 2018 Standards |
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| A.APR.F.6 | Rewrite simple rational expressions in different forms; write $a(x)/b(x)$ in the form $q(x) + r(x)/b(x)$, where $a(x)$, $b(x)$, $q(x)$, and $r(x)$ are polynomials with the degree of $r(x)$ less than the degree of $b(x)$, using inspection, long division, or, for the more complicated examples, a computer algebra system. | Rewrite simple rational expressions in different forms; write $a(x)/b(x)$ in the form $q(x) + r(x)/b(x)$, where $a(x)$, $b(x)$, $q(x)$, and $r(x)$ are polynomials with the degree of $r(x)$ less than the degree of $b(x)$ using inspection, long division, or, for the more complicated examples, a computer algebra system. (i.e. rewriting a rational expression as the quotient plus the remainder over divisor). |
| A.REI.I.4 | <p>Solve quadratic equations in one variable.</p> <p>A. Use the method of completing the square to transform any quadratic equation in x into an equation of the form $(x - p)^2 = q$ that has the same solutions. Derive the quadratic formula from this form.</p> <p>B. Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers a and b.</p> | <p>Solve quadratic equations in one variable.</p> <p>A. Use the method of completing the square to transform any quadratic equation in x into an equation of the form $(x - p)^2 = q$ that has the same solutions.</p> <p>B. Solve quadratic equations by inspection (e.g., for $x^2 = 49$), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as $a \pm bi$ for real numbers a and b.</p> <p>C. (+)Derive the quadratic formula from the general form of a quadratic equation.</p> |
| A.REI.J.6 | Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables. | Estimate solutions graphically and determine algebraic solutions to linear systems, focusing on pairs of linear equations in two variables. |
| A.REI.K.10 | Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line). | Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

High School Functions

| | 2012 Standards | 2018 Standards |
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| F.IF.C.7 | <p>Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.*</p> <p>A. Graph linear and quadratic functions and show intercepts, maxima, and minima.*</p> <p>B. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.*</p> <p>C. Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.*</p> <p>D. (+)Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior.*</p> <p>E. Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.*</p> | <p>Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.</p> <p>A. Graph linear and quadratic functions and show intercepts, maxima, and minima.</p> <p>B. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.</p> <p>C. Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.</p> <p>E. Graph exponential and logarithmic functions, showing intercepts and end behavior</p> <p>D. (+)Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior.</p> <p>F. (+)Graph trigonometric functions, showing period, midline, and amplitude.</p> |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

High School Functions

| | 2012 Standards | 2018 Standards |
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| F.BF.E.4 | <p>Find inverse functions.</p> <p>A. Solve an equation of the form $f(x) = c$ for a simple function f that has an inverse and write an expression for the inverse. For example, $f(x) = 2(x^3)$ or $f(x) = (x+1)/(x-1)$ for $x \neq 1$ (x not equal to 1).</p> <p>B. (+)Verify by composition that one function is the inverse of another.</p> <p>C. (+)Read values of an inverse function from a graph or a table, given that the function has an inverse.</p> <p>D. (+)Produce an invertible function from a non-invertible function by restricting the domain.</p> | <p>Find inverse functions.</p> <p>A. Write an expression for the inverse of a simple, invertible function $f(x)$. Understand that an inverse function can be obtained by expressing the dependent variable of one function as the independent variable of another, as f and g are inverse functions, if and only if, $f(x) = y$ and $g(y) = x$, for all values of x in the domain of f and all values of y in the domain of g.</p> <p>B. (+)Verify by composition that one function is the inverse of another.</p> <p>C. (+)Read values of an inverse function from a graph or a table, given that the function has an inverse.</p> <p>D. (+)Produce an invertible function from a non-invertible function by restricting the domain.</p> |
| F.LE.F.1 | <p>Distinguish between situations that can be modeled with linear functions and with exponential functions.*</p> <p>A. Prove that linear functions grow by equal differences over equal intervals and that exponential functions grow by equal factors over equal intervals.*</p> <p>B. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.*</p> <p>C. Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.*</p> | <p>Distinguish between situations that can be modeled with linear functions and with exponential functions.</p> <p>A. Verify that linear functions grow by equal differences over equal intervals and that exponential functions grow by equal factors over equal intervals.</p> <p>B. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.</p> <p>C. Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.</p> |
| F.LE.F.2 | <p>Construct linear and exponential functions, including arithmetic and geometric sequences, given a graph, a description of a relationship, or two input-output pairs (include reading these from a table).*</p> | <p>Construct linear and exponential functions using a graph, a description of a relationship, or two input-output pairs (include reading these from a table).</p> |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

| High School Functions | | |
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| | 2012 Standards | 2018 Standards |
| F.TF.H.1 F.TF.H.1 | Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle. | (+) Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle. |
| F.TF.H.2 F.TF.H.2 | Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle. | (+) Explain how the unit circle in the coordinate plane enables the extension of trigonometric functions to all real numbers, interpreted as radian measures of angles traversed counterclockwise around the unit circle. |
| F.TF.I.5 F.TF.I.5 | Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.* | (+) Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline. |
| F.TF.J.8 F.TF.J.8 | Prove the Pythagorean identity $(\sin A)^2 + (\cos A)^2 = 1$ and use it to find $\sin A$, $\cos A$, or $\tan A$, given $\sin A$, $\cos A$, or $\tan A$, and the quadrant of the angle. | (+) Prove the Pythagorean identity $(\sin A)^2 + (\cos A)^2 = 1$ and use it to find $\sin A$, $\cos A$, or $\tan A$, given $\sin A$, $\cos A$, or $\tan A$, and the quadrant of the angle. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

High School Geometry

| | 2012 Standards | 2018 Standards |
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| G.CO.A.1 | Know precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc. | Apply precise definitions of angle, circle, perpendicular line, parallel line, and line segment, based on the undefined notions of point, line, distance along a line, and distance around a circular arc. |
| G.SRT.E.1 | Understand similarity in terms of similarity transformations. Verify experimentally the properties of dilations given by a center and a scale factor: a. A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged. b. The dilation of a line segment is longer or shorter in the ratio given by the scale factor. | Understand similarity in terms of similarity transformations. Verify heuristically the properties of dilations given by a center and a scale factor. A. A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged. B. The dilation of a line segment is longer or shorter in the ratio given by the scale factor. |
| G.GPE.K.2 | Derive the equation of a parabola given a focus and directrix. | (+) Derive the equation of a parabola given a focus and directrix. |
| G.GPE.L.4 | For example, prove or disprove that a figure defined by four given points in the coordinate plane is a rectangle; prove or disprove that the point (1, $\sqrt{3}$) lies on the circle centered at the origin and containing the point (0, 2). | Use coordinates to prove simple geometric theorems algebraically. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

High School Statistics and Probability

| | 2012 Standards | 2018 Standards |
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| S.ID.A.1 | Represent data with plots on the real number line (dot plots, histograms, and box plots).* | Represent data with plots on the real number line (dot plots, histograms, and box plots) by hand or using technology. |
| S.ID.A.4 | Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use calculators, spreadsheets, and tables to estimate areas under the normal curve.* | (+) Use the mean and standard deviation of a data set to fit it to a normal distribution and to estimate population percentages. Recognize that there are data sets for which such a procedure is not appropriate. Use the Empirical Rule, calculators, spreadsheets, and/or tables to estimate areas under the normal curve. |
| S.ID.B.5 | Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations and trends in the data.* | (+) Summarize categorical data for two categories in two-way frequency tables. Interpret relative frequencies in the context of the data (including joint, marginal, and conditional relative frequencies). Recognize possible associations in the data, and use inferential statistical techniques to show association. |
| S.ID.B.6 | <p>Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.*</p> <p>A. Fit a function to the data; use functions fitted to data to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models.*</p> <p>B. Informally assess the fit of a function by plotting and analyzing residuals.*</p> <p>C. Fit a linear function for a scatter plot that suggests a linear association.*</p> | <p>Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.</p> <p>A. Use a function to describe data trends to solve problems in the context of the data. Use given functions or choose a function suggested by the context. Emphasize linear, quadratic, and exponential models.</p> <p>B. (+)Informally assess the fit of a function by plotting and analyzing residuals.</p> <p>C. Using technology, fit a least squares linear regression function for a scatter plot that suggests a linear association.</p> |
| S.IC.D.1 | Understand statistics as a process for making inferences about population parameters based on a random sample from that population.* | (+) Understand statistics as a process for making inferences about population parameters based on a random sample from that population |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

High School Statistics and Probability

| | 2012 Standards | 2018 Standards |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S.IC.D.2 | Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. For example, a model says a spinning coin falls heads up with probability 0.5. Would a result of 5 tails in a row cause you to question the model?* | (+) Decide if a specified model is consistent with results from a given data-generating process, e.g., using simulation. |
| S.IC.E.3 | Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.* | (+) Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each. |
| S.IC.E.4 | Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling.* | (+) Use data from a sample survey to estimate a population mean or proportion; develop a margin of error through the use of simulation models for random sampling. |
| S.IC.E.5 | Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant.* | (+) Use data from a randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant. |
| S.IC.E.6 | Evaluate reports based on data.* | (+) Evaluate reports based on data. |
| S.CP.F.2 | Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent.* | (+) Understand that two events A and B are independent if the probability of A and B occurring together is the product of their probabilities, and use this characterization to determine if they are independent. |
| S.CP.F.3 | Understand the conditional probability of A given B as $P(A \text{ and } B)/P(B)$, and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B.* | (+) Understand the conditional probability of A given B as $P(A \text{ and } B)/P(B)$, and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B. |

2012 – 2018 Math Wyoming Content and Performance Standards Crosswalk

High School Statistics and Probability

| | 2012 Standards | 2018 Standards |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| S.CP.F.4 | Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. For example, collect data from a random sample of students in your school on their favorite subject among math, science, and English. Estimate the probability that a randomly selected student from your school will favor science given that the student is in tenth grade. Do the same for other subjects and compare the results.* | (+) Construct and interpret two-way frequency tables of data when two categories are associated with each object being classified. Use the two-way table as a sample space to decide if events are independent and to approximate conditional probabilities. |
| S.CP.F.5 | Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. For example, compare the chance of having lung cancer if you are a smoker with the chance of being a smoker if you have lung cancer.* | Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations. |
| S.CP.G.6 | Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A, and interpret the answer in terms of the model.* | (+) Find the conditional probability of A given B as the fraction of B's outcomes that also belong to A, and interpret the answer in terms of the model. |
| S.CP.G.7 | Apply the Addition Rule, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$, and interpret the answer in terms of the model.* | (+) Apply the Addition Rule, $P(A \text{ or } B) = P(A) + P(B) - P(A \text{ and } B)$, and interpret the answer in terms of the model. |

Implementation Plan – 2018 Wyoming Math Content and Performance Standards

Phase 1: 2018-19 Awareness/Planning

- ✓ Participate in State Collaborative on Assessment and Student Standards (SCASS) and Association of State Supervisors of Mathematics (ASSM) meeting to collaborate with other states and gather resources to share
- ✓ Provide updates through Edmodo, Facebook, Twitter conferences, memos and newsletter
- ✓ Provide crosswalk and shifts of new standards for mathematics

Phase 2: 2019-20 Transition/Implementation

- ✓ Participate in SCASS/ ASSM meetings and share resources with educators
- ✓ Maintain communication regarding implementation of standards
- ✓ Present new information at WCDA/SBE/ Math and Science Conference, and other PD Events
- ✓ Update WDE website with resources for new standards
- ✓ Develop and provide PD around standards
- ✓ Provide trainings and communicate on the state assessment regarding standards

Phase 3: 2020-21 2nd Yr. Implementation

- ✓ Participate in SCASS/ ASSM meetings and share resources with educators
- ✓ Maintain communication regarding implementation of standards
- ✓ Present new information at WCDA/SBE/ Math and Science Conference, and other PD events
- ✓ Continue to develop and maintain WDE website with resources
- ✓ Develop and provide PD – including cross disciplinary and mathematical practices
- ✓ Provide trainings and communicate on the state assessment regarding standards

Phase 4: 2021-22 Full Implementation

- ✓ WDE math consultant participate SCASS and ASSM Meetings and share resources with educators
- ✓ Maintain communication regarding implementation of standards
- ✓ Present new information at WCDA/SBE/Legislative Meetings, Math and Science Conference, & other PD events
- ✓ Continue to develop and maintain WDE website with resources
- ✓ Develop and provide PD for math practices, computational thinking, and financial literacy
- ✓ Provide data resources to districts

State Support – WDE

Implementation Plan – 2018 Wyoming Math Content and Performance Standards

Phase 1: 2018-19 Awareness/Planning

Phase 2: 2019-20 Transition/Implementation

Phase 3: 2020-21 2nd Yr. Implementation

Phase 4: 2021-22 Full Implementation

Recommended District Support

- ✓ Review standards and give feedback to WDE
- ✓ Consider possible impact of on curriculum, district assessments, and instruction

- ✓ Develop transition plan to new standards
- ✓ Develop understanding of learning progressions
- ✓ Review alignment of curricular resources
- ✓ Review and align district curriculum, instruction, assessments, and district professional development

- ✓ Develop and implement PD aligned to the new standards
- ✓ Visit and review resources on the WDE website
- ✓ Develop and update district assessments
- ✓ Provide feedback to WDE

- ✓ Evaluate implementation plan for standards
- ✓ Review curriculum, district assessments, and instructional practices
- ✓ Review assessment data from classroom and district assessments
- ✓ Provide feedback to WDE

State Assessment & Accountability

- ✓ Online WY-TOPP adaptive state assessment (test on 2012 Math standards)
- ✓ WY-TOPP standard setting
- ✓ Accountability measures per WAEA

- ✓ Online WY-TOPP adaptive state assessment (test on 2012 Math standards)
- ✓ WY-TOPP – operational field test items on 2018 standards
- ✓ Accountability measures per WAEA

