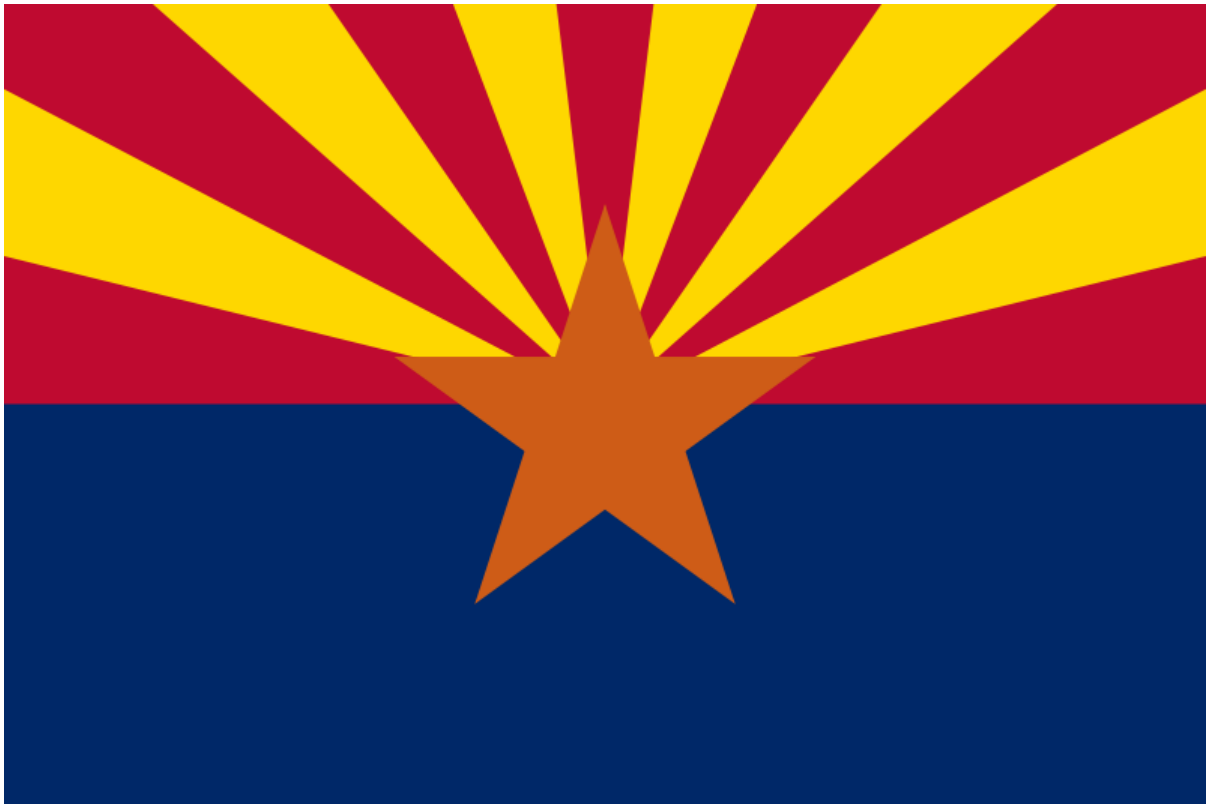
Arizona Science Standards Revision Working Group



June 28, 2018

Arizona Department of Education

Arizona Department of Education

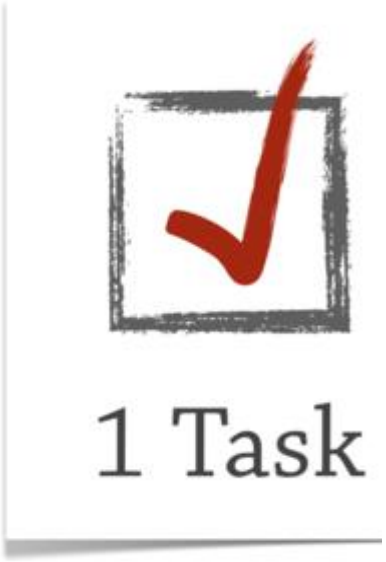
Introductions

- Sarah Sleasman
  - Director of Science and STEM
- Brea Rivera
  - Science Specialist

- Jonathan Moore, Ed. D.
  - Deputy Associate Superintendent

Arizona Department of Education

Arizona Science Standards Revision Working Group



Today we look at the 6-8 standards progression and make any necessary changes.

