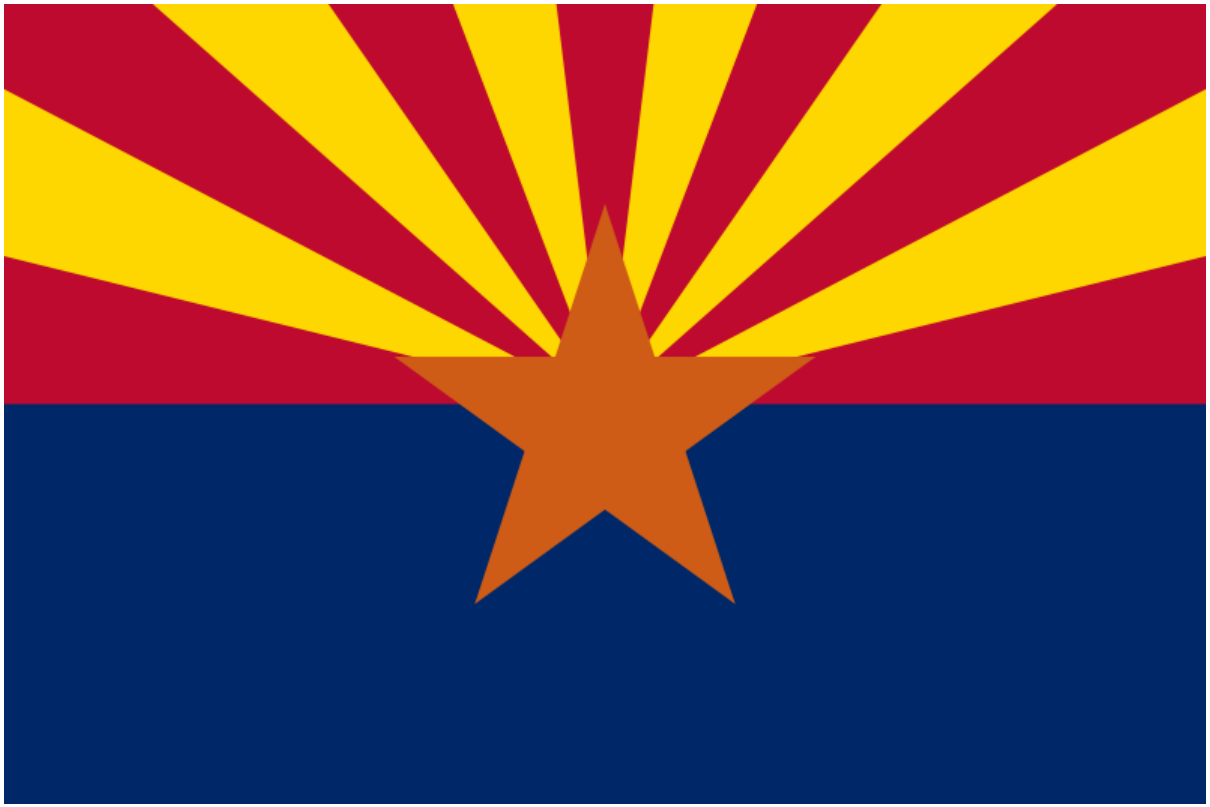
Arizona Science Standards Revision Working Group



July 23, 2018

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Introductions

- Sarah Sleasman
  - Director of Science and STEM
- Brea Rivera
  - Science Specialist
- Jonathan Moore, Ed. D.
  - Deputy Associate Superintendent
- Heather Cruz, Ed. D.
  - Associate Superintendent

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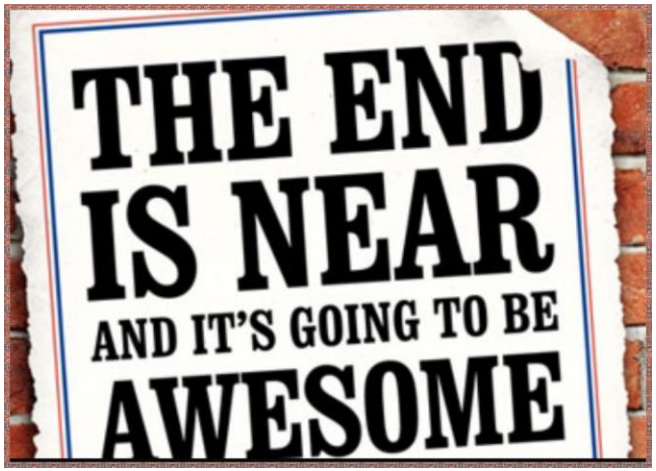
Arizona Science Standards Revision Working Group



