



WYOMING
DEPARTMENT OF EDUCATION

*A resource and partner
in the education
of Wyoming's students.*

Science Standards Review Committee Meeting

**Casper College - UWC
Casper, WY
June 15-16, 2015**



DEPARTMENT OF EDUCATION

Welcome and Introductions

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Sign-In / PTSB Credit

- Please sign in
- You will need to sign in each day
 - Morning
 - Afternoon (during break)
- Educators, be sure to give us your PTSB #
 - If you don't have it, you can give us your identifiable # to have it looked up for you

Objectives of the SSRC

- To review/revise Wyoming Science Content & Performance Standards
 - Standards
 - Benchmarks
 - Rationale
 - Glossary of terms
 - Consider alignment to other WyCPS

Ice Breaker—Cup Stack

- Teams of 4-5
 - 6 cups/group
 - 1 rubber band
 - 5 pieces of string
- Without touching the cups with your hands or any part of your body, you will have 5 minutes to work as a team to create a device (using only the rubber band and strings) to stack your cups into the configuration shown above.



Morning Agenda

- Logistics – Restrooms, Agenda, Meals, Breaks...
 - WiFi – CC-Public
 - Silence Cell Phones & Limit Use
- Preliminary Information
- Desired Outcomes
- Roles
- Ground Rules
- Decision Making

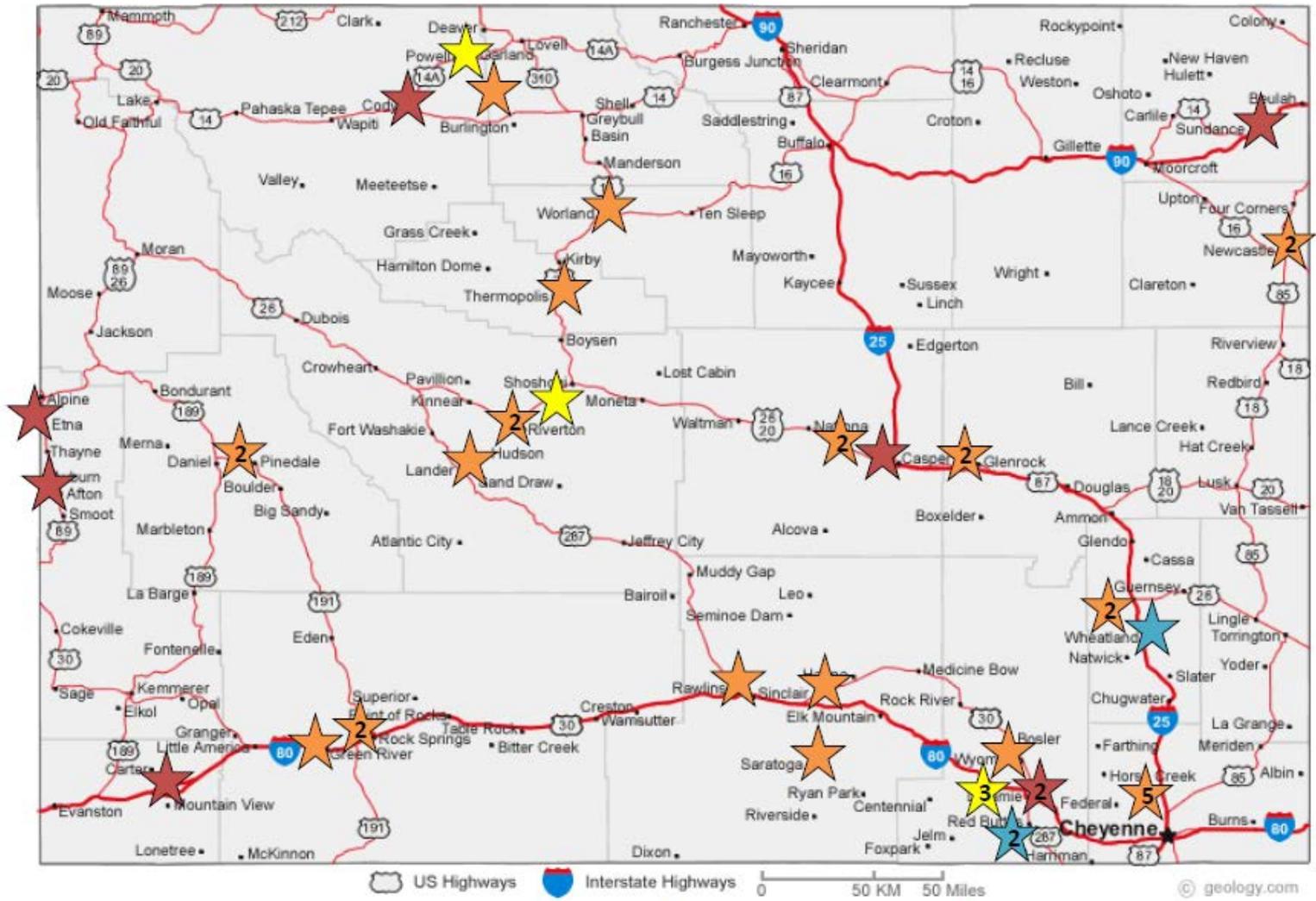
Standards Review Authority

- Pursuant to W.S. §21-2-304(a)(iii), the Wyoming State Board of Education must **prescribe uniform student content and performance standards** for the common core of knowledge specified by W.S. §21-9-101(b)(i).
- The Wyoming Content and Performance Standards **must be reviewed every nine (9) years** per W.S. §21-2-304(c).

Standards Review Authority

- Pursuant to WY §21-2-304(a)(iii), the ability to prescribe content and performance standards **shall not be construed to give** the state board of education the **authority to prescribe textbooks or curriculum** which the state board is hereby **forbidden to do**.