Housekeeping

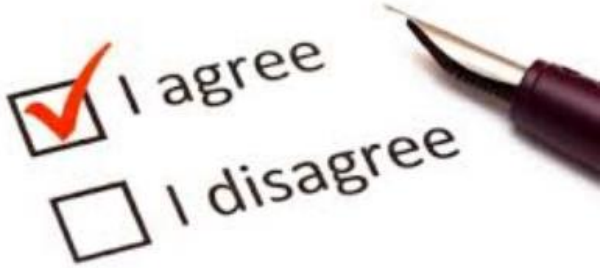
1. Sign in
2. Parking validation
3. Restrooms
4. Breaks/Lunch
5. Travel Questions – Fill out W9 if needed
6. Sign forms – All members

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.

Arizona Department of Education

Arizona Department of Education

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!

Introductions

Introduce yourself by telling everyone in the group:

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

Arizona Department of Education

Arizona Department of Education

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**

Arizona Department of Education

Arizona Department of Education

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.

Arizona Department of Education

This is the "WHAT"

Arizona Department of Education

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.

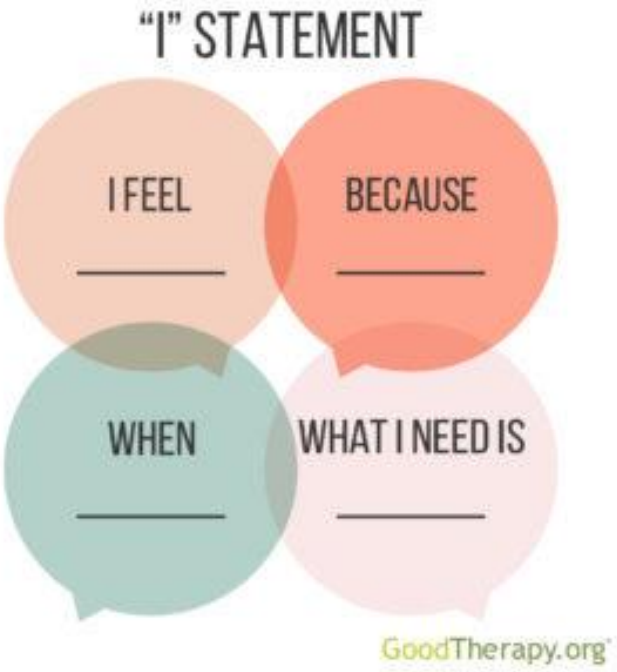
Arizona Department of Education

This is the "HOW"

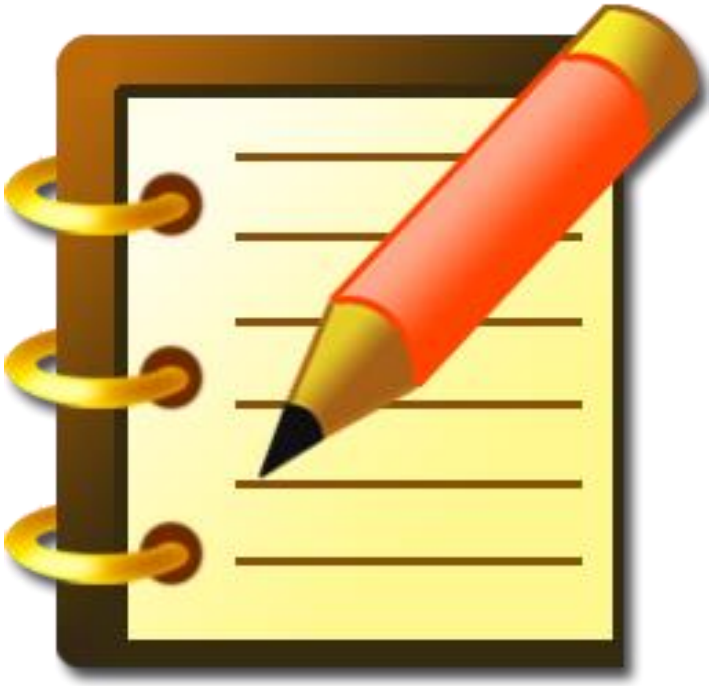
Arizona Department of Education

Working Group Norms

No "I" Statements



Today's Tasks



Reminder:

Keep in mind our work product is public record.