Today we will…

- ❑ Using Science – group discussion
- ❑ Finish any final verb review - using science check
- ❑ Vertical alignment/ complimentary standards connections and links
- ❑ Rating the Standards

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Housekeeping

1. Sign in
2. Parking validation
3. Restrooms
4. Breaks/Lunch
5. 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.

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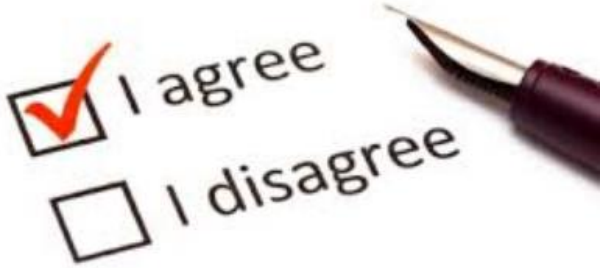
Housekeeping



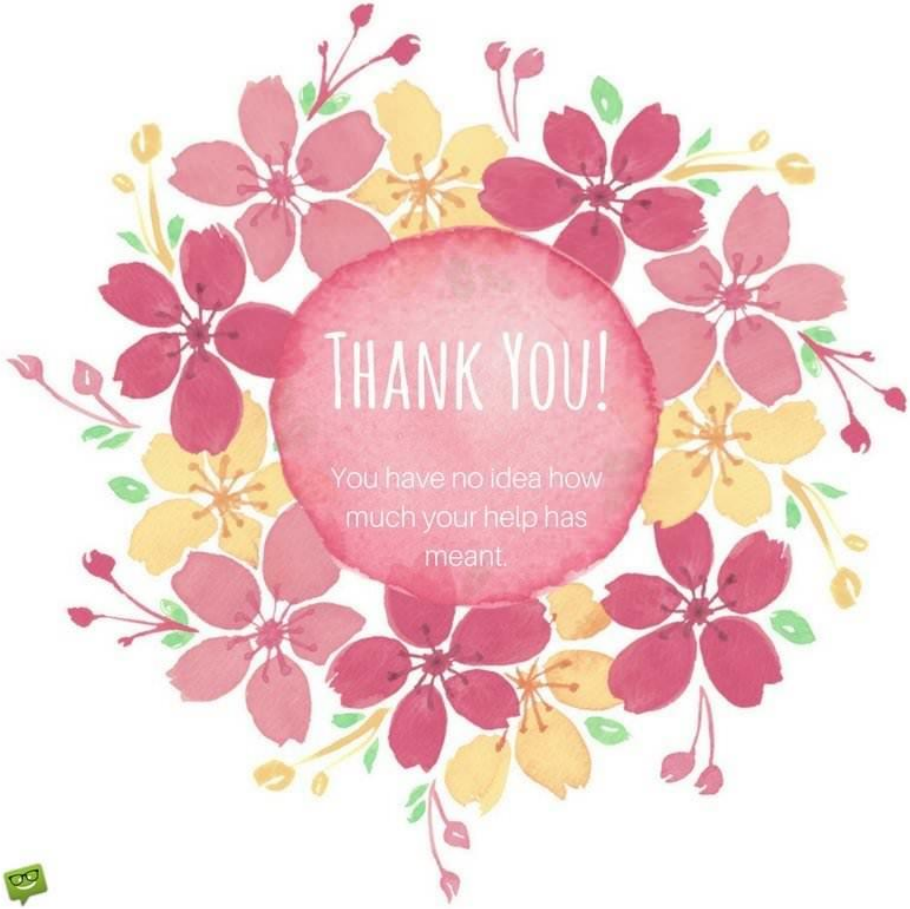
Dr. Eugene Judson

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

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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**

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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.

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This is the "WHAT"

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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.