Map of 2015 Science Standards Review Committee



8 Parent

5 Professor

28 Educator

3 Community Member/
Business Owner

Standards Review - Roles

- WDE Consultants
 - Facilitate & Communicate
- Content Committees
 - Revise Content Standards
 - Keep Standards Consistent Across the Grade Bands
 - Make Recommendations to the State Board of Education

Standards Review Process – Goals & Objectives

- Review the Current Content Standards (WyCPS)
- Consider any Revisions (Applying up-to-date Research)
- Consider Aligning/Integrating to other Wyoming Content Standards (WyCPS) (e.g. math, ELA, C&VE)
- Consider any National Content Standards
- Consider Other Exemplary States' Standards

Standards Committee Options

1. Keep the Current (2008) Wyoming Science Content & Performance Standards (WyCPS) as is
2. Revise the Current WyCPS for Science
3. Adopt an already created set of Science Standards (nationally or another state's)
4. Revise/borrow from other created Science Standards
5. Create a set of Science Standards from multiple documents
6. Create a brand new set of Science Standards

Design Criteria

Purpose of the Wyoming Content and Performance Standards

1. The Wyoming Content and Performance Standards **will include the knowledge and skills necessary for student success in college and career.**

Overall Criteria

2. The Wyoming Content and Performance Standards **should be uniform** in structure within each content area.
3. Each content area will be **prefaced with a content-specific rationale.**
4. The Wyoming Content and Performance Standards will be **structured at the standard and benchmark levels** only, but groups of benchmarks can be organized into several categories.
5. The Wyoming Content and Performance Standards **will include performance level descriptors** that describe what advanced, proficient, basic, and below basic performance levels look like. (**except** for the content areas currently assessed under the statewide assessment system [PAWS])
6. The Wyoming Content and Performance Standards and benchmarks will be **knowledge and skill expectations rather than activities.**
7. **The grain size of the benchmarks will be neither too small nor too large.** For example the grain size may be too large with one benchmark per standard or too small with twenty-three.
8. The benchmarks in the Wyoming Content and Performance Standards in each content area **will reflect the full range of cognitive and psychomotor levels or depth appropriate to the content area and grade level.**

Design Criteria (cont.)

Knowledge and Skills

9. The entire common core of knowledge, as specified in W.S.21-9-101(b)(i), will be reflected in the set of standards.
10. The entire common core of skills, as specified in W.S.21-9-101(b)(iii), will be integrated into the Wyoming Content and Performance Standards and benchmarks in each content area.
11. **The purposeful integration of technology**, to include the International Society for Technology in Education (ISTE) National Educational Technology Standards for Students, will be integrated into standards and benchmarks in each content area.

Grade-level and Graduation

12. The Wyoming Content and Performance **Standards will define what students are expected to know and be able to do in each content area by the time they graduate.**
13. The Wyoming Content and Performance Standards **will represent a progression of knowledge and skills across grade levels.**

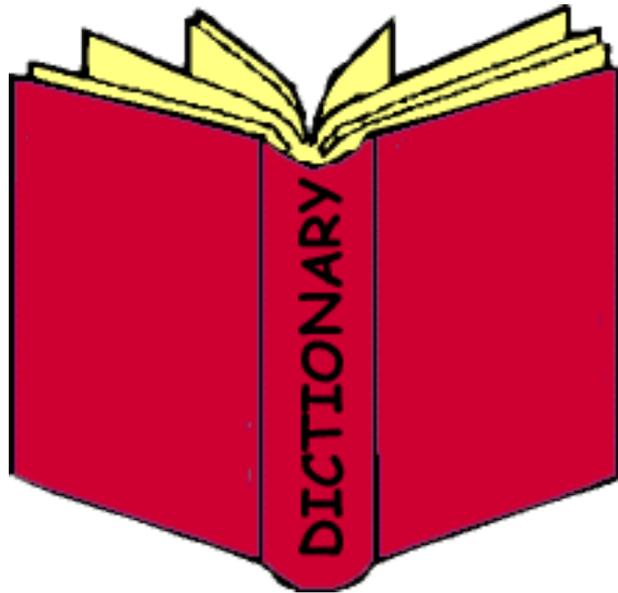
Clarity

14. The Wyoming Content and Performance Standards **will be understandable by students, parents, educators, and other Wyoming stakeholders.**

Measurability

15. The benchmarks in the Wyoming Content and Performance **Standards will serve as the basis for formative, interim, and summative assessment of student learning.**