Today's Tasks

Distribution of the Grades 6-8 Standards

Dark blue = 6th Dark yellow = 7th Dark purple = 8th	**U1**: Science's purpose is to find the cause or causes of phenomena in the natural world.	**U2**: Scientific explanations, theories, and models are those that best fit the evidence available at a particular time.	**U3**: The knowledge produced by science is used in engineering and technologies to create products.	**U4**: Applications of science often have both positive and negative ethical, social, economic, and political implications.
P1: All matter in the Universe is made of very small particles.	6.P1U1.1 6.P1U1.2	6.P1U2.3 8.P1U2.1	8.P1U3.2	
P2: Objects can affect other objects at a distance.	7.P2U1.1	7.P2U2.2		
P3: Changing the movement of an object requires a net force to be acting on it.		6.P3U2.4 7.P3U2.3		
P4: The total amount of energy in a closed system is always the same but can be transferred from one energy store to another during an event.	8.P4U1.3 8.P4U1.4		6.P4U3.5 8.P4U3.5	
E1: The composition of the Earth and its atmosphere and the natural and human processes occurring within them shape the Earth's surface and its climate.	6.E1U1.6 8.E1U1.6	7.E1U2.4 7.E1U2.5	7.E1U3.6 8.E1U3.7	8.E1U4.8
E2: The Earth and our Solar System are a very small part of one of many galaxies within the Universe.	6.E2U1.7 6.E2U1.8 6.E2U1.12	6.E2U2.9 6.E2U2.11	6.E2U3.10	
L1: Organisms are organized on a cellular basis and have a finite life span.	6.L1U1.14 7.L1U1.7	6.L1U2.13 6.L1U2.15	7.L1U3.8	
L2: Organisms require a supply of energy and materials for which they often depend on, or compete with, other organisms.	6.L2U1.16	7.L2U2.9 7.L2U2.10		7.L2U4.11
L3: Genetic information is passed down from one generation of organisms to another.	8.L3U1.9			8.L3U4.10
L4: The theory of evolution seeks to make clear the unity and diversity of living and extinct organisms.		8.L4U2.11 8.L4U2.12		

Today's Tasks

Grade	Physical Standards	Earth & Space Standards	Life Standards	U1	U2	U3	U4	Total # of Standards 2018	Total # of PO's 2004
6th Grade	P1 - 3 P2 - 0 P3 - 1 P4 - 1	E1 – 1 E2 – 6	L1- 3 L2 – 1 L3 – 0 L4 - 0	6.P1U1.1 6.P1U1.2 6.E1U1.6 6.E2U1.7 6.E2U1.8 6.E2U1.12 6.L1U1.14 6.L2U1.16	6.P1U2.3 6.P3U2.4 6.E2U2.9 6.E2U2.11 6.L1U2.13 6.L1U2.15	6.P4U3.5 6.E2U3.10		Total: 16 P: 5 E: 7 L: 4	24 4 11 9
7th Grade	P1 - 0 P2 - 2 P3 - 1 P4 - 0	E1 – 3 E2 – 0	L1- 2 L2 – 3 L3 – 0 L4 - 0	7.P2U1.1 7.L1U1.7	7.P2U2.2 7.E1U2.4 7.E1U2.5 7.L2U2.9 7.L2U2.10	7.E1U3.6 7.E1U3.6 7.L1U3.8	7.L2U4.11	Total: 11 P: 3 E: 3 L: 5	22 0 16 6
8th Grade	P1 - 2 P2 - 0 P3 - 0 P4 -3	E1 – 3 E2 – 0	L1- 0 L2 – 0 L3 – 2 L4 -2	8.P4U1.3 8.P4U1.4 8.E1U1.6 8.L3U1.9	8.L4U2.11 8.L4U2.12	8.E1U3.7	8.E1U4.8 8.L3U4.10	Total: 12 P: 5 E: 3 L: 4	21 12 0 9

Today's Tasks

The Standards Progression

1. Look at the progression
2. Review public feedback
3. Use the Framework and Big Ideas to drive decision making
4. Create a learning progression that creates scientifically literate students that is accessible for ALL AZ students.