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This is the "HOW"

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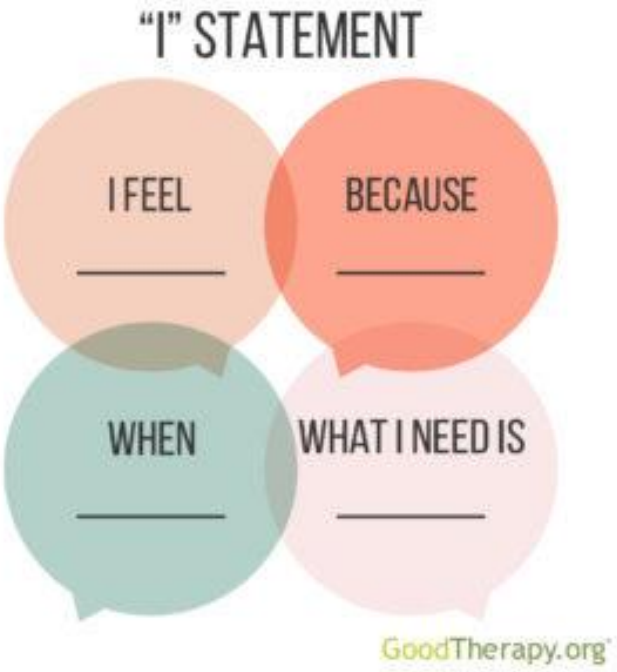
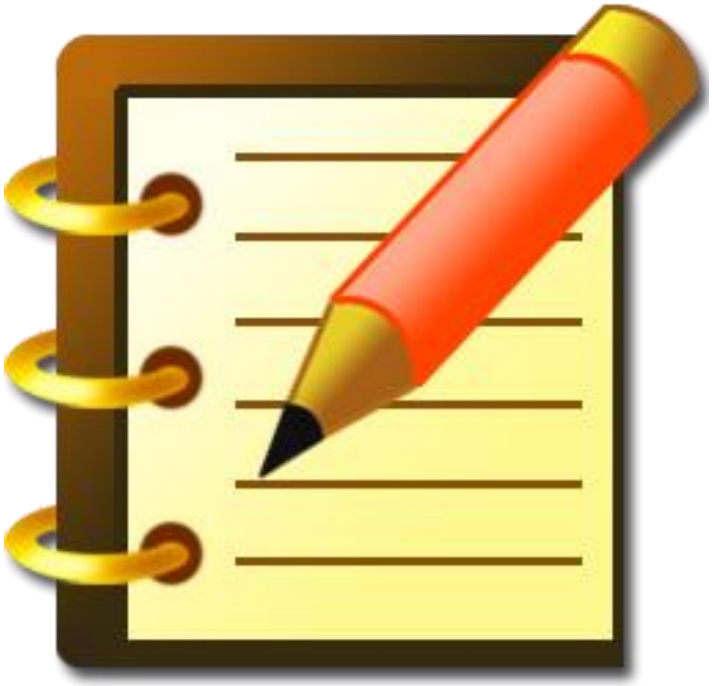
Working Group Norms

No "I" Statements



Today's Tasks



Reminder:

Keep in mind our work product is public record.

Today's Tasks

Refine Framework draft learning progression

Life Science Standards	Learning Progressions, Key Terms, and Crosscutting Concepts
1.L1U1.6	
Observe, describe, and predict life cycles of animals and plants.	**Plants** and **animals** have predictable **characteristics** at different **stages of development**. Plants and animals **grow** and change. Adult plants and animals can have **young**.[1] All will at some stage carry out the **life processes** of respiration, reproduction, feeding, excretion, growth and developments, and all will eventually die.[2] Crosscutting Concepts: **cause and effect, stability and change,** patterns, structure and function.[4]
1.L2U2.7	
Develop and use models about how living things use resources to grow and survive; **design and evaluate** habitats for organisms using earth materials.	All living things need food as their source of **energy** as well as air, water and certain temperature conditions. Plants can use **sunlight** to make the food they need. Animals need food that they can break down, which comes either directly by eating plants (**herbivores**) or by eating animals (**carnivores**) which have eaten plants or other animals.[3] Animals depend on their surroundings (**habitats**) to get what they need, including food, water, shelter, and a favorable temperature.[4]
1.L2U1.8	
Construct an explanation describing how organisms obtain resources from the environment including materials that are used again by other organisms. Concepts taught in K.L1U1.5, K.L4U2.7	Crosscutting Concepts: **cause and effect, stability and change,** patterns, structure and function.[4]
1.L3U2.9	
Obtain, evaluate, and communicate information to support an evidence-based explanation that plants and animals produce offspring of the same kind, but offspring are generally not identical to each other or their parents.	**Living** things produce **offspring** of the same kind, but offspring are not **identical** with each other or with their **parents**. Plants and animals, including humans, resemble their parents in many features because information is passed from one **generation** to the next. Crosscutting Concepts: **cause and effect, stability and change,** patterns, structure and function.[4]