- ✓ WY-TOPP Math – online, test (2012 standards)
- ✓ WY-TOPP – operational items (Phase I) and additional field test items
- ✓ Accountability measures per WAEA

- ✓ WY-TOPP Math – online, adaptable test (2018 standards)
- ✓ WY-TOPP – fully operational around 2018 math standards
- ✓ Accountability measures per WAEA

Professional Development Plan – 2018 Wyoming Mathematics Content and Performance Standards

State Support – WDE

Phase 1: 2018-19 Awareness/Planning

- ✓ Add new standards, resources, documents, and videos on website
- ✓ Announce PD on social media, WDE newsletter, Edmodo and website
- ✓ Educate on the structure and layout of new standards
- ✓ Communicate instructional shifts with mathematical practices and modeling
- ✓ Provide updated information at content area conferences in Wyoming

Phase 2: 2019-21 Transition/Implementation

- ✓ Monitor district needs and collect feedback on implementation of new standards
- ✓ Respond to district needs/ requests for PD
- ✓ Announce PD on social media, WDE newsletter, Edmodo and website
- ✓ Provide PD on mathematical practices and modeling
- ✓ Develop and facilitate content-specific PD opportunities (deep dives)
- ✓ Update and maintain content-specific resources on WDE website
- ✓ Update and present new information at state meetings and conferences

Phase 3: 2021-22 Full Implementation

- ✓ Continue to: monitor district needs and collect feedback on implementation of new standards
- ✓ Respond to individual district needs/ requests for PD
- ✓ Announce PD on social media, WDE newsletter, Edmodo and website
- ✓ Prepare and present best practices PD around implementing new standards
- ✓ Facilitate content-specific PD opportunities (deep dives)
- ✓ Update and maintain content-specific resources on WDE website
- ✓ Update and present new information at state meetings and conferences

Communication Plan – 2018 Wyoming Mathematics Content and Performance Standards

State Support – WDE

Phase 1: 2016-19 Awareness/Planning

Communicate the Following:

- ✓ Regional and community input meetings
- ✓ Gather contact information of interested people to serve on committee:
 - K-12
 - Administrators
 - Higher Ed.
 - Community
 - Parents
 - Business Members
 - Students
- ✓ Information about standards revision process
- ✓ PR for public input and regional meetings
- ✓ Press release - announcing open public comment period
- ✓ Resources and documents added to the WDE website

Phase 2: 2019-21 Transition/Implementation

Communicate the Following:

- ✓ Inform districts and public of new standards and resources on website
- ✓ Implementation of new standards
- ✓ Updates at conferences in WY
 - Educate districts on structure and layout of proposed standards
 - Gather feedback
- ✓ Crosswalk showing shifts/ changes/ additions
- ✓ Updated PD plan
- ✓ PD opportunities
- ✓ Updated Implementation Plan

Phase 3: 2021-22 Full Implementation

Communicate the Following:

- ✓ Inform districts and public of new resources through Edmodo/newsletter/WDE social media and on website
- ✓ Implementation of new standards
- ✓ Send communication through Edmodo/newsletter/WDE social media
- ✓ Updated PD opportunities

MODES of COMMUNICATION

- ✓ WDE Website
- ✓ Supt's Memo
- ✓ Press Release
- ✓ FAQs
- ✓ Social Media
 - Twitter
 - FB
- ✓ Edmodo
- ✓ Standards Newsletter
- ✓ NPR Radio

Implementation Plan – 2018 Wyoming Science Extended Content and Performance Standards

State Support – WDE

Phase 1: 2018-19 Awareness / Planning

- ✓ Maintains membership & participate in relevant national organizations to collaborate with other states and gather resources to share
- ✓ Provide updates through Edmodo, Facebook, Twitter conferences, memos and newsletter
- ✓ Consult with districts to determine if any professional development is needed

Phase 2: 2019-20 Transition/Implementation

- ✓ Develop and provide PD around new science extended science
- ✓ Provide trainings and communication around science WY-ALT assessment for grades 4, 8, and 10

Phase 3: 2020-21 2nd Yr. Implementation

- ✓ Maintain communication regarding implementation of standards
- ✓ Continue to provide resources on WDE website
- ✓ Provide trainings and communication around science WY-ALT state assessment
- ✓ Collect feedback from districts on implementation

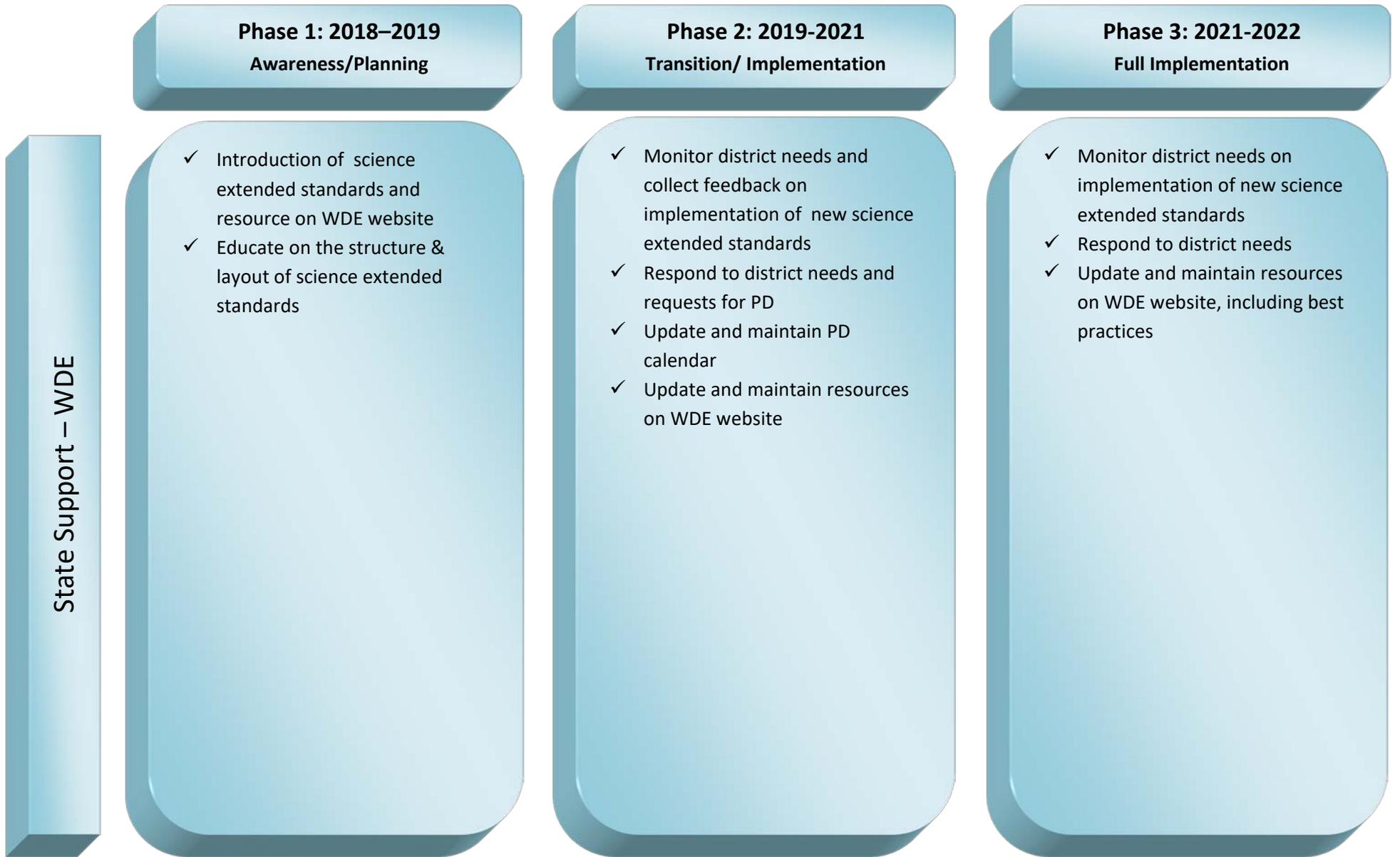
Phase 4: 2021-22 Full Implementation

- ✓ Maintain communication regarding implementation of science extended standards
- ✓ Continue to provide resources on WDE website
- ✓ Develop and provide PD opportunities
- ✓ Continue to provide trainings and communication around science WY-ALT state assessment

Implementation Plan – 2018 Wyoming Science Extended Content and Performance Standards

| | Phase 1: 2018-19 Awareness/Planning | Phase 2: 2019-20 Transition/Implementation | Phase 3: 2020-21 2 nd Yr. Implementation | Phase 4: 2021-22 Full Implementation |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Recommended District Support | <ul style="list-style-type: none"> ✓ Feedback to WDE determine if any professional development is needed ✓ Consider possible impact of new extended standards on curriculum, district assessments, and instruction ✓ Review the WY-ALT User Guide and Manual | <ul style="list-style-type: none"> ✓ Develop understanding of learning progressions of science extended ✓ Review alignment of curricular resources ✓ Review and align district curriculum, instruction, district Assessments, and district professional development | <ul style="list-style-type: none"> ✓ Maintain and develop further resources, including resources on the WDE website ✓ Identify and select aligned instructional practices ✓ Develop and update district assessments | <ul style="list-style-type: none"> ✓ Evaluate implementation of new science extended standards ✓ Review curriculum, district assessments, and instructional practices ✓ Review assessment data from classroom, district, benchmark, and summative assessments |
| State Assessment & Accountability | <ul style="list-style-type: none"> ✓ WY-ALT-online and adaptive test assessing 2006 SES ✓ Accountability measures per WAEA | <ul style="list-style-type: none"> ✓ Field test items on WY-ALT on new extended standards ✓ Accountability measures per WAEA | <ul style="list-style-type: none"> ✓ Operational field test items on WY-ALT on new extended standards ✓ Accountability measures per WAEA | <ul style="list-style-type: none"> ✓ Fully operational WY-ALT on new extended standards ✓ Accountability measures per WAEA |

Professional Development Plan – 2018 Wyoming Science Extended Content and Performance Standards



Communication Plan – 2018 Wyoming Science Extended Content and Performance Standards

Phase 1: 2017-19 Awareness/Planning

Communicate the Following:

- ✓ Gather contact information of interested people to serve on committee:
 - K-12
 - Administrators
 - Higher Ed.
 - Community
 - Parents
 - Business Members
 - Students
- ✓ Information about extended standards revision process
- ✓ PR for public input and regional meetings
- ✓ Press release - announcing open public comment period
- ✓ Resources and documents added to the WDE website

Phase 2: 2019-21 Transition/Implementation

Communicate the Following:

- ✓ Inform districts and public of new standards and resources on website
- ✓ Updates at conferences in WY
 - Educate districts on structure and layout of proposed standards
 - Gather feedback
- ✓ Implementation of new standards
- ✓ Updated PD plan
- ✓ PD opportunities
- ✓ Updated Implementation Plan

Phase 3: 2021-22 Full Implementation

Communicate the Following:

- ✓ Informing districts and public of new standards and resources on website
- ✓ Implementation of new standards
- ✓ Send communication through Edmodo/newsletter/WDE social media
- ✓ Maintain communication regarding implementation statewide
- ✓ Updated PD opportunities

MODES of COMMUNICATION

- ✓ WDE Website
- ✓ Supt's Memo
- ✓ Press Release
- ✓ FAQs
- ✓ Social Media
 - Twitter
 - FB
- ✓ Edmodo
- ✓ Standards Newsletter
- ✓ NPR Radio

State Support – WDE

Implementation Plan – 2018 Additions to Wyoming Social Studies Content and Performance Standards

Phase 1: 2018-19 Awareness/Planning

- ✓ Participate in State Collaborative on Assessment and Student Standards (SCASS) and Council of State Supervisors of Social Studies (CSSSS) meeting to collaborate with other states and gather resources to share
- ✓ Provide updates through Edmodo, Facebook, Twitter conferences, memos and newsletter

Phase 2: 2019-20 Transition/Implementation

- ✓ Participate SCASS and CSSSS meeting to collaborate with other states and gather resources to share
- ✓ Update WDE website with resources for new standards
- ✓ Develop and provide PD around standards

Phase 3: 2020-21 2nd Yr. Implementation

- ✓ Participate SCASS and CSSSS meeting to collaborate with other states and gather resources to share
- ✓ Maintain communication regarding implementation of standards
- ✓ Present new information at WCDA/SBE/ Math and Science Conference, and other PD events
- ✓ Continue to develop and maintain toolkit on WDE website with resources standards

Phase 4: 2021-22 Full Implementation

- ✓ Maintain membership and participate in Content Area SCASS and CSSS meetings
- ✓ Maintain communication statewide regarding implementation of 2018 additions to social studies standards
- ✓ Continue to develop and maintain WDE website with resources
- ✓ Develop and provide PD – including literacy across content areas

State Support – WDE

Implementation Plan –2018 Additions Wyoming to Social Studies Content and Performance Standards

Phase 1: 2018-19 Awareness/Planning

Phase 2: 2019-20 Transition/Implementation

Phase 3: 2020-21 2nd Yr. Implementation

Phase 4: 2021-22 Full Implementation

Recommended District Support

- ✓ Review standards and give feedback to WDE
- ✓ Consider possible impact of 2018 additions on curriculum, district assessments, and instruction

- ✓ Develop transition plan to new standards
- ✓ Develop understanding of learning progressions
- ✓ Review alignment of curricular resources
- ✓ Review and align district curriculum, instruction, , and professional development

- ✓ Develop and implement PD aligned to the new standards
- ✓ Maintain and develop resources on the WDE website
- ✓ Develop and update district assessments
- ✓ Provide feedback to WDE on standards

- ✓ Evaluate implementation plan for standards
- ✓ Review curriculum, district assessments, and instructional practices
- ✓ Review assessment data from classroom and district assessments
- ✓ Provide Feedback to WDE

State Assessment & Accountability

- ✓ Not assessed on state assessment

Professional Development Plan – 2018 Additions to Wyoming Social Studies Content and Performance

