

**State Board of Education
Work Session Agenda
September 26, 2012**

Snow King Resort
Jackson, Wyoming
8:30 a.m. – 5:00 p.m.

1.	State Board of Education Coordinator Report- Paige Fenton Hughes	Tab A	8:30 a.m.
2.	Legislative Subcommittee- Ron Micheli		9:45 a.m.
	BREAK		10:00 a.m.
3.	Dual Immersion- Brandee Mau & Ann Tollefson	Tab B	10:15 a.m.
4.	Direction of Assessment- Cindy Hill		10:45 a.m.
5.	End of Course- Cindy Hill, Sheryl Lain & Kevin Lewis		11:30 a.m.
	WORKING LUNCH		12:00 p.m.
6.	Strategic Plan- Sue Belish & Pete Gosar		12:30 p.m.
7.	Chapter 31 Update- Sue Belish	Tab C	2:00 p.m.
	BREAK		2:45 p.m.
8.	October 15 Report to the Legislature- John Masters & Paige Fenton- Hughes		3:00 p.m.
	ADJOURNMENT		5:00 p.m.



WYOMING

State Board of Education

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Executive Assistant

MEMORANDUM

TO: Wyoming State Board of Education Members

FROM: Paige Fenton Hughes, Coordinator

DATE: September 12, 2012

SUBJECT: State Board of Education accountability tasks update

I am excited to share with you the progress we are making on the accountability tasks assigned to the State Board in the Wyoming Accountability in Education Act. I am only going to report to you the items on which we are actively working. You are kept abreast of the entire list of items in my weekly reports.

Professional Judgment Panel—The SBE voted unanimously to hire Dr. Mike Beck to facilitate the professional judgment panel and to prepare the information to be presented to the PJP for their consideration. Here are the expectations we presented to Dr. Beck:

Lead a team of at least 27 people on a Professional Judgment Panel to:

- Determine performance levels for each indicator as prescribed by statute
- Determine overall school performance levels for Wyoming schools
- Craft an appeals process for schools
- Develop business rules
- Contribute to a report to the Wyoming State Board of Education and the Select Committee on Education Accountability including authoring an accompanying technical report.

On August 20, 2012, we made a request to the WDE to share information about the model the WDE had developed (the draft of which was shared with the SBE at the June meeting in Thermopolis; a final draft of which is included in WDE report for the September meeting in Jackson). We asked that the information about the model the WDE had developed be shared in a phone discussion on August 22, 2012. The August 20, 2012 memo requesting a call included a bulleted list of the information Dr. Beck would need to understand in order to plan for the presentation to the PJP in October. The conference call included Dr. Beck and his partner, Sheila Potter; myself; members of the WDE team; and Dr. Mike Flicek and Ruth Sommers as observers.

On August 22, we learned that a great deal of the information required by Dr. Beck had not been determined and was not available to him including a

model framework tightly aligned to the Select Committee expectations, an explanation of how the overall achievement index was calculated, a frequency distribution of numerical achievement values, an explanation of how the growth data were computed, frequency distributions for the growth data, distributional summaries of the college and career readiness data, a definition of graduation rate, proposed grade-level clusters for the CCR data, the possibility of including equity in the model, and the draft business rules.

Because that information was not available to Dr. Beck, he drafted a subsequent request for information from the WDE which included specific formatting of the data for his use in facilitating the PJP. No information had been received by August 29, 2012, and the additional request was sent to WDE. As of this writing, Dr. Beck has received achievement data, graduation rates, and ACT and EXPLORE data. Dr. Beck has not received growth data, equity data, draft business rules, or notes on a possible appeals process.

We are under an immense time crunch to be able to prepare the information for the PJP by the first week of October. Dr. Beck, however, is confident if he gets the data he needs, he can prepare the information needed to facilitate the PJP. He and his partner, Sheila Potter, have drafted frameworks and agendas to guide the work for the three days. It's a tight three days, but Dr. Beck and Sheila Potter have a solid work plan.

The agenda for the three days includes:

1. Overview and orientation including responsibilities and limitations
2. Overview of the four performance indicators and how each is operationally defined
3. Review of the terminology to be used for all judgments
4. Overview of the process of standards setting and the methodology to be used for each performance indicator; overview of the operational definitions for each performance indicator
5. Round 1 of determining recommended standards for each performance indicator
6. Review of Round 1 recommendations
7. Determination of final recommendations for each of the performance indicators
8. Transforming the performance indicators into an accountability system
9. Presentation of the final recommendations of the PJP as to the four performance indicators
10. Over view of the process for setting school performance levels
11. Determining school performance levels
12. Discussion of business rules and appeals process

The PJP meeting will be held in Casper on October 2, 3 and 4, 2012. Amazingly, we have only had one person who can't be there the entire time. So we look forward to having a full group of panelists to ultimately determine the school-level performance ratings.

After the meeting, Dr. Beck will immediately begin to draft the report he will present to you at the October 9 SBE teleconference. In fact, he has a skeleton outline already in place. Dr. Beck will hear your input at the teleconference and then prepare a final draft of the report by the October 15, 2012 LSO deadline. Dr. Beck will also be at the November Select Committee meeting to present the report in person.

End of Course Assessment Study—

If you'll recall, the State Board is mandated in Wyoming Enrolled Act 65 to continue to study an end-of-course assessment system. Here is the language:

(iii) Notwithstanding 2011 Wyoming Session Laws, Chapter 184, Section 4(f)(ii), the select committee shall continue the study of an end of course assessment system that measures various levels of student performance as described in the uniform student content and performance standards as required by W.S. 21-2-304(a)(iv) and 21-3-110(a)(xxiv). Not later than November 15, 2012, the state board shall report and make recommendations to the select committee on the use of an end of course assessment system as a component of the statewide summative assessment and for district assessment systems that are designed and used to determine the various levels of student performance for purposes of fulfilling high school graduation requirements. Additionally, end of course assessment results shall be used in the statewide accountability system, the school district leader and teacher accountability system and the student accountability system. The recommendations shall conform to the January 2012 education accountability report as defined by W.S. 21-2-204(k);

The end-of-course assessment study is progressing well within the parameters of a tight work plan. I am including a document that gives an overview of the plan for the study as well as another document that gives a plan for task completion.

Chad Buckendahl, the lead researcher from Alpine Testing Solutions, and his partner, Brett Foley, came to Cheyenne on September 5 and 6, 2012 to facilitate a Thought Leader group of Wyoming educators from all across our state from many work groups including teachers, instructional coaches, special services directors, school board members, superintendents, principals, and curriculum and assessment directors. The purpose of the group is to inform the study with input and insights from experienced educators from our state to balance the research Chad and his team will complete about end-of-course assessment systems in general. The group will meet again in Casper on October 11 and 12, 2012.

By the time the SBE meets in Jackson, we will have received a draft report for our review. A conference call for the review will take place on September 21, 2012. The draft report will go out to all thought leaders for them to review. Chad has asked us not to share confidential information from the meeting or to share the actual written draft (it will probably change significantly before it becomes final). But Chad has asked each person to review the draft, take questions and concerns to their groups (principals back to WASSP, curriculum folks back to WCDA, for instance), and seek input from others about the content of the report. The thought leaders will then bring that information back to Casper in October to share with the group and Alpine team.

Chad is going to present the report to the SBE at the November meeting. Because we don't know the date of that meeting yet, Chad will most likely be available by phone, Skype or Facetime. The November SBE meeting will

provide an opportunity for you to discuss the report before it goes to the Select Committee at their meeting on the 13th and 14th of November. That will be an important discussion because we will actually be making a recommendation to the Select Committee about the possible future of end-of-course assessment systems. Remember that the goal of this EOC study is for the SBE to be able to make a recommendation to the Select Committee about transitioning district assessment systems in the absence of BOE.

The work on both these important tasks is progressing quickly, so I will update you on any new developments at our meeting. I will also answer any questions you might have about other accountability issues assigned to the SBE. I look forward to seeing all of you in Jackson Hole.

After reviewing over 200 applications for the Professional Judgment Panel, the committee would like to recommend the following personnel to fulfill the Panel Membership as required by Enrolled Act 65:

State Board of Education:

Sue Belish, Walt Wilcox & Kathy Coon

Public School Teachers

Elementary--Audra Morrow

MS/JH--Paul Crips--Carey Jr. High

Leona Wunnenberg--Jackson MS School

HS--Brent Daly--CCHS

Kara Sweet--Newcastle HS

Michael Read--Ft. Washakie HS

Principal

Elementary--Dr. Joseph Ingalls--North Evanston Elem

JH/MS--Ken Griffith--Guernsey-Sunrise

HS--Darrin Peppard--Rock Springs HS

School District Superintendent

Small District--Dr. Summer Stephens--Weston # 7 Upton

Medium District--M. Neil Terhune Ed. D.--Rawlins

Large District--Donna Little-Kaumo--Sweetwater #2 Green River

Business & Community at-Large

Robert Blaylock--Gillette

Michelle M. Kiggins--Riverton

Jill Bramlet--Wheatland

Parent

Bryan G. Baird--Cowley

Glen Kirkbride--Burns

Greg Legerski--Pinedale

School District Central Office

John Metcalf--Lander Fremont #1

Mark Taylor--Afton--Lincoln #2

Andrea Gilbert--Buffalo--Johnson #1

Wyoming School District Board of Trustees

Dr. Cristy Magagna-McBee--Sweetwater #2

Linda S. Jennings--Gillette

Michael Hunsaker--Lincoln #2

Wyoming Post Secondary Institutions

Renee S. Griffith--Casper College

Kay Perschitte--University of Wyoming

Lona Tracy--Adjunct Prof for EWC

STATE BOARD OF EDUCATION



Wyoming State Board of Education End of Course Assessment Thought Leader Group Members

Name	District	Role
Janice Marshall	Albany 1	School Board Member
Rob Erickson	Lincoln 2	Instructional Coach/Math Teacher
Kathy Stutheit	Sheridan 1	Math Teacher
Elizabeth Scicluna	Platte 1	Language Arts Teacher
Marcy Lore	Natrona 1	Literacy Coach
Charles Auzqui	Sheridan 3	Principal
Joanne Flannagan	Fremont 25	Principal
Scott Crisp	Teton 1	Principal
Marc LaHiff	Laramie 1	Assessment Director
Dodie White	Fremont 14	Curriculum Director
Kim Dolezal	Uinta 4	Curriculum and Assessment Director
Doug Rose	Campbell 1	Director of Student Services
Kevin Mitchell	Park 1	Superintendent
Gerry Chase	Sublette 9	Superintendent
Lisa Weigel	Converse 1	Director of Student Services
Shawna Trujillo	Natrona 1	Principal

**Proposed Project Schedule
Wyoming State Board of Education
Revised 8/10/2012**

ID	Task Name	Duration	Start	Finish	Pred	Resource Names	Notes
1	Wyoming State Board of Education	70 days	Thu 8/9/12	Wed 11/14/12			
2	Program Design for EOC System	70 days	Thu 8/9/12	Wed 11/14/12			
3	Planning	4 days	Thu 8/9/12	Tue 8/14/12			
4	Schedule Iteration & Approval	4 days	Thu 8/9/12	Tue 8/14/12		Alpine/Wyoming	
5	Project Kick-off Call	1 day	Fri 8/10/12	Fri 8/10/12		Alpine/Wyoming	
6	Program Design Meeting I	31 days	Mon 8/13/12	Mon 9/24/12			<i>1st stakeholder group</i>
7	Facilitator Preparation	14 days	Mon 8/13/12	Thu 8/30/12	5	Alpine	
8	Panelist Recruitment & Logistics Setup	17 days	Mon 8/13/12	Tue 9/4/12	5	Wyoming	<i>15 panelists preferred</i>
9	Materials Approval	1 day	Fri 8/31/12	Fri 8/31/12	7	Wyoming	
10	Program Design Workshop - Cheyenne	2 days	Wed 9/5/12	Thu 9/6/12		Alpine/Wyoming	
11	Program Design Report I	7 days	Fri 9/7/12	Mon 9/17/12	10	Alpine	
12	Submit Report Revisions	3 days	Tue 9/18/12	Thu 9/20/12	11	Wyoming	
13	Program Design Meeting I Results Call	1 day	Fri 9/21/12	Fri 9/21/12	12	Alpine/Wyoming	<i>Call to review results and receive feedback from Wyoming on Phase I</i>
14	Submit Approved Report to State Board for Commentary	1 day	Mon 9/24/12	Mon 9/24/12	13	Wyoming	
15	Program Design Meeting II	56 days	Mon 8/13/12	Mon 10/29/12			<i>2nd stakeholder group</i>
16	Facilitator Preparation	38 days	Mon 8/13/12	Wed 10/3/12	5	Alpine	
17	Panelist Recruitment & Logistics Setup	43 days	Mon 8/13/12	Wed 10/10/12	5	Wyoming	<i>15 panelists preferred</i>
18	Materials Approval	2 days	Thu 10/4/12	Fri 10/5/12	16	Wyoming	
19	Program Design Workshop - Casper	2 days	Thu 10/11/12	Fri 10/12/12		Alpine/Wyoming	
20	Program Design Report II	7 days	Mon 10/15/12	Tue 10/23/12	19	Alpine	
21	Submit Report Revisions	3 days	Wed 10/24/12	Fri 10/26/12	20	Wyoming	
22	Submit Approved Report to State Board for Commentary	1 day	Mon 10/29/12	Mon 10/29/12	21	Wyoming	
23	Select Committee Meeting	68 days	Mon 8/13/12	Wed 11/14/12			
24	Draft White Paper	60 days	Mon 8/13/12	Fri 11/2/12	5	Alpine	
25	Receive Feedback on Program Design Report I from State Board	29 days	Tue 9/25/12	Fri 11/2/12	14	Wyoming	
26	Receive Feedback on Program Design Report II from State Board	5 days	Tue 10/30/12	Mon 11/5/12	22	Wyoming	<i>Due to nature of schedule, Board would be limited to a week for Phase II review so that Wyoming can consider feedback during final revision stage</i>
27	Submit Revisions to White Paper	4 days	Mon 11/5/12	Thu 11/8/12	24	Wyoming	
28	Accept Edits and Finalize White Paper	2 days	Fri 11/9/12	Mon 11/12/12	27	Alpine	
29	Present Study Results to Wyoming Committee	2 days	Tue 11/13/12	Wed 11/14/12	28	Alpine	<i>State Board and Committee Meetings to occur same days</i>

Wyoming High School EOC System Program Design Report Outline

Design Summary

The program design study report will be organized according to the figure below. The first section will discuss the prioritization of assessment goals and purposes, as identified in discussions with a broad variety of stakeholders. Next, the pros and cons of various administration levels will be described. In other words, given the priorities of the stake holders, would it be more appropriate/effective to have a single, statewide testing solution, have each district (or other sub-state level entities) chose and administer the assessment design that best fits their needs, some combination of these concepts, or something completely different. Finally, after considering priorities and levels of administration, the report will discuss the advantages and disadvantages of different assessment designs. For example, would an off-the-shelf test be more cost effective than custom designed assessments? What assessment design provides evidence to support other intended uses?

The report will synthesize answers to the following key questions, providing discussion of strengths and weaknesses of assessment designs in the context of Wyoming's goals and needs.

Key Questions

Prioritize assessment goals and purposes

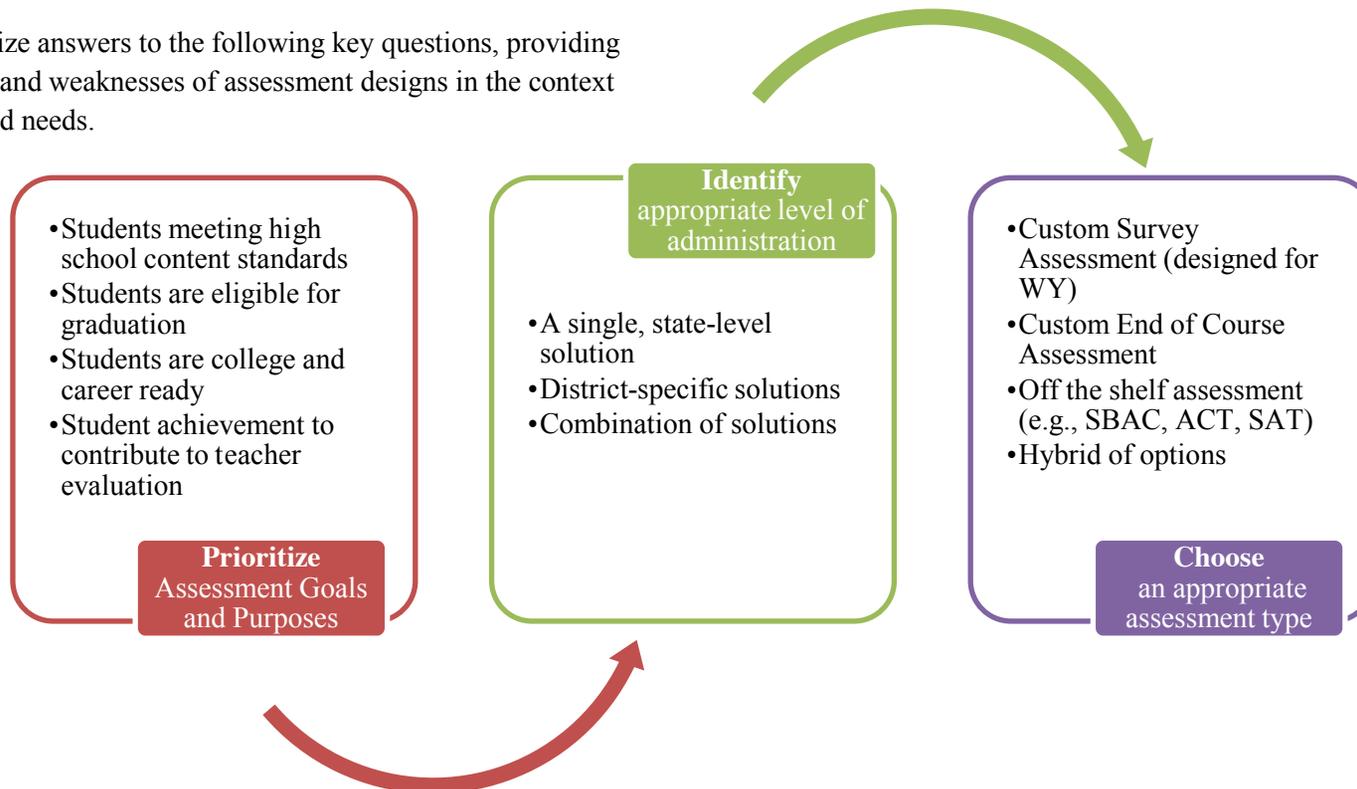
- What are the most essential decisions that will be made using the assessment results? How are they prioritized?

Identify the appropriate level of administration

- What level of administration is best equipped to choose and administer the EOC system?

Chose an appropriate assessment type

- Which assessment type(s) best fit the intended goals, purposes, and administration level of the EOC system?





UTAH DUAL LANGUAGE IMMERSION

Providing a world of opportunities for students.

Utah's Statewide Dual Language Immersion Initiative

In 2008, the Utah Senate passed the International Initiatives (Senate Bill 41), creating funding for Utah schools to begin Dual Language Immersion programs in Chinese, French, and Spanish. In addition, then-Governor Jon Huntsman Jr. initiated the Governor's Language Summit and the Governor's World Language Council, both with a goal to create a K-12 language roadmap for Utah. These groups aimed to address the needs for language skills in business, government, and education. In 2010, current Governor Gary Herbert and State Superintendent of Public Instruction Dr. Larry Shumway issued a challenge to Utah educators to implement one hundred Dual Language Immersion programs throughout Utah by 2015, with a goal of enrolling 30,000 Utah students. Due to the early success of the program and public demand, Governor Herbert and State Superintendent Shumway have moved the target completion date to 2014, with a continuing goal to mainstream Dual Language Immersion programs throughout the Utah public school system. Portuguese will be added to the program for the 2012-13 school year.

The Utah Dual Language Immersion Program uses a fifty-fifty model, in which students spend half of their school day in the target language and the other half-day in English. Most of the state's programs begin in first grade, with a few starting in kindergarten. All state-sponsored schools with Dual Language Immersion programs are required to implement the fifty-fifty model and use two teachers, one who instructs exclusively in the target language for half of the day and a second who teaches in English for the remainder of the day.

From kindergarten through third grade, the target language curriculum includes literacy study and the majority of the content subjects (math, science, and social studies). The English curriculum focuses on English language arts and some collaborative reinforcement of the content. Teamwork is essential! The curriculum shifts in the fourth and fifth grades, as most conceptual instruction in math and social science is taught in English. Practical application of these subjects remains in the target language. In the sixth grade, social science shifts back to the target language and science shifts to English instruction. These curriculum changes in the upper grades purposefully allow for more instruction time in the target language, focusing on literacy study and increasing student proficiencies. Specific proficiency goals for every Dual Language Immersion language are set at each grade level in all areas: reading, writing, speaking, and listening.

The Utah Dual Language Immersion Program then offers two courses in grades seven through nine: one content course in the target language and a second course in advanced language study. Participating students are expected to enroll in Advanced Placement language coursework and complete the AP exam in the ninth grade. In grades ten through twelve, students will be offered university-level coursework through blending learning with six major Utah universities. Students are also encouraged to begin study of a third language in high school. Through this articulated K-12 Utah language roadmap, the state's students will enter universities or the global workforce equipped with truly valuable language and cultural skills at the Advanced Level of proficiency in all four skill areas (reading, writing, listen, and speaking).

One-way Immersion programs serve one group:

This program serves a student population comprised of a predominant majority of native English language speakers with limited to no proficiency in the L2 (e.g. Chinese, French, Portuguese, Spanish, etc.).

Two-way Immersion programs serve two groups:

This program serves English speakers and L2 speakers. A 1:1 ratio is the ideal ratio to be maintained for these two language groups, but a minimum requirement is a 2:1 ratio, or at least one-third of students native speakers of the L2. Two-way Immersion programs are sometimes called two-way bilingual or Dual Language.

Teacher Qualifications

1. **Teaching License:** English Teachers are required to have an elementary Utah teaching license. Target Language Teachers (Chinese, French, Portuguese, and Spanish) are required to have an elementary or secondary Utah teaching license, or be accepted into the Alternative Routes to Licensure (ARL) program.
2. **Endorsements:** Target Language Teachers (Chinese, French, Portuguese, and Spanish) are required to have a World Language endorsement in the immersion language and a Dual Language Immersion endorsement. English Teachers are strongly recommended to have an ESL endorsement in two-way Dual Language Immersion programs.

The Benefits of Dual Language Immersion

1. **Second Language Skills:** Students achieve high proficiency in the immersion language.
2. **Performance on Standardized Tests:** Immersion students perform as well as or better than non-immersion students on standardized tests in English.
3. **Cognitive Skills:** Immersion students typically develop greater cognitive flexibility, demonstrating increased attention control, better memory, and superior problem-solving skills as well as an enhanced understanding of their primary language.
4. **Cultural Competency:** Immersion students are more aware of and generally show more positive attitudes towards other cultures and an appreciation of other people.
5. **Long Term Benefits:** Immersion students are better prepared for the global community and job markets where 21st century skills are an asset.

Utah Dual Immersion Programs

2012-13 School Year (revised 5/14/12)

School & Language	Address	Phone number	School District
<u>Chinese - 25</u>			
Cascade Elementary	160 North 800 East, Orem, Ut 84097-4939	801-610-8102	Alpine
Alpine Elementary	400 E 300 N, Alpine, UT 84004	801-756-8525	Alpine
Riverview Elementary	273 West Aspen Hills Blvd., Saratoga Springs, UT 84045	801-610-8726	Alpine
Foothill Elementary	820 North 100 East, Brigham City, UT 84302	435-734-4916	Box Elder
Draper Elementary	1080 East 12660 South, Draper, UT 84020	801-826-8275	Canyons
Lone Peak Elementary	11515 High Mesa Drive, Sandy, UT 84092	801-826-8650	Canyons
Ridgecrest Elementary	1800 East 7200 South, Salt Lake City, UT 84121	801-826-9250	Canyons
Renaissance Academy	3435 North 1120 East, Lehi, UT 84043-	801-768-4202	Charter
JP Stewart Elementary	1155 North Main Street, Centerville, UT 84014	801-402-1850	Davis
Syracuse Elementary	1503 South 2000 West, Syracuse, UT 84075	801-402-2600	Davis
Heritage Elementary	1354 West Weaver Lane, Layton, UT 84041	801-402-1200	Davis
Muir Elementary	2275 South Davis Blvd., Bountiful, UT 84010	801-402-1550	Davis
Calvin Smith Elementary	2150 West 6200 South, Taylorsville, UT 84129	385-646-5020	Granite
Spring Lane Elementary	5315 South 1700 East, Salt Lake City, UT 84117	385-646-4906	Granite
Eastlake Elementary	4389 West Isla Daybreak Rd., South Jordan, UT 8405	801-446-0778	Jordan
Foothills Elementary	13717 Shaggy Peak Drive, Riverton, UT 84096	801-302-8599	Jordan
Monte Vista Elementary	11121 South 2700 West, South Jordan, UT 84095	801-254-8040	Jordan
Southland Elementary	12675 South 2700 West, Riverton, UT 84065	801-254-8047	Jordan
Sage Creek Elementary	1050 South 700 East, Springville, UT 84663	801-489-2860	Nebo
Wasatch Elementary	1080 North 900 East, Provo, UT 84604	801-374-4910	Provo
Arrowhead Elementary	545 Arrowhead Trail, Santa Clara, UT 84765	435-674-2027	Washington County
Horizon Elementary	1970 South Arabian Way, Washington, UT 84780	435-652-4781	Washington County
Three Falls Elementary	789 South 700 West, Hurricane, Utah 84737	435-635-7229	Washington County
Bates Elementary	850 East 3100 North, North Ogden, UT 84414	801-452-4580	Weber
Uintah Elementary	6115 South 2250 East, Ogden, UT 84403	801-452-4980	Weber

French - 10

Butler Elementary	2700 East 7000 South, Salt Lake City, UT 84121	801-826-7975	Canyons
Oak Hollow Elementary	884 East 14400 South, Draper, UT 84020	801-826-8875	Canyons
Samuel Morgan Elementary	1065 North Thornfield Road, Kaysville, UT 84037	801-402-3450	Davis
Foxboro Elementary	587 North Foxboro Dr., North Salt Lake, UT 84054	801-402-5050	Davis
Diamond Ridge Elementary	6034 West Mill Valley Lane, West Valley, UT 84118	385-646-4858	Granite
Morningside Elementary	4170 South 3000 East, Salt Lake City, UT 84124	385-646-4924	Granite
Fox Hollow	6020 West 8200 South, West Jordan, UT 84021	801-282-1818	Jordan
Trailside Elementary	5700 Trailside Drive, Park City, UT 84098	435-645-5680	Park City
Jeremy Ranch Elementary	3050 Rasmussen Rd. Park City, UT 84098	435-645-5670	Park City
Edgemont Elementary	566 East 3560 North, Provo, UT 84064	801-221-9984	Provo

School & Language**Address****Phone number****District****Portuguese - 3**

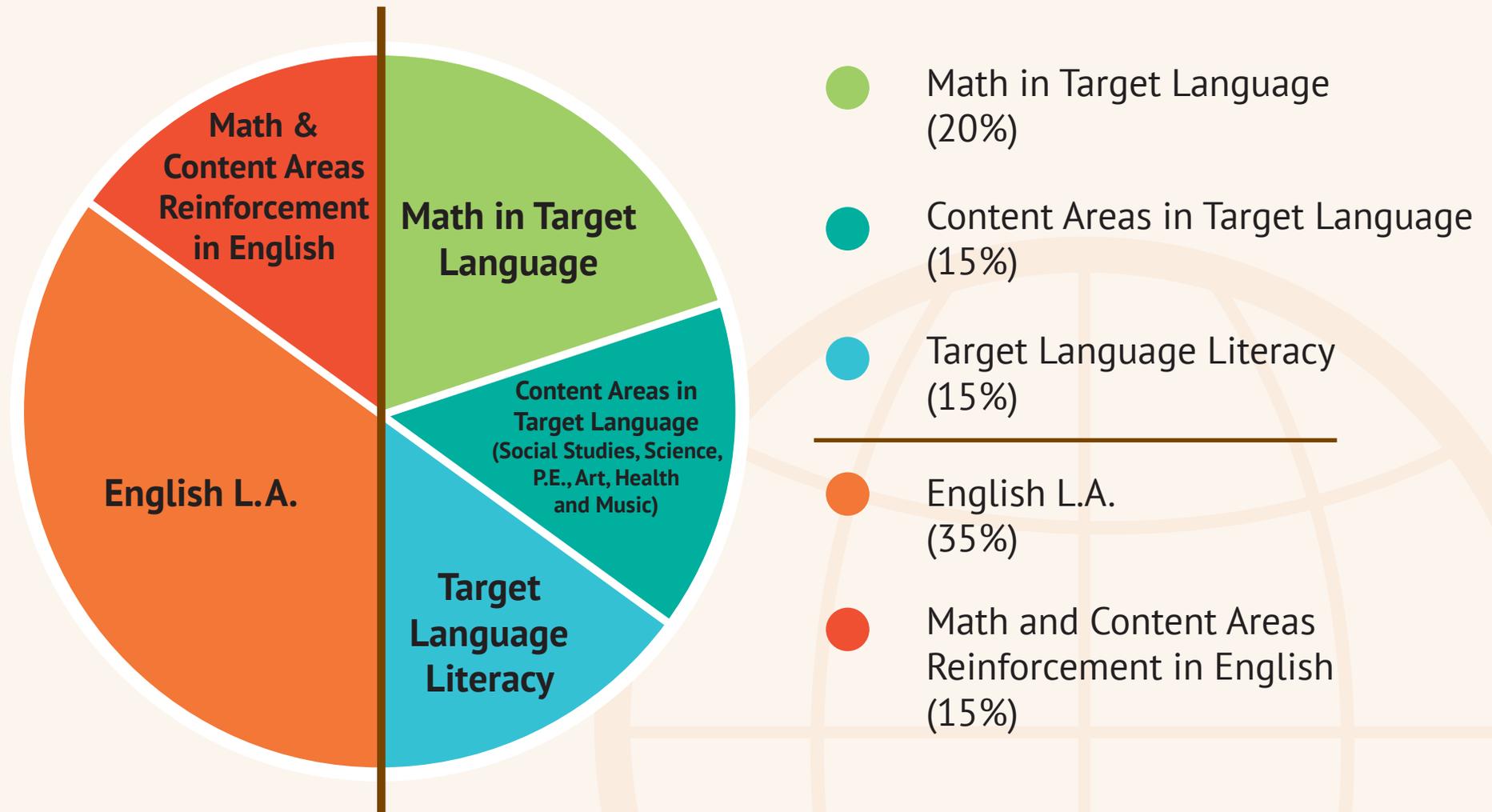
Rocky Mountain Elementary	55 South 500 East Street, Lindon, UT 84042	801-610-8117	Alpine
Parkside Elementary	495 East 5175 South, Murray, UT 84107	801-264-7434	Murray
Lakeview Elementary	2899 West 1390 North, Provo, UT 84601	801-374-4990	Provo