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Today's Tasks

Refine the Cross-cutting concepts

Life Science Standards	Learning Progressions, Key Terms, and Crosscutting Concepts
1.L1U1.6	
Observe, describe, and predict life cycles of animals and plants.	**Plants** and **animals** have predictable **characteristics** at different **stages of development**. Plants and animals **grow** and change. Adult plants and animals can have **young**.[1] All will at some stage carry out the **life processes** of respiration, reproduction, feeding, excretion, growth and developments, and all will eventually die.[2] Crosscutting Concepts: **cause and effect, stability and change,** patterns, structure and function.[4]
1.L2U2.7	
Develop and use models about how living things use resources to grow and survive; **design and evaluate** habitats for organisms using earth materials.	All living things need food as their source of **energy** as well as air, water and certain temperature conditions. Plants can use **sunlight** to make the food they need. Animals need food that they can break down, which comes either directly by eating plants (**herbivores**) or by eating animals (**carnivores**) which have eaten plants or other animals.[3] Animals depend on their surroundings (**habitats**) to get what they need, including food, water, shelter, and a favorable temperature.[4]
1.L2U1.8	
Construct an explanation describing how organisms obtain resources from the environment including materials that are used again by other organisms. Concepts taught in K.L1U1.5, K.L4U2.7	Crosscutting Concepts: **cause and effect, stability and change,** patterns, structure and function.[4]
1.L3U2.9	
Obtain, evaluate, and communicate information to support an evidence-based explanation that plants and animals produce offspring of the same kind, but offspring are generally not identical to each other or their parents.	**Living** things produce **offspring** of the same kind, but offspring are not **identical** with each other or with their **parents**. Plants and animals, including humans, resemble their parents in many features because information is passed from one **generation** to the next. Crosscutting Concepts: **cause and effect, stability and change,** patterns, structure and function.[4]

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Today's Tasks

After all the changes…double check the coding and the "U1-4" for using science are correct…

Life Science Standards	Learning Progressions, Key Terms, and Crosscutting Concepts
1.L U1.6	
Observe, describe, and predict life cycles of animals and plants.	**Plants** and **animals** have predictable **characteristics** at different **stages of development**. Plants and animals **grow** and change. Adult plants and animals can have **young**.[1] All will at some stage carry out the **life processes** of respiration, reproduction, feeding, excretion, growth and developments, and all will eventually die.[2] Crosscutting Concepts: **cause and effect, stability and change,** patterns, structure and function.[1]
1.L U2.7	
Develop and use models about how living things use resources to grow and survive; **design and evaluate** habitats for organisms using earth materials.	All living things need food as their source of **energy** as well as air, water and certain temperature conditions. Plants can use **sunlight** to make the food they need. Animals need food that they can break down, which comes either directly by eating plants (**herbivores**) or by eating animals (**carnivores**) which have eaten plants or other animals.[2] Animals depend on their surroundings (**habitats**) to get what they need, including food, water, shelter, and a favorable temperature.[1]
1.L U1.8	
Construct an explanation describing how organisms obtain resources from the environment including materials that are used again by other organisms. Concepts taught in K.L1U1.5, K.L4U2.7	Crosscutting Concepts: **cause and effect, stability and change,** patterns, structure and function.[1]
1.L U2.9	
Obtain, evaluate, and communicate information to support an evidence-based explanation that plants and animals produce offspring of the same kind, but offspring are generally not identical to each other or their parents.	**Living** things produce **offspring** of the same kind, but offspring are not **identical** with each other or with their **parents**. Plants and animals, including humans, resemble their parents in many features because information is passed from one **generation** to the next. Crosscutting Concepts: **cause and effect, stability and change,** patterns, structure and function.[1]