State Support – WDE

Phase 1: 2018-19 Awareness/Planning

- ✓ Add new standards, resources, documents, and videos on website
- ✓ Announce PD on social media, WDE newsletter, Edmodo and website
- ✓ Educate on the structure and layout of new standards
- ✓ Provide updated information at content area conferences in WY

Phase 2: 2019-21 Transition/Implementation

- ✓ Monitor district needs and collect feedback on implementation of new standards
- ✓ Respond to individual district needs/requests for PD
- ✓ Update and maintain PD on WDE newsletter
- ✓ Develop and facilitate PD
- ✓ Update and maintain content-specific resources on WDE website
- ✓ Update and present new information at state meetings and conferences

Phase 3: 2021-22 Full Implementation

- Continue to:**
- ✓ Monitor district needs and collect feedback on implementation of new standards
 - ✓ Respond to individual district needs/requests for PD
 - ✓ Update and maintain PD on WDE newsletter
 - ✓ Update and maintain content-specific resources on WDE website
 - ✓ Update and present new information at state meetings and conferences

Communication Plan –2018 Additions to Social Studies Wyoming Content and Performance Standards

State Support – WDE

Phase 1: 2017-18 Awareness/Planning

Communicate the Following:

- ✓ Gather contact information of interested people to serve on committee:
 - K-12
 - Administrators
 - Higher Ed.
 - Community
 - Parents
 - Business Members
 - Students
- ✓ Information about standards revision process and invite public to observe
- ✓ PR for public input and regional meetings
- ✓ Press release - announcing open public comment period
- ✓ Collaborate with Eastern Shoshone and Northern Arapaho Tribes

Phase 2: 2018-21 Transition/Implementation

Communicate the Following:

- ✓ Informing districts & public of standards on website
- ✓ Provide updates at content conferences in WY
 - To educate districts on structure and layout of proposed standards
 - Gather feedback
- ✓ Adding crosswalk showing shifts/ changes/ additions
- ✓ Updated PD plan
- ✓ PD opportunities
- ✓ Updated Implementation Plan

Phase 3: 2021-22 Full Implementation

Communicate the Following:

- ✓ Inform districts and public of new resources through Edmodo/newsletter/WDE social media and on website
- ✓ Implementation of new standards
- ✓ Send communication through Edmodo/newsletter/WDE social media

MODES of COMMUNICATION

- ✓ WDE Website
- ✓ Supt's Memo
- ✓ Press Release
- ✓ FAQs
- ✓ Social Media
 - Twitter
 - FB
- ✓ Edmodo
- ✓ Standards Newsletter
- ✓ NPR Radio

Coordinator Priorities
April 2018-June 2018

- Professional Judgement Panel (PJP)
 - Complete contract negotiations
 - Collaborate with Mike Beck, Scott Marion (Accountability Committee), Chris Domaleski (Alternative High School Accountability) and WDE Accountability Team to prepare for PJP
 - Prepare for PJP sessions – lodging, room arrangements, materials
 - Determine PJP participants and correspond with them
- Chapter 31
 - Complete rules
 - Assist in writing guidance to districts for implementation as needed
- Statewide “Basket of Goods” discussion
 - Collaborate with other entities and organizations on holding a statewide conversation
 - Arrange sessions – invitations, location, time, materials
- Legislative Issues
 - Plan responses for interim topics
 - Outline mandated legislative reports
- Governance Policies
 - Revise policies based on comments from board members

| | | | | |
|----------------------------------------------------------------------------|----------------------------------------------|-----------------------------------------------------------|---------------------------------------------------------------------|--|
| * No more than six SBE voting members, in bold voting members & supt proxy | CH Chairperson | C Coordinator | | |
| | VC Vice Chairperson | DE Department of Education | | |
| SBE Communications Committee | SBE Legislative Committee | SBE Administrative Committee | SBE AdHoc Finance Committee | |
| CH Furman, Ryan | Breen, Nate | CH Belish, Sue | Rathbun, Kenny | |
| Ratliff, Scotty | McGlade, Dan | Rathbun, Kenny | Sessions, Kathryn | |
| Sessions, Kathryn | CH Mickelson, Max | Schamber, Robin | Wilcox, Walt | |
| Schamber, Robin | Rose, Jim | Wilcox, Walt | C Sachse, Tom | |
| C Sachse, Tom | C Sachse, Tom | C Sachse, Tom | DE State Supt/WDE - ? | |
| DE State Supt/WDE - Degenfelder, M | DE State Supt/WDE - Degenfelder, M | DE State Supt/WDE - Degenfelder, M | DE WDE - Taylor, Kylie | |
| Potential opening for SBE (6 of 6) | Potential opening for SBE (6 of 6) | Mickleson, Max - Opening for SBE (6 of 6) Need Leg Rep | CH Mickelson, Max - Potential opening for SBE (5 of 6) | |
| DE WDE - Taylor, Kylie | DE WDE - Taylor, Kylie | DE WDE - Magee, Julie | Potential opening for SBE (6 of 6) | |
| | *Need SBE Legislative Rep | DE WDE - Taylor, Kylie | | |
| SBE Professional Judgement Panel (3 Reps) | JEC Select Advisory Committee (1 Rep) | WDE Internal Design Team (1 Rep) | WDE RFP Assessment Committee | |
| Belish, Sue | Belish, Sue | Sessions, Kathryn | Sessions, Kathryn (WYTOPP) (Disolved Spring 2017) | |
| Sessions, Kathryn | | | Wilcox, Walt (HS ACT & WKEYS) (Disolved Spring 2017) | |
| Wilcox, Walt | | | | |
| NASBE Public Education Positions (1 Rep) | NASBE Awards Committee (1 Rep) | Collaborative Council | Wyoming School University Partnerships | |
| Breen, Nate | Breen, Nate | Sessions, Kathryn (Disolved? 9-2017) | Wilcox, Walt (NCSD Membership) | |
| APA Recalibration Visits August 2017 | SBE RFP Professional Judgement Panel | WDE Accreditation Task Force (1 Rep) | SBE Ch 31 Task Force (2 Reps) | |
| Breen, Nate (Disolved Aug 2017) | Belish, Sue | Sessions, Kathryn | Belish, Sue | |
| Mickelson, Max (Disolved Aug 2017) | Furman, Ryan | | Wilcox, Walt | |
| Sessions, Kathryn (Disolved Aug 2017) | McGlade, Dan | | | |
| Wilcox, Walt (Disolved Aug 2017) | Sessions, Kathryn | | | |
| | Wilcox, Walt | | | |
| | McGlade, Dan | | | |
| | DE WDE - Magee, Julie | | | |



WYOMING
DEPARTMENT OF EDUCATION

*Creating Opportunities
for Students to Keep
Wyoming Strong*

Jillian Balow

Superintendent of Public Instruction

Dicky Shanor

Chief of Staff

Brent Bacon

Chief Academic Officer

Megan Degenfelder

Chief Policy Officer

Dianne Bailey

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On the Web

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MEMORANDUM

To: State Board of Education
From: Laurel Ballard, Supervisor, Student and Teacher Resources Resources Team
Date: April 9, 2018
Subject: Leader and Teacher Accountability and Chapter 29 Rules

Meeting Date: April 19-20, 2018

Item Type: Action: _____ Informational: X

Background:

The Wyoming Department of Education (WDE) continues to work with the Certified Personnel Evaluation System for Leaders Advisory Panel (CPES Advisory Panel-Leaders) and Regional Educational Laboratory (REL) Central to make recommendations on the leadership evaluation system and Chapter 29 Rules in order to provide the State Board of Education (SBE) with vetted, high quality rules and regulation.

The CPES Advisory Panel-Leaders met on April 3rd to continue its extensive review of the statutory requirements and refining the Chapter 29 Rules to insure alignment. The WDE will collect informal feedback from stakeholders at the Wyoming Association of School Administrators (WASA) and the Curriculum Directors Conferences later this spring. These rules will also be shared with school principals through their associations for additional input. Feedback will be compiled by the WDE and reviewed by the CPES Advisory Panel-Leaders to finalize the Chapter 29 Rules, Leader Evaluation Crosswalk, and other guidance documents. The SBE will take action on these finalized documents during their May 2018 meeting.

Teacher Evaluation

W.S. 21-2-304(b)(xv) requires the SBE to promulgate rules for teacher evaluation systems. To support the SBE in this effort, the WDE [called for nominations](#) for the Certified Personnel Evaluation Systems for Teachers Advisory Panel (CPES Advisory Panel-Teachers). Attachment A provides the list of practitioners who will be participating on the panel. The CPES Advisory Panel-Teachers will be meeting monthly over the next year to complete this difficult work.

Statutory Reference (if applicable):

- W.S. 21-2-304(b)(xv)
- W.S. 21-2-304(b)(xvi)

- Board Rules, Chapter 29: Certified Personnel Evaluation Systems

Supporting Documents/Attachments:

- CPES Advisory Panel – Teachers

Proposed Motions:

None

For questions or additional information:

Contact Laurel Ballard at laurel.ballard@wyo.gov or (307)777-8715.

**Certified Personnel Evaluation System for Teachers Advisory Panel
Member List**

| NAME | ROLE AND LOCATION |
|------------------------|-----------------------------------------------------------|
| Jean Chrotoski | Goshen #1 Superintendent |
| Brad LaCroix | Weston #1 Superintendent |
| Wanda Maloney | Sweetwater #1 Curriculum Director |
| Christina Mills | Fremont #24 Curriculum Director |
| Tom Sasche | State Board of Education Coordinator |
| Joel Dvorak | State System of Support Consultant |
| Michael Jennings | Executive Director, Human Resources |
| Holly Vorhees-Carmical | Teton #1, Curriculum Director |
| Jenefer Pasqua | Laramie #1, Teacher, Afflerbach Elementary |
| Liesl Sisson | Platte #2, Instructional Facilitator |
| Brian Redmond | Sweetwater #1, Teacher, Rock Springs High School |
| Sharon Seaton | Sweetwater #1, Teacher, Black Buttes High School |
| Robyn Heth | Niobrara #1, Special Education Director |
| Tracy Ragland | Weston #1, Principal, Newcastle High School |
| Julie Shanley | Fremont #1, Principal, Lander Middle School |
| Jason Sleep | Park #1, Principal, Powell Middle School |
| Linda Wolfskill | Crook #1, Principal, Hulett School |
| Dustin Hunt | Hot Springs #1, Superintendent |
| Teresa Ross | Albany #1, Principal, Indian Paintbrush Elementary School |
| Laurel Ballard | Wyoming Department of Education |
| Shelley Hamel | Wyoming Department of Education |
| Robin Grandpre | Wyoming Department of Education |
| Brent Bacon | Wyoming Department of Education |
| Megan Degenfelder | Wyoming Department of Education |
| Ceri Dean | Regional Education Laboratory - Central |
| Josh Stewart | Regional Education Laboratory - Central |
| Mckenzie Haines | Regional Education Laboratory - Central |

| NAME | ROLE AND LOCATION |
|----------------|--------------------------|
| Joe Simpson | Facilitator |
| Amy Starzynski | Foresight Law and Policy |
| Aunnie Johnson | Foresight Law and Policy |



**WYOMING
STATE BOARD
OF EDUCATION**

April 11, 2018

To: State Board Members

From: Tom Sachse, Ph.D.

RE: Coordinator's Report

My report this month has four items including: Interim Topics, Governance Policies, PJP Contract, and Chapter 31 Update. The last two will be co-presented with Dr. Magee.



April 11, 2018

To: State Board Members

From: Tom Sachse, Ph.D.

RE: Interim Topics

As you may be aware, the Management Council of the Wyoming State Legislature will be meeting in Cheyenne on April 19th. At the meeting they will determine the interim topics for study and reporting. It is likely the Joint Education Interim Committee (JEIC) will ask the state board to report on several issues related to the accountability system.

Of course, part of the reporting requirements will likely include an update on the board's progress promulgating rules relative to Chapter 31. They may also want to hear about the Professional Judgment Panel (PJP) process as it moves forward. And, they may want the board to address issues related to the entire "basket of goods and services." At issue is whether the addition of Computer Science adds to the basket to the point where it's too much to carry (think of the addition of computer science to elementary teachers' busy day). Related to that, they may want to ask the state board whether "vestigial" [Common Core](#) of Knowledge subjects, like Humanities, should be legislatively addressed or whether the Common Core of Skills has relevance for local curriculum planning.

By April 20th, we will know the details of the Interim Topics. If the state board does have assigned reporting duties, it would be useful to have a full discussion of how the board would like to meet its obligations. If there are summer meeting plans, it would be important to get the invitations out in mid-to-early May, before your next meeting. There are three actions the board may want to consider. First, the board may want to look at comparisons to requirements of other states. Last year's [Recalibration Study](#) (see pages 181-183) offers one such comparison. The National Association of State Boards of Education (NASBE) would be a useful reference for that work. Second, the board may want to convene a committee of practitioners to discuss and make recommendations on the implications of the entire set of Chapter 10 standards. Third, the board may want to solicit input from around the state by holding regional (or virtual) meetings during the summer to determine if the basket is getting too full.

Finally, the board may want to review and reflect on recent legislative attempts to add new requirements to the basket, including: Indian Ed for All; Computer Science and Computational Thinking; K-2 Foreign Language; CPR; Civics Testing; Megan's Law; and Four Years of Math. These and other legislative considerations ultimately have

implications for implementation at the local level, but begin with issues related to Chapter 10 rules promulgated by the board.



**WYOMING
STATE BOARD
OF EDUCATION**

April 11, 2018

To: State Board Members

From: Tom Sachse, Ph.D.

RE: Policies of Governance

As I wrote to you last week, I am hoping to get input on revisions to the Governance Policies of the state board. I will propose changes to these policies directly to the Admin Committee and hope to bring back revisions to the entire board in the next couple of months. The Communications Committee is looking into whether the five or six policies addressing communication issues can be merged and simplified. Let me know if there are particular policies you would like to have updated or changed in any material way.