School & Language**Address****Phone number****District****Spanish - 40**

Cherry Hill Elementary	250 East 1650 South, Orem, UT 84097	801-227-8710	Alpine
Harvest Elementary	2105 N Providence Drive, Saratoga Springs, UT 84045	801-610-8709	Alpine
Lake View Elementary	851 South 200 West Brigham City, UT 84302	435-734-4922	Box Elder
Alta View Elementary	10333 S. Crocus Street, Sandy, UT 84094	801-826-7600	Canyons
Midvale Elementary	362 West Center Street, Midvale, UT 84047	801-826-8725	Canyons
Silver Mesa Elementary	8920 South 1700 East, Sandy, UT 84093	801-826-9400	Canyons
American Leadership Academy	898 West 1100 South, Spanish Fork, UT 84660	801-794-2226	Charter
Eagle Bay Elementary	1933 West Clark Lane, Farmington, UT 84025	801-402-3800	Davis
Sand Springs Elementary	242 North 3200 West, Layton, UT 84041	801-402-3850	Davis
Buffalo Point Elementary	1924 South Doral Drive, Syracuse, UT 84075	801-402-8400	Davis

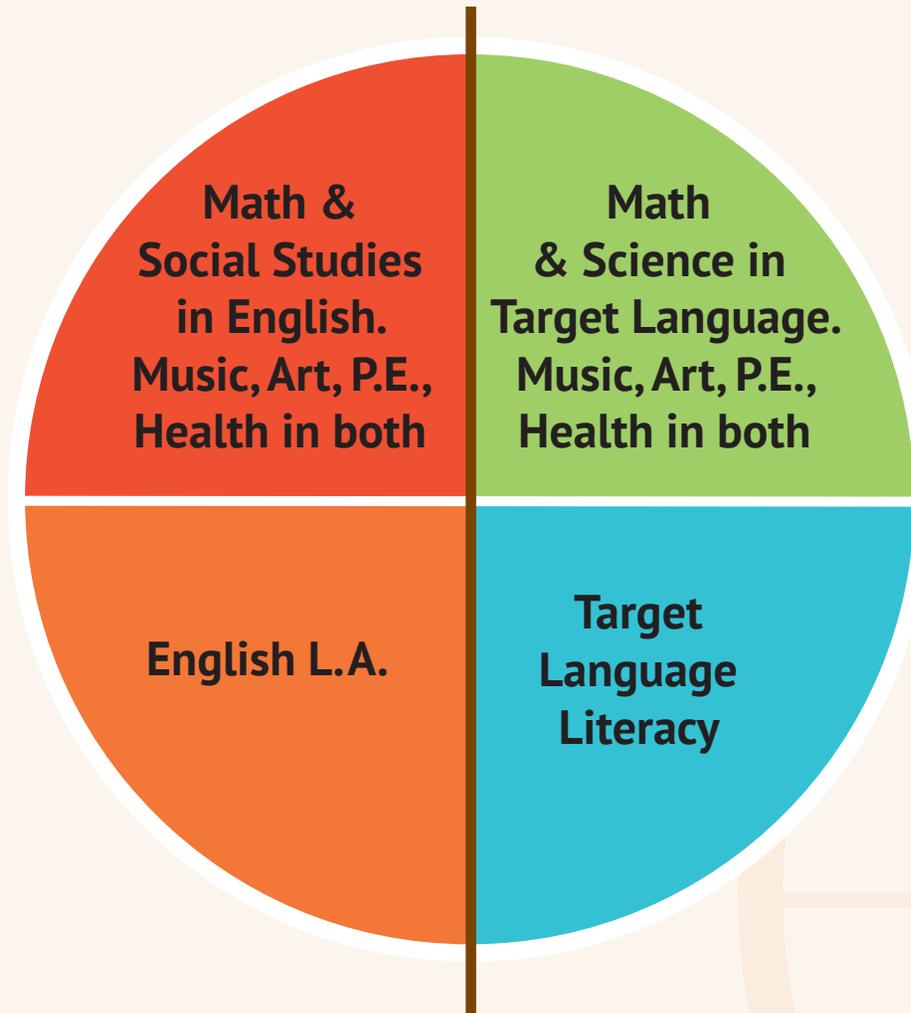
Farmington Jr High	150 South 200 West, Farmington, Ut 84025	801-402-6900	Davis
Legacy Jr. High	411 North 3200 West, Layton, Ut 84041	801-402-4700	Davis
Vista Elementary	4925 South 2200 West, Taylorsville,UT 84118	385-646-5067	Granite
William Penn Elementary	1670 Siggard Drive, Holladay, UT 84106	385-646-4960	Granite
Mill Creek Elementary	3761 South 1100 East, Salt Lake City, UT 84106	385-646-4912	Granite
Valley Crest Elementary	5240 West 3100 South, West Valley City, UT 84120	385-646-5061	Granite
Monroe Elementary	4450 West 3100 South, West Valley City, UT 84120	385-646-4918	Granite
West Kearns Elementary	4900 South 4620 West, Salt Lake City, UT 84118	385-646-5073	Granite(GT)
East Elementary	255 East College Ave., Cedar City, UT 84720	435-586-2840	Iron
Heartland Elementary	1451 West 7000 South, West Jordan, UT 84084	801-565-7533	Jordan
Majestic Elementary	7430 South Redwood Road, West Jordan 84084	801-565-7458	Jordan
Riverside Elementary	1220 West 8737 South, West Jordan, UT 84088	801-565-7484	Jordan
Herriman Elementary	13170 South 6000 West, Herriman, UT 84096	801-446-3215	Jordan
Welby Elementary	4130 West 9580 South, South Jordan, UT 84095	801-280-1456	Jordan
Horizon Elementary	5180 South 700 West, Murray, UT 84123	801-264-7420	Murray
Westside Elementary	740 West Center Street, Springville, UT 84663	801-489-2800	Nebo
Bonneville Elementary	490 Gramercy Ave., Ogden, UT 84057	801-737-8900	Ogden
T.O. Smith Elementary	3295 Gramercy Ave., Ogden, UT 84403	801-737-8350	Ogden
Parley's Park Elementary	4900 N. Silver Springs Drive, Park City UT 84098	435-645-5620	Park City
McPolin Elementary	2270 Kearns Blvd., Park City, UT 84060	435-645-5630	Park City
Canyon Crest Elementary	4664 North Canyon Road, Provo, UT 84604	801-221-9873	Provo
Timpanogos Elementary	449 North 500 West, Provo, UT 84601	801-347-4955	Provo
Emerson Elementary	1017 E Harrison Ave, Salt Lake City, UT 84105	801-481-4819	Salt Lake(GT)
Moutain View Elementary	1380 S Navajo, Salt Lake City, UT 84104	801-974-8315	Salt Lake
South Summit Elementary	535 East 300 South, Kamas, UT 84036	435-783-4318	South Summit
Heber Valley Elementary	600 West 730 South, Heber City, UT 84032	435-654-0112	Wasatch
Dixie Sun Elementary	1795 West 1230 North, St. George UT, 84770	435-673-8978	Washington County
Hurricane Elementary	948 West, 325 North, Hurricane, UT 84737	435-635-4668	Washington County
Freedom Elementary	4555 West 5500 South, Hooper, UT 84315	801-452-4100	Weber
Majestic Elementary	425 West 2550 North, Ogden, UT 84414	801-452-4260	Weber

Dual Language Immersion Instructional Time : Grades 1-3



UTAH DUAL LANGUAGE IMMERSION
Providing a world of opportunities for students.

Dual Language Immersion Instructional Time : Grades 4-5



- Math & Science in Target Language. Music, Art, P.E., Health in both (25%)
- Target Language Literacy (25%)

- English L.A. (25%)
- Math & Social Studies in English. Music, Art, P.E., Health in both (25%)



UTAH DUAL LANGUAGE IMMERSION
Providing a world of opportunities for students.

Utah Dual Language Immersion Model Secondary Course Sequencing

To satisfy the requirements of the Utah Secondary Dual Language Immersion Model, students must enroll in 2 courses in grades 7-9, which are taught entirely in the immersion language (Chinese, French, Spanish, or Portuguese). Students will have the option to take the AP exam as a 9th grader. Upper division university courses will be offered in grades 10-12 to students who pass the AP exam.

Students will have the option to start a 3rd or 4th language in grades 10-12.



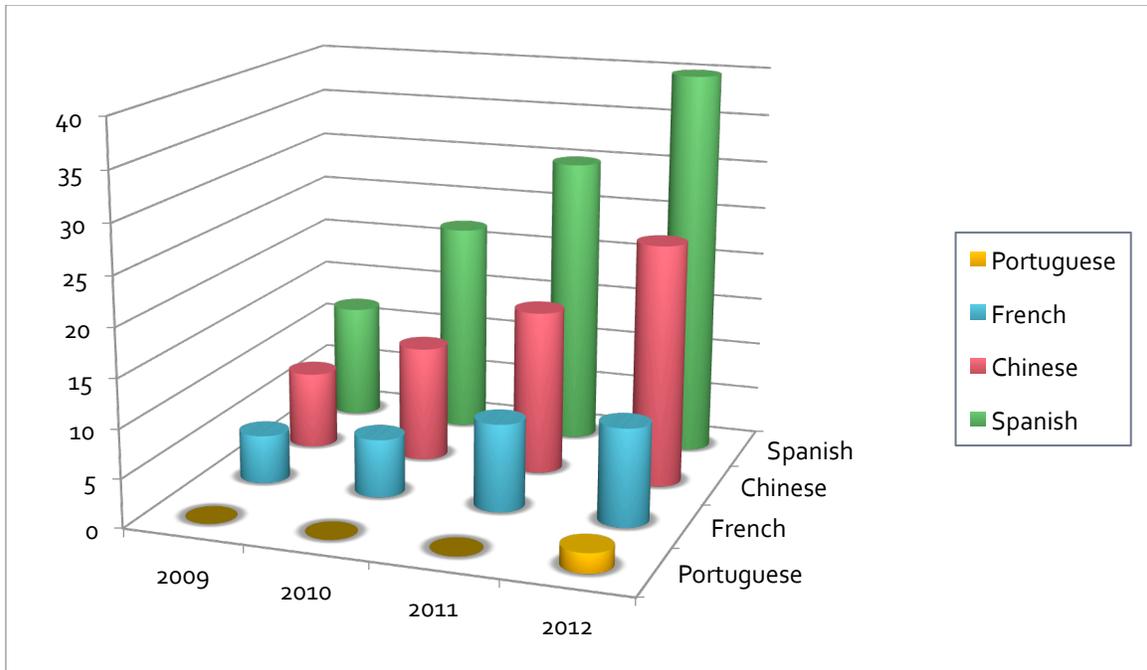
World Languages 3 Honors = Chinese 3 Honors, French 3 Honors, Spanish 3 Honors, Portuguese 3 Honors

World Languages 4 Honors = Chinese 4 Honors, French 4 Honors, Spanish 4 Honors, Portuguese 3 Honors

World Languages AP = Chinese AP, French AP, Spanish AP, Portuguese AP



UTAH DUAL LANGUAGE IMMERSION
Providing a world of opportunities for students.



Utah Dual Language Immersion Programs

2009 – 5 French DLI Programs
 8 Chinese DLI Programs
 12 Spanish DLI Programs

2010 – 6 French DLI Programs
 12 Chinese DLI Programs
 22 Spanish DLI Programs

2011 – 9 French DLI Programs
 17 Chinese DLI Programs
 30 Spanish DLI Programs

2012 – 2 Portuguese DLI Programs
 10 French DLI Programs
 25 Chinese DLI Programs
 40 Spanish DLI Programs

1st grade

	Math End of Year	Language Arts CRTs
ID#		
22	94%	83%
21	93%	82%
33	88%	59%
23	90%	79%
20	90%	68%
Dual Language	94%	83%
Non-DLI	89%	69%
11	95%	94%
13	92%	88%
14	86%	88%
12	84%	78%
Dual Language	94%	87%
Non-DLI	85%	83%
Dual Language Classes	94%	85%
Non-DLI Classes	87%	76%

2nd grade

	Math CRTs	Language Arts CRTs
ID#		
25	74%	85%
26	77%	85%
14	77%	84%
24	78%	76%
Dual Language	76%	85%
Non-DLI	78%	80%
21	85%	89%
23	87%	81%
24	72%	76%
22	77%	79%
Dual Language	80%	81%
Non-DLI	75%	78%
Dual Language Classes	78%	83%
Non-DLI Classes	76%	79%

3rd grade

	Math CRTs	Language Arts CRTs
ID#		
28	74%	86%
27	74%	81%
29	68%	76%
30	73%	76%
Dual Language	74%	84%
Non-DLI	71%	76%
33	82%	87%
32	72%	84%
31	73%	76%
34	83%	85%
Dual Language	78%	83%
Non-DLI	77%	81%
Dual Language Classes	76%	83%
Non-DLI Classes	74%	78%

Wyoming Curriculum Directors Association

President- Jeanie Barent 307-684-9571
President Elect- Scott James 307-322-1518
Secretary- Scott James 307-322-1518
Treasurer- Teri Turner 307-876-2576

Regional Representatives:
Northeast Region: Mike Bond & Teresa Brown
Southwest Region: Sheryl Wilson & Kim Dolezal
Northwest Region: RJ Kost & Teri Turner
Southeast Region: Roger Humphrey & Scott James

August 14, 2012

State Board of Education
2300 Capitol Avenue
Hathaway Building, 2nd Floor
Cheyenne, WY 82002-0050



Dear Joe Reichardt and the State Board of Education:

This letter is in regard to accountability changes and the revisions relevant to the Body of Evidence requirement in Chapter 31, and the impact these changes may have on students, parents, teachers and administrators in Wyoming. As the President of the Wyoming Curriculum Directors Association, I am requesting guidance and direction in understanding the implications of the changes so that I may share this information with my peers and in my district. Some questions that are being asked by curriculum directors around the state include the following:

- Now that the words "Body of Evidence" have been replaced with the word "Evidence," can districts use any method they choose to determine proficiency for graduation as long as it meets the criteria of alignment, consistency, fairness, standard-setting and accountability?
- Does the SBE recommend that districts keep the Body of Evidence assessments in place acknowledging they are not aligned with Chapter 31 state standards?
- Are districts still required to submit the WDE-663 form given the changes in Body of Evidence requirements?
- If districts change their assessment systems to be aligned with the new standards, how will they submit those changes to the SBE or WDE for approval? By what standard and by whom will the assessment systems be judged?
- Do districts need to revise their current graduation requirement policies to be in compliance with the new Chapter 31? If so, do they need to do this by the 2013 graduation?
- Will there be a transition period for students before they are required to show evidence of being proficient on the new health, language arts and math standards? (What will this mean for 2013 graduates? 2014 graduates? 2015 and beyond graduates?)
- What will peer review for new assessment systems look like? What type of training will be provided for districts?

- Does the SBE anticipate going in a new direction concerning graduation requirements such as a revised Body of Evidence process or one of the common core consortium testing systems such as Smarter Balance or Partnership for Assessment of Readiness for College and Careers (PARCC)?
- Is the SBE considering passing emergency rules to give guidance to districts concerning graduation requirements?
- For Spring 2013 for students in Grade 11, will the state use PAWS or the ACT? Along with that, as we adopt the new Common Core we realize that it is not aligned to the ACT. Do curriculum directors help teachers align to the Common Core, ACT or both?
- With the new state standards in language arts and mathematics there are no proficiency standards. When can we expect these?
- What support will there be for districts during this transition period?

In conclusion, many curriculum directors, administrators and teachers are waiting for direction from the state level, while a few are venturing forward with some trepidation that their work will be for naught. With the focus on providing *all* Wyoming students a world-class education that is unparalleled, any guidance and assistance the State Board of Education can provide will be very much appreciated.

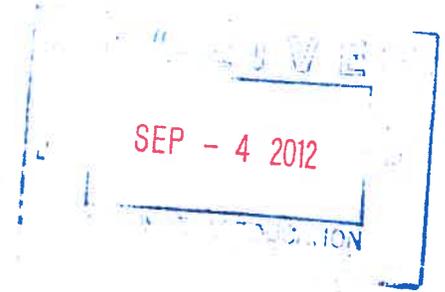
Respectfully,

A handwritten signature in black ink that reads "Jeanie M. Barent". The signature is written in a cursive, flowing style.

Dr. Jeanie M. Barent, WCDA President



Wyoming Association of School Administrators



August 31, 2012

Gerald 'Joe' Reichardt, Chairman
Wyoming State Board of Education
2 Holloway Road
Wheatland, WY 82201

Dear Mr. Reichardt:

I am writing this letter as the President of the Wyoming Association of School Administrators in an effort to express concerns and seek some direction after the approval of Chapter 31.

I believe that with the elimination of the BOE, districts are allowed to determine any method of their choosing to establish graduation proficiency. If this is affirmative, please discuss the appropriate process for peer review that districts should enact if they would choose something other than BOE.

Significant changes in some of the new health, language arts, and math standards may necessitate some sort of transition period for students prior to a proficiency of evidence requirement. Please advise on what the State Board of Education sees as the timeline for when this proficiency of evidence requirement for graduates might be enacted. If districts plan to change their assessment systems to align with the new standards, please explain the submission process to the State Board of Education or the Wyoming Department of Education for approval.

Current district graduation requirement policies may need to be revised to comply with the changes in Chapter 31. In the meantime, would the State Board of Education consider implementing emergency rules so as to provide districts direction on graduation requirements? Is the State Board considering establishing a new approach concerning graduation requirements, i.e., a common core consortium testing system, end of course test, a high stakes test, or another BOE process revision?

I look forward to your responses and wish to express my gratitude for all you do to serve K-12 public education in our great state.

Respectfully,

Dave Barker, President
Wyoming Association of School Administrators

cc: Cindy Hill, State Superintendent of Public Instruction



WYOMING

State Board of Education

Hathaway Building, 2nd Floor
2300 Capitol Avenue
Cheyenne, Wyoming 82002-0050
(307) 777-6213 • (307) 777-6234 FAX

MEMORANDUM

GERALD REICHARDT
Chair, Wheatland

RON MICHELI
Vice Chair, Fort Bridger

PETE GOSAR
Treasurer, Laramie

MATT GARLAND
Gillette

SUE BELISH
Ranchester

KATHY COON
Lusk

DANA MANN-TAVEGIA
Osage

HUGH HAGEMAN
Fort Laramie

SCOTTY RATLIFF
Riverton

WALT WILCOX
Casper

BELENDIA WILSON
Thermopolis

CINDY HILL
State Superintendent

JOHN MASTERS
Board Liaison

CHELSIE BAILEY
Executive Assistant

TO: Cindy Hill, State Superintendent

FROM: Joe Reichardt, Chair

DATE: August 30, 2012

SUBJECT: Wyoming Curriculum Director's letter and questions

Thank you for addressing the issue of the Chapter 31 rules during the State Board teleconference yesterday. The board is interested in keeping apprised of the progress being made in providing guidance and direction to districts as they work through the implications of the changes in the rules. It is important to provide this immediate feedback to districts as they attempt to work under the current rules; however, the board wishes to have other "big picture" issues implied by the rules discussed as the end-of-course study is completed and the future of consortium assessments is contemplated.

You received a copy of the letter from Jeanie Barent, president of the Wyoming Curriculum Directors Association, regarding their concerns about the changes in the Chapter 31 rules. In preparing the proposed guidance for districts that will be presented to the State Board during our September 26 and 27, 2012 meeting, the board wants to ensure the WDE will address all the concerns brought to our attention in Jeanie's letter. The WCDA specifically requests assistance as districts plan revisions to their assessment systems.

Thanks again for the study you and your staff are conducting about the implications of these Chapter 31 rules changes. We look forward to reviewing your recommendations in September.

**ACTION SUMMARY SHEET
STATE BOARD OF VOCATIONAL EDUCATION**

DATE: September 27, 2012

ISSUE: Approval of Agenda

BACKGROUND:

SUGGESTED MOTION/RECOMMENDATION:

To approve the Agenda for the September 27, 2012 meeting

SUPPORTING INFORMATION ATTACHED:

- Agenda

PREPARED BY: *Chelsie Bailey*
Chelsie Bailey, Executive Assistant

APPROVED BY: _____
John Masters
State Board of Education Liaison

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

COMMENTS:

State Board of Vocational Education

September 27, 2012
8:30 a.m. – 9:30 a.m.
Snow King Resort
Jackson, Wyoming

A G E N D A

1.	Call to Order – Joe Reichardt Pledge of Allegiance		Action	8:30 a.m.
2.	Roll Call – Chelsie Bailey			
3.	Approval of Agenda – Joe Reichardt	Tab D	Action	
4.	Approval of Minutes – Joe Reichardt Minutes from April 27, 2012	Tab E	Action	
5.	Update on Dual/Concurrent Enrollments- Teri Wigert & Jim Rose	Tab F	Information	8:40 a.m.
6.	Perkins Reauthorization Update- Teri Wigert & Guy Jackson	Tab G	Information	9:10 a.m.
7.	Adjournment – Joe Reichardt			9:25 a.m.

**ACTION SUMMARY SHEET
STATE BOARD OF VOCATIONAL EDUCATION**

DATE: September 27, 2012

ISSUE: Approval of Minutes

BACKGROUND:

SUGGESTED MOTION/RECOMMENDATION:

To approve the minutes from the April 27, 2012 meeting.

SUPPORTING INFORMATION ATTACHED:

- Minutes from April 27, 2012

PREPARED BY: *Chelsie Bailey*
Chelsie Bailey, Executive Assistant

APPROVED BY: _____
John Masters
State Board of Education Liaison

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

COMMENTS:

WYOMING STATE BOARD OF VOCATIONAL EDUCATION

April 27, 2012

Holiday Inn Express

Gillette, Wyoming

Wyoming State Board of Vocational Education members present: Ron Micheli, Joe Reichardt, Scotty Ratliff, Kathy Coon, Cindy Hill, Sue Belish, Pete Gosar, Belenda Willson, Walt Wilcox, Dana Mann-Tavegia, Matt Garland and Hugh Hageman

Members absent: Jim Rose

Also present: Teri Wigert, Wyoming Department of Education (WDE); John Masters, WDE; Chelsie Bailey, WDE; Julie Magee, WDE; Mary Kay Hill, Governor's Office; Laurel Ballard, ETS; Ruth Sommers, LSO; Mike Flicek, LSO; Nancy Cerroni, Big Horn CSD #2; David Snyder, Fremont CSD #21; Dr. Richard McClements, Fremont CSD #21 and Mackenzie Williams, Attorney General's Office (AG)

CALL TO ORDER

Chairman Joe Reichardt called the meeting to order at 8:30 a.m.

Chelsie Bailey conducted roll call and established that a quorum was present.

APPROVAL OF AGENDA

Ron Micheli moved to approve the agenda as presented seconded by Dana Mann Tavegia; the motion carried.

APPROVAL OF MINUTES

Minutes from the November 17, 2011, State Board of Vocational Education meeting were presented for approval.

Sue Belish moved that the minutes be approved, seconded by Walt Wilcox; the motion carried.

SECONDARY TO POST-SECONDARY ALIGNMENT

Teri Wigert notified the Board that Guy Jackson would not assist with her presentations at the meetings.

Teri Wigert addressed the motion that was made at the November 17 meeting. Ms. Wigert referred to the statutes that were provided in the packet, which include both state and federal laws. The State Board of Education is responsible for approving the Career and Technical education standards; there are six different standards.

The standards committees are appointed by the standards team at the Wyoming Department of Education (WDE), which is lead by Julie Magee. There is a constructive list of suggestions of representation around the state for all content areas; the committees will include about 30-35 people, and at this time they have not been appointed.

Teri Wigert also added that at the national level, the state directors of career and technical education have begun looking at common standards. With the State Superintendent's authorization, the WDE is participating in the work. Teri Wigert wanted to clarify to the Board that the Department has not joined a consortium.

Teri Wigert reviewed the rest of the statutes with the Board.

The second issue addressed by Ms. Wigert is how students get from "Point A to Point B" in transition from secondary to post-secondary education. She provided the Board with chapters from the Wyoming CTE strategic plan, in particular Chapter 6 on "Articulation", and discussed the process between districts and colleges. Also provided in the packet were examples of an articulation plan.

Sue Belish requested that Teri Wigert and her team put together a list of articulations for each school district to see if there are gaps in the smaller districts around the state.

SCIENCE, TECHNOLOGY, ENGINEERING AND MATH (STEM)

STEM is a Career and Technical education initiative. STEM stands for science, technology, engineering and math. A STEM summit lead by the P-16 council was held the first week in February of this year. Teri Wigert reviewed the following from the packet: the Governor's letter regarding the STEM disciplines, a brief summary of the STEM initiative, list of attendees of the summit, and presentations from presenters. The next step for the STEM initiative is to bring CTE teachers and science teachers together this summer to talk about and work together on pre standards. Teri Wigert invites the Board to participate in the summer work.

CARL D. PERKINS PLAN REVISIONS AND BUDGET

Teri Wigert notified the Board that she had communicated with the Chair, Joe Reichardt, that the State Board of Vocational Education is the eligible agency to receive federal funds and the Board must submit official documentation required by the U.S. Department of Education. Each year Wyoming submits a letter that transmits changes in the strategic plan and a budget plan. There will be no changes this year. Teri Wigert reviewed with the Board the letter that was sent to the U.S. Department of Education.

Teri Wigert will return to the Board if the state administrative match is challenged due to 8% budget cuts.

Teri Wigert presented to the Board a document that lists the declining enrollment in Career and Technical Education. Only about 5,000 students are taking three courses in CTE and fewer are taking exploratory courses.

The State Board of Vocational Education adjourned at 10:17 a.m.

The next Wyoming State Board of Vocational Education meeting will be June 12, 2012

U.S. DEPARTMENT OF EDUCATION

Investing in America's Future
*A Blueprint for Transforming
Career and Technical Education*



Investing in America's Future
*A Blueprint for Transforming
Career and Technical Education*

**UNITED STATES DEPARTMENT OF EDUCATION
Office of Vocational and Adult Education**

April 2012

U.S. Department of Education

Arne Duncan

Secretary

Office of Vocational and Adult Education

Brenda Dann-Messier

Assistant Secretary

April 2012

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To request copies of this report,

write to: Bertha Crockett, U.S. Department of Education, Office of Vocational and Adult Education, 550 12th St. S.W., Potomac Center Plaza, Rm. 11-081, Washington, DC 20202-7240;

or **fax** your request to: 202-245-7170;

or **email** your request to: Bertha.Crockett@ed.gov. Those who use a telecommunications device for the deaf (TDD) or teletypewriter (TTY) should call 1-877-576-7734. If 877 service is not yet available in your area, call 1-800 872-5327 (1-800-USA-LEARN) or 1-800-437-0833 (TTY).

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THE SECRETARY OF EDUCATION
WASHINGTON, DC 20202

Dear Colleagues,

In his 2012 State of the Union Address, President Obama laid out a blueprint for an economy that is built to last. The President's plan affirms that the strength of the American economy is inextricably linked to the strength of America's education system. Particularly in times of economic challenge, American employers need a workforce that is skilled, adaptable, creative, and equipped for success in the global marketplace. And our students need a more rigorous, better tailored education to acquire the skills they need to compete, to follow a clear pathway into the middle class and to continue to prosper.

To educate our way to a better economy, educators, public officials, and policymakers must ensure that every student in our country graduates from high school prepared for college and a successful career. Yet that is not enough. If America is to once again have the highest proportion of college graduates in the world by the end of the decade, every American should have access to at least one year of higher education or postsecondary training at an affordable cost. A world-class education system that provides high-quality job-training opportunities will reduce skills shortages, spur business growth, encourage new investment and hiring, spark innovation, and promote continued economic growth.

These educational goals are central to rebuilding our economy and securing a brighter future for our nation, and our career and technical education (CTE) system plays a critical part in accomplishing them. With \$1.14 billion in funding for Fiscal Year 2012, the *Carl D. Perkins Career and Technical Education Act of 2006* (*Perkins Act* or *Act*) represents a considerable investment in career readiness. *Perkins Act* programs leverage other components of a broader education and career pathways system that includes K-12 and postsecondary education, workforce investment and job training, adult education, and health and human services. They help create an American economy built to last.

At present, however, the *Perkins Act* is in need of reform and updating. The 2006 *Act* took modest yet important steps to improve the quality of CTE programs. But it did not go far enough to address the overarching educational and economic needs of youths and adults preparing to participate in the knowledge-based, global marketplace of the 21st century.

Our federal investment in CTE must be dramatically reshaped to fulfill its potential to prepare all students, regardless of their backgrounds or circumstances, for further education and cutting-edge careers. The need to strengthen and elevate CTE is urgent. This is a not a time to tinker with CTE—it is a time to transform it. To help accomplish this transformation, this blueprint sets forth the elements of a rigorous, relevant, and results-driven CTE program through reauthorization of the *Perkins Act*.