Definitions for Standards Review Process



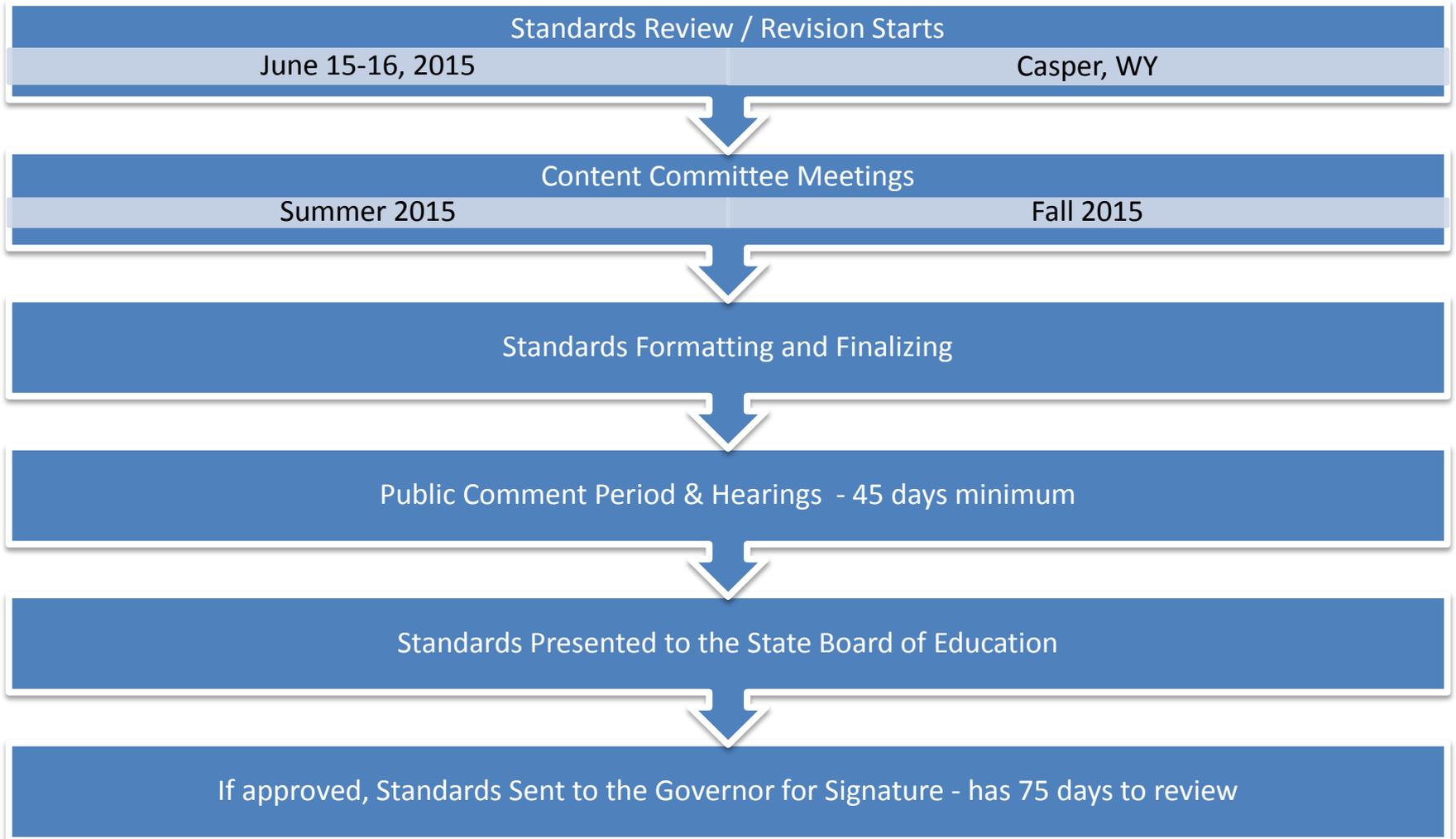
Standards Review – Definitions

- **Content Standards**
 - what students are expected to know and be able to do by the time they graduate
 - do not dictate methodology, instructional materials, or delivery
- **Benchmarks** (expectations)
 - skills and content knowledge students must master along the way in order to reach the content standards by the time they graduate

Benchmarks – Grain Size

- Is the “grain size” of the benchmarks appropriate? Do the benchmarks describe content **not so narrowly** that it could be mastered by a student in an afternoon, but **not so broadly** that it might take several months of instruction?
- **A benchmark should be** specific enough that readers are clear about the instruction and learning it should entail.

Standards Review - Timeline



Questions on Standards Review Process



Desired Outcomes for this Mtg.

- Determine direction of work (from 6 options)
- Set Science Standards
- Start work to set Benchmarks
- Ensure benchmarks are grade level appropriate
- Ensure alignment across grade bands

Ground Rules

- Listen First
- Agree to Disagree
- **Focus on the Work at Hand**
- Be Punctual and Honor the Agenda
- Value People's Expertise
- **Stay Student-Centered**
- Keep Morale Up, Stay Positive
- Equal Opportunities to be Heard
- **Be Open Minded – Value Everyone's Opinion**
- Refrain from Judgmental Statements
- **Listen to Understand Another Point of View**
- Represent all Wyoming Stakeholders
- **Have Fun and Laugh Together!! 😊**

Grade Band Leader

Duties:

- Keep committee on task
- Read audience for getting to closure and to consensus
- Communicate with other Grade Band Leaders for transitional alignment between grade bands
- Coordinate post-meeting communication
- The Leader is responsible for communication with WDE facilitator

Grade Band Scribe

Duties:

- Take brief notes / overview of discussion and decisions made in Grade Band Sub-Committee
 - Record what was discussed
 - Record the consensus decision
- Take notes during discussion in large Content Committee

Grade Band Recorder

Duties:

- Edit and Write Standards Including:
 - Changes to current standards recorded on standards template
 - Changes or additions of new standards recorded on standards template

Decision Making

- Consensus
 - Should be attempted for total buy-in
- Robert's Rules (if consensus cannot be made)
 - 2/3 majority rules

Consensus

- “Consensus – a group has arrived at consensus when **all points of view have been heard** and the will of the group is evident even to those who most oppose it. A consensus decision is one about which each group member can honestly say: “I believe you understand my point of view and that I understand yours. Whether or not I prefer this decision, I support it because it was reached fairly and openly and it is the best solution for us at this time.” I will share the positives of the proposal and that I support the proposal and the team. I will NOT share the negatives of the proposal and that I DID NOT support the proposal and the team.”

Morning Break – 15 min.

- Coffee, Tea, Water
- Fruit



Considerations from Higher Ed.



What is Science?

Science is much more than just a body of knowledge. Science is also **a constellation of practices that are used in order to develop and refine theories**. It is a social activity with its own vocabulary in which many terms have different meanings than those used by the general public. It is **“fundamentally about establishing lines of evidence and using the evidence to develop and refine explanations using theories, models, hypotheses, measurements and observations”** (NRC, 2008, p. 18).

What do Scientists do?

- Since science is primarily a social activity, most scientists work collaboratively.
- Scientists use a variety of methods to answer questions, but they hardly ever use the step-by-step “scientific method” that we may have memorized from our science textbooks.
- Scientists use a special language in which some terms have different meaning than they do in everyday speech. In particular, the difference between the scientific and colloquial definitions of terms such as “theory” and “hypothesis” have caused considerable confusion.
- They argue, but to scientists argument is not competitive, but a way to get to the truth. It is much less combative or competitive than argumentation in debate. It is “a mode of logical discourse whose goal is to tease out the relationship between ideas and the evidence” (NRC, 2008, p. 33).
- Although different domains of science rely on different processes to develop scientific theories, all domains of science share a certain feature. Scientists hold data and evidence in a primary position when deciding any issue.

What is the Nature of Science Literacy?

In order to be literate in science, people must be able to:

- Understand scientific explanations
- Generate scientific evidence
- Reflect on scientific knowledge, and
- Participate productively in science (NRC, 2007, pp. 36-41)

How do Students Learn Science?

Students learn science best when they are engaged in the practices of science (NRC, 2007, p.3).

1. Asking questions (for science) and defining problems (for engineering)
2. Developing and using models
3. Planning and carrying out investigations
4. Analyzing and interpreting data
5. Using mathematics and computational thinking
6. Constructing explanations (for science) and designing solutions (for engineering)
7. Engaging in argument from evidence
8. Obtaining, evaluating, and communicating information (NRC, 2012, p.49)

What does this Mean for our Work?

- At a minimum, in addition to the criteria listed in our homework assignment, our new standards must allow our students to develop all four areas of scientific literacy mentioned previously. This means, among other things, ensuring that they have the opportunity to participate in the practices of science.
- It also means that they must have content that is determined by research rather than the preferences of various interest groups, and to integrate content and practices with processes. We will discuss these issues later in the meeting.

Comments from Higher Ed. Members

People need to understand the nature &/or the language of science:

- “Evolution is just a theory”
- “The standards present human’s role in climate change as fact rather than theory”
- “The science standards must reflect the role of energy and agriculture in our state’s economy”

People need to understand how students learn science:

- “The standards emphasize practices at the expense of content”



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Using Backward Design to Revise & Develop Content Standards...A Roadmap to Success!