Arizona Department of Education

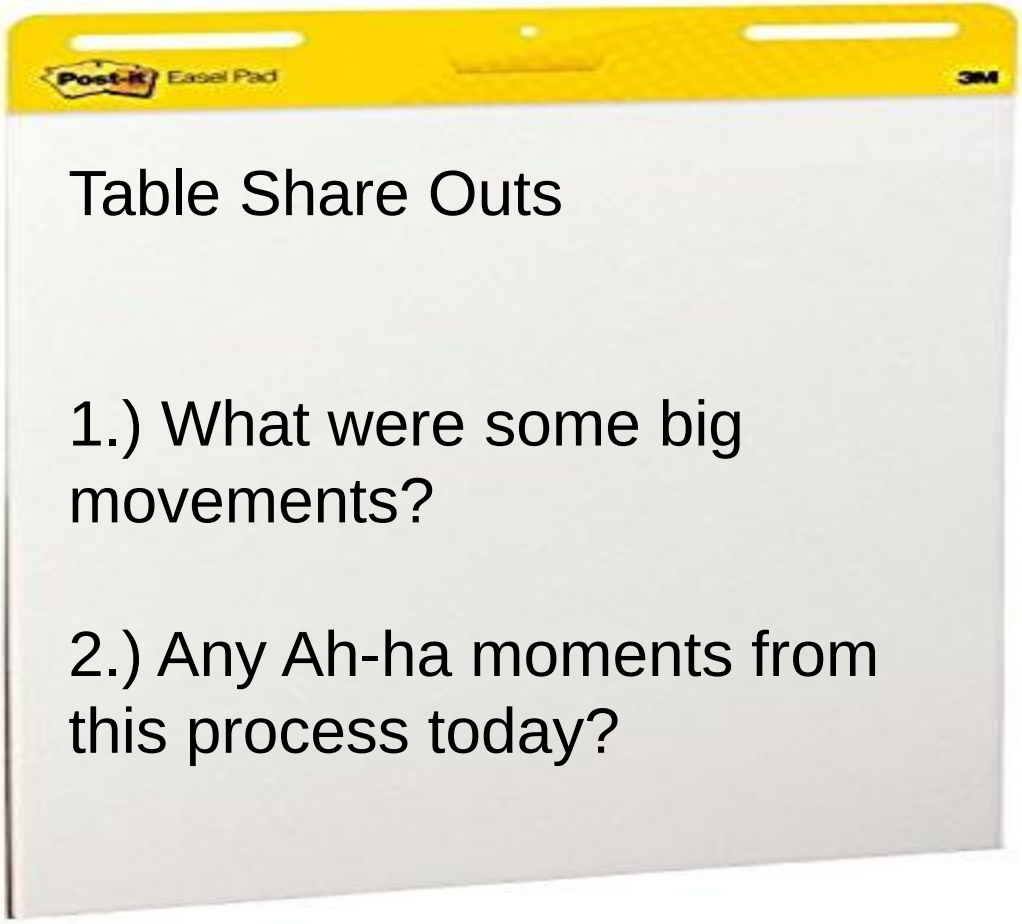
Arizona Department of Education

Today's Tasks

If time…The Learning Progression

1. Look at the progression
2. Does the progression align to the standard
    1. Bold words appropriate (any missing terms that could be bold?)
    2. Crosscutting concepts match standard?

Final Thoughts



Arizona Department of Education

Arizona Department of Education

Final Thoughts

Fill in what we know so far…

Standards Revision Executive Summary

Grade Level	Key Highlights from Public Comment and/or Technical Review	Key Points of Discussion from Working Group	Key Revisions and/or Changes
Kindergarten			
First Grade			
Second Grade			
Third Grade			
Fourth Grade			
Fifth			
Sixth			

Arizona Department of Education

Arizona Department of Education