A handwritten signature in black ink, appearing to read "Arne Duncan".

U.S. SECRETARY OF EDUCATION

Perkins Reauthorization

Introduction

President Obama has laid out a blueprint for an economy that is built to last—an economy built on American manufacturing, American energy, skills for American workers, and a renewal of American values. The President believes that education is a cornerstone of building such an economy.

Today, postsecondary education and training are prerequisites for jobs of the new economy. Of the 30 fastest-growing occupations, about two-thirds require postsecondary education or training. With the average earnings of college graduates at a level that is about twice as high as that of workers with only a high school diploma, postsecondary education and training are now the clearest pathways into the middle class and future prosperity, and central to rebuilding our economy and securing a brighter future for all.

To that end, President Obama set a new goal for the country, that by 2020, America would once again have the highest proportion of college graduates in the world. The President also has challenged every American to commit to at least one year of higher education or postsecondary training.

To achieve the President's goals, we must ensure that every student in our country graduates from high school or its equivalent prepared for both college and a successful career. And we must ensure that more of our nation's young people and adults can afford, access, and complete postsecondary education and training to earn an industry certification or licensure *and* a postsecondary certificate or a degree.

Unfortunately, our education and training systems have failed too many of our students and businesses. In higher education, the U.S. is being outpaced by other countries. While the U.S. ranks 9th in the world in the proportion of young adults enrolled in college, we have fallen to 16th in the world in our share of certificates and degrees awarded to adults ages 25–34—lagging behind South Korea, Canada, Japan, and others. We also suffer from a college attainment gap, as high school graduates from the wealthiest families in our nation are almost certain to continue on to higher education, while just over half of our high school graduates in the poorest quarter of families attend college. And while more than half of college students graduate within six years, the completion rate for students from low-income families is approximately 25 percent. This inequity only fuels the growing income divide in this nation.

Too many of our businesses report that they are having trouble finding workers for skilled jobs in fields such as healthcare, technology, and advanced manufacturing, even in times like today when unemployment is declining but still high. Strengthening all aspects of our education system and creating high-quality job-training opportunities are necessary to further our economic prosperity as a nation and to keep the American promise alive for all of our students.

Transforming career and technical education (CTE) is essential to this process. CTE represents a critical investment in our future. It offers students opportunities for career awareness and preparation by providing them with the academic and technical knowledge and work-related skills necessary to be successful in postsecondary education, training, and employment. Employers turn to CTE as an important source of talent that they need to fill skilled positions within their companies.

Effective, high-quality CTE programs are aligned not only with college- and career-readiness standards, but also with the needs of employers, industry, and labor. They provide students with a curriculum based on integrated academic and technical content and strong employability skills. And they provide work-based learning opportunities that enable students to connect what they are learning to real-life career scenarios and choices.

The students participating in effective CTE programs graduate with industry certifications or licenses and postsecondary certificates or degrees that employers use to make hiring and promotion decisions. These students are positioned to become the country's next leaders and entrepreneurs. And they are empowered to pursue future schooling and training as their educational and career needs evolve.

However, students, parents, teachers, and employers know that there are too few high-quality CTE programs in existence today. *The Carl D. Perkins Career and Technical Education Act of 2006* (*Perkins Act*, *Perkins*, or *Act*) introduced important changes in federal support for CTE, such as in programs of study. These changes helped to improve the learning experiences of students but did not go far enough to systemically create better outcomes for students and employers competing in a 21st-century global economy.

The Administration's blueprint for a reauthorized *Perkins Act* would transform CTE and usher in a new era of rigorous, relevant, and results-driven CTE shaped by **four core principles**:

- (1) Alignment.** Effective alignment between high-quality CTE programs and labor market needs to equip students with 21st-century skills and prepare them for in-demand occupations in high-growth industry sectors;
- (2) Collaboration.** Strong collaborations among secondary and postsecondary institutions, employers, and industry partners to improve the quality of CTE programs;
- (3) Accountability.** Meaningful accountability for improving academic outcomes and building technical and employability skills in CTE programs for all students, based upon common definitions and clear metrics for performance; and
- (4) Innovation.** Increased emphasis on innovation supported by systemic reform of state policies and practices to support CTE implementation of effective practices at the local level.

The Administration's proposal reflects a commitment to promoting equity and quality across these alignment, collaboration, accountability, and innovation efforts in order to ensure that more students have access to high-quality CTE programs. This commitment stems from the fact that the everyday educational experiences of women, students of color, students from low-income families, and students with disabilities, both in secondary and postsecondary CTE programs, violate the belief in equity at the heart of the American promise. The nation cannot lead the world in college graduates unless we extend educational opportunity to everyone—fairly and equitably. The Administration's proposal would use a combination of technical assistance, competition, and a system of structured rewards to ensure that more students, regardless of backgrounds or circumstances, have access to high-quality CTE programs.

Below is an overview of the Administration’s proposed reforms, organized by principle, with a brief description of the current *Act’s* shortcomings.

Overview of the Existing *Perkins Act* and Proposed Reforms

The Current Act	Principle of Reform	Proposed Reforms
<p>Limited provisions to encourage high-quality CTE programs</p> <p>No requirements for states to work with workforce and economic development agencies to identify areas of focus for CTE program</p>	<p>Effective ALIGNMENT between CTE and labor market needs to equip students with 21st-century skills and prepare them for in-demand occupations in high-growth industry sectors</p>	<ul style="list-style-type: none"> • Clear Expectations for High-quality Programming: Provide states better guidance on establishing high-quality programs • A More Active Role for States: Empower states to identify the in-demand occupations in high-growth industry sectors on which CTE programs should focus
<p>Separate funding for secondary and postsecondary institutions</p> <p>No clear ways for employers, industry, and labor to engage in program and curriculum design and implementation</p> <p>No leveraging of private in-kind and cash resources to share program expenses</p>	<p>Strong COLLABORATION among secondary and postsecondary institutions, employers, and industry partners to improve the quality of CTE programs</p>	<ul style="list-style-type: none"> • Consortia Funding: Establish consortia to ensure collaboration among secondary and postsecondary institutions • Private-sector Match: Use a match contribution to strengthen the participation of employers, industry, and labor partners in program design and execution
<p>Funds distributed by states to local recipients by formula</p> <p>States define participation and accountability measures differently</p> <p>No mechanism to reward high-performing local recipients for success</p>	<p>Meaningful ACCOUNTABILITY for improving academic outcomes and building technical and employability skills in CTE programs, based upon common definitions and clear metrics for performance</p>	<ul style="list-style-type: none"> • Within-state Competitions to Distribute Funds to Consortia: Provide states increased autonomy to select and fund high-quality programs responsive to regional labor-market needs

The Current Act	Principle of Reform	Proposed Reforms
<p>Funds distributed by states to local recipients by formula</p> <p>States define participation and accountability measures differently</p> <p>No mechanism to reward high-performing local recipients for success</p>	<p>Meaningful ACCOUNTABILITY for improving academic outcomes and building technical and employability skills in CTE programs, based upon common definitions and clear metrics for performance</p>	<ul style="list-style-type: none"> • Common Definitions to Strengthen Data Systems and Close Equity Gaps for Participation: Use uniform definitions for participation and performance indicators to create high-quality data systems that enable meaningful comparisons and identification of equity gaps • Incentives for High Performance: Incentivize and reward local recipients that exceed performance targets
<p>No clear identification of the state’s role in creating the conditions for high-quality CTE programs to thrive</p> <p>Formula funding that supports too many purposes and limited reserve funding to create performance and innovation incentives</p>	<p>Increased emphasis on INNOVATION supported by systemic reform of state policies and practices to support CTE implementation of effective practices at the local level</p>	<ul style="list-style-type: none"> • State Conditions for Success and Innovation: Ensure states have in place the policies and systems to support programs at the local level • A Competitive CTE Innovation and Transformation Fund: Develop and implement new practices and models at the local level and support systemic reforms at the state level

Effective Alignment Between CTE and Labor Market Needs

Effective alignment is needed between what is taught in CTE programs and the skills the labor market needs. To form high-quality CTE programs, state and local leaders must work closely together, and with employers, to ensure that CTE programs are responsive to labor market demands.

The Administration's proposal defines clearly the elements of a rigorous, relevant, and results-driven CTE program. States would be asked to collaborate with workforce and economic development agencies to identify the in-demand occupations and high-growth industry sectors on which local CTE programs will focus.

Characteristics of Rigorous, Relevant, and Results-Driven CTE Programs

High-quality CTE programs consistently offer rigorous, blended college-preparatory and career-oriented instruction to produce strong results in their students. The Administration's proposal specifies that CTE programs must offer a streamlined and structured sequence of courses that span secondary and postsecondary education, lead to an industry certification or license and a postsecondary certificate or degree, and enable graduates to gain employment in a high-growth industry upon program completion.

While CTE programs would be designed differently across the country, the Administration's proposal anticipates that these programs would share certain essential features. Secondary school teachers and college faculty would work together to teach integrated academic, career, and technical content that enables students to better grasp the material and that demonstrates connections to real-life career scenarios and choices.

Local education agencies (LEAs), postsecondary institutions, and employers would collaborate to offer students opportunities to participate in work-based learning and to accelerate completion of their studies through dual or concurrent credits.

Programs would use technology to increase access to high-quality learning opportunities, particularly for students in rural or remote areas. These core program features would set a higher bar for the expectations and outcomes of CTE programs. Rather than promote one particular educational or training model, they would provide state and local administrators with sufficient flexibility to design programs that fit their labor-market needs and that lead students to successful outcomes. These features also would encourage state and local leaders to build on recent work on programs of study, expand career academies, or pursue other promising or proven approaches and models of service delivery.



A More Active Role for States

America's CTE system cannot be transformed without strong leadership at the state level, but the current *Act* does not require states to systemically identify the economic needs and priorities of the state, regional, or local economies when making decisions on which CTE programs should be funded using *Perkins* dollars. As a result, local program administrators, business and industry, students and their parents, and other key stakeholders cannot make informed decisions on which programs to support or enter.

The Administration's proposal seeks to change this reality by creating a new role for states in determining which types of CTE programs should be funded. In collaboration with its workforce and economic development agencies, each state would identify in-demand occupations in high-growth industry sectors on which CTE programs in their region would focus. States then would disseminate this information to local CTE administrators to ensure that programs are responsive to labor-market needs and aligned with regional priorities for economic growth. States also would share this information with students and parents so that they are well-informed about programs and career options.

Increasing Secondary School Teacher and College Faculty Effectiveness

Successful CTE programs have great teachers and faculty who enhance student learning outcomes and achievement. Under the Administration's reauthorization proposal, states would be encouraged to enhance their recruitment, professional development, and evaluation systems for CTE educators, for example, by developing talented teachers and faculty through alternative licensing policies that support mid-career professionals in becoming CTE teachers. In collaboration with industry associations, states also could innovate to ensure that CTE teachers and faculty have opportunities to refresh their knowledge of industry and of effective instructional practices for students of diverse backgrounds and needs, including English learners and students with disabilities. Finally, states would be encouraged to integrate CTE teachers and faculty into existing evaluation and support systems that assess their effectiveness and continually improve instruction using standards that are appropriate for the subjects that they teach.

Accelerated Completion Through Articulation Agreements

Articulation agreements between LEAs and postsecondary institutions make it possible for students to earn college credit while still finishing high school and avoid repeating course work when they enroll in college. These agreements are crucial to reducing the time and cost to complete a postsecondary certificate or degree. The Administration's proposal fundamentally would alter the current *Act*, which merely encourages articulation agreements, to require all consortia applying for state subgrants to establish or adopt secondary-postsecondary articulation agreements for each funded CTE program. State leaders would be expected to create statewide articulation agreements and encouraged to support policies that maximize the award of college credit to students who complete registered apprenticeship programs and industry-based training. When successfully implemented, articulation agreements provide opportunities for students to earn dual or concurrent credit, putting them on a fast track to an industry-recognized certification or licensure and postsecondary certificate or degree. By accelerating the pace at which they complete their studies, students can reach high-quality career goals with significantly less debt.

Not Just Skills for a Single Job but Skills for a Lifetime of Career and Community Success

CTE must lead students to develop the knowledge and skills required for success in college, career, and civic life. This includes mastery of the core academic content required of all students, as well as specialized knowledge that is specific to particular careers. It also includes learning and practicing a set of employability skills, such as the ability to work collaboratively in diverse teams, communicate effectively, think critically, solve problems, find and analyze information, ask challenging questions, and adapt to change, that make individuals more employable across specialty areas. These employability skills, or 21st-century skills, are the transferable skills that empower a person to seamlessly transition from one job or field to another for a lifetime of career success. These skills are also important in civic life because they empower individuals to understand and tackle pressing public problems in their communities. The Administration's proposal expects CTE programs to create opportunities for students to develop or strengthen these 21st-century skills, which would prepare students for postsecondary education and training, thriving careers, and active citizenship.

Strong Collaborations and Partnerships

Strong collaborations between secondary and postsecondary education institutions, employers, industry, and other partners are essential to creating high-quality CTE programs, and they result in numerous benefits. Academic, career, and technical content can be made more relevant, rigorous, and better aligned with the skills demanded by the labor market. Students can obtain college credit for course work completed in high school, apprenticeships, or industry-based training. Students also can obtain a clearer understanding of the requirements for entry into college programs, positioning them for seamless transitions into postsecondary education. Strong collaborations also enable resources, such as equipment and facility space, to be purchased and used more efficiently. And, finally, these collaborations support the creation of challenging, work-based learning opportunities that prepare students to graduate with an industry-recognized certification or licensure and a postsecondary certificate or degree and to be ready for employment in an in-demand occupation within a high-growth industry sector.

The Administration's proposal recognizes these benefits and fosters collaboration in two important ways. First, the proposal would permit only consortia of LEAs and postsecondary institutions and their partners to apply to states for *Perkins* funding. Second, the proposal would require states to meet a match requirement using private-sector resources in order to receive *Perkins* funding.

Collaboration Through Consortia

The current *Act* provides separate funding streams for LEAs and postsecondary institutions. Siloed funding discourages collaboration, makes alignment challenging, and weakens a student's ability to transition between secondary and postsecondary systems. The Administration's proposal would discontinue this approach by funding only consortia of LEAs, postsecondary institutions, and their partners.

A consortium could be based on geography, a sector, or other considerations, but at a minimum it must include LEAs—at least one of which serves a high concentration of students from low-income families—and postsecondary institutions that offer a two-year degree. Other partners in a consortium could be employers, industry associations, labor organizations, public and private workforce entities, entrepreneurial organizations, and other institutions, including research universities that play a critical role in economic development, Historically Black Colleges and Universities, and other Minority-Serving Institutions.

A Match Requirement to Solidify Collaboration Among Employers, Industry, and Labor

In CTE today, employers, industry, and labor partners—who have the best understanding of current, near-term, and future labor market needs—do not have adequate opportunities to participate in the design and implementation of CTE programs. This issue is in large part a result of the current *Act*, which does not set parameters for meaningful private-sector participation. It has led to inconsistent levels of involvement and a proliferation of CTE programs that are not aligned with existing and emerging in-demand occupations in high-growth industry sectors.

The Administration's proposal would address this issue by establishing a match requirement that states must meet to receive *Perkins* funds. The match requirement could be met with cash or in-kind resources, such as equipment, training facilities, entrepreneurial start-up capital, and technical assessments, to encourage collaboration between key stakeholders within a consortium.

Meaningful Accountability and Rewards Based Upon Clear Metrics

Effectively transforming CTE involves distributing *Perkins* funding to programs that produce desired outcomes for students. It also involves strengthening the accountability systems used by states to track progress so that performance data are collected, analyzed, and used to identify and address student results as well as equity gaps in educational attainment and employment between different groups of students. Finally, it involves rewarding local programs that produce exceptional results for their success.

In a bold departure from the current *Act*, the Administration's proposal would require states to distribute their *Perkins* funding to local consortia through within-state competitions, use uniformly defined participation and performance indicators to measure performance, and award performance-based funding to local programs that produce exceptional results, including success in closing participation and performance gaps between student subgroups.

Within-state Competitions to Ensure That All Students Can Access Rigorous, Relevant, and Results-driven CTE Programs

The current *Act* requires states to distribute their *Perkins* funding to local recipients by formula. By comparison, the Administration's proposal introduces competition as the basis for awarding funds within states to consortia. This approach would give states greater autonomy and flexibility to fund those CTE programs that are rigorous and responsive to their labor-market needs and regional priorities for economic growth.

Under this new approach, the members of a local consortium would apply for funding to develop CTE programs aligned with the high-growth industry sectors and in-demand occupations identified by the state. States then would award funding to the consortia that best demonstrate the ability to provide high-quality CTE programs for all students, regardless of backgrounds.

The switch from formula funding to within-state competitions marks a significant change in how *Perkins* funding is distributed. To ensure a smooth transition, the Administration's proposal would require states to provide appropriate up-front technical assistance to consortia to ensure equitable opportunities to access *Perkins* funds.

Common Definitions to Improve Student Outcomes and Close Equity Gaps

The current *Act* allows states to create their own definitions for participation and performance indicators. The inconsistencies and incompatibilities of these indicators hinder the objective, valid, and externally verifiable analysis of student and program outcomes. Under the Administration's proposal, states would use common definitions for participation and performance indicators. The definitions used for the performance indicators would be aligned with those under other federal laws, such as the *Elementary and Secondary Education Act of 1965 (ESEA)*, the *Workforce Investment Act of 1998 (WIA)*, and the *Higher Education Act of 1965 (HEA)*. Further, the proposal would require that states incorporate CTE data into their state longitudinal data systems.

Local consortia and states would be required to disaggregate program data to identify student participation and performance gaps by sex, race, ethnicity, socio-economic status, disability, and English proficiency at both the secondary and postsecondary levels. Local consortia and states also would be required to focus on closing identified gaps by developing improvement plans to bridge participation and outcome disparities where they exist.

Common participation and performance definitions would enable CTE educators, researchers, and other key stakeholders to compare and analyze *national* outcome data for CTE students for the first time ever. Disaggregated longitudinal data that are objective, valid, and externally verifiable would provide critical information for monitoring and analyzing student outcomes and closing gaps in participation, educational attainment, and employment between different groups of students. Federal and state leaders, armed with this improved data, would be better positioned to support CTE programs, teachers, and administrators at the local level.

Rural Students. The Administration's proposal would help to ensure that students in rural communities across the country have access to high-quality CTE programs. Rural students would be connected to postsecondary institutions through consortia, even if there are no postsecondary institutions near their rural communities. This would occur through increased use of distance learning technology, resources, and services that would foster success and improve the quality of CTE programs available to those students. New state requirements also would ensure that rural economic needs are considered in the creation of CTE programs.

Low-income Students. All too often, low-income students do not have access to high-quality CTE programs. The Administration's proposal would address this issue by requiring that local consortia receiving subgrants from states include school districts that have high concentrations of students from low-income families, ensuring that these students have access to quality programs and are equally positioned for further education and successful career opportunities.

English Learners. Language should not be a barrier that prevents students from accessing high-quality programs. The Administration's proposal requires states to provide supports, such as academic

and wrap-around services, to these students so that they are prepared to succeed in CTE programs and challenging careers after graduation.

Individuals With Disabilities. The Administration's proposal would ensure equity in access and participation for individuals with disabilities. Each state's plan and each local consortium's application would be expected to include descriptions of the actions that would be taken to ensure that there are no access, participation, quality, or performance barriers for the participation of students with disabilities in CTE programs.

Continued Support for American Indian, Alaska Native, and Hawaiian Students. The Administration's proposal includes continued support for programs under the current *Act* that focus on American Indian, Native Hawaiian and Alaska Native students, Tribally Controlled Postsecondary CTE Institutions, and Tribally Controlled Colleges and Universities. It commits the U.S. Department of Education to consult with tribal nations and native communities on how to strengthen their programs in a way that is respectful of tribal sovereignty and mindful of the key issues that many communities face, such as high rates of unemployment and social and economic distress.

Equity: Access to High-quality Programs for ALL Students

The Administration's proposal is grounded in a commitment to equal educational opportunities. It protects the American promise that all youths and adult students can achieve to their maximum potential. Key elements include:

- **More Targeted and Effective Plans to Aggressively Close Equity Gaps for All Groups.** The Administration's proposal would require states to improve their data collection systems by using commonly defined participation and performance indicators, which would lead to increased transparency and accountability for equity gaps. Such data would be collected on the local and state levels and will be disaggregated by race, ethnicity, sex, disability, socio-economic status, and English proficiency. Improved state data would be reported to the U.S. secretary of education and the public, and would allow states to identify equity gaps in participation and performance on the local and state levels, including where students of a particular background are disproportionately enrolled in or absent from certain programs.
- **Provisions to Ensure Equity in Access, Participation, and Outcomes.** In the statewide competition, states would fund programs that ensure access to all students, including those living in rural, remote, or economically distressed urban communities. Under the Administration's proposal, new expectations for states would ensure that the needs of low-income students, English learners, and students with disabilities living in those areas would be considered in the creation of CTE programs. In addition, states would be required to track data on the local consortia to ensure that CTE programs are serving diverse student populations and communities statewide.
- **Technology to Bridge Access.** New and emerging technologies are viable ways to solve problems of limited access, and uneven quality and rigor of academic and technical curricula. The proposal encourages the use of technology-enabled learning solutions that are accessible to, and usable by, students with disabilities and English learners, to create access to high-quality learning opportunities, including to technical courses and virtual work experiences. By promoting the use of technology, the proposal would connect those students who are served by consortia but who are disconnected due to geography to postsecondary institutions as well as to business and industry, even if those partners are not in close proximity. And students who are disconnected due to socio-economic status, disability, or language barriers would be connected as well.
- **Wrap-Around and Support Services for Students Who Need Them.** Local consortia and states must commit to the success of all youths and adults, including those who need to strengthen or refresh their basic academic skills in order to fully benefit from integrated technical and academic instruction. The CTE programs that we envision would not create separate tracks for certain students; instead, they would provide academic supports and support services that students need to succeed, such as tutoring and counseling. Such wrap-around supports would help to ensure that there are no equity gaps in participation or performance in CTE programs. Local consortia and states would be able to use a portion of their *Perkins* funding to ensure that necessary supports are in place.

Rewarding High-performing Programs

Improved participation and performance data would enable states to reward high-performing programs, assist low-performing ones in need of additional technical assistance and support, and ensure that all students receive an equitable opportunity to participate in CTE programs. Once program data systems have been updated to reflect the new, common definitions for participation and performance metrics, the Administration's proposal would ask states to reward effective programs using within-state performance-based funding. To qualify for the rewards, local consortia would have to meet criteria established by the state, which would include improving student outcomes and success in closing participation and performance gaps between student subgroups.

This structured system of rewards and targeted interventions would allow states to develop and implement their vision for CTE transformation in a way that meets their economic priorities and community needs. And local leaders would have financial incentives to create programming that produces better and more equitable student outcomes, marking a shift to a results-based culture that propels systemwide improvement in CTE.

Increased Support for Local Program Implementation and Innovation

America's ability to build a competitive workforce hinges on whether—and to what extent—educators and leaders can find innovative solutions for preparing all students for college and careers. The changing nature of skills required for existing jobs, the ongoing emergence of new jobs, and the rapid pace of technological advances all demand new, more responsive program models, curricular strategies, and instructional approaches. But new models, strategies, and approaches developed at the local level will not suffice to support the type of transformation that the Administration envisions for CTE unless they are validated and taken to scale. State-level reforms also must accompany advancements made at the local level to ensure that the necessary conditions to foster and sustain innovations that result in positive student outcomes are in place.

As the linchpin to its strategy for transforming CTE, the Administration proposes new conditions that states would meet to receive a formula grant. The Administration also proposes a competitive CTE Innovation and Transformation Fund—administered by the U.S. Department of Education—to incentivize innovation at the local level and supportive system reform at the state level. The fund would comprise approximately 10 percent of the total *Perkins* funding.

State Conditions for Success and Innovation

The Administration's proposal underscores the important role that states play in supporting rigorous programs and systemic reform. While the current *Act* sets minimum expectations for states, our proposal would raise expectations by requiring states to meet certain conditions in order to receive state formula grants. Meeting these conditions would signal that a state or outlying area is ready to transform its CTE system, or has transformed it, to ensure that all students are prepared for further education and a successful career. The conditions for success and innovation would cover such areas as connecting CTE data to state longitudinal data systems, allowing rigorous CTE courses to be counted for academic credit, improving career counseling systems, and reducing state policy barriers to the transformation of CTE. Before states receive any federal funding, the Administration's proposal would ensure that they first commit to instituting the important reforms that are critical to improving CTE for all students.

Competitive Resources for Local Innovations

CTE has long been characterized as having “islands of excellence” where innovation exists in isolation. However, federal, state, and local leaders have made little concerted effort to systematically identify and rigorously evaluate the effectiveness of innovative solutions, much less widely disseminate and scale them to meet the needs of our nation's youths and adults. By creating the infrastructure to seed innovations at the local level and expanding the evidence base for which interventions work best for whom, the Administration's proposal would enable CTE programs to continuously adapt and improve over time.

Because the current *Act* does not provide a mechanism for federal leaders to encourage local innovation, the Administration proposes to use the new CTE Innovation and Transformation Fund to infuse new evidence-based practices and tested approaches into current programs and pathways. With a strong emphasis on identifying and developing new practices, the fund would help test promising CTE practices, programs, and strategies and also support the expansion of proven approaches.

Applicants would be asked to propose projects that develop or expand innovations critical to CTE and build a competitive, high-performing, knowledgeable workforce able to solve the most pressing problems facing our nation—in both the local and global arenas. The U.S. secretary of education could give priority to applicants that will develop or expand innovations focused on specific pressing needs and that build on existing assets and capacities, such as projects that better prepare students to enter and succeed in science, technology, engineering, and mathematics (STEM) careers, support innovations targeted at disconnected youths and low-skilled adults, and serve students in rural areas. Additionally, the fund could support Pay-for-Success projects* that make awards to private non-profit or for-profit entities to undertake activities that achieve cost-effective outcomes in CTE and receive payment based on the extent to which they achieve those outcomes.

Competitive Resources to Drive Systemic State Reforms

To further incentivize high performance, the Administration's proposal would allow the U.S. secretary of education to award a portion of the CTE Innovation and Transformation Fund to implement policy and programmatic changes designed to considerably increase CTE access, expand state investments in CTE, and take actions to boost performance and outcome levels significantly. For example, states could apply for funding to enhance the technical skills of adults by training them on equipment housed at regional CTE centers. Or states could apply for funding to use technology and Web-based distance training to increase CTE access for rural or remote communities. Another example of how states could use the funding would be to link existing career guidance and counseling services for CTE students to those services provided by the workforce development system. Funding would be available only for states proposing reforms that either enhance or build on the state conditions for success and innovation.

* See <http://www.whitehouse.gov/blog/2012/01/24/pay-success-new-results-oriented-federal-commitment-underserved-americans/>.

Conclusion

Four core principles—alignment, collaboration, accountability, and innovation—are the foundation for the Administration’s proposed reforms to strengthen the nation’s career and technical education system. Collectively, they would usher in a new era of rigorous, relevant, and results-driven CTE programs that are equitable and accessible to all students regardless of their backgrounds or circumstances. These high-quality CTE programs would give students the skills they need to be successful and businesses the skilled workforce they need to thrive.

Students in these CTE programs would be motivated to learn because they are challenged by the rigor and engaged by the relevance. They would be prepared to complete their studies with industry certifications or licensures and postsecondary certificates or degrees that employers use to make hiring and promotion decisions. They would start careers that lead to increased employment and earning prospects over time, positioning them to become the country’s next leaders and entrepreneurs.

At the same time, employers and industry would have a strong voice in developing the very programs they need to fill positions within their companies. They would have access to a highly-skilled pool of workers ready to make immediate contributions.

Educated citizens. Skilled workers. Competitive businesses. Thriving industries. These are the ingredients for an economy built to last.

The Department of Education's mission is to promote student achievement and preparation for global competitiveness by fostering educational excellence and ensuring equal access.