**Presented at the SSRC Meeting on
June 15, 2015**

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Standards

- Provide a framework to help us identify **learning priorities** (expectations) and guide curriculum design and assessments.
- Promote **greater consistency** and **commonality**.
- Are **concise, written descriptions** of what students are **expected to know** and be able to do at a **specific stage of their education**.

History of Backward Design

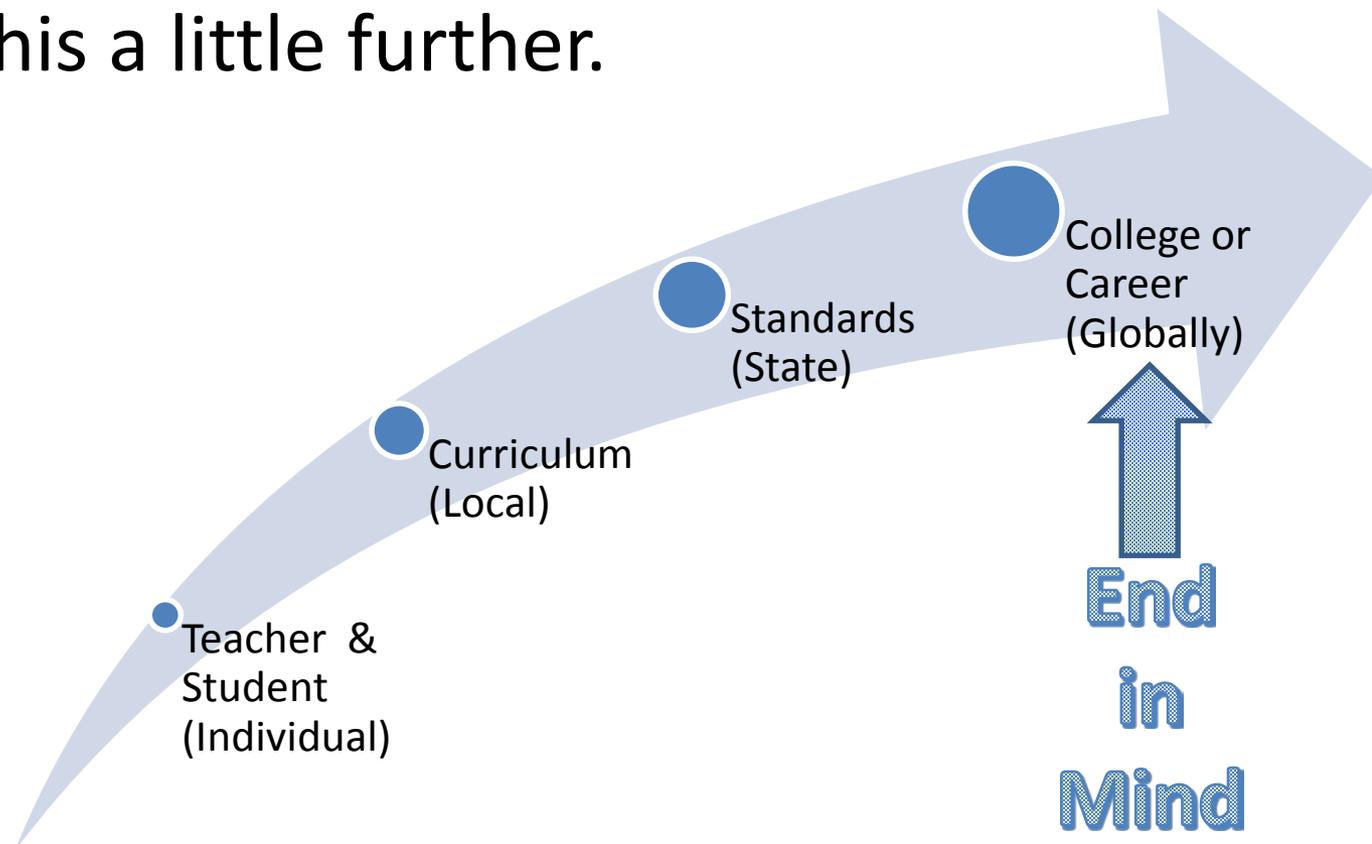
- The idea of backward design/planning may go as far back as 1949, when Ralph W. Tyler wrote an educational “how to” book titled, *Basic Principles of Curriculum and Instruction*.
- The term backward design, however, was popularized in 1998, when Grant Wiggins and Jay McTighe wrote, *Understanding by Design*.

What is Backward Design?

- Simply put, backward design is **beginning with the end in mind**.
 - Steven R. Covey, the author of, *The Seven Habits of Highly Effective People*, stated, “To begin with the end in mind means to start with a clear understanding of your **destination**. It means to know where you’re going so that you better understand where you are now so that the steps you take are always in the right direction.”

Beginning with the End in Mind

- It may sound crazy to apply this technique to the standard review process, so let's explore this a little further.



Application of Backward Design

- How many of you pack for a trip before knowing the destination?
 - Standards are our destination.
 - This is where a student will be by a certain date at a certain time.



This is not how you would pack for a North Pole visit, is it?



Application of Backward Design

- Knowing your destination is essential to the planning process.



- How does it make you feel when you arrive at your destination and you forgot to pack something?

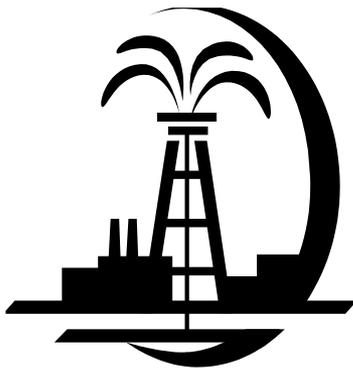
Application of Backward Design

- Frustrated, correct?
- Sometimes we're not as "packed and ready to go" as we assumed.
- We need to assure that our students leave high school, "packed and ready to go", with the essential skills necessary for any life destination.



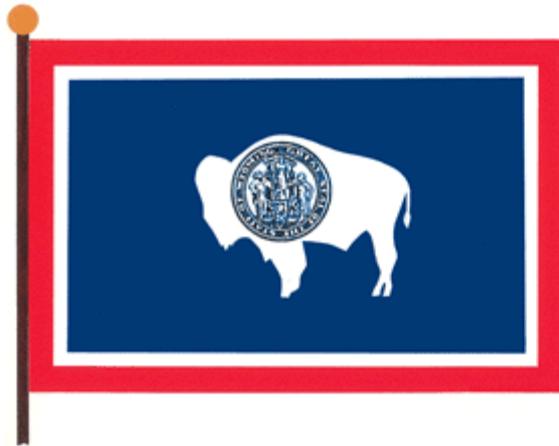
Remember the Destination

- No matter the path (college or career), let's give them the standards for lifelong success.