**WYOMING
STATE BOARD
OF EDUCATION**

April 11, 2018

To: State Board Members

From: Tom Sachse, Ph.D.

RE: Beck Evaluation and Testing Associates (BETA) Contract Progress

Dr. Julie Magee and I have collaborated on developing a [contract](#) and action plan (below) that is acceptable to Mike Beck and appears to meet the (insurance) expectations of the Department of Administration and Information (A&I). (Note: some of the formatting may appear odd, as the translation from Word to Google Docs is inexact.) The draft contract gets reviewed internally by the WDE, and the Attorney General's Office. The target date for the review and approval process is early May, so our treasurer can begin the encumbrance process.

**ATTACHMENT A TO THE
CONTRACT BETWEEN THE WYOMING DEPARTMENT OF EDUCATION AND
BECK EVALUATION AND TESTING ASSOCIATES**

WDE Monitoring Agent: _____

Organization/Division: _____

Date Action Plan Developed: _____

Project Timeline From: _____ To: _____

Full Contract Amount: _____

Division Director Signature _____ **Date:** _____

| Interim Monitoring | | |
|---------------------------|--------------------------|------------------|
| Monitored Dates | Monitoring Agent (Init.) | Amt Paid to Date |
| | | |
| | | |

ACTION PLAN

| Goal 1: Preparation for the Professional Judgment Panel (PJP) | | | | | | | | |
|-----------------------------------------------------------------------------------|---------------------|-----------------------------|------------|--------------------------------------|-------------|--------------------------------------------------------------|---------------------------------|------------|
| Deliverables | Target Dates | Was Target Date Met? | | Contractor Personnel Involved | Cost | Measureable Indicators of Deliverable | Is Deliverable Completed | |
| | | Yes | No* | | | | Yes | No* |
| Review of Advisory Committee Recommendations | 8/1/18 | | | Mike Beck | | Notes on implications for PJP Targeting | | |
| Review of Recent Changes to the Wyoming Accountability in Education (WAEA) system | 8/1/18 | | | Mike Beck | | Notes on implications for PJP Targeting | | |
| Consult with WDE staff and relevant contractors (e.g., Marion, Flicek, etc.) | 8/1/18 | | | Mike Beck | | Comparison of Issues and Discussion Topics for PJP panelists | | |

**ATTACHMENT A TO THE
CONTRACT BETWEEN THE WYOMING DEPARTMENT OF EDUCATION AND
BECK EVALUATION AND TESTING ASSOCIATES**

| | | | | | | | | |
|----------------------------------------------------------------------------|----------|--|--|-----------|--|----------------------------------------|--|--|
| Develop Agendas for the two PJPs | 8/1/18 | | | Mike Beck | | Approved PJP Agendas | | |
| Goal 2: Facilitate the PJPs | | | | | | | | |
| Develop Judges' recording forms | 9/1/18 | | | Mike Beck | | Approved Recording Forms | | |
| Develop all PJP PowerPoint slides | 9/1/18 | | | Mike Beck | | Approved PowerPoint Slides | | |
| Conduct a PJP for the Grade 3 through high school accountability framework | 10/15/18 | | | Mike Beck | | Successful Facilitation Performance | | |
| Set Targets for the Grade 3 through high school accountability system | 10/15/18 | | | Mike Beck | | Targets equivalent with Support System | | |
| Conduct a PJP for Alternative High Schools | 10/15/18 | | | Mike Beck | | Successful Facilitation Performance | | |
| Set Targets for the Alternative High School accountability system | 10/15/18 | | | Mike Beck | | Targets equivalent with Support System | | |
| Goal 3: Create Summary Reports and Recommendations | | | | | | | | |
| Develop "Shell" Report | 9/15/18 | | | Mike Beck | | Approved Shell Report | | |
| Develop Draft Report | 10/17/18 | | | Mike Beck | | Approved Draft Report | | |
| Develop Final Report | 10/20/18 | | | Mike Beck | | Approved Final Report | | |
| Goal 4: Presentation of the Final Report | | | | | | | | |
| Rehearse presentation with key staff | 10/17/18 | | | Mike Beck | | Approved Presentation | | |

**ATTACHMENT A TO THE
CONTRACT BETWEEN THE WYOMING DEPARTMENT OF EDUCATION AND
BECK EVALUATION AND TESTING ASSOCIATES**

| | | | | | | | | |
|----------------------------------------------------------|----------|--|--|-----------|--|------------------------|--|--|
| Deliver presentation to Wyoming State Board of Education | 10/18/18 | | | Mike Beck | | Completed Presentation | | |
| Deliver presentation to key legislative staff | 10/18/18 | | | Mike Beck | | Completed Presentation | | |
| Deliver presentation to Advisory Committee | 10/18/18 | | | Mike Beck | | Completed Presentation | | |
| This space left intentionally blank | | | | | | | | |



**WYOMING
STATE BOARD
OF EDUCATION**

April 11, 2018

To: State Board Members

From: Tom Sachse, Ph.D.

RE: Chapter 31 Revisions

Mike O'Donnell and Dr. Julie Magee have done a nice job entirely revising the Chapter 31 rules addressing Graduation Standards. This draft appears to have strong support from all the relevant players. You will note this draft follows the legal issues articulated by Adam Leuschel and strikes a balance between uniformity (in alignment with state standards) and flexibility (in giving districts broad authority to set graduation requirements that meet the state minimums or add more requirements deemed appropriate by local boards of trustees). If the board supports promulgation of these rules, the Joint Education Interim Committee would be reassured that the board has met its obligation to update these rules consistent with statutory intent.

Chapter 31 Wyoming Graduation Requirements

STATEMENT OF REASONS

2015 SEA No. 87 (2015 Session Laws, Chapter 179) eliminated the tiered diploma system, which required providing one of three endorsement levels on a student's high school transcript. The removal of the tiered diploma system required the State Board of Education to revise the Chapter 31 graduation requirements rules. The revisions to Chapter 31 are intended to set minimum requirements for graduation from any public high school within any school district of this state, identify the required components of each district's assessment system to measure student proficiency on courses taken for the attainment of a high school diploma, and establish a consultation process between the State Board of Education (SBE) and local school districts regarding the creation of local high school diploma requirements.

The primary substance of these rules is contained in three sections: Section 4. High School Diploma Requirements; Section 5. District Assessment System; and, Section 6. Consultation with Local School Districts.

Section 4. High School Diploma Requirements

The proposed revisions establish the minimum requirements for any student to receive a high school diploma from any Wyoming school district. The minimum requirements are to be incorporated within each district's high school diploma policy and include the following components: (1) minimum coursework in the content areas of math, English/language arts, science, and social studies; (2) a passing grade on an exam of the principles of the constitution of the United States and Wyoming; and, (3) evidence of proficient performance, as measured by the district's assessment system, in the courses students take to obtain a high school diploma. Section 4 also requires each school district to establish and implement policies for their local high school diploma requirements.

(a)(i) Coursework

The proposed rules contain three notable differences from previous versions. The first is the inclusion of computer science as an avenue for meeting the science graduation requirement. The second is the allowance of high school-level courses taken before grade nine (9) to count toward coursework required for graduation. The third is the allowance of "functional equivalents" to count toward coursework required for graduation. Examples of functional equivalents include (a) courses that offer the same content under a different course name (i.e. a local course called "Awesome Math" includes the same content as Algebra I), (b) courses that are more rigorous than a specific graduation requirement (i.e. "Pre-Calculus" relies on concepts from Algebra I, therefore it is a functional equivalent of Algebra I), or (c) courses that are aligned to specific standards in other content areas (i.e. a district's "Food Science" course might be aligned to 80% of the standards identified in Chemistry, so it is a functional equivalent of Chemistry). The third option described for functional equivalents does not take teacher certification requirements into account.

(a)(iii) Evidence of Proficient Performance

The minimum requirements for a student to earn a high school diploma include successful completion of the coursework prescribed by the SBE and local school districts. Chapter 31 directs each district to create a diploma policy that requires students to demonstrate *proficient* performance on the state standards in order to receive credit toward the attainment of a high school diploma. Determination of proficient performance is aligned to the parameters (i.e. benchmarks and performance level descriptors) set forth in the Chapter 10 Education Rules, “Wyoming Content and Performance Standards” (state standards). Benchmarks (what students should know) and performance level descriptors (how well they should know it) are described for each of the content areas. Together, the benchmarks and performance level descriptors (PLDs) provide a framework that supports a progression of learning from the time students enter Wyoming public schools until they complete high school and earn a diploma. The content and structure of the state standards in Chapter 10 Education Rules ensure equity of graduation requirements among all Wyoming high schools.

(b)(i) District Policy for Course Credit

Districts set their own policies for credit-awarding decisions. They have the autonomy to determine when and how to award credits, including credits for repeat courses, out-of-district transfer courses, college-level courses, and so on. The same autonomy is applied to competency-based equivalency exams described in (b)(ii).

Section 5. District Assessment System

In order to ensure an educational program is in compliance with W.S. 21-3-110(a)(xv), Chapter 31 directs each school district to design and implement an assessment system that is aligned to the state standards in all content areas. Additionally, a district’s assessment system must be applied uniformly across the grades and content areas. For high school, W.S. 21-2-304(a)(iii) directs school districts to identify and provide courses that are required to earn a diploma, to develop and implement a local assessment system to measure student learning in those courses, and to establish minimum thresholds for student performance as evidence that the standards have been met. As previously described, benchmarks and PLDs are the markers districts use to determine whether proficiency in the content areas has been met.

It is important to note that the law requires districts to design their assessment systems so that student-level performance can be determined in all *content areas* [W.S. 21-3-110(a)(xxiv)]. Content areas must be aligned to the state standards, but there is no statutory language directing districts to assess a student in every single grade level. In other words, a district may choose to assess students at specific points throughout their educational experience. For example, the current standards for English/language arts include the following benchmark in kindergarten reading: “[Students can] read common high-frequency words by sight (e.g., the, of, to, you, she, my, is, are, do, does).” The same content standard (reading) in third grade describes “[knowing and applying] grade-level phonics and word analysis skills in decoding words [to include] decoding multi-syllable words” as an appropriate benchmark. In this example, a district may choose to assess this particular reading standard (phonics and word recognition) once, twice, or any number of times between kindergarten and third grade to measure student learning relative to the standard. It is also important to note that an *assessment system* is comprised of more than just tests or exams. In Chapter 31, “assessment” is defined as a process that includes gathering and analyzing evidence of what students know and are able to do. Evidence may come in the form of

homework assignments, informal observations, hands-on projects, classroom speeches or demonstrations, essays, and so on. It is in this context that a district's assessment system is reviewed by the Wyoming Department of Education (WDE) at least once every five years to ensure that the district has a systematic way to assess and evaluate how student is doing relative to the standards in a given content area.

In addition to the five-year on-site review, any district with schools that are "partially meeting expectations" or "not meeting expectations" under the Wyoming Accountability in Education Act (WAEA) may have its assessment system reviewed more often. In all cases, any deficiencies identified in a district's assessment system will be reported to the SBE and the district's accreditation status may be lowered as a result pursuant to the Chapter 6 Education Rules, "Accreditation".

Section 6. Consultation with Local School Districts

Section 6 establishes the requirement for the SBE to consult with local school districts as they develop and implement the new requirements of these revised rules. The SBE recognizes the November 1 statutory reporting requirement to provide evidence that the district is compliant with high school graduation standards (W.S. 21-3-110 (a)(xxv)). The requirement within these rules for the SBE to offer feedback takes into consideration the timing of the rules promulgation process and provides a reasonable timeframe for implementation.

Chapter 31

Wyoming Graduation Requirements

Section 1. Authority. These rules and regulations are promulgated pursuant to W.S. 21-2-304(a)(i) – (iv) and W.S. 21-3-110(a)(i) and (xxv).

Section 2. Purpose. These rules and regulations pertain to the minimum requirements for graduation from any public high school within any school district of this state, the required components of each district’s assessment system designed to determine student performance levels as aligned to the state standards pursuant to W.S. 21-2-304(a)(iv), and the consultation process between the State Board of Education and local school districts on the establishment of Wyoming high school diploma requirements.

Section 3. Definitions. As used in this chapter:

(a) “Alignment” means evidence that a district assessment system is aligned to the state standards, both in terms of content and cognitive complexity.

(b) “Assessment” means an ongoing process that includes collecting, synthesizing, and interpreting information about what students know (knowledge) and are able to do (skills).

(c) “Department” means Wyoming Department of Education.

(d) “District Assessment System” means a system that measures various levels of student performance on content-specific learning goals that are aligned to the state standards.

(e) “Cognitive Complexity” means the type and level of thinking required to successfully achieve the standard.

(f) “Coursework” means a progression of courses aligned to the state standards that provides students with a quality education as described under W.S. 21-2-304(a)(ii).

(g) “Functional Equivalent” means a course that is aligned to the state standards and is as rigorous as or more rigorous than a college- or career-preparatory course taken in high school.

(h) “Graduation Requirements,” or high school diploma requirements, means successful completion of courses required by this chapter, as evidenced by each district’s assessment system, which is aligned to the state standards, and prescribed by the State Board of Education under W.S. 21-2-304 (a)(iii).

(i) “Performance Level Descriptor” means a statement set by the State Board of Education in Chapter 10 Education Rules that describes how well a student must perform at an identified level for every course the student takes and completes. The following are the three options for performance level descriptors:

- (i) Basic. A limited display of knowledge and skills that shows student is not approaching or approaching, but not yet meeting the standard.
- (ii) Proficient. A satisfactory display of knowledge and skills that shows student is meeting the standard.
- (iii) Advanced. A superior display of knowledge and skills that shows student is exceeding the standard.

(j) “State Standards” means the Wyoming Content and Performance Standards, also known as the Uniform Student Content and Performance Standards, that define what students should be provided the opportunity to learn in the ten (10) content areas as described in W.S. 21-9-101(b) and set by the State Board of Education in Chapter 10 Education Rules.