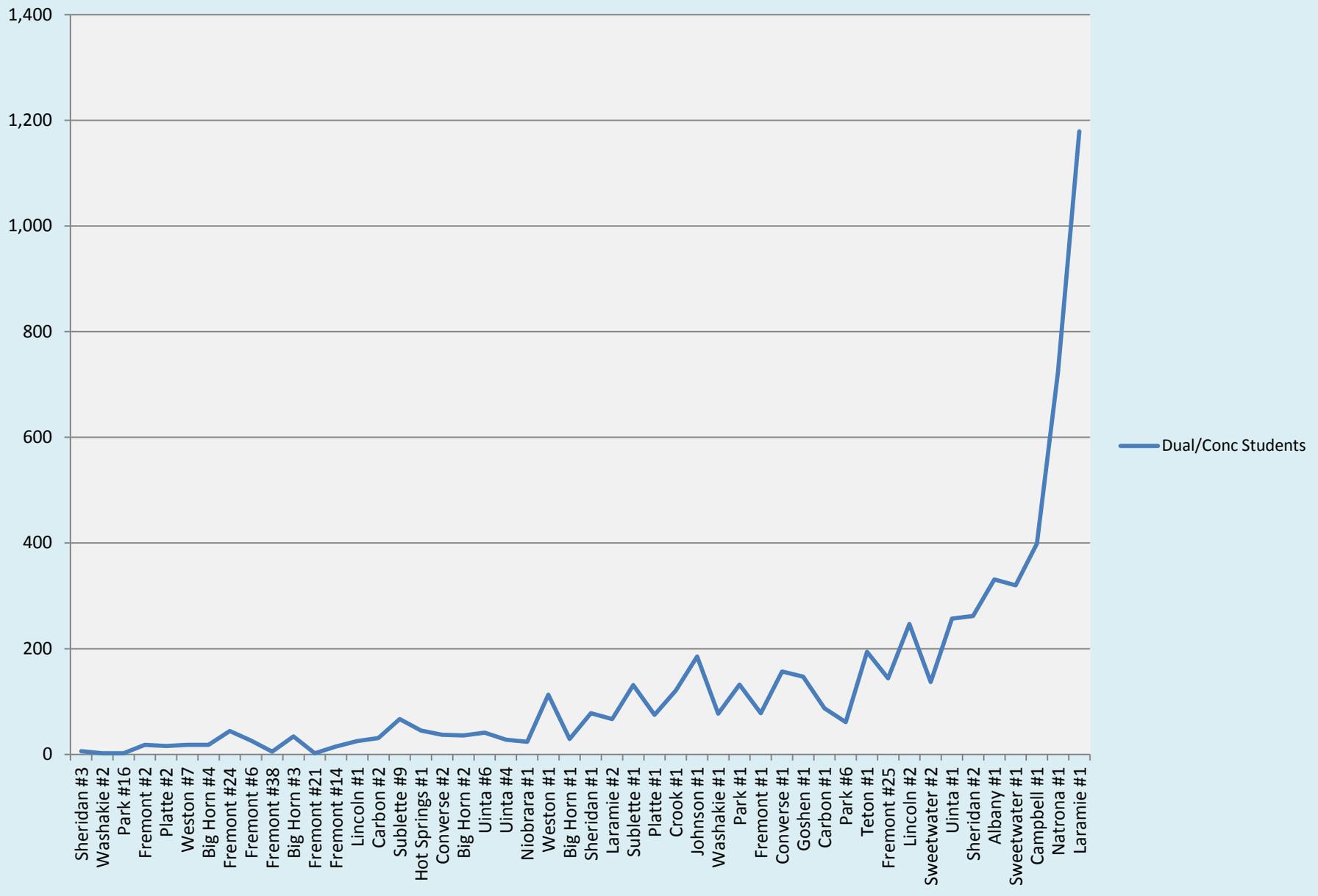
www.ed.gov

Dual/Concurrent College Enrollment in Wyoming Public School Districts

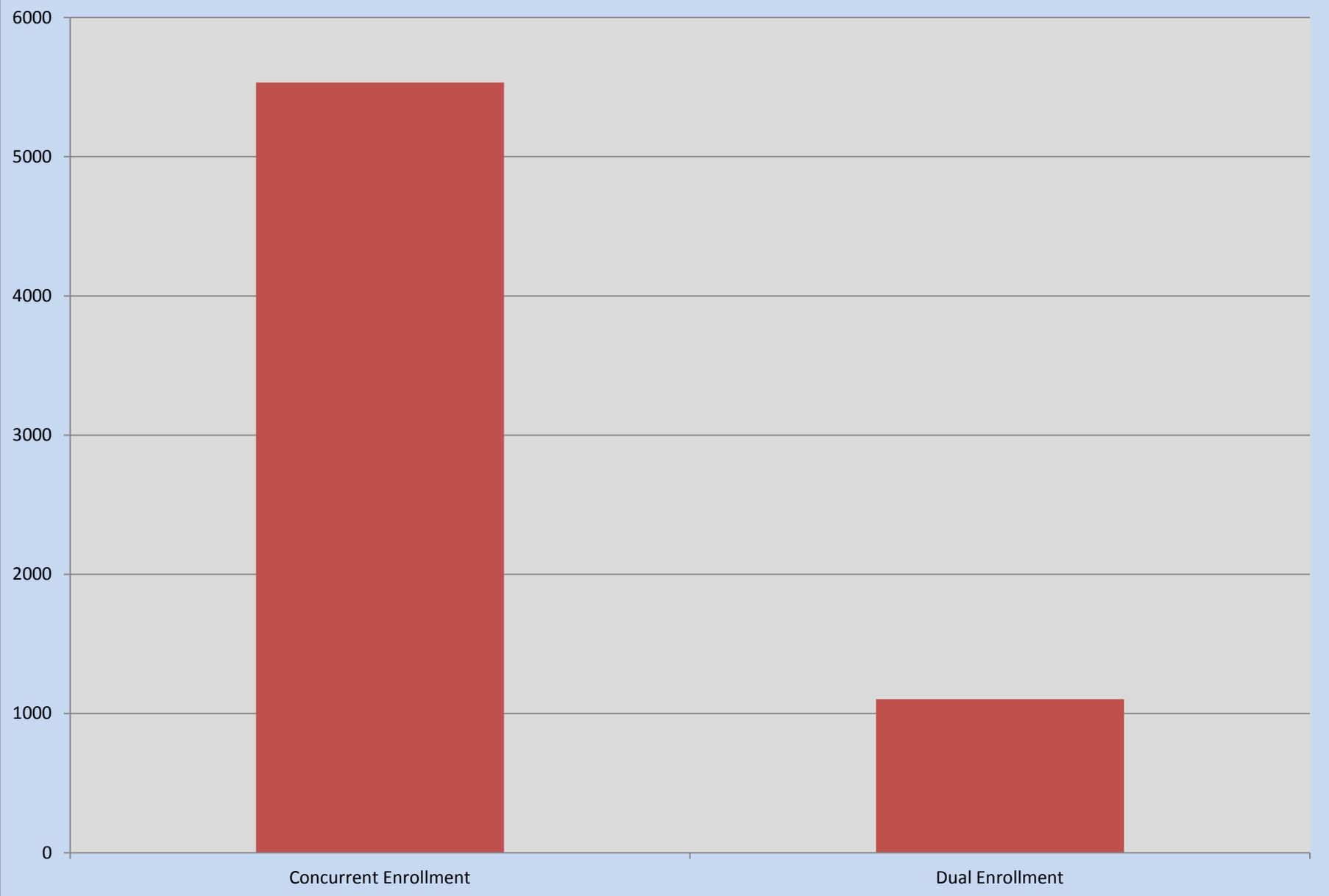
Number of Courses and Students by District				
District ID	District Name	Number of Dual/Conc Courses	Number of Dual/Conc Students	Total District Enrollment
1101000	Laramie #1	97	1,179	13,370
1301000	Natrona #1	216	724	12,075
0301000	Campbell #1	18	399	8,337
1901000	Sweetwater #1	34	320	5,296
0101000	Albany #1	84	331	3,673
1702000	Sheridan #2	43	262	3,202
2101000	Uinta #1	29	257	2,863
1902000	Sweetwater #2	27	137	2,641
1202000	Lincoln #2	20	247	2,601
0725000	Fremont #25	33	144	2,588
2001000	Teton #1	26	194	2,449
1506000	Park #6	10	61	2,208
0401000	Carbon #1	60	87	1,814
0801000	Goshen #1	16	147	1,778
0501000	Converse #1	40	157	1,744
0701000	Fremont #1	12	78	1,710
1501000	Park #1	62	132	1,655
2201000	Washakie #1	11	77	1,374
1001000	Johnson #1	38	185	1,284
0601000	Crook #1	51	121	1,093
1601000	Platte #1	27	75	1,053
1801000	Sublette #1	4	131	1,043
1102000	Laramie #2	12	67	916
1701000	Sheridan #1	21	78	902
0201000	Big Horn #1	14	29	808
2301000	Weston #1	17	113	806
1401000	Niobrara #1	6	24	803
2104000	Uinta #4	5	28	788
2106000	Uinta #6	8	41	750
0202000	Big Horn #2	18	36	710
0502000	Converse #2	8	37	697
0901000	Hot Springs #1	11	45	659
1809000	Sublette #9	22	67	649
0402000	Carbon #2	24	31	640
1201000	Lincoln #1	11	25	612
0714000	Fremont #14	9	15	568
0721000	Fremont #21	12	2	494
0203000	Big Horn #3	9	34	490
0738000	Fremont #38	1	5	389
0706000	Fremont #6	23	26	372
0724000	Fremont #24	16	44	332
0204000	Big Horn #4	7	18	322
2307000	Weston #7	9	18	243
1602000	Platte #2	7	16	189
0702000	Fremont #2	5	18	167
1516000	Park #16	2	2	125
2202000	Washakie #2	4	2	104
1703000	Sheridan #3	3	6	90
Totals:		1242	6272	89,476

Note: The data being provided in this report, and all subsequent reports, is strictly preliminary and may differ from the final data and reports generated by the WCCC

Dual/Concurrent College Enrollment in Wyoming Public School Districts



Student Dual vs. Concurrent Enrollments in College Courses



**ACTION SUMMARY SHEET
STATE BOARD OF EDUCATION**

DATE: September 27, 2012

ISSUE: Approval of Agenda

BACKGROUND:

SUGGESTED MOTION/RECOMMENDATION:

To approve the Agenda for the September 27, 2012 State Board of Education Meeting

SUPPORTING INFORMATION ATTACHED:

- Agenda

PREPARED BY: *Chelsie Bailey*
Chelsie Bailey, Executive Assistant

APPROVED BY: _____
John Masters
State Board of Education Liaison

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

COMMENTS:

STATE BOARD OF EDUCATION
Snow King Resort
Jackson, Wyoming

BUSINESS MEETING AGENDA
September 27, 2012

BOARD MEETING		Tab	Action/Info	8:30 a.m.
1.	Convene as State Board of Vocational Education – Joe Reichardt (Please see separate agenda)			
2.	Adjourn as State Board of Vocational Education and Convene as State Board of Education – Joe Reichardt			
3.	Call to Order – Joe Reichardt Roll Call			9:30 a.m.
4.	Approval of Agenda – Joe Reichardt	H	Action	
5.	Approval of Minutes – Joe Reichardt Approval of Minutes from August 29, 2012	I	Action	
6.	Approval of Treasurer’s Report – Pete Gosar Approval of Treasurer’s Report Ending August 31, 2012	J	Action	
7.	Wyoming Fine and Performing Arts Content and Performance Standards- Dr. Jim Verley	K	Action	9:45 a.m.
	Break			10:30 a.m.
8.	District Certified Personnel Evaluation Systems- Carol Illian	L	Action	10:45 a.m.
9.	Hathaway Success Curriculum- Julie Magee	M	Information	11:15 a.m.
	LUNCH			11:45 p.m.
10.	BOCES/BOCHES Agreement-Carbon County School District No. 2 – Mackenzie Williams	N	Action	12:30 p.m.
11.	Review of Policy Manual and Recommendations- Joe Reichardt	O	Action	12:45 p.m.
12.	Board Updates, Public Comment Accountability Advisory Committee- Sue Belish	P	Information	1:15 p.m.
13.	Recommendation for a New Provider of Court Ordered Placement of Students- Jo Ann Numoto	Q	Action	1:30 p.m.
	Break			2:00 p.m.
14.	Revision of Chapter 14 Rules and Regulations of Court Ordered Placement of Students- Jo Ann Numoto		Action	2:15 p.m.
15.	November 2012 State Board of Education Meeting- Joe Reichardt		Action	2:30 p.m.
	ADJOURNMENT			2:45 p.m.

**ACTION SUMMARY SHEET
STATE BOARD OF EDUCATION**

DATE: September 27, 2012

ISSUE: Approval of Minutes

BACKGROUND:

SUGGESTED MOTION/RECOMMENDATION:

To approve the minutes from the August 29, 2012 State Board of Education meeting.

SUPPORTING INFORMATION ATTACHED:

- Minutes of August 29, 2012

PREPARED BY: *Chelsie Bailey*
Chelsie Bailey, Executive Assistant

APPROVED BY: _____
John Masters
State Board of Education Liaison

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

COMMENTS:

WYOMING STATE BOARD OF EDUCATION
August 29, 2012
Teleconference

Wyoming State Board of Education members present: Joe Reichardt, Scotty Ratliff, Kathy Coon, Cindy Hill, Sue Belish, Matt Garland, Dana Mann-Tavegia and Walt Wilcox

Wyoming State Board of Education members absent: Ron Micheli, Pete Gosar, Belenda Willson and Hugh Hageman

Also present: Chelsie Bailey, WDE; Drew Dilly, WDE; Christine Steele, WDE; Sam Shumway, WDE; Julie Magee, WDE; Megan Miesen, WDE; Paige Fenton-Hughes, SBE; and Mackenzie Williams, Attorney General's Office (AG)

CALL TO ORDER

Chairman Joe Reichardt called the meeting to order at 4:02 p.m.

Chelsie Bailey conducted roll call and established that a quorum was present.

APPROVAL OF AGENDA

Walt Wilcox moved to approve the agenda, seconded by Cindy Hill; the motion carried.

APPROVAL OF MINUTES

Minutes from the July 16, 2012, State Board of Education meeting was presented for approval.

Dana Mann-Tavegia moved that the minutes be approved, seconded by Matt Garland; the motion carried

Minutes from the August 6, 2012, State Board of Education meeting was presented for approval.

Dana Mann-Tavegia moved that the minutes be approved, seconded by Matt Garland; the motion carried

STATE BOARD OF EDUCATION COORDINATOR REPORT

Paige Fenton Hughes, State Board of Education Coordinator, thanked Rebecca Glasgow and Chelsie Bailey for their assistance in the set up of the End Of Course

study group (EOC) and the Professional Judgment Panel (PJP) meetings. For the end of course assessment study, Alpine Testing Solutions has set up a work plan. The work will be divided into two phases and an outline on what they intend the report to look like has been prepared. The End of Course study group has been assembled, which consist of 15 people who will be meeting with Alpine Testing Solutions on September 5-6, 2012 and October 11-12, 2012. The group consists of education people from across the state, and includes: local school board members, teachers, instructional coaches, and administrators.

Paige Fenton-Hughes notified the Board that the meeting dates for the Professional Judgment Panel are October 2-4, 2012 in Casper. In the Board's scheduled teleconference on October 9, 2012, Paige Fenton-Hughes will present the final report to the Board for approval.

PROFESSIONAL JUDGMENT PANEL AND EOC TRAVEL

Paige Fenton-Hughes asked the Board to approve the travel memorandum of agreements (MOA's) for the members of the PJP and EOC that require reimbursement of travel expenses. She also requested the Board to approve the funding of the MOAs and the meeting costs to come out of the 7(d) funds.

Sue Belish moved to approve the appropriate MOAs for members of the Professional Judgment Panel for travel reimbursement and to approve the expenditure of funds to cover incidental meeting costs for the EOC and PJP meetings with all funds to be allocated from the WAEA Section 7(d) funds, seconded by Dana Mann-Tavegia; the motion carried.

AWEC CONTRACT FOR ASSISTANCE TO THE ACCOUNTABILITY PROJECT

John Masters discussed the current At Will Employee Contract for Rebecca Glasgow, which had been acquired by the Department before there was the Select Committee clarification on the 7(d) funds. John Masters stated that the Department felt the AWEC employee could continue to be of service to the State Board and would like to propose to the Board to continue her contract through October 15, 2012, with the revision of the scope of work within her contract to reflect the change in the relationship.

Dana Mann-Tavegia moved that the State Board of Education approve an amendment by substitution of the revised Attachment B for the existing Attachment B of the AWEC contract, seconded by Kathy Coon.

Sue Belish, chair of the Supervisory Committee, expressed that Rebecca Glasgow's work in accountability was very helpful and necessary for the Board and the WDE, especially in how it relates to data and the Professional Judgment Panel.

The motion carried.

DATA GATHERING FOR THE PROFESSIONAL JUDGMENT PANEL

Rebecca Glasgow, from the Wyoming Department of Education, presented to the Board her new roles and responsibilities. She will assist Paige Fenton-Hughes and Dr. Michael Beck with gathering data and information for the Professional Judgment Panel. The data that will be collected pertains to achievement, growth, college and career readiness and any business rules, calculations, and reporting procedures and definitions. Additional efforts provided by Rebecca Glasgow will be assisting in the preparation of PJP documents, memorandum of agreements, and will provide any other information or assistance that is needed by the State Board of Education, Paige Fenton-Hughes, Dr. Michael Beck, or Chelsie Bailey.

DISITRICT ASSESSMENT SYSTEMS

Cindy Hill discussed with the Board the Chapter 31 line veto that removed the wording "Body of Evidence". The WDE has invoked some responses from the districts as to what that entails. Mackenzie Williams and Samuel Shumway have been working on Chapter 31 and the veto, along with Julie Magee, and they have prepared a Superintendents Memo that will be released as soon as possible. During the retreat the Department will have more specifics on the district assessments, the language that has been removed from Chapter 31 and how the Department is working alongside the districts responding to this change.

The State Board of Education received a letter from the Wyoming Curriculum Directors with questions regarding the change in wording; Paige Fenton-Hughes will draft a response to that letter with an invitation to the meeting in September. Cindy Hill and Sue Belish would like to respond to the letter together.

Sam Shumway noted that Mackenzie Williams, WDE staff and himself have thought about the possible need for emergency rules to address the line item veto and it does not appear at this time that there is any substantial affect from the veto that might require emergency rules.

Cindy Hill stated she will keep the Board notified on what the WDE is doing and invited the members to participate in the process. If Board members are interested in participating, please contact Julie Magee or Mackenzie Williams.

Chairman for the Board, Joe Reichardt, called for motion to adjourn the meeting. Sue Belish moved, seconded by Dana Mann-Tavegia; the motion carried.

The State Board of Education meeting adjourned at 4:38 p.m.

The next Board meeting is scheduled for September 26-27, 2012 in Jackson, Wyoming

**ACTION SUMMARY SHEET
STATE BOARD OF EDUCATION**

DATE: September 27, 2012

ISSUE: Approval of Treasurer's Report

BACKGROUND: The State Board of Education budget for the period ending August 31, 2012 shows a balance of \$186,640.91

SUGGESTED MOTION/RECOMMENDATION:

To approve the Treasurer's Reports as submitted.

SUPPORTING INFORMATION ATTACHED:

- State Board Budget Summary from July 1, 2012 through August 31, 2012
- State Board Budget Revision
- Accountability Act 7(d) Budget
- Accountability Act 7(e) Budget

PREPARED BY: *Chelsie Bailey*
Chelsie Bailey, Executive Assistant

APPROVED BY: _____
John Masters
State Board of Education Liaison

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

COMMENTS:

WYOMING DEPARTMENT OF EDUCATION
State Board of Education
FY13 Budget
7/1/2012 thru 31 Aug 2012

DESCRIPTION	BUDGETED	EXPENDED	ENCUMBERED	REMAINING BALANCE
Personal Services (100 series)				
Salaries (0104)	0.00	0.00	0.00	0.00
Employer Paid Benefits (0105)	0.00	0.00	0.00	0.00
Supportive Services (200 series)				
Teleconference (0203.07)	0.00	511.71	0.00	(511.71)
Communications (0204.06)	7,625.00	58.79	0.00	7,566.21
Professional Development & Training (0207)	34,258.00	60.00	0.00	34,198.00
Advertising (0208)	2,000.00	0.00	0.00	2,000.00
State Board, In-State Travel Reimbursement (0221)	51,127.00	2,199.30	0.00	48,927.70
State Board, Out-of-State Travel Reimbursement (0222)	28,474.00	0.00	0.00	28,474.00
Supplies - Safety-Security-Law Enforcement (0230.24)	0.00	20.00	0.00	(20.00)
Supplies - Office, Printing, Reproduction & Stationery (0231.00)	1,411.00	415.39	0.00	995.61
Supplies - Education & Recreational (0236)	672.00	0.00	0.00	672.00
Intangible Assets (0240)	0.00	194.74	0.00	(194.74)
Office, Institutional & Household Equipment & Furnishings (0241)	0.00	179.00	0.00	(179.00)
Data Processing & Other Computer Equipment (0242)	0.00	23.64	0.00	(23.64)
Education, Recreational & Technical Equipment (0246)	0.00	0.00	0.00	0.00
Conference Room Rental (0251.04)	0.00	240.00	0.00	(240.00)
Awards, Prizes (0257.01 Monetary/Taxable) (0257.02 Non Monetary/Not Taxable)	0.00	0.00	0.00	0.00
Awards, Prizes (0271.0)	2,384.00	0.00	0.00	2,384.00
Data Processing Charges (0400 series)				
A&I Telecommunications (0420)	1,003.00	630.52	0.00	372.48
Professional Services (0900 series)				
Contract Services (0901)	71,091.00	1,180.00	7,691.00	62,220.00
TOTAL	200,045.00	5,713.09	7,691.00	186,640.91

DEPARTMENT OF EDUCATION - BUDGET REVISION WORK SHEET

(Federal budgets) - % flow-through

% Admin

Total must equal 100% 0%

BUDGET TITLE & COMPLETE BUDGET CODING: 13-001-005-6101-610

OBJECT CODES	ORIGINAL	DECREASE	INCREASE	NEW TOTAL
103 Salaries - Permanent				
104 Salaries - Temporary				
105 Benefits				
SUB-TOTAL	0.00	0.00	0.00	0.00
202 Equipment Repair & Maintenance				
203 Teleconference	0.00		1,500.00	1,500.00
204 Communications				
207 Professional Development & Training				
208 Advertising				
221 Travel In-State				
222 Travel Out-of-State				
230 Supplies-Safety-Security	0.00		20.00	20.00
231 Supplies-Office, Printing				
234 Supplies-Food & Food Service				
236 Educational Supplies				
240 Intangible Assets	0.00		300.00	300.00
241 Office Equipment, Furniture	0.00		200.00	200.00
242 Data Processing & Other Computer Equipment	0.00		5,000.00	5,000.00
246 Educational Recreational & Technical Equipment				
251 Room & Building Rental	0.00		500.00	500.00
257 Awards Monetary Taxable/Nonmonetary Nontaxal	0.00		2,384.00	2,384.00
271 Awards	2,384.00	2,384.00		0.00
SUB-TOTAL	2,384.00	2,384.00	9,904.00	9,904.00
301 Cost Allocation (Federal)				
SUB-TOTAL	0.00	0.00	0.00	0.00
410 Data Processing				
420 A&I Telecommunication Charges				
SUB-TOTAL	0.00	0.00	0.00	0.00
607 Scholarships, Educational Assistance				
626 School Districts				
SUB-TOTAL	0.00	0.00	0.00	0.00
901 Contract Services	71,091.00	7,520.00	0.00	63,571.00
SUB-TOTAL	71,091.00	7,520.00	0.00	63,571.00
GRAND TOTAL	73,475.00	9,904.00	9,904.00	73,475.00

Funding Source: _____

Additional Funds? YES NO

Approval Signatures:

Unit Director Date

Internal Budget Date

Program Manager Date

WDE SF57
 13 6109 009
 Balance as of September 14, 2013

Transaction Date	Budget #	Appropriation	Fiscal Year	Agency	Transactions	Transaction Amount	
							250,000.00
					<u>Encumberances</u>		
6/26/2012	6109	009	2009	005	DCD Consulting	15,000.00	
6/27/2012	6109	009	2009	005	Benjamin Dominique	25,000.00	
						40,000.00	
					<u>Expenses</u>		
07/30/12	6109	009	2013	005	Rebecca Glasgow - July salary	6,263.78	
08/22/12	6109	009	2013	005	Paige Hughes - Workers Comp	101.24	
08/28/12	6109	009	2013	005	Rebecca Glasgow - Aug salary	6,263.79	
						12,628.81	197,371.19 Balance

WDE SF57
13 6109 009
Balances as of September 14, 2013

Object Code	Appropriated	Expenses	Balance
900	40,000.00	40,000.00	0.00 FY11 Budget
100	161,714.00	12,628.81	149,085.19
900	48,286.00	0.00	48,286.00
			197,371.19 FY13 Budget

SBE SF57
13 6110 009
Balance as of September 14, 2013

Transaction Date	Budget #	Appropriation	Fiscal Year	Agency	Transaction	Transaction Amount		
							250,000.00	
07/30/12	6110	009	2013	005	Paige Hughes - July salary	8,396.70		
08/22/12	6110	009	2013	005	Paige Hughes - Workers Comp	135.72		
08/28/12	6110	009	2013	005	Paige Hughes - Aug salary	8,396.70		
						16,929.12	233,070.88	Balance

SBE SF57
13 6110 009
Balances as of September 14, 2013

Object Code	Appropriated	Expenses	Balance
100	102,412.66	16,929.12	85,483.54
200	20,000.00	0.00	20,000.00
900	127,587.34	0.00	127,587.34
			233,070.88

**ACTION SUMMARY SHEET
STATE BOARD OF EDUCATION**

DATE: September 27, 2012

ISSUE: Wyoming Fine and Performing Arts Content and Performance Standards

BACKGROUND:

After completing the required review process in August of 2012 the WDE is submitting the final draft of the Wyoming Fine and Performing Arts Content and Performance Standards for the State Board of Education's approval.

SUGGESTED MOTION(s)/RECOMMENDATION(s):

The WDE has overseen a process for review of the Standards through multiple meetings, revisions, and public feedback. I move to adopt the 2012 Draft Wyoming Fine and Performing Arts Content and Performance Standards.

I move the Wyoming Department of Education begin the rules promulgation process for the 2012 Wyoming Foreign Language Standards and the 2012 Wyoming Fine and Performing Arts Standards

SUPPORTING INFORMATION ATTACHED:

- **Draft Wyoming Fine and Performing Arts Content and Performance Standards**

PREPARED BY: *Chelsie Bailey*

Chelsie Bailey, Executive Assistant

APPROVED BY: _____

**John Masters
State Board of Education Liaison**

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

COMMENTS:

WYOMING FINE AND PERFORMING ARTS CONTENT AND PERFORMANCE STANDARDS

RATIONALE

Human culture is inseparable from the arts. From cave paintings to soaring music to YouTube, the arts cut across language and time to create connections between peoples. Current technology combined with ancient techniques gives students the opportunity to explore the arts and their world in new ways. Whether it is the play which makes us laugh while addressing issues of loyalty and family relationships, the painting documenting a joyous event, music that evokes patriotism or the courting ritual of dance, the arts create community by serving as a primary medium for communicating ideas, emotion and meaning.

Students who are engaged in the arts develop critical habits of mind which serve them through their work in other disciplines and through life. The arts foster acceptance of diversity, independence and collaboration. Embedded in the arts is the experience of joy through creation, the opportunity to experiment, risk and persevere, and, above all, learning to deeply experience and see, hear, feel the world around you.

Fostering students' creativity is the foundation of the Wyoming State Fine and Performing Content and Performance Standards.

Why do we have Standards for the Fine and Performing Arts?

Standards ensure that all students in Wyoming receive a uniform and consistent art education and are prepared for success in and out of the classroom. The arts, like no other subject, offer students the opportunity to develop and apply thinking and motor skills across disciplines. The Fine and Performing Arts offer multiple pathways to experiencing the arts through:

- **Creating or performing.** At the heart of the standards is developing craft through disciplined practice, whether it is to draw, play an instrument, or bringing a character to life.
- **Aesthetic perception.** Beyond creating is both the ability to enjoy and think critically about the arts in all their varied forms.
- **Historical and cultural context.** The arts span time and culture, drawing us together through a universal language and distinguishing us by our art forms
- **Artistic connections.** Developing connections across disciplines and discovering the arts everywhere!

What is new in the Fine and Performing Arts Standards?

For the first time in the Wyoming Fine and Performing Arts Content and Performance Standards, the four disciplines have the opportunity to express their crucial content and skills in language congruent with the national standards of the field. Each discipline, Dance, Music, Theatre and Visual Arts, has developed their own benchmarks, while recognizing foundational skills and knowledge through common standards. The Content and Performance Standards are organized by grade band to provide specific guidance about what students need to know and be able to do at the end of 4th, 8th and 11th grades. Splitting the disciplines into the new benchmarks supports the work of teachers and principals regarding what a quality program may look like in their buildings. The proposed benchmarks will guide teachers to understanding the critical components of arts instruction that will support the growth of students' knowledge, skill, and interest in a particular arts discipline.

Organization of Standards

The Wyoming Fine and Performing Arts Content and Performance Standards define what students should know and be able to do in their study of the arts. They do not dictate curriculum or teaching methods. Teachers ensure students achieve standards by using a variety of instructional strategies based on their students needs.

The following terms are used in this document:

Grade Span: A consecutive range of grades which align with students' developmental needs and the instructional organization of Wyoming schools.

Standard: A general strand of fine and performing arts content and processes that students are expected to know and be able to do.

Cluster: A group of related benchmarks (dance, music, theatre, and visual arts)

Benchmark: Statement of what a student should know and do at the end of a grade span or high school content area. Benchmarks form a continuum through which students can become successful in reaching a specific standard.

Standards Coding: The standards are coded for ease of identification and recording by **Content & Grade Level, Standard, Cluster and Benchmark** as in the following examples:

FPA 4.1.A.1 stands for: (Content and Grade Span) **Fine and Performing Arts Grade Span K-4**. (Standard Number) **1**. (Cluster) **Visual Arts**. (Benchmark) **1**

FPA 11.3.T.2 stands for: (Content and Grade Span) **Fine and Performing Arts Grade Span 9-11**. (Standard Number) **3**. (Cluster) **Theatre**. (Benchmark) **2**

Performance Level Descriptors: These statements help teachers judge where students are performing in relation to the standards. They describe student performance at various levels of proficiency. To consider a standard as “met”, students are required to perform at the “proficient” level. A general definition of each level is provided below.

Advanced: Superior academic performance indicating an in-depth understanding and exemplary display of the knowledge and skills included in the Wyoming Content and Performance Standards.

Proficient: Satisfactory academic performance indicating a solid understanding and display of the knowledge and skills included in the Wyoming Content and Performance Standards.

Basic: Marginal academic performance, work approaching, but not yet reaching, satisfactory performance, indicating partial understanding and limited display of the knowledge and skills included in the Wyoming Content and Performance Standards.

Performance Level Descriptors - Fine and Performing Arts

Content level descriptors describe the performance expectations for students working in the fine and performing arts. They provide students, parents and teachers a set of expectations for different levels of performance. Content level performance descriptors are intentional broad, addressing the knowledge and skills specific to the discipline of fine and performing arts, as well as the expected cognitive depth students must demonstrate at each performance level.