Getting Started

- Like we have heard from public input, let's create the **BEST** science standards for our students so they can be competitive in a global economy.





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Questions



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[Click here for video](#)

Community Input – Why do you Think Excellent Science Standards are Needed in Wyoming?

We received 211 comments through 5 regional community meetings and an online survey.

Community Input – Excellent Standards

Comments

College ready without remediation

Career ready

Competitive in global market

...advances in battery technology, in solar photovoltaic and wind turbine manufacture...the energy market is changing globally. China and India doing more nuclear due to climate harms...our future is in peril and we can't prepare for those changes by putting our heads in the sand

Should not be cut and paste from federal education department or other states

Lead to achievement

Become informed citizens - know how to look at information and research and understand and determine the validity of different types of info.

Able to dispute theories, make observations, have greater understanding

Be scientifically literate

Have specific expectations for each grade, taught at all levels K-college

Investigate the natural world and understand the world around them

Think critically and scientifically

Community Input – Excellent Standards

Comments

Promote high levels of student achievement

Need more rigorous, fact-based science education

WY continue its tradition of excellent education

WY needs future workers (and leaders) who fully understand the challenges facing the industry to be innovative and create solutions

Contribute to a better world

No political agendas in science

Prepare students for future careers

Prepare students to be able to get scholarships & attend university of choice

Nationwide consistency to best serve our students and give them a fighting chance

Prepare them to participate in an increasingly competitive and advanced world

We have ag, geology, and biology – no better subject to keep students in our state after graduation.

Established on proven data...no place for politicized issues such as man-made global climate change. Indoctrination has no place in education.

Community Input – Excellent Standards

Comments

Apply to the real world experiences in Wyoming, also to trade and tech. skills

Understand how our presence and choices impact the world we live in and on

Ensure the success of our students, nationally and internationally

Science is important to the future of our world (micro & macro)...difficult to predict due to changing of our climates...ensure we have a life-sustaining planet for generations

Teach how to validate and question theory, fact, and opinion and know the difference

Receive a fair and objective education based on science...based on fact and not religion or political beliefs.

Understand our relationship and interaction with the world

Uninfluenced by industry interests

Religious convictions have NO place in our public educational system

Knowledge is discovery...curiosity about the world....graduate with skills to go on

Greatest challenge is climate destabilization...will take perseverance, ability to work with data, and creativity to adapt to this challenge

Base cultural, economic, and other decisions on the best possible understanding of how the world works, not the other way around.

Community Input – Excellent Standards

Comments

We need students who are thinkers...people have not been taught science as a process but rather a collection of facts and that is ignorant... Let our kids be the solution for our economy b/c they are scientifically literate.

Make students able to have successful careers in competitive STEM fields

The industries in WY and globally depend on science and technology...we risk our livelihoods when we raise children who are not educated to the best of our current state of knowledge. Politics should NOT play a role in determining what our kids learn.

Equip kids to be leaders in the scientific world....teach to think like scientists...teach accepted fundamental scientific information...all them to text and explore.

Science is not about opinion but about empirical evidence.

Prepare students for the job force and as future voters and parents.... Applied to health care, soil conservation, water & wildlife resources and the critical capacity to approach problem solving across every field of inquiry.

Should be shaped by what scientists think is true and important, not by what politicians or ideologues think is important.

Evolution is the core idea in all biology

Community Input – What Would You Like to Share with the Science Standards Review Committee?

Community Input – SSRC to Know

Comments

98% of the NGSS are not controversial....can be addressed in an open manner....give students both sides of the issue and allow them to express their opinion with supporting reasons as an assessment.

Adopt NGSS!!! WY needs to maintain alignment with the rest of the country and the world!! Climate change cannot be denied...allow students to formulate their own opinions based on data and science.

Support idea that students are capable of being open-minded, creative, problem solvers. If we allow a political agenda to take place, we will have disempowered them...not prepare them for conflicting ideas...

I would like to see standards 6-8 instead of 5-8...easier to align

Don't let people who are not in education drive this change.

(do) not be bullied by a vocal minority... no oil, gas, and coal jobs on a dead planet...our graduates may face stigma if WY becomes the first state to adopt industry-sponsored language. NGSS actually has the support of industry- including oil and gas.

The NGSS are right for WY...give accurate info that is not politically biased...Ignoring facts b/c we don't like them isn't helpful

Don't handicap students by denying them the most current scientific knowledge

Community Input – SSRC to Know

Comments

Climate change is possibly the biggest hoax ever perpetrated on America... Let us study changes in the weather, but not draw the unwarranted conclusion that man is powerful enough to overpower the earth's normal weather patterns.

I reviewed NGSS and am in favor of adopting including climate change curriculum.

NGSS are excellent science standards...we would be doing our students a real disservice if we did not provide them with all the info, teach them how to question and research, and supply them with the skills to make up their own minds...nurture independent thinkers

Provide necessary skills to understand our natural world, to be curious and explore new ideas...empower our students, they are our future.

Science is about thinking for yourself, coming to conclusions, and challenging the status quo.... Things like man-made global warming as fact rather than theory (still major disagreement) is anti-science. All theories, should be taught as such and the strengths and weaknesses of all theories should be taught equally, esp. beyond elementary age

Climate change is a theory and not proven...I want pros and cons for all forms of energy

I would like a clause about respecting differing views, faiths, and alternative theories of the students regarding aspects of science that are theoretical...should be encouraged to challenge theories rather than accept blindly.

Community Input – SSRC to Know

Comments

I want my children to learn science and the scientific method...to ask hard questions and have the skills needed to be investigators and fact finders...able to analyze and sift through their findings...do not want religion, group or political wing to limit or unjustly influence what they learn...raise intelligent, confident, capable children who can question, study, learn, and apply knowledge...get the facts at school (unfiltered)

Please keep politics out of our science standards...harms WY students...less likely to get into the best colleges and universities...less competitive in global marketplace

Highest weight should go to the teachers who have reviewed NGSS... NGSS are not perfect but please do not handicap our children's future by allowing fear and misinformation to lead this process back to the dark ages

WY needs to be rigorous and fact based, relying upon the scientific method, not religion or opinion...NGSS are a good start...WY has some of the best opportunities to study geology, archaeology, and ecology in the country

Owe it to WY students to provide diverse points of view, to teach them to critically analyze info and create personal opinions that are evidence based and grounded in well-researched facts

Educated parents' points of views must be taken more seriously; local control; resist fed govt. intrusion; No Common Core.

Community Input – SSRC to Know

Comments

Think about what WY residents need to contribute to the global workforce...be competitive

I am in favor of NGSS...focus on skills as well as content knowledge

(current) standards continue to be vague and do not help teachers in specifically identifying what to teach...provide very little direction...causes huge gaps across state...want our students to be competitive...must be consistent and progressive with the rest of U.S.

1) Don't make it about politics...give objective standards that look on both sides of the issues without the charged words. 2) stick with the basics (content in bio, chem, phys, E&S science). 3) require research, critical reading, and evaluation of sources...citizen should be able to understand, critique, and make conclusions about the info.

Please, please, please look to the experts in the fields of education and science...Avoid...where our science standards are the mockery of the academic world.

Climate change and evolution are part of science and need to be addressed

Engineering and technology are an important part of our standards...students can better learn difficult science concepts through making and building...gives problem solving skills.

Be independent thinkers and willing to stretch the envelope...NGSS offers a base from which to correct the obvious errors (e.g. K – plants do not need vitamins and minerals to grow...also make it Wyoming-based.

Community Input – SSRC to Know

Comments

I do not think science should be so focused on global warming...climate change needs to go back to hypothesis stage, not theory.

(NGSS) have already been completed in the top schools in the country...look at their requirements as a guide for ours. Massachusetts, Maryland, Virginia & NSF

Any reference to man made climate change as 'settled science' should be anathema to any person interested in genuine science...needs to reflect the genuine lack of proof by its proponents. At a min, students need to understand that this is a theory and should be given both sides of the story...keep political indoctrination out of science st, curr, and test.

AGW is not settled science...politicized science and therefore...vulnerable to pol. influence

NGSS are not fact based...teach theory as fact...designed to teach a political viewpoint

Theories and opinions are not science. Science does NOT include personal choices...does not include politics or political views or trends...It is part of research and strengthening the systems we have in place in the world of medicine, technology, agriculture, ranching, farming, oil, gas and other necessary industries.

Do not let politics enter into your work...Respect diverse opinions. Validate your decisions. Make science real...through significant project based learning...cross curr. integrations.

Elect to use the NGSS as written. "No omissions".

Community Input – SSRC to Know

Comments

Students need to be exposed to the best knowledge out there...If parents have different views, it is their job to discuss these issues with their children and make sure (they) are well grounded in their personal belief system.

Uniformity of thought may not result in the most successful outputs from individuals, groups, industries, or education institutions...People who dare to think differently than the 'accepted norm' often contribute more to future success than (those) who are trained parrots.

Please do not be intimidated by the idea that WY needs a different science b/c we have depended so long on fossil fuels for our financial security

Be motivated by a sincere concern for the public interest and not by industry pressure, fear, or economic motivations...equip students to be rigorous, critical thinkers

The committee that adopted NGSS should be allowed to do their work...Any concerns RE: the reality of climate destabilization are willful ignorance...Keep education out of that balance.

Please give us the tools...to educate our children and tomorrow's innovators and decision-makers...including whatever the current best info is on climate science, fracking, gender studies, and other controversial topics.

Emphasize critical thinking skills, the scientific process, include evidence-based content, including CLIMATE SCIENCE...must be written and reviewed by scientists & sci. educators

Science Standards Discussion

Wyoming	1	2	3	4	5	Mean	Mode
Do you feel these content standards & benchmarks are appropriately challenging for this grade level?	5	13	7	3	1	2.23	2
Do you feel these content standards & benchmarks sufficiently prepare students for college and career?	5	16	8	0	1	2.13	2
Do you believe these content standards & benchmarks provide clear learning progressions throughout each standard?	11	12	7	1	0	1.94	2
Do you believe these content standards & benchmarks provide clear learning progressions across grade levels?	11	14	6	0	0	1.84	2

http://edu.wyoming.gov/downloads/standards/Standards_2008_Science_PDF.pdf

Science Standards Discussion

California	1	2	3	4	5	Mean	Mode
Do you feel these content standards & benchmarks are appropriately challenging for this grade level?	0	1	3	18	9	4.13	4
Do you feel these content standards & benchmarks sufficiently prepare students for college and career?	0	0	5	14	12	4.23	4
Do you believe these content standards & benchmarks provide clear learning progressions throughout each standard?	0	2	5	13	11	4.06	4
Do you believe these content standards & benchmarks provide clear learning progressions across grade levels?	0	3	4	13	10	3.94	4

<http://www.cde.ca.gov/pd/ca/sc/ngsstandards.asp>

Science Standards Discussion

Connecticut	1	2	3	4	5	Mean	Mode
Do you feel these content standards & benchmarks are appropriately challenging for this grade level?	0	5	14	7	3	3.17	3
Do you feel these content standards & benchmarks sufficiently prepare students for college and career?	0	11	10	4	4	2.93	2
Do you believe these content standards & benchmarks provide clear learning progressions throughout each standard?	1	9	11	7	1	2.83	3
Do you believe these content standards & benchmarks provide clear learning progressions across grade levels?	1	7	12	8	1	2.93	3

<http://www.sde.ct.gov/sde/cwp/view.asp?a=2618&q=320890>

Science Standards Discussion

Massachusetts	1	2	3	4	5	Mean	Mode
Do you feel these content standards & benchmarks are appropriately challenging for this grade level?	1	1	6	11	11	4	4
Do you feel these content standards & benchmarks sufficiently prepare students for college and career?	1	1	6	12	8	3.93	4
Do you believe these content standards & benchmarks provide clear learning progressions throughout each standard?	1	2	5	13	8	3.88	4
Do you believe these content standards & benchmarks provide clear learning progressions across grade levels?	1	3	6	10	9	3.74	4

<http://www.doe.mass.edu/frameworks/scitech/1006.pdf>

Science Standards Discussion

Montana	1	2	3	4	5	Mean	Mode
Do you feel these content standards & benchmarks are appropriately challenging for this grade level?	7	12	5	3	1	2.17	2
Do you feel these content standards & benchmarks sufficiently prepare students for college and career?	10	9	6	1	1	1.96	1
Do you believe these content standards & benchmarks provide clear learning progressions throughout each standard?	10	13	4	2	0	1.93	2
Do you believe these content standards & benchmarks provide clear learning progressions across grade levels?	12	13	1	3	0	1.83	2

<http://opi.mt.gov/PDF/Standards/10ContStds-Science.pdf>

Science Standards Discussion

Oklahoma	1	2	3	4	5	Mean	Mode
Do you feel these content standards & benchmarks are appropriately challenging for this grade level?	1	3	7	12	4	3.56	4
Do you feel these content standards & benchmarks sufficiently prepare students for college and career?	1	6	6	10	4	3.37	4
Do you believe these content standards & benchmarks provide clear learning progressions throughout each standard?	0	8	7	11	1	3.19	4
Do you believe these content standards & benchmarks provide clear learning progressions across grade levels?	1	7	8	8	2	3.07	4

http://www.ok.gov/sde/sites/ok.gov.sde/files/OAS_Science_Standards_3-2-15.pdf

Science Standards Discussion

South Carolina	1	2	3	4	5	Mean	Mode
Do you feel these content standards & benchmarks are appropriately challenging for this grade level?	1	2	3	15	9	3.94	4
Do you feel these content standards & benchmarks sufficiently prepare students for college and career?	1	3	4	15	8	3.81	4
Do you believe these content standards & benchmarks provide clear learning progressions throughout each standard?	0	2	4	10	10	3.81	4
Do you believe these content standards & benchmarks provide clear learning progressions across grade levels?	1	3	6	11	7	3.63	4

<https://ed.sc.gov/agency/ccr/Standards-Learning/Science.cfm>

Science Standards Discussion

Utah	1	2	3	4	5	Mean	Mode
Do you feel these content standards & benchmarks are appropriately challenging for this grade level?	1	7	7	12	2	3.27	4
Do you feel these content standards & benchmarks sufficiently prepare students for college and career?	1	8	13	4	3	3.07	3
Do you believe these content standards & benchmarks provide clear learning progressions throughout each standard?	3	4	10	10	2	3.17	4
Do you believe these content standards & benchmarks provide clear learning progressions across grade levels?	3	5	10	8	2	3.03	3

<http://www.uen.org/core/science/index.shtml>

Science Standards Discussion

Utah – new MS only	1	2	3	4	5	Mean	Mode
Do you feel these content standards & benchmarks are appropriately challenging for this grade level?				3	1	4.25	4
Do you feel these content standards & benchmarks sufficiently prepare students for college and career?				2	2	4.5	5
Do you believe these content standards & benchmarks provide clear learning progressions throughout each standard?				2	2	4.5	5
Do you believe these content standards & benchmarks provide clear learning progressions across grade levels?				2	2	4.5	5

<http://www.schools.utah.gov/CURR/science/Revision.aspx> (gr. 6-8)

Science Standards Discussion

West Virginia	1	2	3	4	5	Mean	Mode
Do you feel these content standards & benchmarks are appropriately challenging for this grade level?	1	9	5	5	5	3.15	2
Do you feel these content standards & benchmarks sufficiently prepare students for college and career?	1	9	8	2	5	3.04	3
Do you believe these content standards & benchmarks provide clear learning progressions throughout each standard?	5	7	7	3	3	2.73	3
Do you believe these content standards & benchmarks provide clear learning progressions across grade levels?	5	6	8	3	2	2.69	3

<http://apps.sos.wv.gov/adlaw/csr/readfile.aspx?DocId=26574&Format=PDF>

Science Standards Discussion

NAEP	1	2	3	4	5	Mean	Mode
Do you feel these content standards & benchmarks are appropriately challenging for this grade level?	0	1	6	10	3	3.76	4
Do you feel these content standards & benchmarks sufficiently prepare students for college and career?	0	3	6	8	3	3.57	4
Do you believe these content standards & benchmarks provide clear learning progressions throughout each standard?	0	4	4	11	1	3.52	4
Do you believe these content standards & benchmarks provide clear learning progressions across grade levels?	0	5	7	6	2	3.33	3

<http://www.nagb.org/content/nagb/assets/documents/publications/frameworks/science/2009-science-framework.pdf>

Science Standards Discussion

NGSS	1	2	3	4	5	Mean	Mode
Do you feel these content standards & benchmarks are appropriately challenging for this grade level?	0	2	4	12	8	4.02	4
Do you feel these content standards & benchmarks sufficiently prepare students for college and career?	0	1	5	11	8	4.04	4
Do you believe these content standards & benchmarks provide clear learning progressions throughout each standard?	0	0	11	10	5	3.8	4
Do you believe these content standards & benchmarks provide clear learning progressions across grade levels?	0	0	11	10	5	3.78	4

<http://www.nextgenscience.org/next-generation-science-standards>

Science Standards Discussion

Working Lunch

- **Little Italy**
 - Traditional Caesar Salad
 - Sliced Italian Bread with Butter
 - Steamed Vegetables
 - Penne Pasta
 - Alfredo Sauce
 - Grilled Chicken
 - Freshly Grated Parmesan Cheese
 - Assorted Cookies



Sub-committee Work Time

Room Assignments

- UU312 – K-2 Sub-Committee
- UU315 – 3-5 Sub-Committee
- UU319 – 6-8 Sub-Committee
- UU322 – 9-12 Sub-Committee

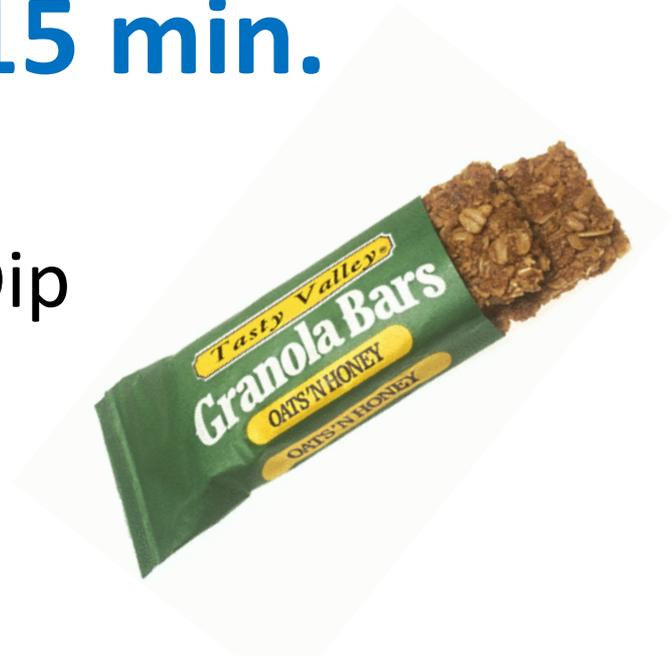
Full Committee Discussion



Afternoon Break – 15 min.

Snacks and Sodas

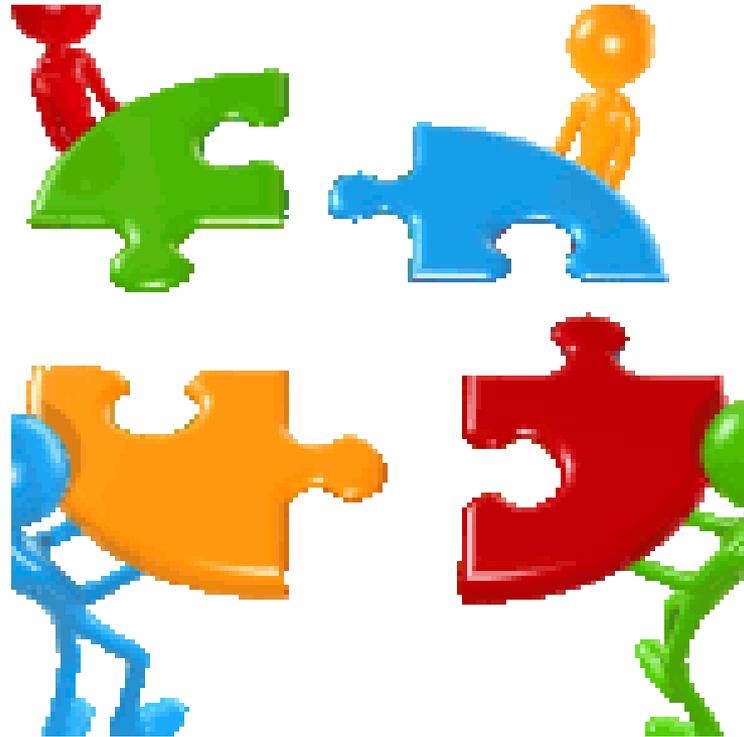
- Potato Chips and Ranch Dip
- Granola Bars



Sub-committee Work Time



Full Committee Discussion



Debrief



- Wrap Up
- Decide Direction & Agenda for Tomorrow
 - Fruit, Coffee, Tea – at 8:00 am
 - We start in Full Committee at 8:30 am
 - Feel free to meet in small groups until then



WYOMING
DEPARTMENT OF EDUCATION

*A resource and partner
in the education
of Wyoming's students.*

Science Standards Review Committee Meeting

**Casper College - UWC
Casper, WY
June 16, 2015
DAY 2**



DEPARTMENT OF EDUCATION

Morning Break – 15 min.

- Coffee, Tea, Water
- Fruit



Sub-committee Work Time



Morning Break – 15 min.

- Coffee, Tea, Water
- Fruit



Full Committee Discussion



Sub-committee Work Time



Working Lunch

- **Fajita and Taco Fiesta**

- Taco Beef
- Served with Soft Flour Tortillas and Crisp Corn Taco Shells
- Fiesta Seasonal Fruit Salad
- Refried Beans
- Shredded Cheese, Lettuce, Diced Tomatoes, Onions, Sliced Jalapenos, and Black Olives
- Sour Cream and Salsa
- Freshly Brewed Iced Tea



Full Committee Discussion



Sub-committee Work Time



Afternoon Break – 15 min.

Snacks and Sodas

- Chips and Salsa
- Granola Bars



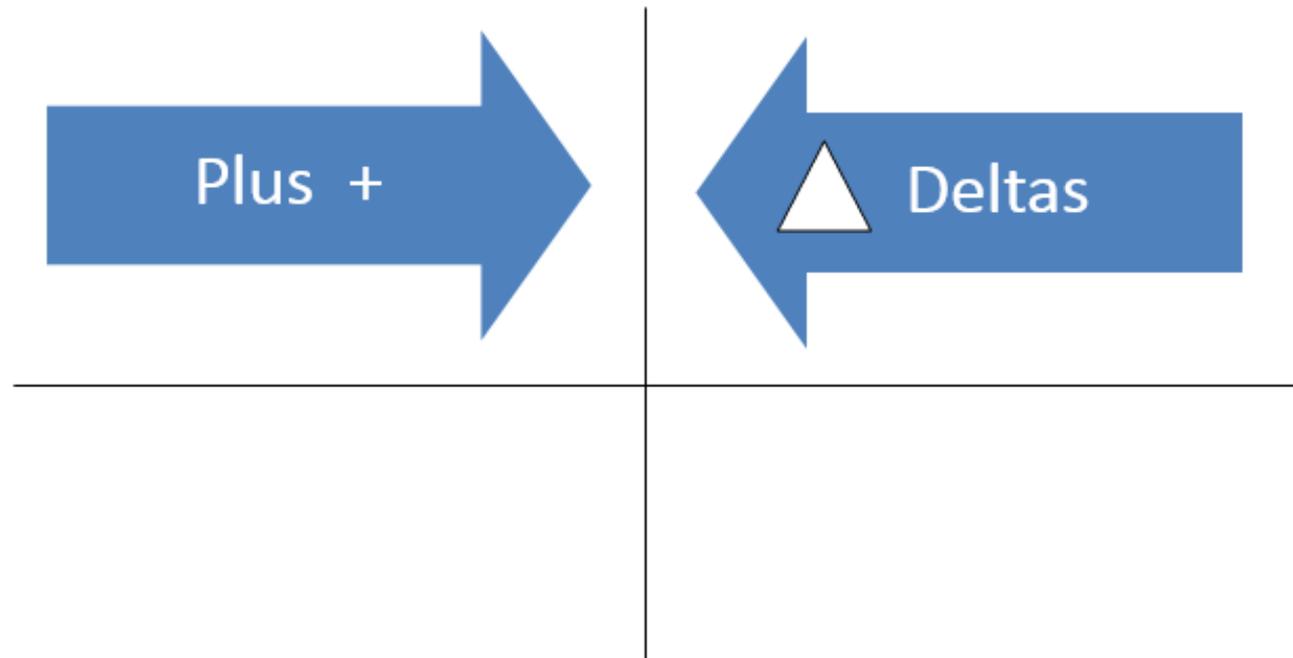
Sub-committee Work Time



Science Standards Review Committee Meeting
June 15, 2015

Grade Band K-2 3-5 6-8 9-12

****Please turn in to the WDE Facilitator before leaving****



Debrief



- Wrap Up & Finalize from this Meeting
- Decide Direction & Agenda for Future Mtgs.
- Set Dates & Locations for next F-2-F Mtg.
- Discuss Sub-Committee Work & Expectations