Section 4. High School Diploma Requirements.

(a) Graduation requirements for earning a high school diploma from any high school within any school district of this state shall include successful completion of the following components as evidenced by passing grades or by successful performance on competency-based equivalency examinations:

(i) Coursework, including courses taken for the attainment of a high school diploma, shall include courses that, taken together, signify students are equipped to compete both intellectually and economically in society. Coursework for the attainment of a high school diploma shall be aligned to the state standards in grades nine (9) through twelve (12) and, at a minimum, include the following:

(A) Four (4) school years of English;

(B) Three (3) school years of mathematics;

(C) Three (3) school years of science, one (1) year of which may be a computer science course; and

(D) Three (3) school years of social studies, including history, American government, and economic systems and institutions, provided business instructors may instruct classes on economic systems and institutions.

(E) Courses taken before grade nine (9) used to satisfy high school diploma requirements shall be aligned to the state standards in grades nine (9) through twelve (12).

(F) Courses designated as functional equivalents may be used to satisfy the coursework described in this subsection. The Department may verify appropriate alignment of the functional equivalents to the state standards in grades nine (9) through twelve

(12).

(ii) Satisfactorily passing an examination on the principles of the constitution of the United States and the state of Wyoming.

(iii) Evidence of proficient performance on the district assessment system, which includes all courses taken for the attainment of a high school diploma.

(A) Proficient performance shall be evidenced by successful completion of courses included in a district's assessment system that are aligned to and inclusive of the state standards as defined in this chapter.

(B) The district determines successful completion through a district assessment system that meets the criteria outlined in Section 5 of this chapter.

(b) Each local school district shall establish high school diploma requirements that shall be reflected in policy and related documents as appropriate. The district's policy shall include:

(i) A description of the district's definition of course credit for any course which may be taken to satisfy the high school diploma requirements;

(ii) A description of the process by which successful performance on a competency-based equivalency examination may be used to satisfy coursework, as defined in this chapter;

(iii) A description of the way in which successful completion of courses taken for graduation will be used as a factor in awarding course credit;

(iv) A requirement that students demonstrate satisfactory performance on an examination of the principles of the constitution of the United States and the State of Wyoming as required by W.S. 21-9-102;

(v) An assurance that academic credit toward the district's high school diploma requirements will be awarded for the successful completion of any course offered under a qualifying post-secondary education program specified under W.S. 21-20-201; and

(vi) A description of any additional requirements that a student must successfully complete at the discretion of the district.

(c) The district shall maintain and publish a list of eligible courses to satisfy the high school diploma requirements, including the minimum graduation requirements established in these rules. All eligible courses shall be aligned to the state standards established for the high school grades and require a logical sequence and the progression of instruction aligned with content and benchmark standards from one school year to the next. This list shall not be required to include post-secondary courses for which academic credit may be awarded.

Section 5. District Assessment System.

(a) In conjunction with district accreditation, a district's assessment system shall be subject to review and approval by the State Board of Education at least once every five (5) years. A district containing schools that are designated as partially meeting expectations or not meeting expectations under W.S. 21-2-204(f)(i) may have its district assessment system reviewed more often as deemed appropriate by the State Board of Education and in accordance with W.S. 21-2-204(h)(vii).

(b) Pursuant to W.S. 21-3-110(a)(xxiv) and (xxxiv), the review shall apply to all ten (10) content areas and verify that the district assessment system includes each of the following criteria:

(i) **Alignment.** The district has a process in place to ensure its district assessment system is aligned to the state standards in both content and cognitive complexity. The district assessment system must be aligned to the state standards within three (3) full years of the Board approving a standard.

(A) Districts shall ensure that their aligned district assessment system produces student performance levels relative to the state standards.

(B) Districts shall ensure that their aligned district assessment system measures the knowledge or skill for the appropriate grade level and content.

(C) Districts shall ensure that their aligned district assessment system provides every student with multiple opportunities to demonstrate what the student understands, knows, and can do.

(ii) **Data Results.** The district has a process in place to regularly monitor student performance in order to determine progress toward the attainment of knowledge and skills aligned to the state standards.

(iii) **Ongoing Evaluation.** The district has a process in place to evaluate its district assessment system on an ongoing basis to inform subsequent adjustments to the district assessment system that will ensure the district's needs, priorities, and goals are met and remains aligned to the state standards.

(c) Not later than November 1 of each year, the district shall report compliance with the criteria of its district assessment system, including compliance with the high school diploma requirements identified in Section 4 of this chapter.

(d) A district that does not meet the criteria of the district assessment system or does not comply with the high school diploma requirements may have its accreditation status lowered in accordance with Chapter 6 Education Rules.

Section 6. Consultation with Local School Districts.

(a) Within twelve (12) months of the effective date of these rules, each local district shall submit to the State Board of Education, through the Department its revised policy establishing high school diploma requirements for review and consultation. Within one hundred and twenty (120) days of receiving a local district's high school diploma requirements, the State Board of Education shall identify any areas in which the district does not comply with state-established requirements and consult with the district on any findings.

(b) Any modification to a district's high school diploma requirements, including a copy of the revised requirements, shall be included in the district's November 1 report required under W.S. 21-3-110(xxv) and Section 5(c) of this chapter.

April Administrative Committee Summary

April 2, 2018

Attendance: Nate Breen, Robin Schamber, Ken Rathbun, Walt Wilcox, Sue Belish, Tom Sachse, Megan Degenfelder, Kari Eakins, Julie Magee, Kylie Taylor, Mackenzie Williams, Adam Leuschel

1. Review topics and agenda for April meeting.
 - a. The draft agenda was reviewed and revised as needed. The order of items was rearranged.
2. Review SBE 2018-19 meeting dates proposal
 - a. The committee reviewed meeting dates and will present a proposal at the April meeting.
3. Review Governance Policy Revisions
 - a. The committee supported the new format for the governance policies where links to the statutory language is provided without including the entire statute. Board members were asked to send comments about policies to Tom. Tom will work on revisions based on the comments and may bring them to the board during the next several meetings. It was suggested that we take a deeper dive on the policies during our September Board Retreat.
4. Review Coordinator priority tasks
 - a. The committee reviewed a list of tasks for our coordinator from April-June. Tom felt that the list was valuable and doable. The list will be presented at the next meeting.
5. Discussion on “basket of goods” or common core of knowledge and common core of skills
 - a. We won’t know if this will become an interim topic, but we would like to discuss the subject to see if it is something the SBE would like to address. Below are some initial ideas:
 - i. Identify rationale for looking at the basket of goods – what do we expect to happen because of our discussions
 - ii. Generate questions that might be asked participants
 - iii. Gather background information on current statutes concerning common core of knowledge and common core of skills
 - iv. Gather information from the APA study that was conducted during recalibration deliberations

SBE Communications Committee

April 3, 2018

Communications Committee members present via Zoom: Ryan Fuhrman and Scotty Ratliff.

Members absent: Kathryn Sessions and Robin Schamber.

Also present: Kylie Taylor, WDE; Kari Eakins, WDE; Tom Sachse, and Kelly Pascal.

April 3, 2018

CALL TO ORDER

Chairman Fuhrman called the meeting to order at 4:00 p.m.

APPROVAL OF MINUTES

Minutes from the March 7th meeting were looked over, no objections or changes were expressed, the minutes were approved.

Review Kelly's Contract

Ryan reviewed Kelly's last invoice and said he will be sending to Walt for approval.

Communication Topics

Kylie Taylor informed the committee that 2018 Wyoming Teacher of the Year will be presenting to the board in Gillette. The board will also receive a presentation from BOCES as well as take a tour of their facility.

Chairman Fuhrman indicated that the press release should highlight the boards sending standards out for promulgation after the board meeting. Kari and Tom gave an update on where the WDE is currently at with standards.

Scotty Ratliff expressed his frustration with having a board member from the University of Wyoming (UW) on the board but the board doesn't have any communication from UW. Scotty said it would be valuable to have an open relationship with UW. The committee discussed possible solutions moving forward to get more information from UW.

Chairman Fuhrman and Kelly Pascal discussed ways to shed light around computer science and the basket of goods. Kari gave an update on what the WDE has been doing for computer science including a press release that went out regarding “Boot Up Wyoming.” Chairman Fuhrman expressed a desire to use the adoption of new Computer Science standards to highlight the process and the role that the State Board of Education plays in the process.

Projects

Chairman Fuhrman informed the committee of two projects that are currently being worked on, the SBE policies, and new board member orientation.

Stakeholder Communication Update

The committee discussed upcoming SBE meetings and individuals presenting to the SBE. In Gillette, the SBE will hear from 2018 Wyoming Teacher of the Year Sara Reed and BOCES.

The committee discussed inviting Rebecca Watt to present at the May SBE meeting that will be held electronically.

Twitter Update

The committee briefly discussed way to engage with the public more through Twitter and to remind board members to send photos and info about any work they are doing outside of board meetings.



WYOMING
DEPARTMENT OF EDUCATION

*Creating Opportunities
for Students to Keep
Wyoming Strong*

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Superintendent of Public Instruction

Dicky Shanor

Chief of Staff

Brent Bacon

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On the Web

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MEMORANDUM

To: State Board of Education
From: Megan Degenfelder, Chief Policy Officer
Julie Magee, Accountability Director
Date: April 11, 2018
Subject: Chapter 6 Rules on Accreditation

Meeting Date: April 19-20, 2018

Item Type: Action: xx Informational:

Introduction: During the March 2018 State Board of Education (SBE) meeting, the WDE presented the outcome of the work of the Accreditation Task Force, including revisions to the Chapter 6 rules and the proposed process for state accreditation. At the April meeting, the SBE will take action on the final draft of the Chapter 6 rules.

Statutory References:

- W.S. 21-2-202(a)(viii) - State superintendent shall prepare and maintain a list of accredited schools in Wyoming.
- W.S. 21-2-202(a)(xxxvi) - State superintendent shall review each school district's assessment system every 5 years in conjunction with district accreditation and as a component of accountability.
- W.S. 21-2-202(c) - State superintendent may change accreditation status of any district or state institution for failing to adhere to all applicable laws and regulations.
- W.S. 21-2-204(h)(iv) - State Board shall administer a progressive multi-tiered system of support as part of district accreditation.
- W.S. 21-2-304(a)(ii) - State Board shall, through district accreditation, implement and enforce uniform standards; implement and enforce statewide accountability system; and require district adherence to WAEA.
- W.S. 21-2-304(b)(ii) - State Board may change accreditation status of any district failing to implement uniform standards or as a result of low performance as measured under WAEA.
- W.S. 21-3-110(a)(xxxiv) - The board of trustees, in conjunction with district accreditation, shall implement a standards-aligned district assessment system.
- W.S. 21-13-310(a) - Use of district funds to offer the educational basket of goods and services.

Supporting Documents/Attachments:

- Chapter 6 Rules
- Chapter 6 Statement of Reasons

Proposed Motions:

"I move to promulgate the Chapter 6 Rules."

For questions or additional information:

Contact Bill Pannell at bill.pannell@wyo.gov or (307)777-7322.

Chapter 6 District and School Accreditation

STATEMENT OF REASONS

The proposed revisions to the Chapter 6 rules are intended to define the expectations for state accreditation and provide detail as to the process by which Wyoming school districts and the schools within districts are annually accredited by the Wyoming State Board of Education.

The Chapter 6 rules were last adopted in 2005 and are inclusive of several components of the Federal Elementary and Secondary Education Act of 2001, “No Child Left Behind” or NCLB. These components became outdated with the passage of the 2015 revision titled the “Every Student Succeeds Act” or ESSA. While the 2005 rules detail the requirements for accreditation and the consequences for reduced accreditation level, there is no explanation of the accreditation *process* for schools or districts.

In addition, changes in Wyoming statute since 2005 create changes that must be included in the Accreditation rules. Based on current laws, the major focus of accreditation is the district, rather than individual schools. Consequently, the first necessary modification is to change the Chapter 6 title from “School Accreditation” to “District and School Accreditation.”

By meeting the regulations set forth in the proposed rules, Wyoming districts ensure that processes are in place to meet statutory requirements intended to improve student learning and ensure equity of opportunity to learn.

CHAPTER 6 DISTRICT AND SCHOOL ACCREDITATION

Section 1. Authority. These rules are promulgated by the Wyoming State Board of Education and the Wyoming Department of Education under the authority of W.S. 21-2-304(a)(i), W.S. 21-2-202(a)(i), and W.S. 21-2-202(c).

Section 2. Purpose. These rules establish the state accreditation requirements for all Wyoming schools and districts.

Section 3. Definitions.

(a) **Accountability.** The system of school performance ratings established by the Wyoming Accountability in Education Act.

(b) **Accountability Framework.** The Wyoming Comprehensive Accountability Framework: Phase 1. National Center for the Improvement of Educational Assessment. (January 31, 2012) incorporated by reference into Wyoming statute per W.S. 21-2-304(a)(vi), W.S. 21-2-204(f), and W.S. 21-2-204(k).

(c) **Accreditation.** A process by which each district and each school within the district annually self-reports and is monitored by the state in order to assure compliance with statutes that are intended to improve student learning and ensure equity of opportunity to learn.

(d) **Accreditation Criteria.** The requirements established in this chapter that all districts and the schools governed by these districts must meet as applicable to be accredited by the State Board.

(e) **Annual Accreditation Report.** A required document with attestations and links to documents submitted annually to the Department by districts that verifies adherence to the accreditation criteria.

(f) **Compliance.** Meeting or adhering to the requirements of statutes and regulations.

(g) **Evidence.** Annual reports, documents, web sites, data, surveys, and other artifacts used to verify adherence to the accreditation criteria.

(h) **Instructional Core.** An education model that illustrates the relationship between the teacher, the content, and active learning or student engagement.

(i) **Improvement Plan.** A document that includes goals and strategies to meet performance objectives.