Advanced: Students at the advanced performance level, engage in the creative process to

- Envision artistic works, demonstrating persistence and craftsmanship while applying skills and knowledge to create or perform work
- Reflect upon and communicate the meaning and purpose of artistic works
- Reflect on their observations and knowledge to interpret and evaluate artistic works
- Analyze and reflect upon the historical and cultural context of the arts and
- Synthesize the arts, other disciplines and the communities in which they live

Proficient: Students at the proficient performance level, engage in the creative process to

- Persistently apply skills and knowledge to create or perform artistic works
- Communicate the meaning and purpose of artistic works
- Make observations about and interpret artistic works
- Analyze the historical and cultural context of the arts and
- Explain connections between arts, other disciplines and the communities in which they live

Basic: Students at the basic performance level, through the creative process,

- Apply skills and knowledge to create or perform artistic works
- Make observations and communicate about artistic works
- Recognize that the arts have a historical and cultural context and

- Identify connections between arts, other disciplines and the communities in which they live

* Note: No performance level descriptor is written for “below basic.”

DRAFT

Visual Art

Standard 1: Creative Expression Through Production: Students create, perform, exhibit or participate in the arts.

K-4	5-8	9-11
FPA4.1.A.1: Students create and revise original art to express ideas, experiences and stories	FPA 8.1.A.1: Students create and revise original art to express ideas, experiences and stories	FPA 11.1.A.1: Students conceptualize, create and revise original art to express ideas, experiences and stories
FPA 4.1.A.2: Students investigate and apply a variety of materials, resources, technologies and processes to communicate experiences and ideas through art.	FPA 8.1.A.2: Students select and recognize qualities and characteristics of art media, techniques, technologies and processes to communicate their experiences and ideas through art	FPA 11.1.A.2: Students envision, create, communicate experiences and ideas, and work toward artistic goals through use of media, techniques, technologies, and processes
FPA 4.1.A.3: Students apply the elements and principles of design to their artwork	FPA 8.1.A.3: Students analyze the use of the elements and principles of design in their artwork	FPA 11.1.A.3: Students plan and create artistic works based on use of design elements and principles
FPA 4.1.A.4: Students collaborate with others in creative artistic processes	FPA 8.1.A.4: Students collaborate with others in creative artistic processes	FPA 11.1.A.4: Students collaborate with others in creative artistic processes
FPA 4.1.A.5: Students use art materials and tools in a safe and responsible manner	FPA 8.1.A.5: Students use art materials and tools in a safe and responsible manner	FPA 11.1.A.5: Students use art materials and tools in a safe and responsible manner
FPA 4.1.A.6: Students complete and exhibit their artwork	FPA 8.1.A.6: Students prepare and exhibit their artwork	FPA 11.1.A.6: Students select, prepare and exhibit their artwork and explain their choice(s)

Visual Art

Standard 2: Aesthetic Perception:

Students respond to, analyze, and make informed judgments about the arts.

K-4	5-8	9-11
FPA 4.2.A.1: Students observe and describe in detail the physical properties of works of art	FPA 8.2.A.1: Students observe and describe in detail the physical properties of works of art	FPA 11.2.A.1: Students observe and describe in detail the physical properties of works of art
FPA 4.2.A.2: Students respond to art, using vocabulary that describes subjects, themes and symbols	FPA 8.2.A.2: Students interpret art, identifying subjects, themes and symbols that communicate their knowledge of context, values and meaning	FPA 11.2.A.2: Students interpret and analyze the intentions of artists through themes, subjects and symbols. Students question and explore the implications of the artists' various purposes
FPA 4.2.A.3: Students describe works of art using the language of artistic elements and principles.	FPA 8.2.A.3: Students describe and analyze works of art using the language of artistic elements and principles	FPA 11.2.A.3: Students state preferences for individual works of art and provide rationale for those preferences based on an analysis of artistic elements and principles
FPA 4.2.A.4: Students explain their preference for specific works	FPA 8.2.A.4: Students form and defend their preferences for artists and specific works	FPA 11.2.A.4: Students form and defend their preferences for artists, specific works and styles

Visual Art

**Standard 3: Historical and cultural context:
Students demonstrate an understanding of the arts
in relation to history, cultures, and contemporary society.**

K-4	5-8	9-11
FPA 4.3.A.1: Students know that the visual arts have both a history and specific relationships to various cultures	FPA 8.3.A.1: Students know, identify and compare the characteristics of works of art from various environments, eras and cultures	FPA 11.3.A.1: Students differentiate among a variety of historical, environmental and cultural contexts in terms of characteristics and purposes of works of art
FPA 4.3.A.2: Students identify specific works of art as belonging to particular cultures, times, and environments	FPA 8.3.A.2: Students describe and place a variety of art objects in historical, environmental and cultural contexts	FPA 11.3.A.2: Students describe the function and explore the meaning of specific art objects within varied cultures, eras, and environments
FPA 4.3.A.3: Students understand that history, environment, culture, and the visual arts can influence each other	FPA 8.3.A.3: Students analyze, describe, and relate how factors of culture, time and environment influence visual characteristics that give meaning and value to a work of art	FPA 11.3.A.3: Students analyze relationships of works of art to one another in terms of history, aesthetics, environment, and culture and place their work within the continuum of the visual arts

Visual Art

Standard 4: Artistic Connections:

Students relate the arts to other disciplines, careers and everyday life.

K-4	5-8	9-11
FPA 4.4.A.1: Students identify connections between the visual arts and other disciplines in the curriculum	FPA 8.4.A.1: Students describe ways in which the principles and subject matter of other disciplines taught in the school are interrelated with the visual arts	FPA 11.4.A.1: Students synthesize the creative and analytical processes and techniques of the visual arts and other disciplines
FPA 4.4.A.2: Students identify careers and recreational opportunities in the visual arts	FPA 8.4.A.2: Students explore visual arts careers and recreational opportunities and investigate the artistic skills needed for those opportunities	FPA 11.4.A.2: Students identify artistic skills and determine how they apply to a variety of careers and recreational opportunities
FPA 4.4.A.3: Students recognize visual artists in their family and community and explore how these artists create their work	FPA 8.4.A.3: Students recognize the role of visual artists in their culture and investigate how these artists create their work	FPA 11.4.A.3: Students analyze the contributions that art and visual artists make to their local community and contemporary society
FPA 4.4.A.4: Students demonstrate appropriate behavior in a variety of art settings	FPA 8.4.A.4: Students demonstrate appropriate behavior in a variety of art settings	FPA 11.4.A.4: Students demonstrate appropriate behavior in a variety of art settings

Dance

Standard 1: Creative Expression Through Production: Students create, perform, exhibit or participate in the arts.

FPA4.1.D.1: Students explore isolated and coordinated dance movement with body awareness	FPA8.1.D.1: Students demonstrate and explain isolated and coordinated dance movements with body awareness and intent	FPA11.1.D.1: Students analyze and evaluate a wide range of isolated and coordinated dance movements with body awareness and intent
FPA4.1.D.2: Students practice and demonstrate balance, coordination, strength and range of motion in basic locomotor and nonlocomotor/axial movements, moving in a variety of directions	FPA8.1.D.2: Students perform movements with an understanding of alignment, balance, initiation of movement, range of motion, weight shift, elevation and landing, fall and recovery	FPA11.1.D.2: Students refine movement skills and evaluate alignment, balance, initiation of movement, range of motion, weight shift, elevation and landing, fall and recovery
FPA4.1.D.3: Students demonstrate the elements of dance, including shape, level, pathway, spatial awareness, and energy/movement quality	FPA8.1.D.3: Students apply and analyze the elements of dance in their own and others performance	FPA11.1.D.3: Students apply and evaluate the elements of dance in their own and others performance
FPA4.1.D.4: Students demonstrate the ability to dance to a musical phrase, responding to dynamic changes	FPA8.1.D.4: Students understand and perform musical phrasing	FPA11.1.D.4: Students phrase movement artistically and musically and explain their choices
FPA4.1.D.5: Students demonstrate a sequence of movements, remember them in a short phrase and identify the beginning, middle and end	FPA8.1.D.5: Students perform multiple movement phrases to demonstrate different choreographic structures and forms. Students explain the choreographic structures they performed.	FPA11.1.D.5: Students choreograph a dance using recognized structures and forms; students critique the use of choreographic structures and forms in a specific dance.
FPA4.1.D.6: Experience the use of technology with dance	FPA8.1.D.6: Explore and discuss ways of using technologies with dance	FPA11.1.D.6: Explore and use technology with dance.
FPA4.1.D.7: Students independently create and perform movements to express images, ideas, intent, situations and feelings	FPA8.1.D.7: Students use improvisation and revision to choreograph to communicate images, ideas, intent, situations or feelings	FPA11.1.D.7: Students synthesize elements of dance and choreography to communicate a coherent idea in a performance

Dance

Standard 2: Aesthetic Perception:

Students respond to, analyze, and make informed judgments about the arts.

FPA4.2.D.1: Students observe and discuss how dance is similar to and different from other forms of human movement	FPA8.2.D.1: Students explain how different kinds of movement impact meaning and interpretation of artistic choices	FPA11.2.D.1: Students interpret and analyze themes and symbolic movements in a dance performance
FPA4.2.D.2: Students observe or perform dance and discuss observations in relation to personal context.	FPA8.2.D.2: Students observe or perform dance and discuss the main ideas of the dance, articulating emotional and kinesthetic responses in relation to personal context.	FPA11.2.D.2: Students observe and critique performance of dance, based on their intellectual, kinesthetic and emotional response to the performance
FPA4.2.D.3: Students observe and use dance terminology to describe how elements of dance contribute to a performance	FPA8.2.D.3: Students use dance terminology to analyze how technical, organizational and dance elements contribute to the ideas, aesthetic quality, and impact of the performance.	FPA11.2.D.3: Students use dance terminology to analyze how technical, organizational and dance elements contribute to the ideas, aesthetic quality, and impact of the performance.
FPA4.2.D.4: Students observe and describe how production elements contribute to a performance	FPA8.2.D.4: Students discuss how production elements contribute to the ideas and impact of the performance	FPA11.2.D.4: Students evaluate how production elements contribute to the ideas, aesthetic quality, and impact of the performance.

Dance

Standard 3: Historical and cultural context:
Students demonstrate an understanding of the arts
in relation to history, cultures, and contemporary society.

FPA4.3.D.1: Students observe, practice, perform and respond to dances from their community and different cultures	FPA8.3.D.1: Students explain how values and beliefs are reflected in dance in their community and in different cultures	FPA11.3.D.1: Students analyze the role of dance in reflecting the values and beliefs of various societies
FPA4.3.D.2: Students observe or perform historical movements or dances	FPA8.3.D.2: Students investigate historical events and periods and their influence on dance	FPA11.3.D.2: Students analyze the relationships between historical events and the development of dance.
FPA4.3.D.3: Students recognize that people create and perform dance differently. Observe or perform and compare multiple dance genres	FPA8.3.D.3: Students compare and contrast choreography from a variety of styles of dance	FPA11.3.D.3: Students analyze the contributions of selected dance artists to various styles of dance and how they have used materials, inventions and technologies in their work
FPA4.3.D.4: Students recognize dancers in their family and community and explore how these artists create their work	FPA8.3.D.4: Students recognize the role of dancers in their community and investigate how these artists create their work	FPA11.3.D.4: Students analyze the contributions that dance and its artists make to their local community

Dance

Standard 4: Artistic Connections:

Students relate the arts to other disciplines, careers and everyday life.

FPA4.4.D.1: Students explore a concept or idea from another discipline through movement	FPA8.4.D.1: Students cite examples of concepts common between dance and other disciplines	FPA11.4.D.1: Students identify and explain commonalities and differences between dance and other disciplines
FPA4.4.D.2: Students identify careers and recreational opportunities in dance	FPA8.4.D.2: Students understand the relationships between various careers in and related to dance	FPA11.4.D.2: Students identify how dance skills and experiences support and apply to a variety of careers and recreational opportunities
FPA4.4.D.3: Students explain how healthy practices enhance their ability to dance	FPA8.4.D.3: Students identify personal goals to improve themselves as dancers and the steps they are taking to reach those goals	FPA11.4.D.3: Students understand how media and social environment affect a dancer. Students analyze strategies to maintain personal health and well-being through dance
FPA4.4.D.4: Students are attentive and respond appropriately to vocal, musical, social or observed cues.	FPA8.4.D.4: Students are attentive and respond appropriately to vocal, musical, social or observed cues.	FPA11.4.D.4: Students are attentive and respond appropriately to vocal, musical, social or observed cues.
FPA4.4.D.5: Students recognize how dance opportunities are supported in the community	FPA8.4.D.5: Students understand the economics of dance, including the role of advocacy and philanthropy	FPA11.4.D.5: Students analyze the economics of dance including the role of management, patronage, philanthropy and advocacy

Music

Standard 1: Creative Expression Through Production:
Students create, perform, exhibit or participate in the arts.

K-4	5-8	9-11
FPA4.1.M.1: Students develop basic musicianship through practice, rehearsal and revision	FPA8.1.M.1: Students demonstrate musicianship through individual practice, rehearsal and revision	FPA11.1.M.1: Students refine musicianship through individual practice, rehearsal, revision and performance
FPA 4.1.M.2: Students perform independently and with others a varied repertoire of music, developing pitch accuracy, rhythm, posture, dynamics, and steady beat.	FPA 8.1.M.2: Students perform independently and with others a varied repertoire of music, demonstrating correct posture, playing position, breath control, dynamics, intonation, range and tone quality.	FPA 11.1.M.2: Students perform independently and with others a varied repertoire of music, refining musicianship and technical accuracy.
FPA4.1.M.3: Students improvise simple rhythms, melodies and accompaniments using a variety of traditional and non-traditional sounds	FPA8.1.M.3: Students improvise rhythms, melodies and accompaniments within a consistent style, meter, and tonality	FPA11.1.M.3: Students improvise rhythms, melodies and accompaniments within a consistent style, meter, and tonality, and discuss their musical choices
FPA 4.1.M.4: Students create music using a variety of traditional and non-traditional sound sources	FPA 8.1.M.4: Students compose and arrange music within specified guidelines	FPA 11.1.M.4: Students compose and arrange music within specified guidelines, demonstrating creativity in using the elements of music for expressive effect
FPA 4.1.M.5: Students read and notate simple rhythm, dynamics and pitch notation	FPA 8.1.M.5: Students develop musical literacy through reading, sightreading and notating music	FPA 11.1.M.5: Students demonstrate musical literacy through reading, sightreading and notating music

Music

Standard 2: Aesthetic Perception:

Students respond to, analyze, and make informed judgments about the arts.

K-4	5-8	9-11
FPA4.2.M.1 Students use appropriate terminology to identify simple forms and the timbres of a variety of instruments and voices.	FPA8.2.M.1 Students apply appropriate terminology in the analysis of compositional devices and techniques used in a musical work	FPA11.2.M.1 Students analyze compositional devices and techniques used in a musical work and give examples of other works that make similar uses of these devices and techniques
FPA4.2.M.2 Students respond to aural examples by moving to and describing music of various styles	FPA8.2.M.2 Students respond to aural examples by describing musical elements of a varied repertoire of music	FPA11.2.M.2 Students respond to aural examples by evaluating musical elements and expressive devices of a varied repertoire of music
FPA4.2.M.3 Students explore criteria and discuss the quality of their own and others' performances and improvisations	FPA8.2.M.3 Students discuss criteria and evaluate the quality and effectiveness of their own and others' performances, compositions, arrangements, or improvisations	FPA11.2.M.3 Students apply criteria in evaluating their own and others' performances, compositions, arrangements, or improvisations by comparing and contrasting them to similar or exemplary models.
FPA4.2.M.4 Students explain their preferences for specific musical works and genres	FPA8.2.M.4 Students form and defend their preferences for musicians, musical works and genres	FPA11.2.M.4 Students form and defend their preferences for musicians, musical works and genres

Music

**Standard 3: Historical and cultural context:
Students demonstrate an understanding of the arts
in relation to history, cultures, and contemporary society.**

K-4	5-8	9-11
FPA4.3.M.1: Students identify by genre or style examples of music from various historical periods and cultures	FPA8.3.M.1: Students describe distinguishing characteristics of musical genres or styles from various historical periods and cultures	FPA11.3.M.1: Students classify, by genre or style and by historical period or culture, unfamiliar music and explain the reasoning behind their classifications
FPA4.3.M.2: Students listen to a varied repertoire of music and explore the historical and cultural significance	FPA8.3.M.2: Students listen to a varied repertoire of music and explain the characteristics that cause a work to be considered historically or culturally significant	FPA11.3.M.2: Students listen to a varied repertoire of music, emphasizing American music, and analyze the characteristics that cause a work to be considered historically or culturally significant
FPA4.3.M.3: Students identify the purposes of music, roles of musicians, and environments in which music is performed in their daily lives and other world cultures	FPA8.3.M.3: Students compare the purposes of music, roles of musicians, and environments in which music is typically performed in a variety of world cultures	FPA11.3.M.3: Students evaluate the various purposes of music, select music for a specific purpose, and defend their choice

Music

Standard 4: Artistic Connections:

Students relate the arts to other disciplines, careers and everyday life.

K-4	5-8	9-11
FPA4.4.M.1: Students demonstrate safe, responsible and appropriate behavior in a variety of musical settings	FPA8.4.M.1: Students demonstrate safe, responsible and appropriate behavior in a variety of musical settings	FPA11.4.M.1: Students demonstrate safe, responsible and appropriate behavior in a variety of musical settings
FPA4.4.M.2: Students identify similarities and differences between other disciplines and music	FPA8.4.M.2: Students describe ways in which other disciplines are interrelated with music	FPA11.4.M.2: Students examine the creative and analytical processes of music in relationship to other disciplines
FPA4.4.M.3: Students explore careers, cultural and recreational opportunities in music	FPA8.4.M.3: Students develop an awareness of careers, cultural and recreational opportunities in music	FPA11.4.M.3: Students identify how musical skills and dispositions are applied to careers, cultural and recreational opportunities
FPA4.4.M.4: Students recognize how musical opportunities are supported in the community	FPA8.4.M.4: Students discuss the economics of music, including the role of advocacy	FPA11.4.M.4: Students analyze the economics of music including the role of management, patrons, philanthropy and advocacy

Theatre

Standard 1: Creative Expression Through Production: Students create, perform, exhibit or participate in the arts.

K-4	5-8	9-11
FPA4.1.T.1: Students create and perform to express ideas through the use of movement, sound and language	FPA8.1.T.1: Students perform in a theatrical setting	FPA11.1.T.1: Students perform in a theatrical setting using a variety of dramatic styles.
FPA4.1.T.2: Students explore the expression of an idea through the creative use of available materials and resources	FPA8.1.T.2: Students create for a theatrical setting using technical theatre skills	FPA11.1.T.2: Students design and create for a theatrical setting using a variety of technical theatre skills and technologies
FPA4.1.T.3: Students develop self-discipline through practice and memorization	FPA8.1.T.3: Students improve theatrical skills and self-discipline through rehearsal, practice, and memorization.	FPA11.1.T.3: Students refine theatrical skills and self-discipline through rehearsal, practice, memorization and revision
FPA4.1.T.4: Students develop collaborative skills through the creative dramatic process	FPA8.1.T.4: Students apply collaborative skills in the creative dramatic process	FPA11.1.T.4: Students apply collaborative skills to create and critique theatrical works
FPA4.1.T.5: Students imagine and describe characters, plots and settings	FPA8.1.T.5: Students explore character and theme within a dramatic piece	FPA11.1.T.5: Students research characters, themes, and historical events to support the creation of theatrical productions
	FPA8.1.T.6: Students understand the role of a script in a production	FPA11.1.T.6: Students use a script to inform their performances and technical theatre designs

Theatre

Standard 2: Aesthetic Perception:

Students respond to, analyze, and make informed judgments about the arts.

FPA4.2.T.1: Students view and discuss a live performance	FPA8.2.T.1: Students view and analyze a live performance including articulating emotional responses to the performance	FPA11.2.T.1: Students view and critique a live performance, including responses to the intellectual and emotional effects of the performance
FPA4.2.T.2: Students observe and describe how theatrical elements contribute to a live performance	FPA8.2.T.2: Students observe and analyze how technical, organizational and theatrical elements contribute to the ideas, aesthetic quality, and impact of the theatrical form.	FPA11.2.T.2: Students observe and evaluate how technical, organizational and theatrical elements contribute to the ideas, aesthetic quality, and impact of the theatrical form.
FPA4.2.T.3: Students describe subjects, themes and symbols of a dramatic work using basic theatrical terminology	FPA8.2.T.3: Students interpret dramatic works, identifying subjects, themes, artistic choices and symbols that communicate their knowledge of context, values and meaning through use of theatrical terminology	FPA11.2.T.3: Students interpret and analyze the intentions and artistic choices of dramatic artists through themes, subjects and symbols through use of theatrical terminology. Students question and explore the implications of the dramatic artists' various purposes
FPA4.2.T.4: Students explain their personal preference for dramatic works.	FPA8.2.T.4: Students explain personal preferences for dramatic works and styles through the influence of personal experiences	FPA11.2.T.4: Students form and defend preferences for specific theatrical works using a rationale based on an analysis of theatrical elements, and personal experiences.
FPA4.2.T.5: Students read and understand a simple script	FPA8.2.T.5: Students read and analyze a script	FPA11.2.T.5: Students read, analyze and evaluate scripts

Theatre

Standard 3: Historical and cultural context:
Students demonstrate an understanding of the arts in relation to history, cultures, and contemporary society.

K-4	5-8	9-11
FPA4.3.T.1: Students explore dramatic works belonging to various cultures, times, and places.	FPA8.3.T.1: Students investigate dramatic works as belonging to various cultures, times, and places.	FPA11.3.T.1: Students analyze dramatic works and distinguishing features from a variety of cultures and historical periods
	FPA8.3.T.2: Students explain how history, culture and theatre influence each other.	FPA11.3.T.2: Students examine the role and development of the theatre arts in a variety of cultures and historical periods
		FPA11.3.T.3 Students evaluate how a work of theatre impacts and is influenced by authorial, social, cultural and historical contexts

Theatre

Standard 4: Artistic Connections:

Students relate the arts to other disciplines, careers and everyday life.

K-4	5-8	9-11
FPA4.4.T.1: Students demonstrate appropriate etiquette in a variety of theatrical settings	FPA8.4.T.1: Students demonstrate appropriate etiquette in a variety of theatrical settings	FPA11.4.T.1: Students demonstrate appropriate etiquette in a variety of a theatrical settings
FPA4.4.T.2: Students develop and practice safe and responsible behavior in theatrical spaces	FPA8.4.T.2: Students demonstrate and practice safe and responsible behavior in theatrical spaces	FPA11.4.T.2: Students model and practice safe and responsible behavior in theatrical spaces
FPA4.4.T.3: Students identify connections between theatre and other disciplines	FPA8.4.T.3: Students describe ways in which the principles and subject matter of theatre are interrelated with other disciplines	FPA11.4.T.3: Students connect the creative and analytical processes and techniques of theatre with other disciplines, and understand how theatre influences and enhances other disciplines
FPA4.4.T.4: Students identify careers and recreational opportunities in theatre	FPA8.4.T.4: Students explore careers and recreational opportunities utilizing theatrical skills	FPA11.4.T.4: Students identify theatrical skills and determine how they apply to a variety of careers and recreational opportunities
FPA4.4.T.5: Students recognize theatre artists in their family and community and explore how these artists create their work	FPA8.4.T.5: Students recognize the role of theatre artists in their culture and investigate how these artists create their work	FPA11.4.T.5: Students analyze the contributions that theatre and its artists make to their local community and contemporary society
FPA4.4.T.6: Students recognize how theatre opportunities are supported in the community	FPA8.4.T.6: Students understand the economics of the theatre, including the role of advocacy and philanthropy	FPA11.4.T.6: Students analyze the economics of theatre including the role of management, patronage, philanthropy and advocacy

Grades K-12 Common Core State Standards Literacy Component

K-5: To build a foundation for college and career readiness, students must read widely and deeply from among a broad range of high-quality, increasingly challenging literary and informational texts.

K-5: To build a foundation for college and career readiness, students need to learn to use writing as a way of offering and supporting opinions, demonstrating understanding of the subjects they are studying, and conveying real and imagined experiences and events.

6-12: To become college and career ready, students must grapple with works of exceptional craft and thought whose range extends across genres, cultures, and centuries

6-12: For students, writing is a key means of asserting and defending claims, showing what they know about a subject, and conveying what they have experienced, imagined, thought, and felt.

It is important to note that these Reading/Writing standards are meant to complement the specific content demands of the discipline, not replace them.

For further examination of the Literacy Component in the Common Core State Standards:

<http://www.corestandards.org/the-standards/english-language-arts-standards/science-technical/introduction/>

**ACTION SUMMARY SHEET
STATE BOARD OF EDUCATION**

DATE: September 27, 2012

ISSUE: Approval of Wyoming School Districts' Certified Personnel Evaluation Systems

BACKGROUND:

- Adjusted Chapter 29 Rules for Certified Personnel Evaluation Systems were approved in November 2010.
- State statute requires the State Board of Education to approve districts' certified personnel evaluation systems.
- Chapter 29 aligned district evaluation systems for core teachers and principals were to be approved and implemented during the 2011-2012 school year.
- Chapter 29 aligned district evaluation systems for all other certified personnel were to be approved and implemented during the 2012-2013 school year.

SUGGESTED MOTION(s)/RECOMMENDATION(s):

It is recommended that the State Board of Education approve the Certified Personnel Evaluation Systems for Big Horn CSD #4, Campbell CSD #1, Converse CSD #1, Converse CSD #2, Fremont CSD #1, Fremont CSD #2, Fremont CSD #14, Goshen CSD #1, Hot Springs CSD #1, Johnson CSD #1, Laramie CSD #1, Lincoln CSD #1, Natrona CSD #1, Niobrara CSD #1, Park CSD #1, Park CSD #6, Park CSD #16, Platte CSD #1, Platte CSD #2, Sheridan CSD #2, Sheridan CSD #3, Sublette CSD #1, Sublette CSD #9, Sweetwater CSD #1, Sweetwater CSD #2, Teton CSD #1, Uinta CSD #1, Uinta CSD #4, Uinta CSD #6, Washakie CSD #1, and Snowy Range Academy.

SUPPORTING INFORMATION ATTACHED:

Certified Personnel Evaluation Systems Approval Narrative
Certified Personnel Evaluation Systems Approval Status

PREPARED BY: *Carol Illian*

Carol Illian, Supervisor of Teacher/Leader Quality

APPROVED BY: _____

**John Masters
State Board of Education Liaison**

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

COMMENTS:

CERTIFIED PERSONNEL EVALUATION SYSTEMS
Approval by State Board of Education

September 27, 2012

Following approval of Chapter 29 Rules and Regulations for Evaluation of Certified Personnel in November 2010, all Wyoming school districts were asked to have approvable evaluation systems aligned with the Rules in place by the beginning of the 2011-2012 school year. The districts, noting that the timeline was relatively tight, requested that they be required to have systems for core teachers and principals in place by the stated deadline, but have another year to develop and/or adopt their systems for the remaining certified personnel in their districts. That request was granted.

The Wyoming Department of Education (WDE) has reviewed all submitted systems to ensure that all Chapter 29 requirements are included in the districts' systems. When it was determined that not all requirements had been met, the districts were asked to make the necessary adjustments; they have made adjustments, and some are still working on adjustments and/or completing development of their certified personnel evaluation systems for those "other" certified personnel.

The attached chart identifies thirty (30) districts and one charter school that have WDE approved certified personnel evaluation systems for core teachers, principals, and all other certified personnel in their districts. As you can see, all districts have WDE approved systems for their core teachers and principals, but sixteen (16) continue to work on their systems for "other certified personnel", and two (2) still have not submitted their systems for the "other certified personnel".

State statute requires the State Board of Education to approve districts' certified personnel evaluation systems. WDE is recommending that the Board approve the certified personnel evaluation systems for the thirty (30) districts and one (1) charter school that it has approved. Guidance as to how the Board wishes to proceed with the remaining eighteen (18) districts is requested.

*Compiled and submitted by
Carol Illian
Supervisor, Teacher/Leader Quality
Wyoming Department of Education*

CERTIFIED PERSONNEL EVALUATION SYSTEMS

Districts' WDE Approval Status

September 16, 2012

District	Core Teachers & Principals	Other Certified Personnel	Evaluation System Complete
Albany CSD #1	WDE Approved	Conditional	
Big Horn CSD #1	WDE Approved	Conditional	
Big Horn CSD #2	WDE Approved	Conditional	
Big Horn CSD #3	WDE Approved	Conditional	
Big Horn CSD #4	WDE Approved	WDE Approved	Yes
Campbell CSD #1	WDE Approved	WDE Approved	Yes
Carbon CSD #1	WDE Approved	Conditional	
Carbon CSD #2	WDE Approved	Conditional	
Converse CSD #1	WDE Approved	WDE Approved	Yes
Converse CSD #2	WDE Approved	WDE Approved	Yes
Crook CSD #1	WDE Approved	Conditional	
Fremont CSD #1	WDE Approved	WDE Approved	Yes
Fremont CSD #2	WDE Approved	WDE Approved	Yes
Fremont CSD #6	WDE Approved	Not Submitted	
Fremont CSD #14	WDE Approved	WDE Approved	Yes
Fremont CSD #21	WDE Approved	Not Approved	
Fremont CSD #24	WDE Approved	Conditional	
Fremont CSD #25	WDE Approved	Conditional	
Fremont CSD #38	WDE Approved	Not Submitted	
Goshen CSD #1	WDE Approved	WDE Approved	Yes
Hot Springs CSD #1	WDE Approved	WDE Approved	Yes
Johnson CSD #1	WDE Approved	WDE Approved	Yes
Laramie CSD #1	WDE Approved	WDE Approved	Yes
Laramie CSD #2	WDE Approved	Conditional	
Lincoln CSD #1	WDE Approved	WDE Approved	Yes
Lincoln CSD #2	WDE Approved	Conditional	
Natrona CSD #1	WDE Approved	WDE Approved	Yes
Niobrara CSD #1	WDE Approved	WDE Approved	Yes
Park CSD #1	WDE Approved	WDE Approved	Yes
Park CSD #6	WDE Approved	WDE Approved	Yes
Park CSD #16	WDE Approved	WDE Approved	Yes
Platte CSD #1	WDE Approved	WDE Approved	Yes

Platte CSD #2	WDE Approved	WDE Approved	Yes
Sheridan CSD #1	WDE Approved	Conditional	
Sheridan CSD #2	WDE Approved	WDE Approved	Yes
Sheridan CSD #3	WDE Approved	WDE Approved	Yes
Sublette CSD #1	WDE Approved	WDE Approved	Yes
Sublette CSD #9	WDE Approved	WDE Approved	Yes
Sweetwater CSD #1	WDE Approved	WDE Approved	Yes
Sweetwater CSD #2	WDE Approved	WDE Approved	Yes
Teton CSD #1	WDE Approved	WDE Approved	Yes
Uinta CSD #1	WDE Approved	WDE Approved	Yes
Uinta CSD #4	WDE Approved	WDE Approved	Yes
Uinta CSD #6	WDE Approved	WDE Approved	Yes
Washakie CSD #1	WDE Approved	WDE Approved	Yes
Washakie CSD #2	WDE Approved	Conditional	
Weston CSD #1	WDE Approved	Conditional	
Weston CSD #7	WDE Approved	Conditional	
Snowy Range Academy	WDE Approved	WDE Approved	Yes



Wyoming statute 21-16-1307 outlines the Success Curriculum requirements for the Hathaway Scholarship Program. Success Curriculum courses are expected to provide rigorous educational experiences for high school students that will prepare them for a post-secondary education and reduce the need for remediation in college. All Success Curriculum courses must be aligned to the current Wyoming Content Standards.

