

Arizona Science Standards Revision Working Group



May 17, 2018

Housekeeping

1. Sign in
2. Parking validation
3. Restrooms
4. Breaks/Lunch
5. Travel Questions – Fill out W9 if needed
6. Sign forms – All members

Cell phones should only be used during breaks and lunch. If you need to take a call, please go to the break room. Please check text and email only during break due to non-disclosure.

Housekeeping

Dr. Eugene Judson

Associate Professor - Science Education
Arizona State University



ASU Research project – IRB consent

Participation in this research project is completely voluntary and does not impact your participation in standards work.

Biggest Thank You!

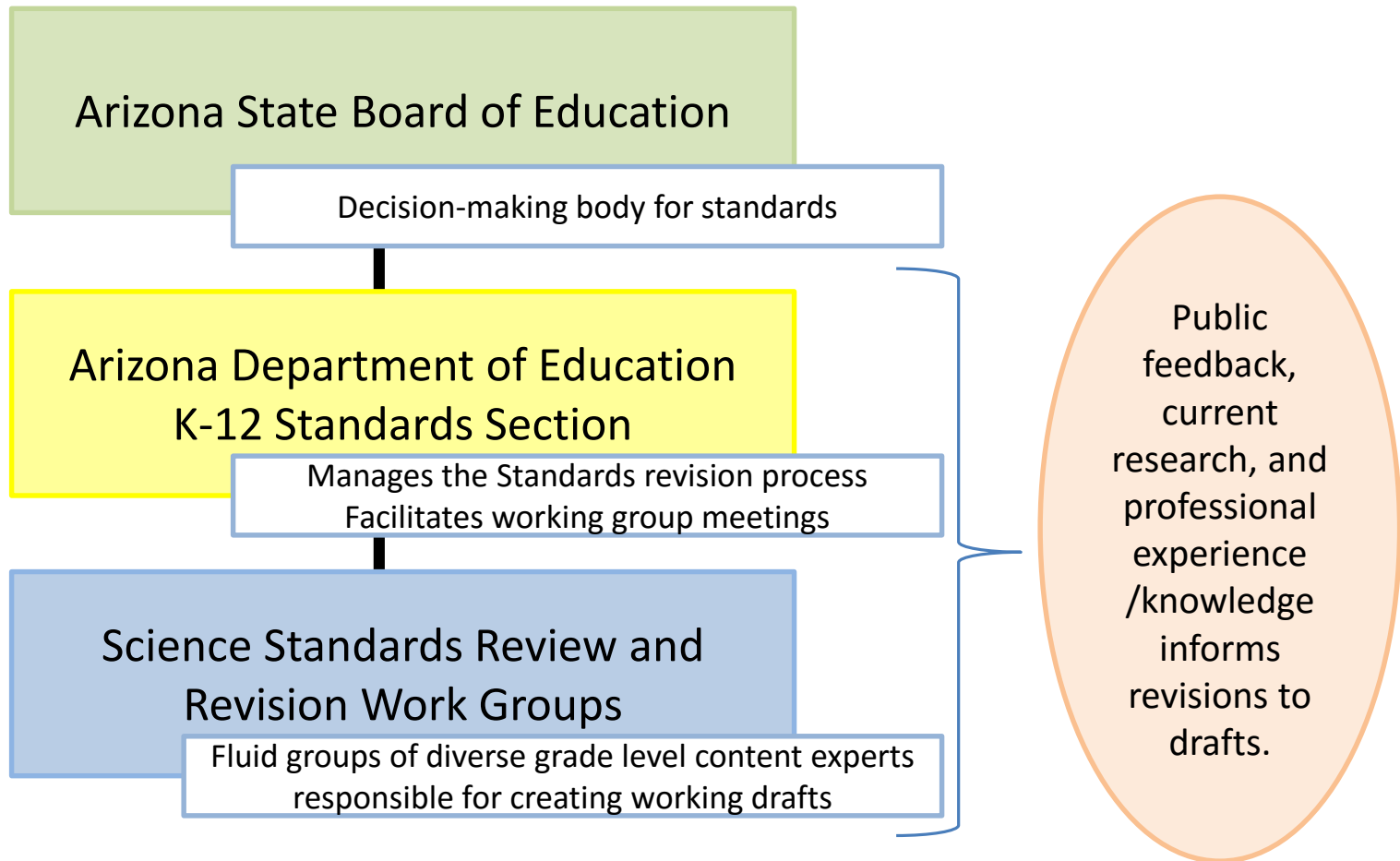
thank
you

Introductions

Introduce yourself by telling everyone in the group:

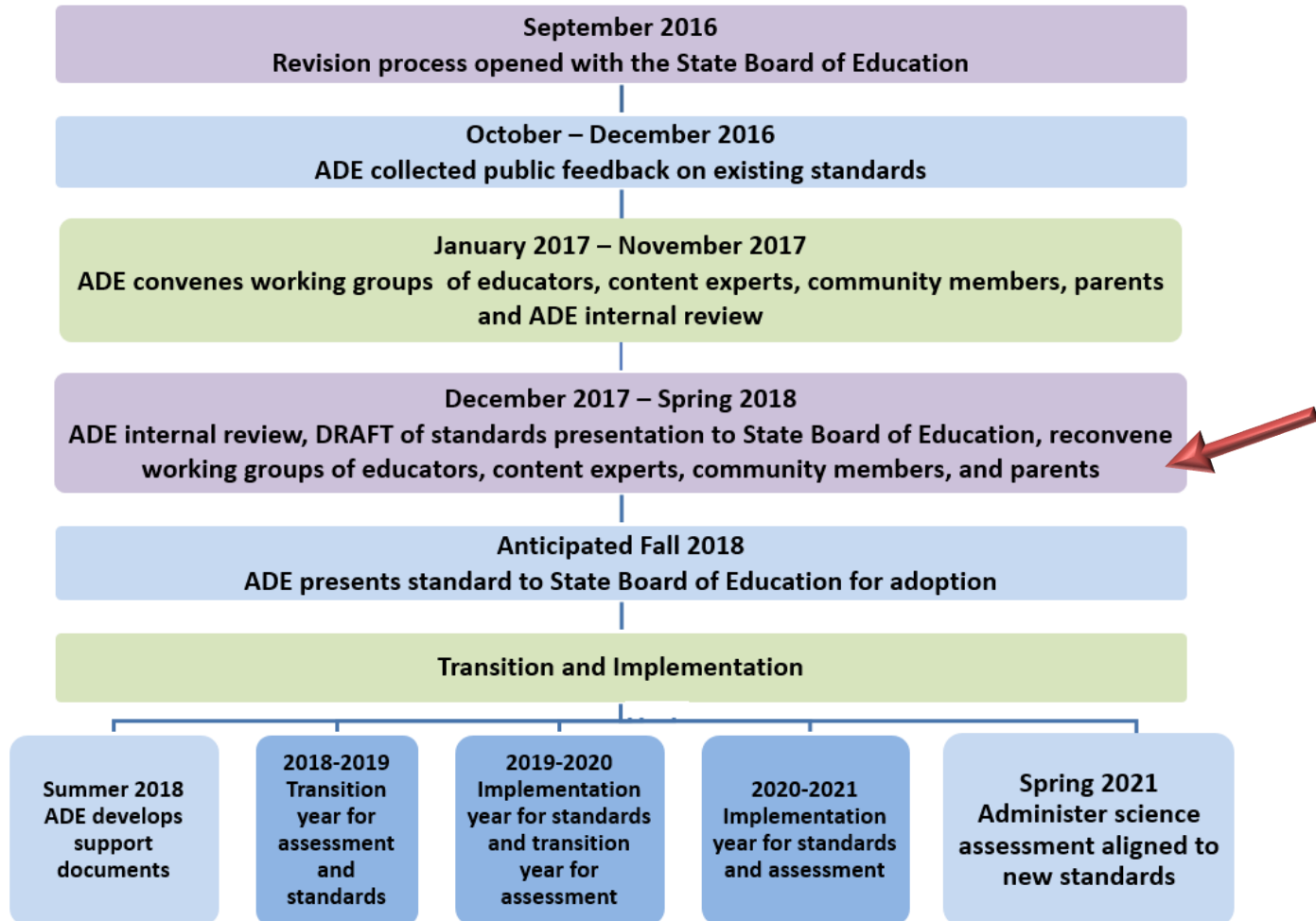
1. Your name
2. Your school/district
3. Your current position

Standards Review - Structure



Science Standard Revision and Implementation Timeline

Science Standards Revision and Tentative Implementation Timeline



Working Group Norms

- Actively engage in all discussions
- Be open-minded
- Have an attitude that fosters collaboration, agreement, and consensus
- Be mindful of timelines and scope of work
- **Cell phone/email checks are limited to breaks**

Standards, Curriculum, & Instruction

Standards – What a student needs to know, understand, and be able to do by the end of each grade. Standards build across grade levels in a progression of increasing understanding and through a range of cognitive demand levels.

Standards are adopted at the state level by the State Board of Education.



This is the “WHAT”



Standards, Curriculum, & Instruction

Curriculum – The resources used for teaching and learning the standards. **Curricula are adopted at a local level by districts and schools.**

Instruction – The methods used by teachers to teach their students. **Instructional techniques are employed by individual teachers** in response to the needs of the students in their classes to help them progress through the curriculum in order to master the standards.



This is the “HOW”



Learning Progressions

March DRAFT

Physical Science Standards	Key concepts include but are not limited to:
1.P2U1.1	
Plan and carry out investigations demonstrating the effect of placing objects made with different materials in the path of a beam of light and predict how objects with similar properties will affect the beam of light.	Concepts taught in <u>K.P2U2.1</u> and light waves, prisms, mirrors, reflection, opaque, translucent, transparent, lenses, visible light color spectrum

Learning Progressions

Physical Science Standards	Learning Progression and Key Terms
<p>1.P2U1.1</p> <p>Plan and carry out investigations demonstrating the effect of placing objects made with different materials in the path of a beam of light and predict how objects with similar properties will affect the beam of light.</p>	<p>By the end of grade 2:</p> <p>Some materials allow light to pass through them (transparent), others allow only some light through (translucent), and others block all the light (opaque) and create a dark shadow on any surface beyond them (i.e., on the other side from the light source), where the light cannot reach. Mirrors and prisms can be used to redirect a light beam.</p> <p>Concepts taught in K.P2U2.1</p>

Proposal

Learning Progressions

Physical Science Standards	Learning Progression and Key Terms
<p>1.P2U1.1</p> <p>Plan and carry out investigations demonstrating the effect of placing objects made with different materials in the path of a beam of light and predict how objects with similar properties will affect the beam of light.</p> <p style="text-align: center;">Proposal</p>	<p>By the end of grade 2:</p> <p>Some materials allow light to pass through them (transparent), others allow only some light through (translucent), and others block all the light (opaque) and create a dark shadow on any surface beyond them (i.e., on the other side from the light source), where the light cannot reach. Mirrors and prisms can be used to redirect a light beam.</p> <p>Concepts taught in K.P2U2.1</p>

March DRAFT

Key concepts include but are not limited to:
<p>Concepts taught in <u>K.P2U2.1</u> and light waves, prisms, mirrors, reflection, opaque, translucent, transparent, lenses, visible light color spectrum</p>

Learning Progressions

Learning Progression acknowledging scientific terms

Physical Science Standards	Learning Progression and Key Terms
1.P2U1.1 Plan and carry out investigations demonstrating the effect of placing objects made with different materials in the path of a beam of light and predict how objects with similar properties will affect the beam of light.	By the end of grade 2: Some materials allow light to pass through them (transparent), others allow only some light through (translucent), and others block all the light (opaque) and create a dark shadow on any surface beyond them (i.e., on the other side from the light source), where the light cannot reach. Mirrors and prisms can be used to redirect a light beam. Concepts taught in K.P2U2.1
1.P2U2.2 Use models to provide evidence that vibrating matter creates sound and sound can make matter vibrate.	By the end of grade 2: Light and sound are wavelike phenomena. Sound can make matter vibrate , and vibrating matter can make sound. Concepts taught in K.P2U2.1
1.P3U1.3 Plan and carry out investigations which demonstrate how equal forces can balance objects and how unequal forces can push, pull, or twist objects, making them change their speed, direction, or shape.	By the end of grade 2: Forces can push, pull or twist objects, making them change their motion or shape. Forces act <u>in particular directions</u> . Equal forces acting in opposite directions in the same line cancel each other and are described as being in balance (balanced forces) . The

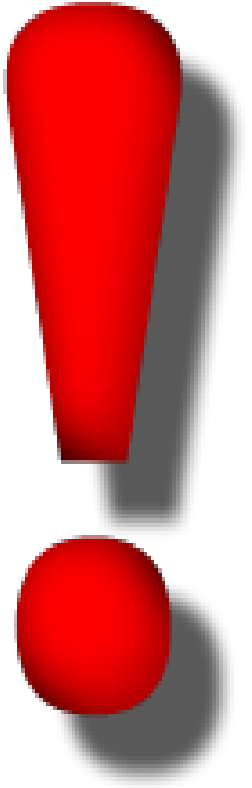
Today's Tasks



Reminder:

Keep in mind our work product is public record.

Today's Tasks



Items that are not actionable:

- Curriculum
- Instruction
- Funding/Budget
- Assessment

Actionable:

Specific actionable comments related to

- Standard
- Organization
- Introduction

Etc....

Today's Tasks

Public Survey Review (Task 1)

You can jot ideas or make notes on your own document if you like.

*Groups final comments from discussion should be on Master and on Excel Spreadsheet



Today's Tasks



- Determine if the comment /feedback is actionable or not
- What item the comment/feedback addresses (see suggested list)
- Potential changes the group agrees should be made

Today's Task Example

Survey Question	51. What would you like the working group to consider as they revise the Seventh Grade Science Standards?				
Comment #	Public Comment	Actionable Yes/No	Item Addressed	Suggested Changes	Committee Notes
7	Should focus on earth science.	No	K-12 Progression		Too broad
46	Remove key concepts				Discussed on comment number 12
65	There needs to be clearer emphasis on the use of the metric system in all data collection and analysis in science at all levels.	Yes	Other	Add into/storyline or an appendix. Possible addition to standard wording.	

Today's Tasks



- In your groups select one recorder to write on the Master Copy and one recorder to type into the public comment Excel spreadsheet
- Write all group members names on the “master” packet

Grade Level Standards

Read your grade level draft standards that correspond with your working group today.

Begin when your group is ready!

- Grade level survey 1st (K-2, 3-5, 6-8, HS+B, HS+PC, HS+ES)
- Other survey categories as assigned



A cartoon-style illustration of a wooden sign. The sign is rectangular with a light brown wood grain texture and a darker brown shadow on its right side, giving it a 3D appearance. It is held up by a dark grey pushpin at the top center, with two thin grey lines extending from the pushpin to the top corners of the sign. The text on the sign is in a bold, dark brown font with a white drop shadow. The words "Out to" are on the top line, and "LUNCH!" is on the bottom line in a larger font size.

**Out to
LUNCH!**

Today's Tasks

Public Review – Non-survey
format (Task 2)



You can jot ideas or make notes
on your own document if you like.

Non-Survey Example

Public Comment Non-Survey	Public comment received outside of the survey				
Comment #	Public Comment	Actionable Yes/No	Item Addressed	Suggested Changes	Committee Notes
A-1	I would call them [big ideas] "bad ideas," and are nothing more than the progressives push to change how our children are being taught and it is adding to the "deliberate dumbing down of America" that we continue to see with Common Core in English Language Arts and Mathematics which are in our current Arizona K-12 Standards.				
A-2	The science standards are more than just standards because they call out specific methods to be used to teach science - modeling thought the standards!				
	Record the comment				
B -3.5	3.L1U1.5 Obtain, evaluate, and communicate how the human body has different systems and information processing that carry out life processes.		Standard		

Final Thoughts