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Today's Tasks

Final verb review

Life Science Standards	Learning Progressions, Key Terms, and Crosscutting Concepts
1.L1U1.6	
Observe, describe, and predict life cycles of animals and plants.	**Plants** and **animals** have predictable **characteristics** at different **stages of development**. Plants and animals **grow** and change. Adult plants and animals can have **young**.[1] All will at some stage carry out the **life processes** of respiration, reproduction, feeding, excretion, growth and developments, and all will eventually die.[2] Crosscutting Concepts: **cause and effect, stability and change,** patterns, structure and function.[1]
1.L2U2.7	
Develop and use models about how living things use resources to grow and survive; **design and evaluate** habitats for organisms using earth materials.	All living things need food as their source of **energy** as well as air, water and certain temperature conditions. Plants can use **sunlight** to make the food they need. Animals need food that they can break down, which comes either directly by eating plants (**herbivores**) or by eating animals (**carnivores**) which have eaten plants or other animals.[2] Animals depend on their surroundings (**habitats**) to get what they need, including food, water, shelter, and a favorable temperature.[1]
1.L2U1.8	
Construct an explanation describing how organisms obtain [illegible] ent including materials that are used again by other organisms. Concepts taught in K.L1U1.5, K.L4U2.7	Crosscutting Concepts: **cause and effect, stability and change,** patterns, structure and function.[1]
1.L3U2.9	
Obtain, evaluate, and communicate information t support an [illegible] roduce offspring of the same kind, but offspring are generally not identical to each other or their parents.	**Living** things produce **offspring** of the same kind, but offspring are not **identical** with each other or with their **parents**. Plants and animals, including humans, resemble their parents in many features because information is passed from one **generation** to the next. Crosscutting Concepts: **cause and effect, stability and change,** patterns, structure and function.[1]

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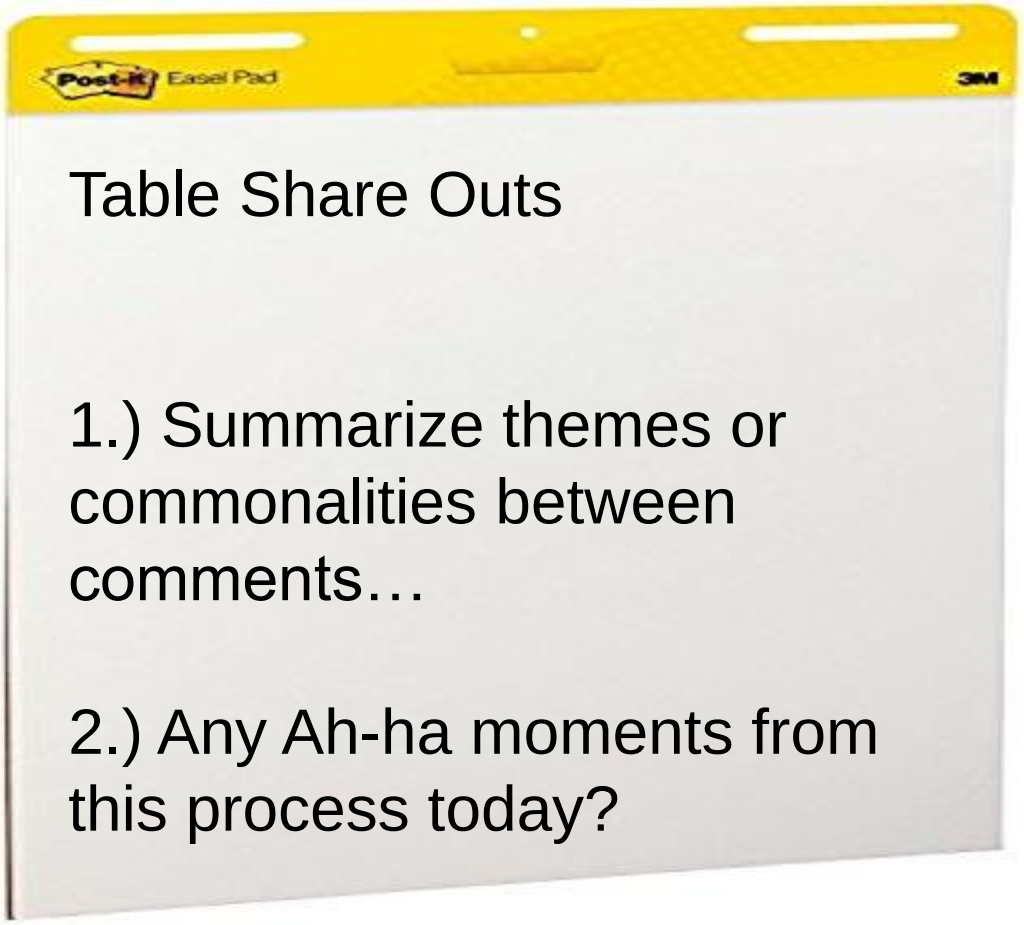
Final Thoughts



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Final Thoughts

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			

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