The math and science sections of the Success Curriculum are unique to the other content areas in that “additional math” and “additional science” courses may include courses that do not technically provide a math or science credit, yet count toward the *math* and *science* Success Curriculum requirements. For example, **business math** is allowed for the additional math requirement of the Success Curriculum, even though a student may actually earn a Career-Vocational Education credit for the same course. Another example is **agriculture science** for the additional science requirement. These courses are allowed because the course content can be aligned to the science or math content standards (as well as the Career-Vocational Education standards).

Courses that incorporate a substantial portion of standards from *math* or *science* are reviewed and considered for the “additional math” or “additional science” requirement through the Success Curriculum course verification process. The WDE math and science consultants offer the following guidance for districts who are interested in including courses to their Hathaway Success Curriculum in the “additional math” or “additional science” category even if the student will earn a non-math or non-science credit.

To add an “additional science” course:

- Proposed course(s) must align with the current Wyoming Science Content Standards as follows (see attached content standards):
 - Course must align with the entirety of *Science Content Standard #2: Science as Inquiry*, including all benchmarks.
 - Course must align with the entirety of *Science Content Standard #3: History and Nature of Science in Personal and Social Decisions*, including all benchmarks.
 - Course must align with *Science Content Standard #1: Concepts and Processes* as follows:
 - For the Life Systems branch*, meet five (5) of the six (6) benchmarks.
 - For the Earth and Space Systems branch*, meet two (2) of the three (3) benchmarks.
 - For the Physical Systems branch*, meet three (3) of the five (5) benchmarks.
- Please check with the Hathaway Consultant at WDE for questions about any additional science courses your district would like to add.

*For Science Content Standard #1, courses need only align with the branch(es) that meet the goals of the additional science course.

To add an “additional math” course:

- Proposed course(s) must align with the current Wyoming Math Content Standards* as follows (see attached content standards):
 - For the Number and Quantity domain, see attached for required sub-domains, clusters, and standards.
 - For the Algebra domain, see attached for required sub-domains, clusters, and standards.
 - For the Functions domain, see attached for required sub-domains, clusters, and standards.
 - For the Geometry domain, see attached for required sub-domains, clusters, and standards.
 - For the Statistics and Probability domain, see attached for required sub-domains, clusters, and standards.
- Business courses must incorporate the required components of the following domains:
 - Number and Quantity
 - Algebra
 - Functions
 - Statistics and Probability
- Drafting or Construction courses must incorporate the required components of the following domains:
 - Geometry
- Please check with the Hathaway Consultant at WDE for questions about any additional math courses your district would like to add.

*Courses need only align with the domain(s) that meet the goals of the additional math course.

See attached curriculum map for one example of how to align science standards to CTE standards.

- For questions about the Hathaway Success Curriculum, contact Joey French (joey.french@wyo.gov).
- For questions about additional science courses, contact Jim Verley (jim.verley@wyo.gov).
- For questions about additional math courses, contact Laurie Hernandez (laurie.hernandez@wyo.gov).

GRADE SPAN 9-12

CONTENT STANDARD 1: CONCEPTS AND PROCESSES

Science is a dynamic process; concepts and processes in life systems, earth and space systems, and physical systems are best learned through inquiry and investigation. Students develop an understanding of scientific content through inquiry within the context of these unifying concepts and processes:

- Systems, classification, order, and organization
- Evidence, models, and explanations
- Change, constancy, and measurement
- Evolution and equilibrium
- Form and function

CODE	GRADE 11 BENCHMARKS
LIFE SYSTEMS	
SC11.1.1	<u>The Cell</u> : Explain the processes of life, which necessitates an understanding of relationships between structure and function of the cell and cellular differentiation. Identify activities taking place in an organism related to metabolic activities in cells, including growth, regulation, transport, and homeostasis. _Differentiate between asexual and sexual reproduction.
SC11.1.2	<u>Molecular Basis of Heredity</u> : Demonstrate an understanding that organisms ensure species continuity by passing genetic information from parent to offspring. Utilize genetic information to make predictions about possible offspring. Apply concepts of molecular biology (DNA and genes) to recent discoveries.
SC11.1.3	<u>Biological Evolution</u> : Explain how species evolve over time. Understand that evolution is the consequence of various interactions, including the genetic variability of offspring due to mutation and recombination of genes, and the ensuing selection by the environment of those offspring better able to survive and leave additional offspring. Discuss natural selection and that its evolutionary consequences provide a scientific explanation for the great diversity of organisms as evidenced by the fossil record. Examine how different species are related by descent from common ancestors. Explain how organisms are classified based on similarities that reflect their evolutionary relationships, with species being the most fundamental unit of classification.
SC11.1.4	<u>Interdependence of Organisms</u> : Investigate the interrelationships and interdependence of organisms, including the ecosystem concept, energy flow, competition for resources, and human effects on the environment.
SC11.1.5	<u>Matter, Energy, and Organization in Living Systems</u> : Describe the need of living systems for a continuous input of energy to maintain chemical and physical stability. Explain the unidirectional flow of energy and organic matter through a series of trophic levels in living systems. Investigate the distribution and abundance of organisms in ecosystems, which are limited by the availability of matter and energy and the ability of the living system to recycle materials.
SC11.1.6	<u>Behavior and Adaptation</u> : Examine behavior as the sum of responses of an organism to stimuli in its environment, which evolves through adaptation, increasing the potential for species survival. Identify adaptations as characteristics and behaviors of an organism that enhance the chance for survival and reproductive success in a particular environment.

EARTH AND SPACE SYSTEMS	
SC11.1.7	<p><u>Geochemical Cycles</u>: Describe the Earth as a closed system and demonstrate a conceptual understanding of the following systems:</p> <ul style="list-style-type: none"> • Geosphere • Hydrosphere • Atmosphere • Biosphere <p>Explain the role of energy in each of these systems, such as weather patterns, global climate, weathering, and plate tectonics.</p>
SC11.1.8	<p><u>Origin and Evolution of the Earth System</u>: Investigate geologic time through comparing rock sequences, the fossil record, and decay rates of radioactive isotopes.</p>
SC11.1.9	<p><u>Origin and Evolution of the Universe</u>: Examine evidence for the Big Bang Theory and recognize the immense time scale involved in comparison to human-perceived time. Describe the process of star and planet formation, planetary and stellar evolution, including the fusion process, element formation, and dispersion.</p>
PHYSICAL SYSTEMS	
SC11.1.10	<p><u>Structure and Properties of Matter</u>: Describe the atomic structure of matter, including subatomic particles, their properties, and interactions. Recognize that elements are organized into groups in the periodic table based on their outermost electrons and these groups have similar properties. Explain chemical bonding in terms of the transfer or sharing of electrons between atoms. Describe physical states of matter and phase changes. Differentiate between chemical and physical properties, and chemical and physical changes.</p>
SC11.1.11	<p><u>Chemical Reactions</u>: Recognize that chemical reactions take place all around us. Realize that chemical reactions may release or consume energy, occur at different rates. Identify the factors that affect reaction rates. and result in the formation of different substances.</p>
SC11.1.12	<p><u>Conservation of Energy and Increase in Disorder</u>: Demonstrate and understanding of the laws of conservation of mass and energy within the context of physical and chemical changes. Realize the tendency for systems to increase in disorder.</p>
SC11.1.13	<p><u>Energy and Matter</u>: Demonstrate an understanding of types of energy, energy transfer and transformations, and the relationship between mass and energy.</p>
SC11.1.14	<p><u>Force and Motion</u>: Develop a conceptual understanding of Newton's Laws of Motion, gravity, electricity, and magnetism.</p>

GRADE 11 PERFORMANCE LEVEL DESCRIPTORS

1. CONCEPTS AND PROCESSES

ADVANCED PERFORMANCE

11th grade students at the advanced level, in addition to demonstrating the proficient level, make connections among unifying concepts and processes to explain the natural world and the dynamic nature of science. The cognitive complexity for students at this level reaches into a higher level of thinking, requiring frequent responses citing evidence, drawing conclusions, explaining phenomena, and using concepts to solve problems. Students extend many of the higher level thinking skills over a period of time, such as making connections between related concepts and phenomena and synthesizing ideas into new concepts.

PROFICIENT PERFORMANCE

11th grade students at the proficient level demonstrate an accurate understanding of science content. Students make connections to the major related unifying concepts and processes, building on their prior knowledge and experiences. The cognitive complexity at this level identifies students who recognize, use, identify, describe, and recall scientific information. In addition to these levels of performance, students explain, classify, organize, model, illustrate, systematize, evaluate, relate, interpret, observe, and predict, which extends beyond a habitual response.

BASIC PERFORMANCE

11th grade students at the basic level demonstrate an accurate understanding of some basic science facts and principles. With support, they make connections to related unifying concepts and processes. The cognitive complexity for students at this level identifies students who recognize, use, identify, describe, and recall scientific information with support.

BELOW BASIC PERFORMANCE

11th grade students at the below basic level require extensive support or provide little or no evidence in meeting the standard. The cognitive complexity for students at this level identifies students who have difficulty with skills to recognize, use, identify, describe, and recall scientific information.

**CONTENT STANDARD
2: SCIENCE AS INQUIRY**

Students demonstrate knowledge, skills, and habits of mind necessary to safely perform scientific inquiry. Inquiry is the foundation for the development of content, teaching students the use of processes of science that enable them to construct and develop their own knowledge. Inquiry requires appropriate field, classroom, and laboratory experiences with suitable facilities and equipment.

CODE	GRADE 11 BENCHMARKS
SC11.2.1	Students use research scientific information and present findings through appropriate means.
SC11.2.2	Students use inquiry to conduct scientific investigations. <ul style="list-style-type: none">• Pose problems and identify questions and concepts to design and conduct an investigation.• Collect, organize, analyze and appropriately represent data.• Give priority to evidence in drawing conclusions and making connections to scientific concepts.• Clearly and accurately communicate the result of the investigation.
SC11.2.3	Students clearly and accurately communicate the result of their own work as well as information from other sources.
SC11.2.4	Students investigate the relationships between science and technology and the role of technological design in meeting human needs.
SC11.2.5	Students properly use appropriate scientific and safety equipment, recognize hazards and safety symbols, and observe standard safety procedures.

Mathematics Standards for High School

The high school standards specify the mathematics that all students should study in order to be college and career ready. Additional mathematics that students should learn in order to take advanced courses such as calculus, advanced statistics, or discrete mathematics is indicated by (+), as in this example:

(+) Represent complex numbers on the complex plane in rectangular and polar form (including real and imaginary numbers).

All standards without a (+) symbol should be in the common mathematics curriculum for all college and career ready students. Standards with a (+) symbol may also appear in courses intended for all students.

The high school standards are listed in conceptual categories:

- Number and Quantity
- Algebra
- Functions
- Modeling
- Geometry
- Statistics and Probability

Conceptual categories portray a coherent view of high school mathematics; a student's work with functions, for example, crosses a number of traditional course boundaries, potentially up through and including calculus.

Modeling is best interpreted not as a collection of isolated topics but in relation to other standards. Making mathematical models is a Standard for Mathematical Practice, and specific modeling standards appear throughout the high school standards indicated by a star symbol (*). The star symbol sometimes appears on the heading for a group of standards; in that case, it should be understood to apply to all standards in that group.

Mathematics | High School—Number and Quantity

Numbers and Number Systems. During the years from kindergarten to eighth grade, students must repeatedly extend their conception of number. At first, “number” means “counting number”: 1, 2, 3... Soon after that, 0 is used to represent “none” and the whole numbers are formed by the counting numbers together with zero. The next extension is fractions. At first, fractions are barely numbers and tied strongly to pictorial representations. Yet by the time students understand division of fractions, they have a strong concept of fractions as numbers and have connected them, via their decimal representations, with the base-ten system used to represent the whole numbers. During middle school, fractions are augmented by negative fractions to form the rational numbers. In Grade 8, students extend this system once more, augmenting the rational numbers with the irrational numbers to form the real numbers. In high school, students will be exposed to yet another extension of number, when the real numbers are augmented by the imaginary numbers to form the complex numbers.

With each extension of number, the meanings of addition, subtraction, multiplication, and division are extended. In each new number system—integers, rational numbers, real numbers, and complex numbers—the four operations stay the same in two important ways: They have the commutative, associative, and distributive properties and their new meanings are consistent with their previous meanings.

Extending the properties of whole-number exponents leads to new and productive notation. For example, properties of whole-number exponents suggest that $(5^{1/3})^3$ should be $5^{(1/3)3} = 5^1 = 5$ and that $5^{1/3}$ should be the cube root of 5.

Calculators, spreadsheets, and computer algebra systems can provide ways for students to become better acquainted with these new number systems and their notation. They can be used to generate data for numerical experiments, to help understand the workings of matrix, vector, and complex number algebra, and to experiment with non-integer exponents.

Quantities. In real world problems, the answers are usually not numbers but quantities: numbers with units, which involves measurement. In their work in measurement up through Grade 8, students primarily measure commonly used attributes such as length, area, and volume. In high school, students encounter a wider variety of units in modeling, e.g., acceleration, currency conversions, derived quantities such as person-hours and heating degree days, social science rates such as per-capita income, and rates in everyday life such as points scored per game or batting averages. They also encounter novel situations in which they themselves must conceive the attributes of interest. For example, to find a good measure of overall highway safety, they might propose measures such as fatalities per year, fatalities per year per driver, or fatalities per vehicle-mile traveled. Such a conceptual process is sometimes called quantification. Quantification is important for science, as when surface area suddenly “stands out” as an important variable in evaporation. Quantification is also important for companies, which must conceptualize relevant attributes and create or choose suitable measures for them.

Number and Quantity Overview

The Real Number System

- Extend the properties of exponents to rational exponents
- Use properties of rational and irrational numbers.

Quantities

- Reason quantitatively and use units to solve problems

The Complex Number System

- Perform arithmetic operations with complex numbers
- Represent complex numbers and their operations on the complex plane
- Use complex numbers in polynomial identities and equations

Vector and Matrix Quantities

- Represent and model with vector quantities.
- Perform operations on vectors.
- Perform operations on matrices and use matrices in applications.

Mathematical Practices

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

The Real Number System**N-RN****Extend the properties of exponents to rational exponents.**

1. 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 $(5^{1/3})^3 = 5^{(1/3)3}$ to hold, so $(5^{1/3})^3$ must equal 5.*
2. Rewrite expressions involving radicals and rational exponents using the properties of exponents.

Use properties of rational and irrational numbers.← **Required.**

3. Explain why the sum or product of two rational numbers is rational; that the sum of a rational number and an irrational number is irrational; and that the product of a nonzero rational number and an irrational number is irrational.

Quantities***N-Q****Reason quantitatively and use units to solve problems.**← **Choose any 2 from this group (#1 - 3)**

1. Use units as a way to understand problems and to guide the solution of multi-step problems; choose and interpret units consistently in formulas; choose and interpret the scale and the origin in graphs and data displays.
2. Define appropriate quantities for the purpose of descriptive modeling.
3. Choose a level of accuracy appropriate to limitations on measurement when reporting quantities.

The Complex Number System**N-CN****Perform arithmetic operations with complex numbers.**← **Choose any 2 from this group (#1 - 3)**

1. Know there is a complex number i such that $i^2 = -1$, and every complex number has the form $a + bi$ with a and b real.
2. Use the relation $i^2 = -1$ and the commutative, associative, and distributive properties to add, subtract, and multiply complex numbers.
3. (+) Find the conjugate of a complex number; use conjugates to find moduli and quotients of complex numbers.

Represent complex numbers and their operations on the complex plane.

4. (+) Represent complex numbers on the complex plane in rectangular and polar form (including real and imaginary numbers), and explain why the rectangular and polar forms of a given complex number represent the same number.
5. (+) Represent addition, subtraction, multiplication, and conjugation of complex numbers geometrically on the complex plane; use properties of this representation for computation. *For example, $(-1 + \sqrt{3}i)^3 = 8$ because $(-1 + \sqrt{3}i)$ has modulus 2 and argument 120° .*
6. (+) Calculate the distance between numbers in the complex plane as the modulus of the difference, and the midpoint of a segment as the average of the numbers at its endpoints.

Use complex numbers in polynomial identities and equations.← **Choose any 2 from this group (#7 - 9)**

7. Solve quadratic equations with real coefficients that have complex solutions.
8. (+) Extend polynomial identities to the complex numbers. *For example, rewrite $x^2 + 4$ as $(x + 2i)(x - 2i)$.*
9. (+) Know the Fundamental Theorem of Algebra; show that it is true for quadratic polynomials.

Vector and Matrix Quantities**N-VM****Represent and model with vector quantities.**

1. (+) Recognize vector quantities as having both magnitude and direction. Represent vector quantities by directed line segments, and use appropriate symbols for vectors and their magnitudes (e.g., \mathbf{v} , $|\mathbf{v}|$, $\|\mathbf{v}\|$, v).
2. (+) Find the components of a vector by subtracting the coordinates of an initial point from the coordinates of a terminal point.
3. (+) Solve problems involving velocity and other quantities that can be represented by vectors.

Perform operations on vectors.

4. (+) Add and subtract vectors.
 - a. Add vectors end-to-end, component-wise, and by the parallelogram rule. Understand that the magnitude of a sum of two vectors is typically not the sum of the magnitudes.
 - b. Given two vectors in magnitude and direction form, determine the magnitude and direction of their sum.
 - c. Understand vector subtraction $\mathbf{v} - \mathbf{w}$ as $\mathbf{v} + (-\mathbf{w})$, where $-\mathbf{w}$ is the additive inverse of \mathbf{w} , with the same magnitude as \mathbf{w} and pointing in the opposite direction. Represent vector subtraction graphically by connecting the tips in the appropriate order, and perform vector subtraction component-wise.
5. (+) Multiply a vector by a scalar.
 - a. Represent scalar multiplication graphically by scaling vectors and possibly reversing their direction; perform scalar multiplication component-wise, e.g., as $c(v_x, v_y) = (cv_x, cv_y)$.
 - b. Compute the magnitude of a scalar multiple $c\mathbf{v}$ using $\|c\mathbf{v}\| = |c|v$. Compute the direction of $c\mathbf{v}$ knowing that when $|c|v \neq 0$, the direction of $c\mathbf{v}$ is either along \mathbf{v} (for $c > 0$) or against \mathbf{v} (for $c < 0$).

Perform operations on matrices and use matrices in applications.

6. (+) Use matrices to represent and manipulate data, e.g., to represent payoffs or incidence relationships in a network.
7. (+) Multiply matrices by scalars to produce new matrices, e.g., as when all of the payoffs in a game are doubled.
8. (+) Add, subtract, and multiply matrices of appropriate dimensions.
9. (+) Understand that, unlike multiplication of numbers, matrix multiplication for square matrices is not a commutative operation, but still satisfies the associative and distributive properties.
10. (+) Understand that the zero and identity matrices play a role in matrix addition and multiplication similar to the role of 0 and 1 in the real numbers. The determinant of a square matrix is nonzero if and only if the matrix has a multiplicative inverse.
11. (+) Multiply a vector (regarded as a matrix with one column) by a matrix of suitable dimensions to produce another vector. Work with matrices as transformations of vectors.
12. (+) Work with 2×2 matrices as transformations of the plane, and interpret the absolute value of the determinant in terms of area.

Choose any 4
from this group
(#6 - 12)

Mathematics | High School—Algebra

Expressions. An expression is a record of a computation with numbers, symbols that represent numbers, arithmetic operations, exponentiation, and, at more advanced levels, the operation of evaluating a function. Conventions about the use of parentheses and the order of operations assure that each expression is unambiguous. Creating an expression that describes a computation involving a general quantity requires the ability to express the computation in general terms, abstracting from specific instances.

Reading an expression with comprehension involves analysis of its underlying structure. This may suggest a different but equivalent way of writing the expression that exhibits some different aspect of its meaning. For example, $p + 0.05p$ can be interpreted as the addition of a 5% tax to a price p . Rewriting $p + 0.05p$ as $1.05p$ shows that adding a tax is the same as multiplying the price by a constant factor.

Algebraic manipulations are governed by the properties of operations and exponents, and the conventions of algebraic notation. At times, an expression is the result of applying operations to simpler expressions. For example, $p + 0.05p$ is the sum of the simpler expressions p and $0.05p$. Viewing an expression as the result of operation on simpler expressions can sometimes clarify its underlying structure.

A spreadsheet or a computer algebra system (CAS) can be used to experiment with algebraic expressions, perform complicated algebraic manipulations, and understand how algebraic manipulations behave.

Equations and inequalities. An equation is a statement of equality between two expressions, often viewed as a question asking for which values of the variables the expressions on either side are in fact equal. These values are the solutions to the equation. An identity, in contrast, is true for all values of the variables; identities are often developed by rewriting an expression in an equivalent form.

The solutions of an equation in one variable form a set of numbers; the solutions of an equation in two variables form a set of ordered pairs of numbers, which can be plotted in the coordinate plane. Two or more equations and/or inequalities form a system. A solution for such a system must satisfy every equation and inequality in the system.

An equation can often be solved by successively deducing from it one or more simpler equations. For example, one can add the same constant to both sides without changing the solutions, but squaring both sides might lead to extraneous solutions. Strategic competence in solving includes looking ahead for productive manipulations and anticipating the nature and number of solutions.

Some equations have no solutions in a given number system, but have a solution in a larger system. For example, the solution of $x + 1 = 0$ is an integer, not a whole number; the solution of $2x + 1 = 0$ is a rational number, not an integer; the solutions of $x^2 - 2 = 0$ are real numbers, not rational numbers; and the solutions of $x^2 + 2 = 0$ are complex numbers, not real numbers.

The same solution techniques used to solve equations can be used to rearrange formulas. For example, the formula for the area of a trapezoid, $A = ((b_1 + b_2)/2)h$, can be solved for h using the same deductive process.

Inequalities can be solved by reasoning about the properties of inequality. Many, but not all, of the properties of equality continue to hold for inequalities and can be useful in solving them.

Connections to Functions and Modeling. Expressions can define functions, and equivalent expressions define the same function. Asking when two functions have the same value for the same input leads to an equation; graphing the two functions allows for finding approximate solutions of the equation. Converting a verbal description to an equation, inequality, or system of these is an essential skill in modeling.

Algebra Overview

Seeing Structure in Expressions

- Interpret the structure of expressions
- Write expressions in equivalent forms to solve problems

Arithmetic with Polynomials and Rational Expressions

- Perform arithmetic operations on polynomials
- Understand the relationship between zeros and factors of polynomials
- Use polynomial identities to solve problems
- Rewrite rational expressions

Creating Equations

- Create equations that describe numbers or relationships

Reasoning with Equations and Inequalities

- Understand solving equations as a process of reasoning and explain the reasoning
- Solve equations and inequalities in one variable
- Solve systems of equations
- Represent and solve equations and inequalities graphically

Mathematical Practices

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

Seeing Structure in Expressions**A-SSE****Interpret the structure of expressions**

Choose any 1 from this group (#1 - 2)

1. Interpret expressions that represent a quantity in terms of its context.*
 - a. Interpret parts of an expression, such as terms, factors, and coefficients.
 - b. Interpret complicated expressions by viewing one or more of their parts as a single entity. *For example, interpret $P(1+r)^n$ as the product of P and a factor not depending on P .*
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 $(x^2 - y^2)(x^2 + y^2)$.*

Write expressions in equivalent forms to solve problems

Choose any 1 from this group (#3 - 4)

3. Choose and produce an equivalent form of an expression to reveal and explain properties of the quantity represented by the expression.*
 - a. Factor a quadratic expression to reveal the zeros of the function it defines.
 - b. Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.
 - 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%.*
4. Derive the formula for the sum of a finite geometric series (when the common ratio is not 1), and use the formula to solve problems. *For example, calculate mortgage payments.**

Arithmetic with Polynomials and Rational Expressions**A-APR****Perform arithmetic operations on polynomials**

1. Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.

Understand the relationship between zeros and factors of polynomials

2. Know and apply the Remainder Theorem: For a polynomial $p(x)$ and a number a , the remainder on division by $x - a$ is $p(a)$, so $p(a) = 0$ if and only if $(x - a)$ is a factor of $p(x)$.
3. Identify zeros of polynomials when suitable factorizations are available, and use the zeros to construct a rough graph of the function defined by the polynomial.

Use polynomial identities to solve problems

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.*
5. (+) Know and apply the Binomial Theorem for the expansion of $(x + y)^n$ in powers of x and y for a positive integer n , where x and y are any numbers, with coefficients determined for example by Pascal's Triangle.¹

¹The Binomial Theorem can be proved by mathematical induction or by a combinatorial argument.

Rewrite rational expressionsChoose any 1 from
this group (#6 - 7)

- 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.
- (+) Understand that rational expressions form a system analogous to the rational numbers, closed under addition, subtraction, multiplication, and division by a nonzero rational expression; add, subtract, multiply, and divide rational expressions.

Creating Equations*

A-CED

Create equations that describe numbers or relationshipsChoose any 2 from
this group (#1 - 4)

- Create equations and inequalities in one variable and use them to solve problems. *Include equations arising from linear and quadratic functions, and simple rational and exponential functions.*
- Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.
- Represent constraints by equations or inequalities, and by systems of equations and/or inequalities, and interpret solutions as viable or non-viable options in a modeling context. *For example, represent inequalities describing nutritional and cost constraints on combinations of different foods.*
- Rearrange formulas to highlight a quantity of interest, using the same reasoning as in solving equations. *For example, rearrange Ohm's law $V = IR$ to highlight resistance R .*

Reasoning with Equations and Inequalities

A-REI

Understand solving equations as a process of reasoning and explain the reasoning

- Explain each step in solving a simple equation as following from the equality of numbers asserted at the previous step, starting from the assumption that the original equation has a solution. Construct a viable argument to justify a solution method.
- Solve simple rational and radical equations in one variable, and give examples showing how extraneous solutions may arise.

Solve equations and inequalities in one variableChoose any 1 from
this group (#3 - 4)

- Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
- Solve quadratic equations in one variable.
 - 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.
 - 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 .

Solve systems of equations

- Prove that, given a system of two equations in two variables, replacing one equation by the sum of that equation and a multiple of the other produces a system with the same solutions.

6. Solve systems of linear equations exactly and approximately (e.g., with graphs), focusing on pairs of linear equations in two variables.
7. Solve a simple system consisting of a linear equation and a quadratic equation in two variables algebraically and graphically. *For example, find the points of intersection between the line $y = -3x$ and the circle $x^2 + y^2 = 3$.*
8. (+) Represent a system of linear equations as a single matrix equation in a vector variable.
9. (+) Find the inverse of a matrix if it exists and use it to solve systems of linear equations (using technology for matrices of dimension 3×3 or greater).

Represent and solve equations and inequalities graphically

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).
11. Explain why the x -coordinates of the points where the graphs of the equations $y = f(x)$ and $y = g(x)$ intersect are the solutions of the equation $f(x) = g(x)$; find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where $f(x)$ and/or $g(x)$ are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.*
12. Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.

Mathematics | High School—Functions

Functions describe situations where one quantity determines another. For example, the return on \$10,000 invested at an annualized percentage rate of 4.25% is a function of the length of time the money is invested. Because we continually make theories about dependencies between quantities in nature and society, functions are important tools in the construction of mathematical models.

In school mathematics, functions usually have numerical inputs and outputs and are often defined by an algebraic expression. For example, the time in hours it takes for a car to drive 100 miles is a function of the car's speed in miles per hour, v ; the rule $T(v) = 100/v$ expresses this relationship algebraically and defines a function whose name is T .

The set of inputs to a function is called its domain. We often infer the domain to be all inputs for which the expression defining a function has a value, or for which the function makes sense in a given context.

A function can be described in various ways, such as by a graph (e.g., the trace of a seismograph); by a verbal rule, as in, "I'll give you a state, you give me the capital city;" by an algebraic expression like $f(x) = a + bx$; or by a recursive rule. The graph of a function is often a useful way of visualizing the relationship of the function models, and manipulating a mathematical expression for a function can throw light on the function's properties.

Functions presented as expressions can model many important phenomena. Two important families of functions characterized by laws of growth are linear functions, which grow at a constant rate, and exponential functions, which grow at a constant percent rate. Linear functions with a constant term of zero describe proportional relationships.