(j) **Proprietary.** A process or product that is used, produced, or marketed under exclusive legal right of any business, agency, or non-profit organization.

(k) **Statewide System of Support.** State and district assistance intended to increase school performance in accordance with W.S. § 21-2-204(h).

(l) **Verification.** Confirmation that all Wyoming districts and the schools governed by these districts have met the Wyoming accreditation criteria.

(m) **Wyoming Accountability in Education Act (WAEA).** The Wyoming school accountability system established by W.S. § 21-2-204.

(n) **Wyoming High School Activities Association (WHSAA).** An organization that promotes, coordinates, and controls interscholastic activities in Wyoming.

Section 4. Accreditation in General. The Department shall implement and maintain a process to evaluate and accredit Wyoming districts and the schools governed by these districts based on adherence to all applicable laws, rules, and regulations, including the Wyoming Accountability Framework.

(a) The process for accreditation of Wyoming districts and the schools governed by these districts shall include:

(i) Attestation through an accreditation report submitted to the Department by November 1 annually by the district superintendent that the district and all schools governed by the district meet the accreditation criteria.

(ii) Annual verification of district compliance with all applicable laws, rules, and regulations through review of documents, data and other evidence by the Department aligned to the accreditation criteria.

(iii) A review of the District Assessment System (DAS) every five years by the Department.

(iv) The accreditation status of the district or individual schools may be lowered by the State Board based on school performance as measured by the Wyoming Accountability in Education Act in accordance with Section 6 of this chapter.

(b) All documents and data submitted to the Department, as well as other Department verification processes, shall be considered as evidence for accreditation to reduce duplicative reporting requirements.

(c) Findings of noncompliance shall be reviewed with district superintendents annually by March 1. District superintendents shall be given until May 1 to satisfactorily address the findings without negatively impacting the accreditation level of the district or any school governed by the district.

(d) The Department shall annually make an accreditation recommendation to the State Board for all Wyoming districts and the schools governed by these districts.

(e) The duration of accreditation shall be for one year, from July 1 to the following year on June 30.

(f) The accreditation level shall be the accreditation level for the next year unless an exception is granted by the State Board.

(g) The Department shall maintain a list of accredited Wyoming schools on the Department website.

(h) No Wyoming district or the schools governed by a district shall, as a condition for state accreditation, be required to participate in any proprietary continuous improvement or school improvement process provided by the Department beyond that required by the System of Support per W.S. § 21-2-204(h) and through Federal regulations.

(i) Each district will host an on-site external review of the district and schools within the district at least once every five (5) years with the purpose of reviewing selected accreditation criteria, including the district assessment system. This includes a review of the assessment system by the Department, and may include a review of other aspects of the district system by the Department, or an external systems review by a Department-approved third-party vendor.

Section 5. Accreditation Criteria. The accreditation criteria and the aligned indicators summarize the requirements for Wyoming districts and schools governed by Wyoming districts.

(a) **District Board.** Oversight and governance for the district is provided by an elected board of trustees that determines the district purpose and goals, operates in an ethical manner, maintains up-to-date, publicly available policies and documents, and employs and evaluates a superintendent who serves as the chief administrator for the district.

(i) **Board Members and Operations.** An elected board provides oversight and governance for the district, establishes district policy, operates within established board duties, and adheres to a code of conduct and a code of ethics.

(ii) **District Purpose and Goals.** The board develops a widely shared purpose and goals, or strategic plan for the district that conveys high expectations for learning for all staff and students and is focused on improving the instructional core.

(iii) **District Superintendent.** A hired superintendent serves as the chief administrative officer, and implements district procedures in a cohesive manner consistent with statute, board policies, and the district strategic plan. The superintendent is evaluated by the District Board.

(b) **District Leadership.** District administrators, including principals, manage district operations and provide instructional guidance. District administrators are evaluated in a manner consistent with Wyoming statute and regulations. The district superintendent or his/her representative provides assistance with school improvement planning and resource allocation for schools that need improvement.

(i) **District and School Accreditation.** District and school leaders annually self-evaluate to ensure the district and all schools within the district meet all applicable Wyoming accreditation criteria and the aligned requirements of statute.

(ii) **District Leader Evaluation.** District and school leaders are evaluated by the district superintendent in a manner consistent with statute and board policy. This includes annual submission of a review of the district leader evaluation system for districts with schools that are partially meeting and not meeting expectations per W.S. 21-2-204(h)(v) & (vi).

(iii) **School Improvement Representative.** The district superintendent or a designated representative provides assistance with improvement planning and resource allocation for schools identified as in need of improvement through the Wyoming accountability system.

(c) **School Leadership.** Principals provide administrative management and instructional leadership, including the evaluation of teachers and other instructional staff in accordance with Wyoming regulations, for the school(s) to which they are assigned.

(i) **Principal Roles and Responsibilities.** The district defines the roles and responsibilities of principals, including establishing a positive culture, instructional leadership, and school administration.

(ii) **Teacher Evaluation.** Teachers are evaluated by principals in a manner consistent with statute and board policy.

(d) **Stakeholder Communication and Input.** The district and all schools within the district communicate with and solicit input and feedback from stakeholders, and use the input to improve district and school processes.

(e) **Employment and Certification.** All personnel are hired and evaluated in accordance with Wyoming statute and district policies.

(i) **Teacher Employment.** District employment policies and practices ensure that quality applicants are hired for all instructional positions.

(ii) **Teacher Certification and Assignment.** All certified staff have a current or pending certificate issued by the Wyoming Professional Teaching Standards Board, and their assignment is consistent with their area of endorsement.

(iii) **Education Support Personnel.** Education support personnel are employed in a manner consistent with district policy that ensures qualified support staff.

(iv) **Compliance Training.** District personnel receive compliance training as required by statute.

(f) **Professional Development.** The district professional development plan is designed to increase the capacity, collaboration, and collective efficacy of instructional staff and leaders to improve the instructional core. Professional development is regularly conducted, is relevant to daily work and content areas, and involves active work among colleagues.

(g) **State Assessment and Accountability.** All schools in the district administer Wyoming statewide assessments and receive a school performance rating annually in accordance with the Wyoming Accountability in Education Act (WAEA).

(h) **School Improvement and Support.** Schools identified as partially meeting or not meeting expectations assess needs using WAEA indicator data, write improvement goals aligned with the applicable WAEA indicators, develop improvement plans that are annually approved by the district and submitted to the Department, and participate in the Statewide System of Support if requested to do so by the Department.

(i) **Data Review/Needs Assessment.** Results from the Wyoming accountability system as well as other data are used to identify school improvement goals and priorities.

(ii) **School Improvement Plans.** School improvement plans are written, submitted to the district and the Department, implemented, and routinely updated by school leaders and staff for schools designated as in need of improvement.

(iii) **Small School Improvement Plans.** Schools that do not have at least ten students on at least two WAEA indicators will annually submit an improvement plan to the Department that includes strategies to improve student achievement, growth, and equity.

(iv) **Statewide System of Support.** Leadership teams for schools designated as priority schools by the Department participate in the system of support.

(i) **Programs, Standards, and Curriculum.** Educational programs in the district are sufficient for all students to meet the uniform Wyoming Content and Performance Standards in all content areas.

(i) **Education Programs and Standards.** The curriculum in all content areas is aligned to and inclusive of the Wyoming Content and Performance Standards.

(ii) **Math and Literacy Focus.** Math and literacy are a high priority in the elementary grades.

(iii) **College and Career Preparation.** Coursework and guidance provided is sufficient to prepare students for college, career, and successful citizenship.

(iv) **Other Curricular Requirements.** The district curriculum addresses other curricular requirements included in Wyoming statute.

(j) **District Assessment System.** Through a balanced student assessment system, the district verifies that Wyoming Content and Performance Standards are taught and assessed in all content areas. Assessment results are used to set goals, make instructional decisions and monitor student progress. The assessment system is continuously refined and updated by the district, and is formally reviewed every five years by the Department. The assessment system may be reviewed more frequently by the Department for districts with schools that are partially meeting and not meeting expectations.

(k) **Instructional Methods.** The district has implemented a coherent instructional system and a shared instructional process or framework that defines high leverage teaching methods instructional staff use to engage students in the subject matter in all content areas across the district.

(i) **District Instructional System.** The district has a coherent approach, model, or system for aligning curriculum, assessment, instruction, learning support and other aspects of the instructional program.

(ii) **Instructional Framework.** The district has identified high leverage instructional strategies, intended to increase student engagement and active learning that should be observed in all classrooms across the district.

(iii) **Teacher Expertise.** Individual teacher professional growth is focused on the development of instructional expertise specific to the grade level or content area.

(l) **Learning Supports.** Assessment results are used to monitor student progress and assign students in need of intervention to multi-tiered supports. The district is in compliance with all State and Federal Special Education laws. The district addresses the individual learning needs of English learners.

(i) **Student Learning Support.** Individual student needs are addressed through a structured process that includes interventions and enrichment for all students. (i.e. Response to Intervention or Multi-Tiered System of Support).

(ii) **Reading Assessment and Intervention.** The district reading assessment and intervention plan includes multi-tiered supports, a screening program, progress monitoring, individual student reading plans, and individual school plans in accordance with W.S. § 21-3-401.

(iii) **Students with Disabilities.** Specialized staff, differentiated instruction, and evidence-based interventions are provided for Students with Disabilities in accordance with Wyoming and Federal statute.

(iv) **English Learners.** The district provides support by qualified staff to address language barriers for English learners.

(v) **Gifted and Talented.** The district offers instruction that addresses the individual learning needs of gifted students.

(vi) **Student Support Services.** The district offers additional student supports including guidance counseling and social services, and instruction for hospitalized and homebound students.

(vii) **Family Engagement.** The district has adopted and implemented strategies to engage families at all levels in their children's learning.

(m) **At-Risk and Dropout Prevention.** The district has an early warning system to identify at-risk students, and has implemented dropout prevention strategies.

(i) **Early Warning Systems.** The district has data systems in place to monitor factors that are early predictors of dropout.

(ii) **Compulsory Attendance.** The district and all schools monitor student absenteeism and intervene as soon as a student becomes chronically absent.

(iii) **Dropout Prevention Strategies.** The district has implemented dropout prevention strategies.

(n) **High School Graduation.** High school graduates satisfactorily complete coursework that meets or exceeds the minimum requirements established by the State Board.

(o) **School Culture, Climate, and Safety.** The district has a plan for promoting positive school culture and learning environments that are safe, orderly, and conducive to learning for all students.

(i) **School Culture and Climate.** The culture and climate in all schools is designed to ensure positive relationships and decrease harassment, intimidation, and bullying.

(ii) **School Safety.** All schools use multiple strategies to ensure the physical safety of students. These are defined in a district crisis management plan.

(p) **Student Activities.** Students are encouraged to participate in activities, clubs, organizations, field trips, and school-sponsored events that extend learning beyond the

classroom. WHSAA sanctioned activities and athletics are made available to all high school-age individuals that reside in the district.

(q) **Technology and Media.** District technology includes internet connectivity. Technology, library, and media services meet the research, learning, and information management needs of students and staff.

(r) **Virtual Education.** If virtual education is provided by the district, the virtual courses meet all state requirements in accordance with Chapter 41 Rules and Regulations.

(s) **Buildings and Facilities.** All schools and other district buildings are constructed and maintained in accordance with Wyoming School Facilities Department guidelines and other regulations that govern the safety and security of Wyoming public buildings.

(t) **Student Health.** Personnel and processes, including prevention programs, are in place to address the physical and mental health needs of all students enrolled in the district.

(u) **Calendars and Schedules.** The number of school days, hours of student teacher contact, alternative calendars, days of observance and mourning, scheduled holidays, and reports of school closure are in accordance with Wyoming statute, rules and regulations.

(v) **Transportation.** The district provides student transportation to and from school and provides student transportation for interscholastic activities in accordance with applicable laws, rules, and regulations.

(w) **Food Services.** The district adheres to Wyoming and Federal regulations and guidelines related to the sanitation of food service facilities and the quality and nutritional value of food provided to students. Free and reduced cost meals are provided based on the income of parents or guardians.

(x) **Finance and Data.** District finances are managed and routinely audited in accordance with Wyoming and Federal regulations, and accurate data are collected and reported to the Department in a timely manner.

(y) **Student Information Management.** Student information, records, identification, attendance calculations, enrollment and transfers are conducted in accordance with statute.

Section 6. Accreditation Status. All public school districts and schools within those districts shall be granted accreditation levels by the State Board.

(a) One of the following accreditation levels shall be granted by the State Board on an annual basis:

(i) **Accredited.** The district has met all applicable state accreditation criteria based on the Department annual review of evidence or the most recent external review. With the exception of schools identified as accredited with support in accordance with Section 7 of this chapter, the school accreditation level shall be the same as the district accreditation level.

(ii) **Accredited With Follow-up.** The district has not met one or more of the accreditation criterion, and has not addressed the concern during the grace period described in Section 3(c) of this chapter. Districts that are accredited with follow-up will be recommended for full accreditation to the state board upon Department verification that the district has met the criteria.

(iii) **Accredited With Support.** The district failed to meet one or more criteria for more than one year. Schools and districts may also be accredited with support based on WAEA school performance level in accordance with Section 6 of this chapter. A district or school may remain at the level of accredited with support indefinitely.

(iv) **Non-Accredited.** Upon the recommendation of the Department and a majority vote of the State Board, a district that has been at the level of accredited with support for two or more years may be designated as non-accredited by the State Board.

(A) This decision shall be based on refusal or inability of the district to address the issues of non-compliance that caused the district to be at the level of accredited with support and shall not be based solely on school performance.

(B) The State Board may raise the status of a district from *non-accredited* to *accredited with support* based on a majority vote if the district has addressed the issues of non-compliance in a manner deemed satisfactory by the Department.

Section 7. School Accreditation Status.

(a) The State Board may lower the annual accreditation status for an individual school based on WAEA school performance level per W.S. § 21-2-304(b)(ii). This shall include:

(i) An accreditation status of “accredited with support” for any school that is not meeting expectations for three or more consecutive more years. The first year of identification will be 2020-21 with the initial accountability level derived from the spring 2018 state assessment.

(ii) An accreditation status of “accredited with support” for any district in which every school in the district is not meeting expectations for three or more consecutive years. The first year of identification will be 2020-21 with the initial accountability level derived from the spring 2018 state assessment.

Section 8. Consequences for Non-Accreditation

(a) The State Board and State Superintendent shall take appropriate administrative action with the Wyoming Legislature against any Wyoming district or any school governed by the district for non-accreditation.



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DEPARTMENT OF EDUCATION

*Creating Opportunities
for Students to Keep
Wyoming Strong*

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MEMORANDUM

To: State Board of Education
From: Megan Degenfelder, Chief Policy Officer
Julie Magee, Accountability Director
Date: April 11, 2018
Subject: Chapter 31 Rules on Graduation Requirements

Meeting Date: April 19-20, 2018

Item Type: Action: xx Informational:

Introduction: During the March 2018 State Board of Education (SBE) meeting, the WDE will present revisions to the Chapter 31 rules. At the April meeting, the SBE will take action on the final draft of the Chapter 31 rules.

Statutory References:

- W.S. 21-2-304(a)(i)-(iv)
- W.S. 21-3-110(a)(i) and (xxv)
- W.S. 21-3-110(a)(xxiv) and (xxxiv)
- W.S. 21-9-101(b)
- W.S. 21-9-102

Supporting Documents/Attachments:

- Chapter 31 Rules
- Chapter 31 Statement of Reasons

Proposed Motions:

"I move to promulgate the Chapter 31 Rules."

For questions or additional information:

Contact Julie Magee at julie.magee@wyo.gov or (307)777-8740.

Chapter 31 Wyoming Graduation Requirements

STATEMENT OF REASONS

2015 SEA No. 87 (2015 Session Laws, Chapter 179) eliminated the tiered diploma system, which required providing one of three endorsement levels on a student's high school transcript. The removal of the tiered diploma system required the State Board of Education to revise the Chapter 31 graduation requirements rules. The revisions to Chapter 31 are intended to set minimum requirements for graduation from any public high school within any school district of this state, identify the required components of each district's assessment system to measure student proficiency on courses taken for the attainment of a high school diploma, and establish a consultation process between the State Board of Education (SBE) and local school districts regarding the creation of local high school diploma requirements.

The primary substance of these rules is contained in three sections: Section 4. High School Diploma Requirements; Section 5. District Assessment System; and, Section 6. Consultation with Local School Districts.

Section 4. High School Diploma Requirements

The proposed revisions establish the minimum requirements for any student to receive a high school diploma from any Wyoming school district. The minimum requirements are to be incorporated within each district's high school diploma policy and include the following components: (1) minimum coursework in the content areas of math, English/language arts, science, and social studies; (2) a passing grade on an exam of the principles of the constitution of the United States and Wyoming; and, (3) evidence of proficient performance, as measured by the district's assessment system, in the courses students take to obtain a high school diploma. Section 4 also requires each school district to establish and implement policies for their local high school diploma requirements.

(a)(i) Coursework

The proposed rules contain three notable differences from previous versions. The first is the inclusion of computer science as an avenue for meeting the science graduation requirement. The second is the allowance of high school-level courses taken before grade nine (9) to count toward coursework required for graduation. The third is the allowance of "functional equivalents" to count toward coursework required for graduation. Examples of functional equivalents include (a) courses that offer the same content under a different course name (i.e. a local course called "Awesome Math" includes the same content as Algebra I), (b) courses that are more rigorous than a specific graduation requirement (i.e. "Pre-Calculus" relies on concepts from Algebra I, therefore it is a functional equivalent of Algebra I), or (c) courses that are aligned to specific standards in other content areas (i.e. a district's "Food Science" course might be aligned to 80% of the standards identified in Chemistry, so it is a functional equivalent of Chemistry). The third option described for functional equivalents does not take teacher certification requirements into account.

(a)(iii) Evidence of Proficient Performance

The minimum requirements for a student to earn a high school diploma include successful completion of the coursework prescribed by the SBE and local school districts. Chapter 31 directs each district to create a diploma policy that requires students to demonstrate *proficient* performance on the state standards in order to receive credit toward the attainment of a high school diploma. Determination of proficient performance is aligned to the parameters (i.e. benchmarks and performance level descriptors) set forth in the Chapter 10 Education Rules, “Wyoming Content and Performance Standards” (state standards). Benchmarks (what students should know) and performance level descriptors (how well they should know it) are described for each of the content areas. Together, the benchmarks and performance level descriptors (PLDs) provide a framework that supports a progression of learning from the time students enter Wyoming public schools until they complete high school and earn a diploma. The content and structure of the state standards in Chapter 10 Education Rules ensure equity of graduation requirements among all Wyoming high schools.

(b)(i) District Policy for Course Credit

Districts set their own policies for credit-awarding decisions. They have the autonomy to determine when and how to award credits, including credits for repeat courses, out-of-district transfer courses, college-level courses, and so on. The same autonomy is applied to competency-based equivalency exams described in (b)(ii).

Section 5. District Assessment System

In order to ensure an educational program is in compliance with W.S. 21-3-110(a)(xv), Chapter 31 directs each school district to design and implement an assessment system that is aligned to the state standards in all content areas. Additionally, a district’s assessment system must be applied uniformly across the grades and content areas. For high school, W.S. 21-2-304(a)(iii) directs school districts to identify and provide courses that are required to earn a diploma, to develop and implement a local assessment system to measure student learning in those courses, and to establish minimum thresholds for student performance as evidence that the standards have been met. As previously described, benchmarks and PLDs are the markers districts use to determine whether proficiency in the content areas has been met.

It is important to note that the law requires districts to design their assessment systems so that student-level performance can be determined in all *content areas* [W.S. 21-3-110(a)(xxiv)]. Content areas must be aligned to the state standards, but there is no statutory language directing districts to assess a student in every single grade level. In other words, a district may choose to assess students at specific points throughout their educational experience. For example, the current standards for English/language arts include the following benchmark in kindergarten reading: “[Students can] read common high-frequency words by sight (e.g., the, of, to, you, she, my, is, are, do, does).” The same content standard (reading) in third grade describes “[knowing and applying] grade-level phonics and word analysis skills in decoding words [to include] decoding multi-syllable words” as an appropriate benchmark. In this example, a district may choose to assess this particular reading standard (phonics and word recognition) once, twice, or any number of times between kindergarten and third grade to measure student learning relative to the standard. It is also important to note that an *assessment system* is comprised of more than just tests or exams. In Chapter 31, “assessment” is defined as a process that includes gathering and analyzing evidence of what students know and are able to do. Evidence may come in the form of

homework assignments, informal observations, hands-on projects, classroom speeches or demonstrations, essays, and so on. It is in this context that a district's assessment system is reviewed by the Wyoming Department of Education (WDE) at least once every five years to ensure that the district has a systematic way to assess and evaluate how student is doing relative to the standards in a given content area.

In addition to the five-year on-site review, any district with schools that are "partially meeting expectations" or "not meeting expectations" under the Wyoming Accountability in Education Act (WAEA) may have its assessment system reviewed more often. In all cases, any deficiencies identified in a district's assessment system will be reported to the SBE and the district's accreditation status may be lowered as a result pursuant to the Chapter 6 Education Rules, "Accreditation".

Section 6. Consultation with Local School Districts

Section 6 establishes the requirement for the SBE to consult with local school districts as they develop and implement the new requirements of these revised rules. The SBE recognizes the November 1 statutory reporting requirement to provide evidence that the district is compliant with high school graduation standards (W.S. 21-3-110 (a)(xxv)). The requirement within these rules for the SBE to offer feedback takes into consideration the timing of the rules promulgation process and provides a reasonable timeframe for implementation.

Chapter 31

Wyoming Graduation Requirements

Section 1. Authority. These rules and regulations are promulgated pursuant to W.S. 21-2-304(a)(i) – (iv) and W.S. 21-3-110(a)(i) and (xxv).

Section 2. Purpose. These rules and regulations pertain to the minimum requirements for graduation from any public high school within any school district of this state, the required components of each district’s assessment system designed to determine student performance levels as aligned to the state standards pursuant to W.S. 21-2-304(a)(iv), and the consultation process between the State Board of Education and local school districts on the establishment of Wyoming high school diploma requirements.

Section 3. Definitions. As used in this chapter:

(a) “Alignment” means evidence that a district assessment system is aligned to the state standards, both in terms of content and cognitive complexity.

(b) “Assessment” means an ongoing process that includes collecting, synthesizing, and interpreting information about what students know (knowledge) and are able to do (skills).

(c) “Department” means Wyoming Department of Education.

(d) “District Assessment System” means a system that measures various levels of student performance on content-specific learning goals that are aligned to the state standards.

(e) “Cognitive Complexity” means the type and level of thinking required to successfully achieve the standard.

(f) “Coursework” means a progression of courses aligned to the state standards that provides students with a quality education as described under W.S. 21-2-304(a)(ii).

(g) “Functional Equivalent” means a course that is aligned to the state standards and is as rigorous as or more rigorous than a college- or career-preparatory course taken in high school.

(h) “Graduation Requirements,” or high school diploma requirements, means successful completion of courses required by this chapter, as evidenced by each district’s assessment system, which is aligned to the state standards, and prescribed by the State Board of Education under W.S. 21-2-304 (a)(iii).

(i) “Performance Level Descriptor” means a statement set by the State Board of Education in Chapter 10 Education Rules that describes how well a student must perform at an identified level for every course the student takes and completes. The following are the three options for performance level descriptors:

- (i) Basic. A limited display of knowledge and skills that shows student is not approaching or approaching, but not yet meeting the standard.
- (ii) Proficient. A satisfactory display of knowledge and skills that shows student is meeting the standard.
- (iii) Advanced. A superior display of knowledge and skills that shows student is exceeding the standard.

(j) “State Standards” means the Wyoming Content and Performance Standards, also known as the Uniform Student Content and Performance Standards, that define what students should be provided the opportunity to learn in the ten (10) content areas as described in W.S. 21-9-101(b) and set by the State Board of Education in Chapter 10 Education Rules.

Section 4. High School Diploma Requirements.

(a) Graduation requirements for earning a high school diploma from any high school within any school district of this state shall include successful completion of the following components as evidenced by passing grades or by successful performance on competency-based equivalency examinations:

(i) Coursework, including courses taken for the attainment of a high school diploma, shall include courses that, taken together, signify students are equipped to compete both intellectually and economically in society. Coursework for the attainment of a high school diploma shall be aligned to the state standards in grades nine (9) through twelve (12) and, at a minimum, include the following:

(A) Four (4) school years of English;

(B) Three (3) school years of mathematics;

(C) Three (3) school years of science, one (1) year of which may be a computer science course; and

(D) Three (3) school years of social studies, including history, American government, and economic systems and institutions, provided business instructors may instruct classes on economic systems and institutions.

(E) Courses taken before grade nine (9) used to satisfy high school diploma requirements shall be aligned to the state standards in grades nine (9) through twelve (12).

(F) Courses designated as functional equivalents may be used to satisfy the coursework described in this subsection. The Department may verify appropriate alignment of the functional equivalents to the state standards in grades nine (9) through twelve

(12).

(ii) Satisfactorily passing an examination on the principles of the constitution of the United States and the state of Wyoming.

(iii) Evidence of proficient performance on the district assessment system, which includes all courses taken for the attainment of a high school diploma.

(A) Proficient performance shall be evidenced by successful completion of courses included in a district's assessment system that are aligned to and inclusive of the state standards as defined in this chapter.

(B) The district determines successful completion through a district assessment system that meets the criteria outlined in Section 5 of this chapter.

(b) Each local school district shall establish high school diploma requirements that shall be reflected in policy and related documents as appropriate. The district's policy shall include:

(i) A description of the district's definition of course credit for any course which may be taken to satisfy the high school diploma requirements;

(ii) A description of the process by which successful performance on a competency-based equivalency examination may be used to satisfy coursework, as defined in this chapter;

(iii) A description of the way in which successful completion of courses taken for graduation will be used as a factor in awarding course credit;

(iv) A requirement that students demonstrate satisfactory performance on an examination of the principles of the constitution of the United States and the State of Wyoming as required by W.S. 21-9-102;

(v) An assurance that academic credit toward the district's high school diploma requirements will be awarded for the successful completion of any course offered under a qualifying post-secondary education program specified under W.S. 21-20-201; and

(vi) A description of any additional requirements that a student must successfully complete at the discretion of the district.

(c) The district shall maintain and publish a list of eligible courses to satisfy the high school diploma requirements, including the minimum graduation requirements established in these rules. All eligible courses shall be aligned to the state standards established for the high school grades and require a logical sequence and the progression of instruction aligned with content and benchmark standards from one school year to the next. This list shall not be required to include post-secondary courses for which academic credit may be awarded.

Section 5. District Assessment System.

(a) In conjunction with district accreditation, a district's assessment system shall be subject to review and approval by the State Board of Education at least once every five (5) years. A district containing schools that are designated as partially meeting expectations or not meeting expectations under W.S. 21-2-204(f)(i) may have its district assessment system reviewed more often as deemed appropriate by the State Board of Education and in accordance with W.S. 21-2-204(h)(vii).

(b) Pursuant to W.S. 21-3-110(a)(xxiv) and (xxxiv), the review shall apply to all ten (10) content areas and verify that the district assessment system includes each of the following criteria:

(i) **Alignment.** The district has a process in place to ensure its district assessment system is aligned to the state standards in both content and cognitive complexity. The district assessment system must be aligned to the state standards within three (3) full years of the Board approving a standard.

(A) Districts shall ensure that their aligned district assessment system produces student performance levels relative to the state standards.

(B) Districts shall ensure that their aligned district assessment system measures the knowledge or skill for the appropriate grade level and content.

(C) Districts shall ensure that their aligned district assessment system provides every student with multiple opportunities to demonstrate what the student understands, knows, and can do.

(ii) **Data Results.** The district has a process in place to regularly monitor student performance in order to determine progress toward the attainment of knowledge and skills aligned to the state standards.

(iii) **Ongoing Evaluation.** The district has a process in place to evaluate its district assessment system on an ongoing basis to inform subsequent adjustments to the district assessment system that will ensure the district's needs, priorities, and goals are met and remains aligned to the state standards.

(c) Not later than November 1 of each year, the district shall report compliance with the criteria of its district assessment system, including compliance with the high school diploma requirements identified in Section 4 of this chapter.

(d) A district that does not meet the criteria of the district assessment system or does not comply with the high school diploma requirements may have its accreditation status lowered in accordance with Chapter 6 Education Rules.

Section 6. Consultation with Local School Districts.

(a) Within twelve (12) months of the effective date of these rules, each local district shall submit to the State Board of Education, through the Department its revised policy establishing high school diploma requirements for review and consultation. Within one hundred and twenty (120) days of receiving a local district's high school diploma requirements, the State Board of Education shall identify any areas in which the district does not comply with state-established requirements and consult with the district on any findings.

(b) Any modification to a district's high school diploma requirements, including a copy of the revised requirements, shall be included in the district's November 1 report required under W.S. 21-3-110(xxv) and Section 5(c) of this chapter.

CHAPTER 10

WYOMING CONTENT AND PERFORMANCE STANDARDS

STATEMENT OF REASONS

Pursuant to Wyo. Stat. § 21-2-304(a)(iii), the Wyoming State Board of Education must prescribe uniform student content and performance standards for the common core of knowledge specified by Wyo. Stat. § 21-9-101(b)(i). The common core of knowledge includes Reading/Language Arts, Social Studies, Mathematics, Science, Fine and Performing Arts, Physical Education, Health and Safety, Humanities, Career/Vocational Education, Foreign Cultures and Languages, Applied Technology, and Government and Civics.

After careful consideration, and with support from members of the Standards Review Committee and input from school districts and the public at large, the Wyoming State Board of Education approved proposing the following amendments to the standards on April 20, 2018.

The Board is promulgating revised rules for the Wyoming Content and Performance Standards for the content areas of Mathematics and Social Studies. These standards define the knowledge and skills students should know and be able to do throughout their K-12 education so they can graduate from high school able to succeed in college and career. The Science Extended Standards for students with significant cognitive disabilities are also being promulgated. These standards were built from the general science standards which were approved in 2016 and extend the standards to make them accessible to those students with the most significant cognitive disabilities.

In developing the standards for each of the content areas of Mathematics, Social Studies, and Science Extended Standards, the Wyoming Department of Education, on

the Board's behalf, convened a standards review committee composed of 18-40 members, which included educators, professors, parents, and business/community members. The Math Standards Review Committee had 40 members; the Social Studies Review Committee had 25 members; and the Science Extended Review Committee had 18 members. Prior to the committee's first meeting, the Department collected input online and held five community input meetings to inform the public of the upcoming review process and to solicit information for the standards review committees' consideration. Following the work of the committee, the Department also collected input online and held five public input hearings, plus an additional public meeting in Fremont County on the Social Studies Proposed Standards, to inform the public and gather feedback from the public for the Board's consideration when voting whether to adopt the proposed standards in the content areas of Mathematics, Social Studies, and Science Extended.

Additional changes to these rules include the following, which will ultimately simplify and reduce the length of these rules:

- removing past approval dates, which are no longer relevant and potentially confusing to readers (the date the standards were developed is more salient for users);
- removing the implementation dates, which are already explicit in the standards document;
- adding reference to the 2018 Science Extended Standards;
- replacing reference to 2012 Math Standards with 2018 Math Standards;

- replacing reference to 2014 Social Studies Standards with 2018 Additions to Social Studies Standards; and
- changing how standards are identified by including the year of adoption in the title of the content standards. Previously, they were identified in the rules by date of amendment. Moving forward, it is simpler and clearer to appropriately title the standards document being incorporated and identify the matter by its title. For example, the most recent science standards are identified as the “2016 Wyoming Science Content and Performance Standards.” The agency believes this practice is more logical and accessible to the public.

The Board previously revised the process for compiling public comments to more adequately inform the public of the nature of the comments and the reasons for either adopting or rejecting the comment. This process includes articulating comments separately even if they were part of a single submission that addressed several topics, grouping substantially identical comments together with a single response, and organizing the comments and responses into comment, discussion, and changes sections. These changes should make it easier to understand the comments received and the agency's response to those comments. Comments received in this rulemaking will be addressed accordingly.

These rules meet the minimum substantive state statutory requirements and are within the Board and Department's statutory authority. No part of this action should be interpreted as any attempt to dictate curriculum at the local or state level.

Wyoming Department of Education
Wyoming Content and Performance Standards

CHAPTER 10

Section 1. Authority. These rules and regulations are promulgated pursuant to W.S. 21-2-304(a)(i), (ii), (iii), and (iv).

Section 2. Applicability. These rules and regulations pertain to the uniform student content and performance standards for the common core of knowledge and the common core of skills specified under W.S. 21-9-101(b).

Section 3. Definitions.

(a) “Common Core of Knowledge” means areas of knowledge each student is expected to acquire at levels established by the state board of education. W.S. 21-9-101(b)(i) This includes the nine content areas listed in subsection (c) and Health and Safety, Humanities, Applied Technology, and Government and Civics.

(b) “Common Core of Skills” means skills each student is expected to demonstrate at levels established by the state board of education. W.S. 21-9-101(b)(iii). These skills may be integrated into the uniform student content and performance standards for the Common Core of Knowledge. This includes Problem Solving, Interpersonal Communications, Keyboarding and Computer Applications, Critical Thinking, Creativity, and Life Skills, including Personal Financial Management Skills.

(c) “Content and Performance Standards” means standards that include the K-12 content standards, benchmark standards, and the performance standards with performance level descriptors established for the Common Core of Knowledge and Common Core of Skills. W.S. 21-2-304(a)(iii) The nine content areas are as follows:

- (i) English Language Arts (ELA)
- (ii) Mathematics
- (iii) Science
- (iv) Social Studies
- (v) Health
- (vi) Physical Education

- (vii) Foreign Language
- (viii) Career & Vocational Education
- (ix) Fine & Performing Arts

(d) “Wyoming Extended Standards” also interchangeable with “Wyoming Standards Extensions” means standards for students with the most significant cognitive disabilities that show a clear link to the content standards for the grade in which the student is enrolled, although the grade-level content may be reduced in complexity or modified to reflect pre-requisite skills.

Section 4. Uniform Student Content and Performance Standards.

(a) Uniform student content and performance standards, including standards for graduation, are hereby incorporated by reference pursuant to W.S. 16-3-103(h) and include the following:

(i) [2012 Wyoming Language Arts Content and Performance Standards](#) as approved by the Wyoming State Board of Education on April 27, 2012;

(A) 2012 Wyoming Language Arts Content and Performance Standards amended on April 27, 2012 shall be fully implemented on or before the first day of the 2015-2016 school year.

(B) The [2014 Language Arts Performance Level Descriptors](#), as incorporated by reference, shall be the Wyoming Language Arts Performance Standards for the 2012 Wyoming Language Arts Content Standards.

(C) The [2014 Wyoming Language Arts Extended Standards](#) for students with significant cognitive disabilities, as incorporated by reference, shall be fully implemented on or before the first day of the 2017-18 school year.

(D) The Wyoming Language Arts Content and Performance Standards, Performance Level Descriptors, and Extended Standards are available at <https://edu.wyoming.gov/educators/standards/language-arts>.

(ii) ~~20128 Wyoming Mathematics Content and Performance Standards as approved by the Wyoming State Board of Education on April 27, 2012; available at <https://edu.wyoming.gov/educators/standards/mathematics>.~~

~~(A) 2012 Wyoming Mathematics Content and Performance Standards amended on April 27, 2012 shall be fully implemented on or before the first day of the 2015-2016 school year.~~

~~(B)~~(A) The [2014 Mathematics Performance Level Descriptors](#), as incorporated by reference, shall be the Wyoming Mathematics Performance Standards ~~for the 2012 Wyoming Mathematics Content Standards~~.

~~(C)~~(B) The [2014 Wyoming Mathematics Standards Extensions](#) for students with significant cognitive disabilities, as incorporated by reference, shall be fully implemented on or before the first day of the 2017-18 school year.

~~(D)~~(C) The Wyoming Mathematics Content and Performance Standards, Performance Level Descriptors, and Standards Extensions are available at <https://edu.wyoming.gov/educators/standards/mathematics>.

(iii) [2016 Wyoming Science Content and Performance Standards](#) are available at <https://edu.wyoming.gov/educators/standards/science>.

~~(iii)~~(A) [The 2018 Wyoming Science Extended Standards for students with significant cognitive disabilities are available at https://edu.wyoming.gov/educators/standards/extended-benchmarks](#).

(iv) [2014 with 2018 Additions Wyoming Social Studies Content and Performance Standards](#) are available at <https://edu.wyoming.gov/educators/standards/social-studies>.

(v) [2012 Wyoming Health Content and Performance Standards](#) as approved by the Wyoming State Board of Education on April 27, 2012;

(A) 2012 Wyoming Health Content and Performance Standards amended on April 27, 2012 shall be fully implemented on or before the first day of the 2015-2016 school year.

(B) The Wyoming Health Content and Performance Standards are available at <https://edu.wyoming.gov/educators/standards/health-education>.

(vi) [2014 Wyoming Physical Education Content and Performance Standards](#) are available at <https://edu.wyoming.gov/educators/standards/physical-education>.

(vii) [2013 Wyoming Foreign Language Content and Performance Standards](#) as approved by the Wyoming State Board of Education on May 8, 2013;

(A) 2013 Wyoming Foreign Language Content and Performance Standards amended on May 8, 2013 shall be fully implemented on or before the first day of the 2016-2017 school year.

(B) The Wyoming Foreign Language Content and Performance Standards are available at <https://edu.wyoming.gov/educators/standards/foreign-language>.

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(viii) [2014 Wyoming Career/Vocational Education Content and Performance Standards](https://edu.wyoming.gov/educators/standards/career-vocational) are available at <https://edu.wyoming.gov/educators/standards/career-vocational>.

(ix) [2013 Wyoming Fine and Performing Arts Content and Performance Standards](https://edu.wyoming.gov/educators/standards/arts) as approved by the Wyoming State Board of Education on May 8, 2013;

(A) 2013 Wyoming Fine and Performing Arts Content and Performance Standards amended on May 8, 2013 shall be fully implemented on or before the first day of the 2016-2017 school year.

(B) The Wyoming Fine and Performing Arts Content and Performance Standards are available at <https://edu.wyoming.gov/educators/standards/arts>.

(b) The above-referenced content and performance standards are available at the Wyoming Department of Education website at <https://edu.wyoming.gov> (or at cost of production) from the Wyoming Department of Education, ~~2300 Capitol Avenue~~ ^{122 E. 25th Street, Suite E200, Hathaway Building, 2nd Floor}, Cheyenne, WY 82002.

(c) The above-referenced content and performance standards are the most current editions.

(d) The above performance standards that are incorporated by reference do not include any amendments to or editions of the standards since the effective date of this rule.

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1. We are identifying dates as placeholders so members can reserve the dates but will cancel meetings if no business is pending.
2. Some meeting dates are being suggested to allow for board action on required reports.
3. When feasible electronic meetings will be considered
4. Locations for meetings will be determined by the Administrative Committee
5. The board will try to efficiently schedule meetings in an attempt lessen the burden on the WDE staff.

2018 Yellow = SBE Green = UW Trustee Blue = JEIC Sundays and Holidays

Calendarpedia
Your source for calendars

| January | | | | | | | February | | | | | | | March | | | | | | | April | | | | | | | May | | | | | | | June | | | | | | | | | | | | | | |
|---------|----|----|----|----|----|----|----------|----|----|----|----|----|----|-------|----|----|----|----|----|----|-------|----|----|----|----|----|----|-----|----|----|----|----|----|----|------|----|----|----|----|----|----|---|--|--|--|--|---|---|---|
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| 7 | 8 | 9 | 10 | 11 | 12 | 13 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | | | | | | | | |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | | | | | | | | |
| 21 | 22 | 23 | 24 | 25 | 26 | 27 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | | | | | | | | |
| 28 | 29 | 30 | 31 | | | | 25 | 26 | 27 | 28 | | | | | | | | | | | 29 | 30 | | | | | | 27 | 28 | 29 | 30 | 31 | | | 24 | 25 | 26 | 27 | 28 | 29 | 30 | | | | | | | | |

| July | | | | | | | August | | | | | | | September | | | | | | | October | | | | | | | November | | | | | | | December | | | | | | |
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| 22 | 23 | 24 | 25 | 26 | 27 | 28 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 29 | 30 | 31 | | | | | 26 | 27 | 28 | 29 | 30 | 31 | 30 | | | | | | | 28 | 29 | 30 | 31 | | | | 25 | 26 | 27 | 28 | 29 | 30 | | 30 | 31 | | | | | | |

*Nov. 16 UW trustee meeting and SBE

Calendarpedia
Your source for calendars

2019

| January | | | | | | | February | | | | | | | March | | | | | | | April | | | | | | | May | | | | | | | June | | | | | | | | | | | | | |
|---------|----|----|----|----|----|----|----------|----|----|----|----|----|----|-------|----|----|----|----|----|----|-------|----|----|----|----|----|----|-----|----|----|----|----|----|----|------|----|----|----|----|----|----|--|--|--|--|---|---|---|
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| 7 | 8 | 9 | 10 | 11 | 12 | 13 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
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