A graphing utility or a computer algebra system can be used to experiment with properties of these functions and their graphs and to build computational models of functions, including recursively defined functions.

Connections to Expressions, Equations, Modeling, and Coordinates.

Determining an output value for a particular input involves evaluating an expression; finding inputs that yield a given output involves solving an equation. Questions about when two functions have the same value for the same input lead to equations, whose solutions can be visualized from the intersection of their graphs. Because functions describe relationships between quantities, they are frequently used in modeling. Sometimes functions are defined by a recursive process, which can be displayed effectively using a spreadsheet or other technology.

Functions Overview

Interpreting Functions

- Understand the concept of a function and use function notation
- Interpret functions that arise in applications in terms of the context
- Analyze functions using different representations

Building Functions

- Build a function that models a relationship between two quantities
- Build new functions from existing functions

Linear, Quadratic, and Exponential Models

- Construct and compare linear, quadratic, and exponential models and solve problems
- Interpret expressions for functions in terms of the situation they model

Trigonometric Functions

- Extend the domain of trigonometric functions using the unit circle
- Model periodic phenomena with trigonometric functions
- Prove and apply trigonometric identities

Mathematical Practices

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

Interpreting Functions**F-IF****Understand the concept of a function and use function notation**

1. Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then $f(x)$ denotes the output of f corresponding to the input x . The graph of f is the graph of the equation $y = f(x)$.
2. Use function notation, evaluate functions for inputs in their domains, and interpret statements that use function notation in terms of a context.
3. Recognize that sequences are functions, sometimes defined recursively, whose domain is a subset of the integers. *For example, the Fibonacci sequence is defined recursively by $f(0) = f(1) = 1$, $f(n+1) = f(n) + f(n-1)$ for $n \geq 1$.*

Interpret functions that arise in applications in terms of the contextChoose any 1 from this group (#4 - 6)

4. For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. *Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.**
5. Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. *For example, if the function $h(n)$ gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.**
6. Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.*

Analyze functions using different representations

7. Graph functions expressed symbolically and show key features of the graph, by hand in simple cases and using technology for more complicated cases.*
 - a. Graph linear and quadratic functions and show intercepts, maxima, and minima.
 - b. Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.
 - c. Graph polynomial functions, identifying zeros when suitable factorizations are available, and showing end behavior.
 - d. (+) Graph rational functions, identifying zeros and asymptotes when suitable factorizations are available, and showing end behavior.
 - e. Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.
8. Write a function defined by an expression in different but equivalent forms to reveal and explain different properties of the function.
 - a. Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context.
 - b. Use the properties of exponents to interpret expressions for exponential functions. *For example, identify percent rate of change in functions such as $y = (1.02)^t$, $y = (0.97)^t$, $y = (1.01)^{12t}$, $y = (1.2)^{t/10}$, and classify them as representing exponential growth or decay.*

9. Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). *For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.*

Building Functions**F-BF****Build a function that models a relationship between two quantities**

1. Write a function that describes a relationship between two quantities.*
 - a. Determine an explicit expression, a recursive process, or steps for calculation from a context.
 - b. Combine standard function types using arithmetic operations. *For example, build a function that models the temperature of a cooling body by adding a constant function to a decaying exponential, and relate these functions to the model.*
 - c. (+) Compose functions. *For example, if $T(y)$ is the temperature in the atmosphere as a function of height, and $h(t)$ is the height of a weather balloon as a function of time, then $T(h(t))$ is the temperature at the location of the weather balloon as a function of time.*
2. Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.*

Build new functions from existing functions

3. Identify the effect on the graph of replacing $f(x)$ by $f(x) + k$, $k f(x)$, $f(kx)$, and $f(x + k)$ for specific values of k (both positive and negative); find the value of k given the graphs. Experiment with cases and illustrate an explanation of the effects on the graph using technology. *Include recognizing even and odd functions from their graphs and algebraic expressions for them.*
4. Find inverse functions.
 - 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, $f(x) = 2x^3$ or $f(x) = (x+1)/(x-1)$ for $x \neq 1$.*
 - b. (+) Verify by composition that one function is the inverse of another.
 - c. (+) Read values of an inverse function from a graph or a table, given that the function has an inverse.
 - d. (+) Produce an invertible function from a non-invertible function by restricting the domain.
5. (+) Understand the inverse relationship between exponents and logarithms and use this relationship to solve problems involving logarithms and exponents.

Linear, Quadratic, and Exponential Models***F-LE****Construct and compare linear, quadratic, and exponential models and solve problems**

1. Distinguish between situations that can be modeled with linear functions and with exponential functions.
 - a. Prove that linear functions grow by equal differences over equal intervals, and that exponential functions grow by equal factors over equal intervals.
 - b. Recognize situations in which one quantity changes at a constant rate per unit interval relative to another.
 - c. Recognize situations in which a quantity grows or decays by a constant percent rate per unit interval relative to another.

Choose any 2 from this group (#1 - 4).

2. 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).
3. Observe using graphs and tables that a quantity increasing exponentially eventually exceeds a quantity increasing linearly, quadratically, or (more generally) as a polynomial function.
4. For exponential models, express as a logarithm the solution to $ab^{ct} = d$ where a , c , and d are numbers and the base b is 2, 10, or e ; evaluate the logarithm using technology.

Interpret expressions for functions in terms of the situation they model

5. Interpret the parameters in a linear or exponential function in terms of a context.

Trigonometric Functions

F-TF

Extend the domain of trigonometric functions using the unit circle

1. Understand radian measure of an angle as the length of the arc on the unit circle subtended by the angle.
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.
3. (+) Use special triangles to determine geometrically the values of sine, cosine, tangent for $\pi/3$, $\pi/4$ and $\pi/6$, and use the unit circle to express the values of sine, cosine, and tangent for $\pi-x$, $\pi+x$, and $2\pi-x$ in terms of their values for x , where x is any real number.
4. (+) Use the unit circle to explain symmetry (odd and even) and periodicity of trigonometric functions.

Model periodic phenomena with trigonometric functions

5. Choose trigonometric functions to model periodic phenomena with specified amplitude, frequency, and midline.*
6. (+) Understand that restricting a trigonometric function to a domain on which it is always increasing or always decreasing allows its inverse to be constructed.
7. (+) Use inverse functions to solve trigonometric equations that arise in modeling contexts; evaluate the solutions using technology, and interpret them in terms of the context.*

Prove and apply trigonometric identities

8. Prove the Pythagorean identity $\sin^2(\theta) + \cos^2(\theta) = 1$ and use it to find $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ given $\sin(\theta)$, $\cos(\theta)$, or $\tan(\theta)$ and the quadrant of the angle.
9. (+) Prove the addition and subtraction formulas for sine, cosine, and tangent and use them to solve problems.

Mathematics | High School—Modeling

Modeling links classroom mathematics and statistics to everyday life, work, and decision-making. Modeling is the process of choosing and using appropriate mathematics and statistics to analyze empirical situations, to understand them better, and to improve decisions. Quantities and their relationships in physical, economic, public policy, social, and everyday situations can be modeled using mathematical and statistical methods. When making mathematical models, technology is valuable for varying assumptions, exploring consequences, and comparing predictions with data.

A model can be very simple, such as writing total cost as a product of unit price and number bought, or using a geometric shape to describe a physical object like a coin. Even such simple models involve making choices. It is up to us whether to model a coin as a three-dimensional cylinder, or whether a two-dimensional disk works well enough for our purposes. Other situations—modeling a delivery route, a production schedule, or a comparison of loan amortizations—need more elaborate models that use other tools from the mathematical sciences. Real-world situations are not organized and labeled for analysis; formulating tractable models, representing such models, and analyzing them is appropriately a creative process. Like every such process, this depends on acquired expertise as well as creativity.

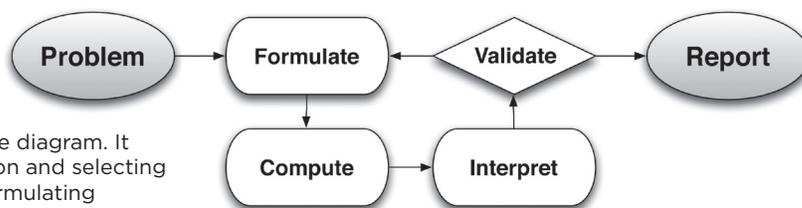
Some examples of such situations might include:

- Estimating how much water and food is needed for emergency relief in a devastated city of 3 million people, and how it might be distributed.
- Planning a table tennis tournament for 7 players at a club with 4 tables, where each player plays against each other player.
- Designing the layout of the stalls in a school fair so as to raise as much money as possible.
- Analyzing stopping distance for a car.
- Modeling savings account balance, bacterial colony growth, or investment growth.
- Engaging in critical path analysis, e.g., applied to turnaround of an aircraft at an airport.
- Analyzing risk in situations such as extreme sports, pandemics, and terrorism.
- Relating population statistics to individual predictions.

In situations like these, the models devised depend on a number of factors: How precise an answer do we want or need? What aspects of the situation do we most need to understand, control, or optimize? What resources of time and tools do we have? The range of models that we can create and analyze is also constrained by the limitations of our mathematical, statistical, and technical skills, and our ability to recognize significant variables and relationships among them. Diagrams of various kinds, spreadsheets and other technology, and algebra are powerful tools for understanding and solving problems drawn from different types of real-world situations.

One of the insights provided by mathematical modeling is that essentially the same mathematical or statistical structure can sometimes model seemingly different situations. Models can also shed light on the mathematical structures themselves, for example, as when a model of bacterial growth makes more vivid the explosive growth of the exponential function.

The basic modeling cycle is summarized in the diagram. It involves (1) identifying variables in the situation and selecting those that represent essential features, (2) formulating a model by creating and selecting geometric, graphical, tabular, algebraic, or statistical representations that describe relationships between the variables, (3) analyzing and performing operations on these relationships to draw conclusions, (4) interpreting the results of the mathematics in terms of the original situation, (5) validating the conclusions by comparing them with the situation, and then either improving the model or, if it



is acceptable, (6) reporting on the conclusions and the reasoning behind them. Choices, assumptions, and approximations are present throughout this cycle.

In descriptive modeling, a model simply describes the phenomena or summarizes them in a compact form. Graphs of observations are a familiar descriptive model—for example, graphs of global temperature and atmospheric CO₂ over time.

Analytic modeling seeks to explain data on the basis of deeper theoretical ideas, albeit with parameters that are empirically based; for example, exponential growth of bacterial colonies (until cut-off mechanisms such as pollution or starvation intervene) follows from a constant reproduction rate. Functions are an important tool for analyzing such problems.

Graphing utilities, spreadsheets, computer algebra systems, and dynamic geometry software are powerful tools that can be used to model purely mathematical phenomena (e.g., the behavior of polynomials) as well as physical phenomena.

Modeling Standards *Modeling is best interpreted not as a collection of isolated topics but rather in relation to other standards. Making mathematical models is a Standard for Mathematical Practice, and specific modeling standards appear throughout the high school standards indicated by a star symbol (*).*

Mathematics | High School—Geometry

An understanding of the attributes and relationships of geometric objects can be applied in diverse contexts—interpreting a schematic drawing, estimating the amount of wood needed to frame a sloping roof, rendering computer graphics, or designing a sewing pattern for the most efficient use of material.

Although there are many types of geometry, school mathematics is devoted primarily to plane Euclidean geometry, studied both synthetically (without coordinates) and analytically (with coordinates). Euclidean geometry is characterized most importantly by the Parallel Postulate, that through a point not on a given line there is exactly one parallel line. (Spherical geometry, in contrast, has no parallel lines.)

During high school, students begin to formalize their geometry experiences from elementary and middle school, using more precise definitions and developing careful proofs. Later in college some students develop Euclidean and other geometries carefully from a small set of axioms.

The concepts of congruence, similarity, and symmetry can be understood from the perspective of geometric transformation. Fundamental are the rigid motions: translations, rotations, reflections, and combinations of these, all of which are here assumed to preserve distance and angles (and therefore shapes generally). Reflections and rotations each explain a particular type of symmetry, and the symmetries of an object offer insight into its attributes—as when the reflective symmetry of an isosceles triangle assures that its base angles are congruent.

In the approach taken here, two geometric figures are defined to be congruent if there is a sequence of rigid motions that carries one onto the other. This is the principle of superposition. For triangles, congruence means the equality of all corresponding pairs of sides and all corresponding pairs of angles. During the middle grades, through experiences drawing triangles from given conditions, students notice ways to specify enough measures in a triangle to ensure that all triangles drawn with those measures are congruent. Once these triangle congruence criteria (ASA, SAS, and SSS) are established using rigid motions, they can be used to prove theorems about triangles, quadrilaterals, and other geometric figures.

Similarity transformations (rigid motions followed by dilations) define similarity in the same way that rigid motions define congruence, thereby formalizing the similarity ideas of “same shape” and “scale factor” developed in the middle grades. These transformations lead to the criterion for triangle similarity that two pairs of corresponding angles are congruent.

The definitions of sine, cosine, and tangent for acute angles are founded on right triangles and similarity, and, with the Pythagorean Theorem, are fundamental in many real-world and theoretical situations. The Pythagorean Theorem is generalized to non-right triangles by the Law of Cosines. Together, the Laws of Sines and Cosines embody the triangle congruence criteria for the cases where three pieces of information suffice to completely solve a triangle. Furthermore, these laws yield two possible solutions in the ambiguous case, illustrating that Side-Side-Angle is not a congruence criterion.

Analytic geometry connects algebra and geometry, resulting in powerful methods of analysis and problem solving. Just as the number line associates numbers with locations in one dimension, a pair of perpendicular axes associates pairs of numbers with locations in two dimensions. This correspondence between numerical coordinates and geometric points allows methods from algebra to be applied to geometry and vice versa. The solution set of an equation becomes a geometric curve, making visualization a tool for doing and understanding algebra. Geometric shapes can be described by equations, making algebraic manipulation into a tool for geometric understanding, modeling, and proof. Geometric transformations of the graphs of equations correspond to algebraic changes in their equations.

Dynamic geometry environments provide students with experimental and modeling tools that allow them to investigate geometric phenomena in much the same way as computer algebra systems allow them to experiment with algebraic phenomena.

Connections to Equations. The correspondence between numerical coordinates and geometric points allows methods from algebra to be applied to geometry and vice versa. The solution set of an equation becomes a geometric curve, making visualization a tool for doing and understanding algebra. Geometric shapes can be described by equations, making algebraic manipulation into a tool for geometric understanding, modeling, and proof.

Geometry Overview

Congruence

- Experiment with transformations in the plane
- Understand congruence in terms of rigid motions
- **Prove geometric theorems**
- **Make geometric constructions**

Similarity, Right Triangles, and Trigonometry

- Understand similarity in terms of similarity transformations
- Prove theorems involving similarity
- **Define trigonometric ratios and solve problems involving right triangles**
- Apply trigonometry to general triangles

Circles

- **Understand and apply theorems about circles**
- Find arc lengths and areas of sectors of circles

Expressing Geometric Properties with Equations

- Translate between the geometric description and the equation for a conic section
- **Use coordinates to prove simple geometric theorems algebraically**

Geometric Measurement and Dimension

- **Explain volume formulas and use them to solve problems**
- Visualize relationships between two-dimensional and three-dimensional objects

Modeling with Geometry

- **Apply geometric concepts in modeling situations**

Mathematical Practices

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

Congruence

G-CO

Experiment with transformations in the plane

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.
2. Represent transformations in the plane using, e.g., transparencies and geometry software; describe transformations as functions that take points in the plane as inputs and give other points as outputs. Compare transformations that preserve distance and angle to those that do not (e.g., translation versus horizontal stretch).
3. Given a rectangle, parallelogram, trapezoid, or regular polygon, describe the rotations and reflections that carry it onto itself.
4. Develop definitions of rotations, reflections, and translations in terms of angles, circles, perpendicular lines, parallel lines, and line segments.
5. Given a geometric figure and a rotation, reflection, or translation, draw the transformed figure using, e.g., graph paper, tracing paper, or geometry software. Specify a sequence of transformations that will carry a given figure onto another.

Understand congruence in terms of rigid motions

6. Use geometric descriptions of rigid motions to transform figures and to predict the effect of a given rigid motion on a given figure; given two figures, use the definition of congruence in terms of rigid motions to decide if they are congruent.
7. Use the definition of congruence in terms of rigid motions to show that two triangles are congruent if and only if corresponding pairs of sides and corresponding pairs of angles are congruent.
8. Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.

Prove geometric theorems

9. Prove theorems about lines and angles. *Theorems include: vertical angles are congruent; when a transversal crosses parallel lines, alternate interior angles are congruent and corresponding angles are congruent; points on a perpendicular bisector of a line segment are exactly those equidistant from the segment's endpoints.*
10. Prove theorems about triangles. *Theorems include: measures of interior angles of a triangle sum to 180° ; base angles of isosceles triangles are congruent; the segment joining midpoints of two sides of a triangle is parallel to the third side and half the length; the medians of a triangle meet at a point.*
11. Prove theorems about parallelograms. *Theorems include: opposite sides are congruent, opposite angles are congruent, the diagonals of a parallelogram bisect each other, and conversely, rectangles are parallelograms with congruent diagonals.*

Choose any 2 from this group (#9 - 11)

Make geometric constructions

12. Make formal geometric constructions with a variety of tools and methods (compass and straightedge, string, reflective devices, paper folding, dynamic geometric software, etc.). *Copying a segment; copying an angle; bisecting a segment; bisecting an angle; constructing perpendicular lines, including the perpendicular bisector of a line segment; and constructing a line parallel to a given line through a point not on the line.*
13. Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle.

#12 and #13 required from this group.

Similarity, Right Triangles, and Trigonometry**G-SRT****Understand similarity in terms of similarity transformations**

1. 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.
2. Given two figures, use the definition of similarity in terms of similarity transformations to decide if they are similar; explain using similarity transformations the meaning of similarity for triangles as the equality of all corresponding pairs of angles and the proportionality of all corresponding pairs of sides.
3. Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar.

Prove theorems involving similarity

4. Prove theorems about triangles. *Theorems include: a line parallel to one side of a triangle divides the other two proportionally, and conversely; the Pythagorean Theorem proved using triangle similarity.*
5. Use congruence and similarity criteria for triangles to solve problems and to prove relationships in geometric figures.

Define trigonometric ratios and solve problems involving right trianglesChoose any 2 from this group (#6 - 8)

6. Understand that by similarity, side ratios in right triangles are properties of the angles in the triangle, leading to definitions of trigonometric ratios for acute angles.
7. Explain and use the relationship between the sine and cosine of complementary angles.
8. Use trigonometric ratios and the Pythagorean Theorem to solve right triangles in applied problems.*

Apply trigonometry to general triangles

9. (+) Derive the formula $A = \frac{1}{2} ab \sin(C)$ for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side.
10. (+) Prove the Laws of Sines and Cosines and use them to solve problems.
11. (+) Understand and apply the Law of Sines and the Law of Cosines to find unknown measurements in right and non-right triangles (e.g., surveying problems, resultant forces).

Circles**G-C****Understand and apply theorems about circles**Choose any 2 from this group (#1 - 4)

1. Prove that all circles are similar.
2. Identify and describe relationships among inscribed angles, radii, and chords. *Include the relationship between central, inscribed, and circumscribed angles; inscribed angles on a diameter are right angles; the radius of a circle is perpendicular to the tangent where the radius intersects the circle.*
3. Construct the inscribed and circumscribed circles of a triangle, and prove properties of angles for a quadrilateral inscribed in a circle.
4. (+) Construct a tangent line from a point outside a given circle to the circle.

Find arc lengths and areas of sectors of circles

- Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector.

Expressing Geometric Properties with Equations**G-GPE****Translate between the geometric description and the equation for a conic section**

- Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.
- Derive the equation of a parabola given a focus and directrix.
- (+) Derive the equations of ellipses and hyperbolas given the foci, using the fact that the sum or difference of distances from the foci is constant.

Use coordinates to prove simple geometric theorems algebraically

- Use coordinates to prove simple geometric theorems algebraically. *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 $(0, 2)$.*
- Prove the slope criteria for parallel and perpendicular lines and use them to solve geometric problems (e.g., find the equation of a line parallel or perpendicular to a given line that passes through a given point).
- Find the point on a directed line segment between two given points that partitions the segment in a given ratio.
- Use coordinates to compute perimeters of polygons and areas of triangles and rectangles, e.g., using the distance formula.*

Choose any 3 from this group (#4 - 7)**Geometric Measurement and Dimension****G-GMD****Explain volume formulas and use them to solve problems**

- Give an informal argument for the formulas for the circumference of a circle, area of a circle, volume of a cylinder, pyramid, and cone. *Use dissection arguments, Cavalieri's principle, and informal limit arguments.*
- (+) Give an informal argument using Cavalieri's principle for the formulas for the volume of a sphere and other solid figures.
- Use volume formulas for cylinders, pyramids, cones, and spheres to solve problems.*

Choose any 2 from this group (#1 - 3)**Visualize relationships between two-dimensional and three-dimensional objects**

- Identify the shapes of two-dimensional cross-sections of three-dimensional objects, and identify three-dimensional objects generated by rotations of two-dimensional objects.

Modeling with Geometry**G-MG****Apply geometric concepts in modeling situations**

- Use geometric shapes, their measures, and their properties to describe objects (e.g., modeling a tree trunk or a human torso as a cylinder).*
- Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).*
- Apply geometric methods to solve design problems (e.g., designing an object or structure to satisfy physical constraints or minimize cost; working with typographic grid systems based on ratios).*

Choose any 2 from this group (#1 - 3)

Mathematics | High School—Statistics and Probability*

Decisions or predictions are often based on data—numbers in context. These decisions or predictions would be easy if the data always sent a clear message, but the message is often obscured by variability. Statistics provides tools for describing variability in data and for making informed decisions that take it into account.

Data are gathered, displayed, summarized, examined, and interpreted to discover patterns and deviations from patterns. Quantitative data can be described in terms of key characteristics: measures of shape, center, and spread. The shape of a data distribution might be described as symmetric, skewed, flat, or bell shaped, and it might be summarized by a statistic measuring center (such as mean or median) and a statistic measuring spread (such as standard deviation or interquartile range). Different distributions can be compared numerically using these statistics or compared visually using plots. Knowledge of center and spread are not enough to describe a distribution. Which statistics to compare, which plots to use, and what the results of a comparison might mean, depend on the question to be investigated and the real-life actions to be taken.

Randomization has two important uses in drawing statistical conclusions. First, collecting data from a random sample of a population makes it possible to draw valid conclusions about the whole population, taking variability into account. Second, randomly assigning individuals to different treatments allows a fair comparison of the effectiveness of those treatments. A statistically significant outcome is one that is unlikely to be due to chance alone, and this can be evaluated only under the condition of randomness. The conditions under which data are collected are important in drawing conclusions from the data; in critically reviewing uses of statistics in public media and other reports, it is important to consider the study design, how the data were gathered, and the analyses employed as well as the data summaries and the conclusions drawn.

Random processes can be described mathematically by using a probability model: a list or description of the possible outcomes (the sample space), each of which is assigned a probability. In situations such as flipping a coin, rolling a number cube, or drawing a card, it might be reasonable to assume various outcomes are equally likely. In a probability model, sample points represent outcomes and combine to make up events; probabilities of events can be computed by applying the Addition and Multiplication Rules. Interpreting these probabilities relies on an understanding of independence and conditional probability, which can be approached through the analysis of two-way tables.

Technology plays an important role in statistics and probability by making it possible to generate plots, regression functions, and correlation coefficients, and to simulate many possible outcomes in a short amount of time.

Connections to Functions and Modeling. Functions may be used to describe data; if the data suggest a linear relationship, the relationship can be modeled with a regression line, and its strength and direction can be expressed through a correlation coefficient.

Statistics and Probability Overview

Interpreting Categorical and Quantitative Data

- Summarize, represent, and interpret data on a single count or measurement variable
- Summarize, represent, and interpret data on two categorical and quantitative variables
- Interpret linear models

Making Inferences and Justifying Conclusions

- Understand and evaluate random processes underlying statistical experiments
- Make inferences and justify conclusions from sample surveys, experiments and observational studies

Conditional Probability and the Rules of Probability

- Understand independence and conditional probability and use them to interpret data
- Use the rules of probability to compute probabilities of compound events in a uniform probability model

Using Probability to Make Decisions

- Calculate expected values and use them to solve problems
- Use probability to evaluate outcomes of decisions

Mathematical Practices

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

Interpreting Categorical and Quantitative Data

S-ID

Summarize, represent, and interpret data on a single count or measurement variable

Choose any 2 from this group (#1 - 4)

1. Represent data with plots on the real number line (dot plots, histograms, and box plots).
2. Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.
3. Interpret differences in shape, center, and spread in the context of the data sets, accounting for possible effects of extreme data points (outliers).
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.

Summarize, represent, and interpret data on two categorical and quantitative variables

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.
6. Represent data on two quantitative variables on a scatter plot, and describe how the variables are related.
 - 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.*
 - b. Informally assess the fit of a function by plotting and analyzing residuals.
 - c. Fit a linear function for a scatter plot that suggests a linear association.

Interpret linear models

Choose any 2 from this group (#7 - 9)

7. Interpret the slope (rate of change) and the intercept (constant term) of a linear model in the context of the data.
8. Compute (using technology) and interpret the correlation coefficient of a linear fit.
9. Distinguish between correlation and causation.

Making Inferences and Justifying Conclusions

S-IC

Understand and evaluate random processes underlying statistical experiments

1. Understand statistics as a process for making inferences about population parameters based on a random sample from that population.
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?*

Make inferences and justify conclusions from sample surveys, experiments, and observational studies

3. Recognize the purposes of and differences among sample surveys, experiments, and observational studies; explain how randomization relates to each.

- 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 randomized experiment to compare two treatments; use simulations to decide if differences between parameters are significant.
- Evaluate reports based on data.

Conditional Probability and the Rules of Probability

S-CP

Understand independence and conditional probability and use them to interpret data

- Describe events as subsets of a sample space (the set of outcomes) using characteristics (or categories) of the outcomes, or as unions, intersections, or complements of other events (“or,” “and,” “not”).
- 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 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 .
- 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.*
- 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.*

Use the rules of probability to compute probabilities of compound events in a uniform probability 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.
- 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 general Multiplication Rule in a uniform probability model, $P(A \text{ and } B) = P(A)P(B|A) = P(B)P(A|B)$, and interpret the answer in terms of the model.
- (+) Use permutations and combinations to compute probabilities of compound events and solve problems.

Using Probability to Make Decisions

S-MD

Calculate expected values and use them to solve problems

- (+) Define a random variable for a quantity of interest by assigning a numerical value to each event in a sample space; graph the corresponding probability distribution using the same graphical displays as for data distributions.
- (+) Calculate the expected value of a random variable; interpret it as the mean of the probability distribution.

3. (+) Develop a probability distribution for a random variable defined for a sample space in which theoretical probabilities can be calculated; find the expected value. *For example, find the theoretical probability distribution for the number of correct answers obtained by guessing on all five questions of a multiple-choice test where each question has four choices, and find the expected grade under various grading schemes.*
4. (+) Develop a probability distribution for a random variable defined for a sample space in which probabilities are assigned empirically; find the expected value. *For example, find a current data distribution on the number of TV sets per household in the United States, and calculate the expected number of sets per household. How many TV sets would you expect to find in 100 randomly selected households?*

Use probability to evaluate outcomes of decisions

5. (+) Weigh the possible outcomes of a decision by assigning probabilities to payoff values and finding expected values.
 - a. Find the expected payoff for a game of chance. *For example, find the expected winnings from a state lottery ticket or a game at a fast-food restaurant.*
 - b. Evaluate and compare strategies on the basis of expected values. *For example, compare a high-deductible versus a low-deductible automobile insurance policy using various, but reasonable, chances of having a minor or a major accident.*
6. (+) Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator).
7. (+) Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game).

Teacher: [REDACTED]

Course/Subject: Agricultural Science

Grade Level: Junior/Senior

Quarter 1

Dates	Vocational Standards	Science Standards	Content	Essential Understandings	Assessment Evidence
Aug 20 Aug 31	4.1 Evaluate 4.2 Modify 6.1 Career Interests	1.3 Evolution 1.4 Interdependence 2.4 Technology 3.1 History 3.2 Decisions	Introduction to Agricultural Science	1. Students will explore the relevance of science in agriculture 2. Students will explore the importance of agriculture on the economy and society.	Written Exam Class Discussions
Sept 1 Sept 30	1.2 Performance 1.3 Resources 2.1 Diversity 2.2 Communicate 2.4 Demonstrate 3.1 Acquire Info 3.2 Organize 3.3 Interpret 3.4 Technology	1.1 Cell 1.6 Adaptation 1.11 Reactions 2.5 Safety 3.1 History	Livestock Anatomy & Physiology	1. Students will learn basic internal and external anatomy of economically important livestock. 2. Students will explain functions of body systems	Written Exams Presentation
Oct 1 Oct 15	3.3 Interpret 4.1 Evaluate 4.2 Modify 6.1 Career Interests	1.3 Evolution 1.4 Interdependence 1.6 Adaptation 1.11 Reactions 2.4 Technology 2.5 Safety 3.1 History 3.2 Decisions	Animal Health	1. Students will explain management practices to keep livestock healthy 2. Students will identify common livestock pathogens 3. Students will name treatments for common livestock diseases	Written Exam
Oct 15 Oct 31	1.2 Performance 1.3 Resources 2.1 Diversity 2.2 Communicate 2.4 Demonstrate	1.4 Interdependence 1.6 Adaptation 1.11 Reactions 2.1 Research 2.2 Investigate	Biotechnology	1. Students will explore current and future biotechnology in agriculture 2. Students will discuss ethics issues related to biotechnology 3. Students will demonstrate the six	4-6 Page Paper Speech

	<p>3.1 Acquire Info 3.2 Organize Info 3.3 Interpret Info 3.4 Technology 4.1 Evaluate 4.2 Modify 6.1 Career Interests 6.4 Job Skills</p>	<p>2.3 Communicate 2.4 Technology 3.1 History 3.2 Decisions</p>		<p>traits of writing 4. Students will demonstrate effective public speaking skills</p>	
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Teacher: Christin Shorma

Course/Subject: Agricultural Science

Grade Level: Junior/Senior

Quarter 2

Dates	Vocational Standards	Science Standards	Content	Essential Understandings	Assessment Evidence
Ongoing	1.2 Performance 1.3 Resources 2.4 Demonstrate 3.1 Acquire Info 3.2 Organize 3.3 Interpret 3.4 Technology 4.1 Evaluate 4.2 Modify 5.1 Choose Tools 5.2 Procedure 5.3 Equipment 5.4 Safety 6.1 Career Interests 6.4 Job Skills	1.2 Heredity 1.4 Interdependence 1.6 Behavior 1.11 Reactions 2.1 Research 2.2 Investigate 2.3 Communicate 2.4 Technology 2.5 Safety 3.1 History 3.2 Decisions	Scientific Method	1. Students will apply the scientific method to projects in agriculture	Project
Oct 20 Nov 1	4.1 Evaluate	1.2 Heredity 2.4 Technology 3.1 History 3.2 Decisions	Genetics	2. Students will understand heritability of traits 3. Students will explain practices used in livestock production to manipulate genetics to society's advantage	Written Exam
Nov 1 Nov 20	1.1 Financial 1.2 Performance 1.3 Resources 3.1 Acquire Info 3.2 Organize 3.3 Interpret	2.1 Research 2.2 Investigate 2.3 Communicate 2.4 Technology	Business & Career Planning	1. Students will become familiar with careers in agricultural science 2. Students will gain skills necessary to obtain college acceptance or a job 3. Students will practice strategies for selling a product or idea	Application

	<p>3.4 Technology 4.1 Evaluate 4.2 Modify 6.1 Career Interests 6.2 Career Info 6.3 Career Plan 6.4 Job Skills</p>			<p>4. Students will learn how to budget 5. Students will practice record keeping</p>	<p>Record Book</p>
<p>Nov 20 Dec 20</p>	<p>1.2 Performance 1.3 Resources 2.1 Diversity 2.2 Communicate 2.4 Demonstrate 4.1 Evaluate 4.2 Modify 5.1 Choose Tools 5.2 Procedure 5.3 Equipment 5.4 Safety</p>	<p>1.7 Geochemical 1.10 Matter 1.11 Reactions 2.2 Investigate 2.3 Communicate 2.4 Technology 2.5 Safety</p>	<p>Welding & Structural Systems</p>	<p>1. Students will demonstrate shop safety 2. Students will explain physical properties of metal 3. Students will learn different welding processes 4. Students will complete a welding project</p>	<p>Written Exam Daily Work Project</p>

Teacher: Christin Shorma

Course/Subject: Agricultural Science

Grade Level: Junior/Senior

Quarter 3

Dates	Vocational Standards	Science Standards	Content	Essential Understandings	Assessment Evidence
Jan 1 Jan 20	4.1 Evaluate	1.1 Cell 1.3 Evolution 1.4 Interdependence 1.6 Adaptations 1.11 Reactions 2.2 Investigate 2.3 Communicate 2.5 Safety 3.1 History 3.2 Decisions	Plant Structures & Physiology	1. Students will be able to identify internal & external plant structures and their functions	Written Exam
Jan 20 Feb 7	2.1 Diversity 2.2 Communicate 2.4 Demonstrate 3.1 Acquire Info 3.3 Interpret 3.4 Technology 4.1 Evaluate 4.2 Modify 5.1 Choose Tools 5.2 Procedure 5.3 Equipment 5.4 Safety	1.4 Interdependence 1.7 Geochemical 2.2 Investigate 2.3 Communicate 2.5 Safety 3.1 History 3.2 Decisions	Soil Science	1. Students will identify types of soil by texture and particle size 2. Students will identify nutrients necessary for plant growth and symptoms of deficiency	Labs: Soil Texturing Soil Nutrient Test & Analysis
Feb 7 Feb 28	1.2 Performance 2.1 Diversity 2.2 Communicate	1.3 Evolution 1.4 Interdependence 2.2 Investigate	Plant Propagation	1. Students will describe the different processes of sexual and asexual propagation	Written Exam Propagation Lab

	2.4 Demonstrate 4.1 Evaluate 4.2 Modify 5.1 Choose Tools 5.2 Procedure 5.3 Equipment 5.4 Safety	2.3 Communicate 2.4 Technology 2.5 Safety 3.1 History 3.2 Decisions			
Mar 1 Mar 20	3.3 Interpret 4.1 Evaluate 4.2 Modify 6.1 Career Interests	1.1 Cell 1.3 Evolution 1.4 Interdependence 1.6 Adaptations 2.1 Research 2.2 Investigate 2.3 Communicate 2.4 Technology 2.5 Safety 3.1 History 3.2 Decisions	Plant Pathology	1. Students will identify common plant pathogens 2. Students will identify remedies for common plant diseases	Written Exam

Teacher: Christin Shorma

Course/Subject: Agricultural Science

Grade Level: Junior/Senior

Quarter 4

Dates	Vocational Standards	Science Standards	Content	Essential Understandings	Assessment Evidence
Mar 20 Apr 30	1.3 Resources 2.1 Diversity 2.2 Communicate 2.3 Leadership 2.4 Demonstrate 3.1 Acquire Info 3.2 Organize 3.3 Interpret 3.4 Technology 4.1 Evaluate 4.2 Modify 5.1 Choose Tools 5.2 Procedure 5.3 Equipment 5.4 Safety 6.1 Career Interests 6.4 Job Skills	1.4 Interdependence 1.5 Energy 1.6 Adaptations 1.7 Geochemical 1.11 Reactions 2.2 Investigate 2.3 Communicate 2.4 Technology 2.5 Safety 3.1 History 3.2 Decisions	Environment & Natural Resource Management	<ol style="list-style-type: none"> 1. Students will identify types of agricultural pests and pest management practices 2. Students will describe sustainable resource management practices 3. Students will solve environmental problems 	Written Exam Group Practicum Biofuel Lab
Apr 25 May 15	2.1 Diversity 2.2 Communicate 2.3 Leadership 2.4 Demonstrate 4.1 Evaluate 5.2 Procedure 5.3 Equipment 5.4 Safety	1.4 Interdependence 1.11 Reactions 2.2 Investigate 2.3 Communicate 2.4 Technology 2.5 Safety 3.1 History 3.2 Decisions	Food Science	<ol style="list-style-type: none"> 1. Students will describe practices necessary for food safety 2. Students will describe biological processes used in food production 3. Students will learn food preservation techniques 	Written Exam Lab

	6.1 Career Interests 6.4 Job Skills				
Jan 20 May 20	1.1 Financial 1.2 Performance 1.3 Resources 2.1 Diversity 2.2 Communicate 2.3 Leadership 2.4 Demonstrate 4.1 Evaluate 4.2 Modify 5.1 Choose Tools 5.2 Procedure 5.3 Equipment 5.4 Safety 6.1 Career Interests 6.4 Job Skills	1.2 Heredity 1.3 Evolution 1.4 Interdependence 1.5 Energy 1.6 Adaptations 1.7 Geochemical 2.1 Research 2.2 Investigate 2.3 Communicate 2.4 Technology 2.5 Safety 3.1 History 3.2 Decisions	Plant Production	1. Students will practice soil selection 2. Students will practice plant production from seed and asexual propagation methods 3. Students will monitor and effectively manage plant growth	Greenhouse Project

**ACTION SUMMARY SHEET
STATE BOARD OF EDUCATION**

DATE: September 27, 2012

ISSUE: Review of Policy Manual and Recommendations

BACKGROUND:

SUGGESTED MOTION/RECOMMENDATION:

To review manual and provide recommendations on changes if necessary

SUPPORTING INFORMATION ATTACHED:

PREPARED BY: *Chelsie Bailey*
Chelsie Bailey, Executive Assistant

APPROVED BY: _____
John Masters
State Board of Education Liaison

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

COMMENTS:

**ACTION SUMMARY SHEET
STATE BOARD OF EDUCATION**

DATE: September 27, 2012

ISSUE: Approval of BOCES/BOCHES Agreements as stated in Wyoming State Statute §21-20-104(a).

BACKGROUND: The Wyoming State Board of Education (“State Board”), pursuant to Wyo. Stat. Ann. § 21-20-104(a), is required to approve any agreement to form a BOCES. “Any agreement to form a board of cooperative educational services entered into between the participating districts shall be approved by the state board of education.” Wyo. Stat. Ann. §21-20-104(a).

SUGGESTED MOTION/RECOMMENDATION:

To approve the following agreement:

Carbon Country School District No. 2

SUPPORTING INFORMATION ATTACHED:

- Carbon Country School District No. 2 BOCES Agreement

PREPARED BY: *Chelsie Bailey*
Chelsie Bailey, Executive Assistant

APPROVED BY: _____
John Masters
State Board of Education Liaison

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

COMMENTS:

CARBON COUNTY SCHOOL DISTRICT NO. 2 BOARD OF COOPERATIVE EDUCATIONAL SERVICES (BOCES)

This Agreement is entered into by and between the Board of Trustees, Carbon County School District No. 2 (hereinafter referred to as “District No. 2”) and Board of Trustees, Western Wyoming Community College (hereinafter referred to as “Western Wyoming Community College”), who are, collectively, referred to herein as “Participating Districts.”

WHEREAS, Wyo. Stat. Ann. 21-20-101 et. seq. (LexisNexis 2011) authorizes school districts and community college districts, or any combination, to work together and cooperate to provide educational services, including but not limited to, postsecondary education, vocational-technical education, adult education, and services for children with disabilities, when the services can be more effectively provided through a cooperative effort; and

WHEREAS, District No. 2 and Western Wyoming Community College have each passed resolutions indicating a desire to establish a board of cooperative educational services for the propose of providing cooperative educational services and finding that certain services can be provided more effectively through a cooperative effort; and

WHEREAS, a majority of the members of the Board of Trustees of Carbon County School District No. 2 voted in favor of entering into an agreement to form a board of cooperative educational services and to approve this Agreement on _____, 2012; and

WHEREAS, a majority of the members of the Board of Trustees of Western Wyoming Community College voted in favor of entering into an agreement to form a board of cooperative educational services and to approve this Agreement on _____, 2012; and

NOW, THEREFORE, for and in consideration of the mutual covenants passing by and between the parties, the adequacy and receipt of which is hereby acknowledged, the parties agree as follows:

1. Creation of Carbon County School District No. 2 Board of Cooperative Educational Services.

The Board of Trustees of District No. 2 and the Board of Trustees of Western Wyoming Community College, hereby form the “Carbon County School District No. 2 Board of Cooperative Educational Services” (hereinafter referred to as “Carbon No. 2 BOCES”) to work together and cooperate to provide educational services which can be provided more effectively through a cooperative effort.

2. Length of Term of Agreement.

The duration of this Agreement shall be perpetual, subject to the provisions contained herein relative to withdrawal or termination.

3. Rights, Responsibilities and Obligations of each Participating District.

Each Participating District shall have an equal right of access, benefit and use of materials and services provided by Carbon No. 2 BOCES. Each Participating District shall have all rights, responsibilities and obligations as provided by “The Boards of

Cooperative Educational Services Act,” Wyo. Stat. Ann. 21-20-101 et. seq. (LexisNexis 2011), as amended from time to time. In addition, Western Wyoming Community College shall have, via a separate Memorandum of Understanding, certain rights and obligations regarding supervision of the supervisor pertaining to the offering of credit classes in Carbon No. 2 BOCES.

4. Types of Services to be Rendered.

The educational services to be provided by Carbon No. 2 BOCES may include, but will not be limited to, postsecondary education, vocational-technical education, adult education, distance learning, high school concurrent enrollment, establishment of a regional Wide Area Network, and teacher in-service and training.

5. Procedure for Establishment of Additional Services; Procedure for Elimination of Services Being Provided.

The Board of Trustees of a Participating District may determine, by majority vote at a duly called public meeting, that there is an additional service that could or should be provided more effectively through a cooperative effort, or that certain services may no longer be provided more effectively through Carbon No. 2 BOCES and should be eliminated. If a Board of Trustees of a Participating District so determines, the matter shall then be forwarded to the remaining Participating Districts for review and consideration. Any matter to establish additional services or to eliminate a service being provided must be approved by a majority vote of the members of each of the Boards of Trustees of all Participating Districts in order to become effective. All changes relative to providing additional services or the elimination of services being provided shall be reduced to writing in the form of an amendment to this Agreement.

6. Board of Carbon No. 2 BOCES.

The Board of Carbon No. 2 BOCES shall be composed of five members. Four members shall be appointed from District No. 2 by its Board of Trustees. One member shall be appointed from Western Wyoming Community College by its Board of Trustees. In the event additional districts shall be included in the Carbon No. 2 BOCES, the size of the board and the number of members each then participating district shall appoint to the Board of Carbon No. 2 BOCES shall be determined as part of the process of inclusion of additional districts, but in any event each participating board of trustees shall have at least one member appointed to the Board of Carbon No.2 BOCES. The terms of office of each of the members of the Board of Carbon No.2 BOCES shall be coterminous with their respective terms of office upon their respective board of trustees. As the terms of office expire, or as vacancies occur, new members shall be appointed by the Board of Trustees of the Participating District.

7. Procedure for Inclusion of Additional Districts Within the Carbon No. 2 BOCES.

Whenever one or more outside school or community college district, as allowed by statute, desires to join with District No. 2 and Western Wyoming Community College for the purpose of providing the cooperative educational services which are provided by the Carbon No. 2 BOCES created hereunder, the chairman of the board of trustees of the outside district shall submit a written request to join to each of the Participating Districts. In this request, it is incumbent upon the outside district seeking to join Carbon No. 2 BOCES to establish that the inclusion of the outside district will provide for more effective rendering of services and that the board of the outside district has passed a resolution, by a majority vote, indicating its desire to become a part of

Carbon No. 2 BOCES. Upon receipt of this request, the matter shall be submitted to the Board of Trustees of each of the Participating Districts for consideration and a vote as to whether to include the outside district. The inclusion of an outside district must be approved by a majority vote of the members of each Board of Trustees of all Participating Districts in order to become effective. The inclusion of an additional district shall be reduced to writing in the form of an amendment to this Agreement, which amendment shall address the size of and the number of members each then participating district shall appoint to the Board of Carbon No. 2 BOCES.

8. Organizational Meeting.

Promptly upon appointment of its members, the Board of Carbon No. 2 BOCES shall meet, organize and elect from its membership a chairman, vice-chairman, clerk and treasurer, whose terms of office shall be for one (1) year unless their term of office as school/community college board members expire earlier. The duties of the chairman, vice-chairman, clerk and treasurer shall be the same as the duties provided by law for similar offices of boards of trustees of school districts insofar as they are applicable.

The Board of Carbon No. 2 BOCES shall determine where the minutes and other records of Carbon No. 2 BOCES shall be maintained and be available for public inspection. The clerk of the Board of Carbon No. 2 BOCES shall notify each Participating District of the Board's organization and file a certificate showing its organization and where the minutes and other records shall be maintained and be available for public inspection, and an executed copy of this Agreement, with the Clerk of the Board of Trustees of each Participating District, the County Clerk and the Wyoming Secretary of State.

9. Powers Vested in Carbon No. 2 BOCES.

Carbon No. 2 BOCES is vested with the powers and duties to provide educational services pursuant to this Agreement and any amendments thereto. The Board of Carbon No. 2 BOCES shall have such powers and duties as prescribed by The Boards of Cooperative Educational Services Act, Wyo. Stat. Ann. 21-20-101 et. seq. (LexisNexis 2011) as amended from time to time.

10. Liability.

No individual member of Carbon No. 2 BOCES shall be personally liable for any action or procedure of the Carbon No. 2 BOCES.

11. Meetings.

Meetings of the Board of Carbon No. 2 BOCES shall be called, held and conducted as provided by law for the meeting of the boards of trustees of school districts. A majority of the duly appointed members of the Board of Carbon No. 2 BOCES shall constitute a quorum for the transaction of business. No action shall be valid unless such action shall receive the approval of a majority of all the members appointed to the Board of Carbon No. 2 BOCES.

12. Fiscal Year.

The fiscal year of Carbon No. 2 BOCES shall be July 1st to June 30th.

13. Information, Statistics, and Reports.

Upon request of Carbon No. 2 BOCES and approval of the respective Board of Trustees, elected and appointed officers and employees of the Participating Districts

shall promptly furnish information, statistics and reports under their control to the Board of Carbon No. 2 BOCES and its appointed officers and employees. All Participating Districts shall fully cooperate with Carbon No. 2 BOCES, its board, officers and employees.

14. Reports to Participating Districts.

Carbon No. 2 BOCES shall make regular reports to the Participating Districts. Upon request of the Board of Trustees of one or more of the Participating Districts, Carbon No. 2 BOCES, its board, officers and employees shall promptly furnish information, statistics and reports under its control to all the Participating Districts and shall fully cooperate with each of the Participating Districts, the respective boards, officers and employees.

15. Financing of Facilities, Equipment and Services; Inventory of Carbon No. 2 BOCES Equipment and Property.

Carbon No. 2 BOCES shall be financed as follows: Western Wyoming Community College shall make such contribution as is provided by Legislative appropriation. District No. 2, as well as any school districts which are subsequently included in the Carbon No. 2 BOCES, shall make such contribution of funds as is generated by the levy of a special school district tax not to exceed the mill levy established by statute on the taxable valuation of the district, as provided by Wyo. Stat. Ann. 21-20-109 (a) (LexisNexis 2011) as may be amended from time to time. The amount of the mill levy shall be determined in accordance with the provisions of Wyo. Stat. Ann. 21-20-109 (b) (LexisNexis 2011) as amended from time to time.

In addition, school district(s) may impose an additional school district tax as provided in Wyo. Stat. Ann. 21-20-110 (LexisNexis 2011), as amended from time to time, upon those terms and conditions as may be agreed upon by the Participating Districts, which agreement shall provide for the contingency that the additional school district tax is not approved by the voters in all school districts included in the Carbon No.2 BOCES.

Carbon No. 2 BOCES shall at all times maintain a complete inventory of all Carbon No. 2 BOCES property and equipment, including the date of acquisition and initial purchase price. All property and equipment will be appropriately labeled so as to identify Carbon No. 2 BOCES ownership.

16. Withdrawal or Termination of Agreement.

This Agreement may be terminated, a Participating District may withdraw funding of Carbon No. 2 BOCES, or Carbon No. 2 BOCES may be dissolved upon the written consent of each Participating District. Within sixty (60) days after the effective date of such action, the facilities, equipment, improvements and other property acquired, including any money held by Carbon No. 2 BOCES shall be distributed to each of the Participating Districts in proportion to the respective financial contribution made by each Participating District during the term of this Agreement or any amendment thereto.

17. Amendment of Agreement.

This Agreement may be amended when any Participating District determines, and all other Participating Districts mutually agree, that an amendment to the Agreement is desirable or necessary. The chairman of Board of Trustees of the Participating District seeking to amend the Agreement shall submit a written request to each of the Participating Districts, specifying the amendment sought, the reasons for the sought amendment, and that the Board of Trustees of the Participating District has passed a resolution, by a majority vote, indicating its desire to make an amendment to the Agreement. Upon receipt of this request, the matter shall be submitted to the Board of Trustees of each of the Participating Districts for consideration and a vote as to whether to make the amendment sought. The amendment must be approved by a majority vote of the members of each Board of Trustees of all Participating Districts in order to become effective. The sought amendment shall be reduced to writing in the form of an amendment to this Agreement and shall be subject to the same approvals as this Agreement.

18. Authorization.

District No. 2 and Western Wyoming Community College each certifies that it has authorized entry into this Agreement pursuant to resolution and according to law.

19. Effective Date.

This Agreement shall become effective on the later date of when all of the following required actions have occurred: Both parties have approved and executed this Agreement; written approval of the Agreement has been received from: State Board of Education, Wyoming Community College Commission, and Wyoming Attorney General.

BOARD OF TRUSTEES
CARBON COUNTY SCHOOL DISTRICT NO. 2
STATE OF WYOMING

Chairman

ATTEST:

Clerk/Secretary

Date Approved by Board of Trustees

BOARD OF TRUSTEES
WESTERN WYOMING COMMUNITY COLLEGE
STATE OF WYOMING

Chairman

ATTEST:

Clerk/Secretary

Date Approved by Board of Trustees

APPROVED: WYOMING COMMUNITY COLLEGE COMMISSION

By: _____

Date Approved: _____

WYOMING STATE BOARD OF EDUCATION

By: _____

Date Approved: _____

WYOMING ATTORNEY GENERAL

By: _____

Date Approved: _____



Wyoming State Board of Education

Approval of BOCES Agreement

The Wyoming State Board of Education (“State Board”), pursuant to WYO. STAT. ANN. § 21-20-104(a), is required to approve any agreement to form a BOCES. “Any agreement to form a board of cooperative educational services entered into between the participating districts shall be approved by the state board of education.” WYO. STAT. ANN. § 21-20-104(a).

On September 27, 2012, Carbon County School District No. 2 presented the State Board with an agreement to form a BOCES. After reviewing the agreement and all the necessary documentation in order to consider the formation of a BOCES, the State Board hereby approves the creation of this BOCES.

Dated this _____ day of September 2012.

State Board Chairman

Advisory Committee to the Select Committee on Educational Accountability
Teacher Evaluations

1. Motions and implications from the July 26th Meeting of the Select Committee

- ✓ Develop a “state model system” with a requirement for some common elements across schools and districts.
- ✓ Develop common elements in the system and allow districts to give input on locally controlled aspects.
- ✓ Design a coherent system such that focuses on building quality educational organizations instead of focusing our evaluations solely on individual educators.
- ✓ Include the incorporation of student performance results in teacher and leader evaluation systems, but do not impose parameters on how much influence student performance results should have.
- ✓ Inventory existing programs for instructional improvement to avoid duplication and additional cost and focus on sharing of resources. The improvement of the professional development system and the existing resources of this system should be considered.
- ✓ Recognize that every teacher is an asset and that the state has a significant investment in its teachers and that the system should make every effort to improve their abilities as a first step, but that the system provide guidance for those teachers or leaders that are unwilling or don’t have the skills to improve.

2. Guiding Design Principles

1. The primary purpose of Wyoming’s educator evaluation and the reason for engaging in this work is to support and promote increases in student learning in Wyoming schools.
2. The State Model system and local instantiations of this system shall be designed to promote opportunities for meaningful professional growth of educators. As such, the system must be designed to provide specific and timely feedback on multiple aspects of professional practice and student learning. A feedback-oriented system must be a continuous improvement process and not a one-time event.
3. The system must be designed and implemented with integrity. Doing so will offer a positive and far-reaching vision for education as a profession, one built on respect, caring, and fairness. A system designed with integrity will be transparent such that all relevant participants clearly understand the expectations.
4. The system must be designed coherently to support a system of continuous school improvement. A coherent system will work seamlessly with the school and leader accountability systems and foster collaboration among educators, administrators, and other stakeholders.
5. The State Model System must allow for flexibility to best fit local contexts and needs. The local evaluation systems should be designed collaboratively by administrators and educators, with input gathered from parents and community members.

3. Features of a State Model System

<i>Feature</i>	<i>Description</i>
Name	Wyoming State Model Educator Evaluation System
Design Team	The Wyoming Advisory Committee to the Select Committee on Educational Accountability, comprised of key education stakeholders, including teachers, principals, superintendents, business, and policy representatives. Additionally, the Advisory Committee invited the participation of key union and association representatives. The Advisory Committee is supported by the WY Legislative Service Office (LSO), with technical advice provided by the National Center for the Improvement of Educational Assessment.
Guiding Principles	The State Model System development was guided by shared design principles.
General Evaluation Framework	<p>The state model system includes measures of professional practice and student performance results.</p> <p>Each educator evaluation shall include:</p> <p><u>Professional practice measures</u></p> <ul style="list-style-type: none"> ✓ A professional portfolio documenting key aspects of teacher practice that is based upon professional self-reflection and goal setting ✓ Analysis of key artifacts such as student work from specific assignments, planning documents, and assessments ✓ Observations of practice by educational leaders and potentially peers <p><u>Measures of student performance</u></p> <ul style="list-style-type: none"> ✓ Student Learning Objectives (SLO) ✓ Student Growth Percentiles (SGP) (if applicable) ✓ Shared attribution of at least part of the SLO and/or SGP results depending upon local theories of action around school improvement.
Specific Measurement Framework	<p>The Advisory Committee will need to describe, in considerable detail, how each of the components of the general evaluation framework (above) should be designed and deployed. At the higher levels of the system, the committee should recommend the specific standards for professional practice that will be used or at least recommend a process by which such standards shall be created and the model for incorporating student performance results into the evaluations of educators.</p> <p>Moving to finer grained levels of the system, the specific measurement framework would describe things such as the expected process to follow to create a professional portfolio, the requirements for implementing student learning objectives, and the expected number and type of classroom observations that should occur.</p>
Combining Multiple Measures	Once scores and/or ratings have been produced for each of the indicators, the system needs to specify how the various indicators will be combined to provide an overall evaluation for each educator.
Coherence	<p>The State Model is designed to maximize coherence among the various aspects of the system. At the highest level, this means that the teacher accountability system should work in support of the school and leader accountability systems.</p> <p>Within the educator effectiveness system, the Advisory Committee wants to ensure that the multiple domains of teaching practice and student performance results are seen as integral parts of a comprehensive system. For example, this means that, to the extent possible,</p>

	observations of teaching performance should be connected to measures of student performance (via SLOs) as a way to triangulate information. Similarly, the quality and usefulness of student performance measures should be incentivized and recognized as part of the specific domains of teaching practice.
Frequency of Evaluation	The frequency of summative evaluations for each educator will be tied to educators' length of time teaching and previous evaluation rating. Highly effective, experienced teachers will undergo a summative evaluation less frequently than new and/or teachers previously rated ineffective. All teachers, however, will be expected to receive formative feedback and participate in SLOs and the professional portfolio process each year.
Supports and consequences	If the system is designed to improve educator quality, then support must be provided to give low performing the support they need in order to improve. For educators unable (or unwilling) to improve after a specified period of time, the system must carry consequences that allow local administrators to easily non-renew the contracts of such educators. At the other end of the continuum, continuously high performing educators should be rewarded, preferably through intrinsic approaches such as increased flexibility from standard requirements or additional leadership/mentoring roles.
Piloting and implementation	The Advisory Committee should help design the timing and structure of the pilot evaluation and offer suggestions for full implementation.
Monitoring, oversight, and support	If Wyoming is going to have a State Model System that districts are expected to implement, there is an implication that the State will have a monitoring, oversight, and hopefully support role. The Advisory Committee's work must provide guidance in this area.

4. Standards for Professional Practice

Wyoming does not have Standards for Professional Practice for current educators.

Having one's own standards provides a basis for which to judge the quality of tools and makes clear what the state values in effective teaching. Other state systems include state developed or adopted standards for professional practice.

It is beyond the scope of the Advisory Committee to develop or adopt standards for professional practice. But we will make a recommendation to the Select Committee for authorizing this work including considerations of:

- ✓ Who should lead this work and where should it be housed?
- ✓ Who should be involved (composition of committees)?
- ✓ Differentiation (or not) of the standards (e.g., elementary/secondary)?

5. Plan for moving forward

- ✓ September meeting: A draft of the specific measurement framework
- ✓ October meeting: Supports and consequences and combining multiple measures
- ✓ November meeting: Monitoring, oversight, and support
- ✓ December meeting: A draft of the full system

**ACTION SUMMARY REVIEW
STATE BOARD of EDUCATION**

August 2012

ISSUE:

Wyoming State Statute 21-13-315 requires the Wyoming Department of Education (WDE) to adopt reasonable rules prescribing minimum standards and allowable costs for educational program services in support of Court Ordered Placement of Students. Chapter 14, State Board of Education Rules and Regulations, lists these minimum standards. For new facilities, written verification of information provided to the WDE and an on-site review are required. WDE representative Jo Ann Numoto reviewed the Mount St. Vincent Home, Denver, Colorado on August 27, 2012. Documentation is on file at the WDE; the State Board of Education reviews this information, and either approves or denies the applicant.

BACKGROUND:

Mount St. Vincent Home is working with Wyoming Medicaid to become an approved out-of-state Residential Treatment Center (RTC) provider. Mount St. Vincent Home is located at 4159 Lowell Boulevard, Denver, Colorado. Mount St. Vincent Home's educational program is designed for children ages five through fourteen who need either day or residential treatment in an on-grounds school. Mount St. Vincent Home also has a Therapeutic Preschool designed to serve emotionally disturbed preschool children (ages 3-5). Mount St. Vincent Home works closely with and follows the curriculum of the Denver Public Schools. Currently, there are no Wyoming court ordered youth served by the facility, but placement possibilities increase as procedural steps are being completed.

Mount St. Vincent Home is a private non-profit facility serving children with severe behavioral needs that impact their learning/education due to mental illness and/or trauma due to abuse and/or neglect. Mount St. Vincent Home has a faculty of ten teachers and twelve paraprofessionals. Certification is authorized by the Colorado Department of Education.

Key Facts:

- Mount St. Vincent Home is accredited by the North Central Association Commission on Accreditation and School Improvement (NCA/CASI) of the AdvancED Accreditation Commission.
- Mount St. Vincent Home is licensed by the State of Colorado Department of Human Services Division of Child Care as a Permanent Child Care Facility, Residential Treatment Center.

SUGGESTED MOTION:

Recommend that the State Board of Education (SBE) designate Mount St. Vincent Home as an approved facility for court ordered placement of students and subsequent educational payments pursuant to Section 9 and 10 of Chapter 14, SBE Rules and Regulations and completion of the review.

SUPPORTING DOCUMENTATION IS FOUND ON FILE AT THE WDE, HATHAWAY BUILDING, SECOND FLOOR.

APPROVED BY: _____
Christine Steele, Director Administration and Operations

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

COMMENTS:

