




Lunch & Learn

Summer 2021



Using Claim-Evidence-Reasoning: Scientific Explanations to Increase Student Voice

Presented by Susan Arnette, MEd, and Mindy Stroup, EdD




July 21, 2021
12:00-12:45 pm CST


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Using Claim-Evidence-Reasoning: Scientific Explanations to Increase Student Voice




Susan Arnette, MEd
STEMscopes Regional Trainer



Susan Arnette is a Nationally Certified STEM Teacher through the National Institute for STEM Education. After 24 years in the classroom, she transitioned to providing regional and statewide professional development and coaching for teachers as a STEM specialist with the state department of education. Upon leaving public education she remained active as an independent consultant specializing in STEM education then found a home with STEMscopes. Susan knows that the teacher is the determining factor in the classroom for student success and continues her lifelong passion for education by providing STEM professional learning sessions, consulting, curriculum design, and coaching throughout the United States.

Mindy Stroup, EdD
STEMscopes Regional Trainer



Mindy Stroup worked in the public school system for over 30 years as a teacher, a curriculum specialist, an administrator, and a K-5 science lab teacher. Dr. Stroup earned her undergraduate and master's degree from Ball State University in Indiana and her Education Specialist and Doctorate in Supervision and Educational Leadership from NOVA Southeastern University in Florida. She has presented at numerous state and regional conferences. As an Implementation Specialist for STEMscopes, she helps develop, coordinate and provide professional development along with coaching sessions, across the country using best practices. Dr. Stroup knows that the teacher is the determining factor in the classroom for student success

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Is this a healthy snack?

Nutrition Facts

10 servings per container
Serving size 1 bar (68g)
Calories per serving 260

Amount/serving	% Daily Value*
Total Fat 7g	9%
Saturated Fat 1g	6%
Trans Fat 0g	
Polyunsaturated Fat 2.5g	
Monounsaturated Fat 3g	
Cholesterol 0mg	0%
Sodium 230mg	10%

*The % Daily Value tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

INGREDIENTS:
ORGANIC BROWN RICE SYRUP, ORGANIC ROLLED OATS, ORGANIC CANE SYRUP, ORGANIC PEANUT BUTTER, ORGANIC ROASTED SOYBEANS, SOY PROTEIN ISOLATE, PEANUTS, PEANUT FLOUR, RICE FLOUR, ORGANIC SOY FLOUR, ORGANIC OAT FIBER, NATURAL FLAVORS, SEA SALT, BARLEY MALT EXTRACT. **VITAMINS & MINERALS:** DICALCIUM PHOSPHATE, MAGNESIUM OXIDE, ASCORBIC ACID (VIT. C), DL-ALPHA TOCOPHERYL ACETATE (VIT. E), BETA CAROTENE (VIT. A), NIACINAMIDE (VIT. B3), ERGOCALCIFEROL (VIT. D2), THIAMINE MONONITRATE (VIT. B1), PYRIDOXINE HYDROCHLORIDE (VIT. B6), RIBOFLAVIN (VIT. B2), CYANOCOBALAMIN (VIT. B12).

ALLERGEN STATEMENT: CONTAINS PEANUTS AND SOY. MAY CONTAIN TREE NUTS, MILK, AND WHEAT.

Amount/serving	% Daily Value*
Total Carb. 40g	15%
Dietary Fiber 4g	14%
Insoluble Fiber 3g	
Total Sugars 19g	
Incl. 18g Added Sugars	35%
Protein 11g	18%

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Session Goals

→Practice using the CER process to:

- ◆ Encourage student **curiosity** and **engagement** in authentic science and engineering practices
- ◆ Engage students in the deeper skills of **inquiry** they need to be successful not just academically but in the real world
- ◆ Empower students to make **informed decisions** and speak from **evidence with reasoning**

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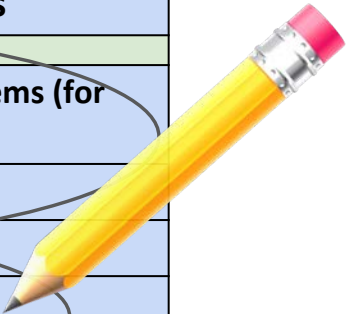
→ Is the light always on in the refrigerator?

- ◆ How do you know?
- ◆ What do you know that will help you to explain your response?
- ◆ What can you do to prove it?



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Practices for K-12 Science Classrooms
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




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Would you play in this water?




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Clear Expectations 			
	Specifications	Feedback	Score
Claim	Answers the Question: <i>Would you play in this water?</i>		/4
Evidence	Provide at least <u>three</u> pieces of evidence from your observations of the image.		/6
Reasoning	How does your evidence point to the conclusion you are making? Include the terms: → Environment → Contamination → Toxins		/6


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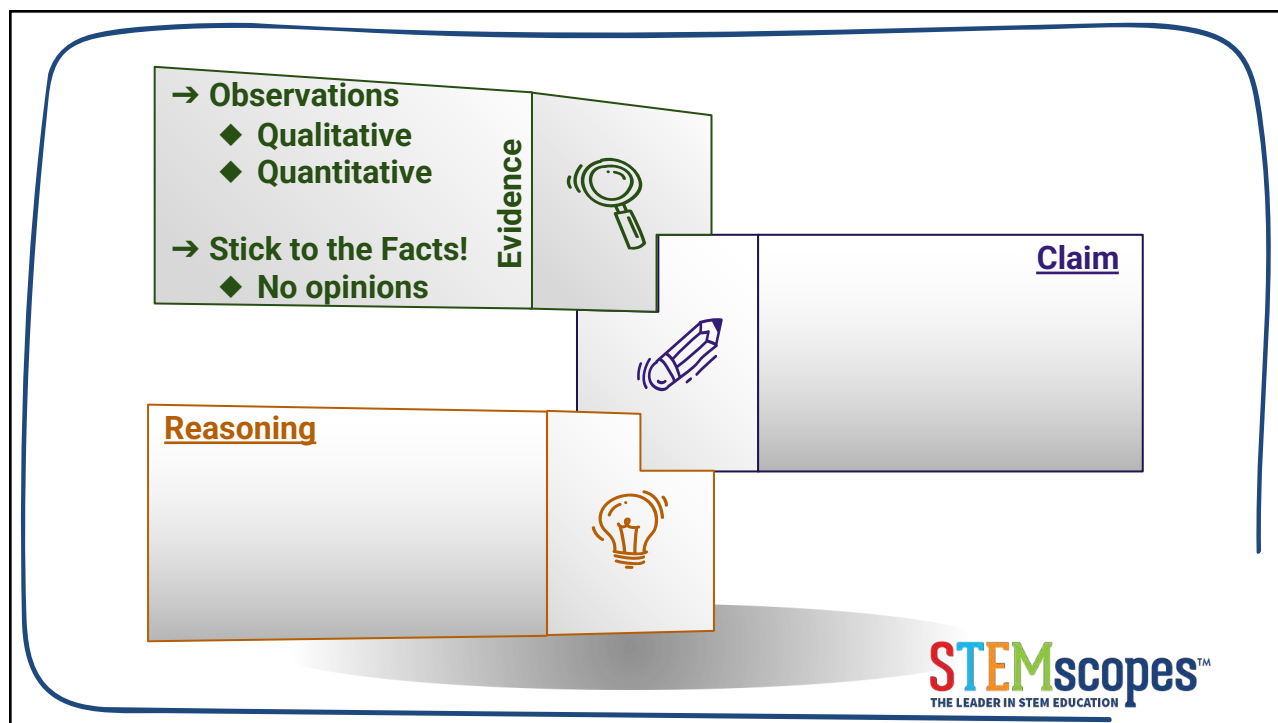


Find 3 pieces of evidence to answer the question, “Would you play in this water?”

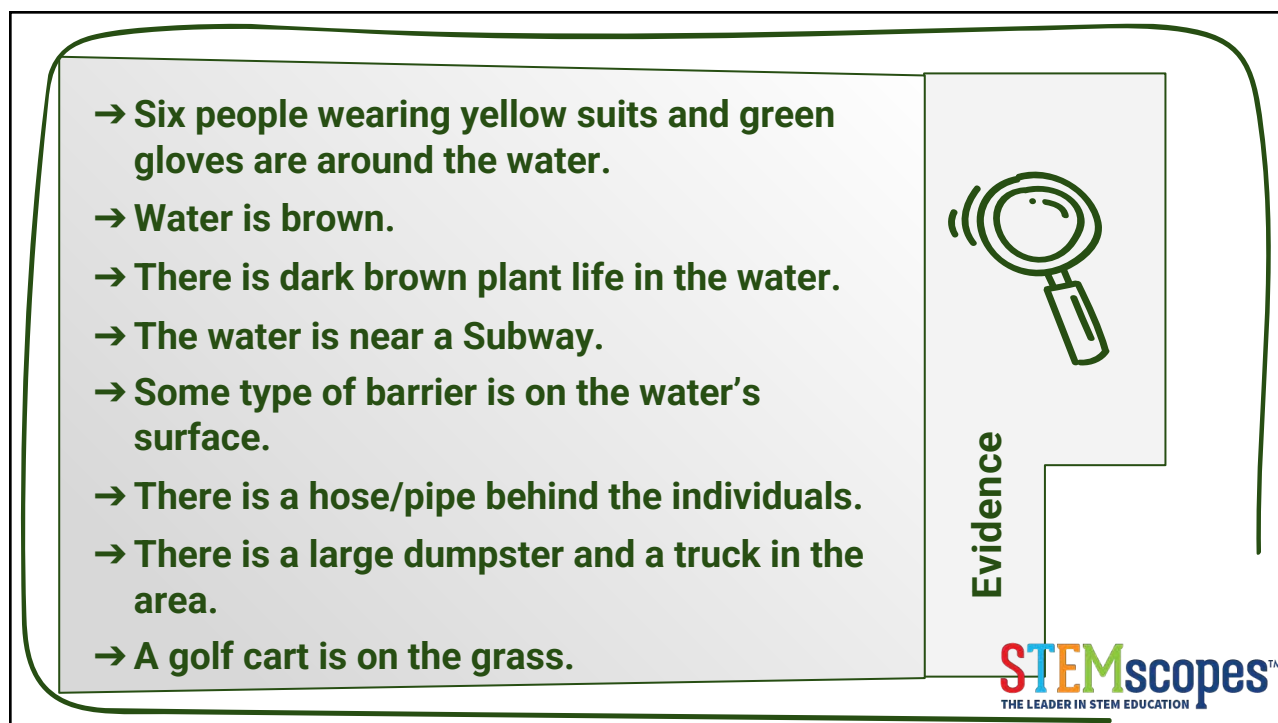




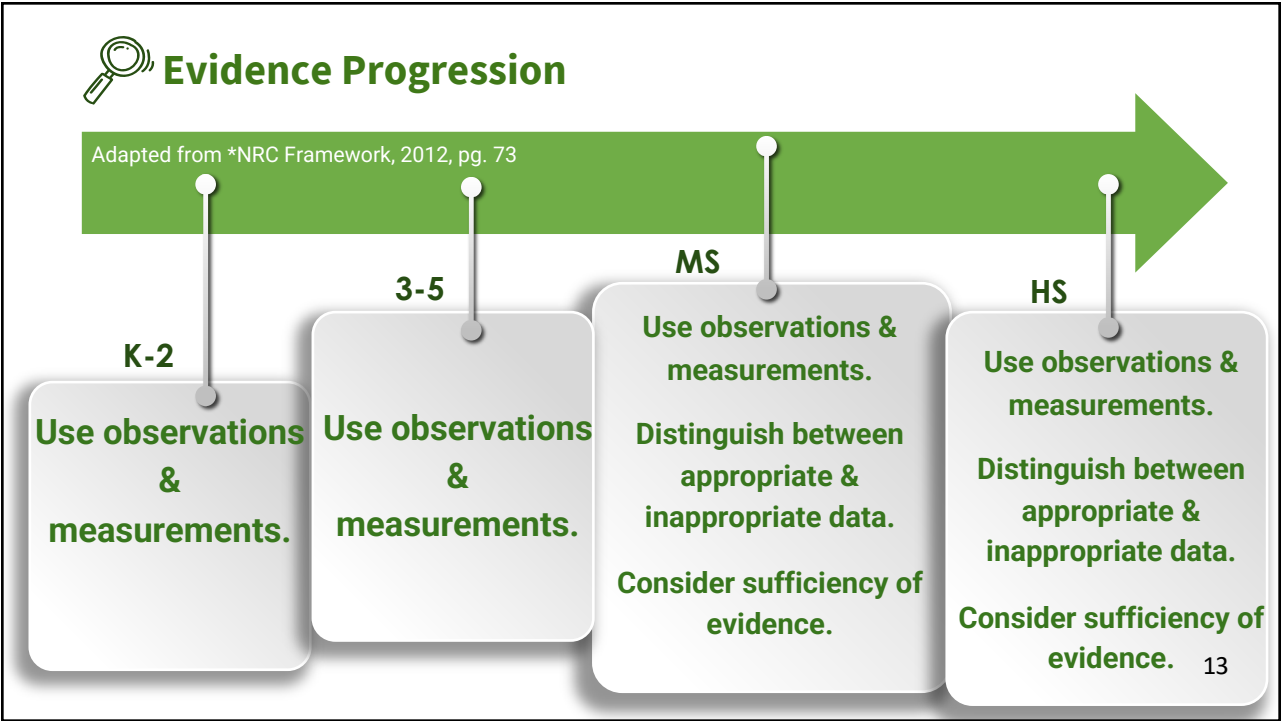
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Evidence

- Six people wearing yellow suits and green gloves are around the water.
- Water is brown.
- There is dark brown plant life in the water.
- The water is near a Subway.
- Some type of barrier is on the water's surface.
- There is a hose/pipe behind the individuals.
- There is a large dumpster and a truck in the area.
- A golf cart is on the grass.

Claim

I would **not** play in this water.

Reasoning

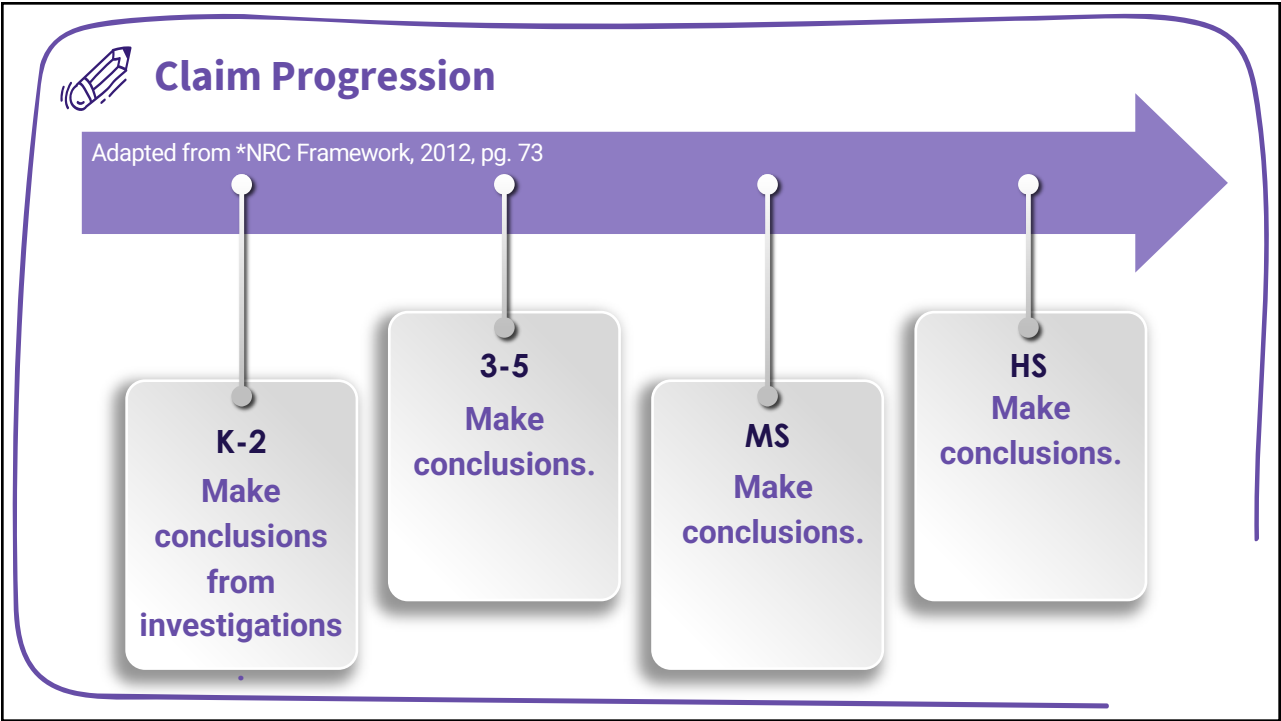
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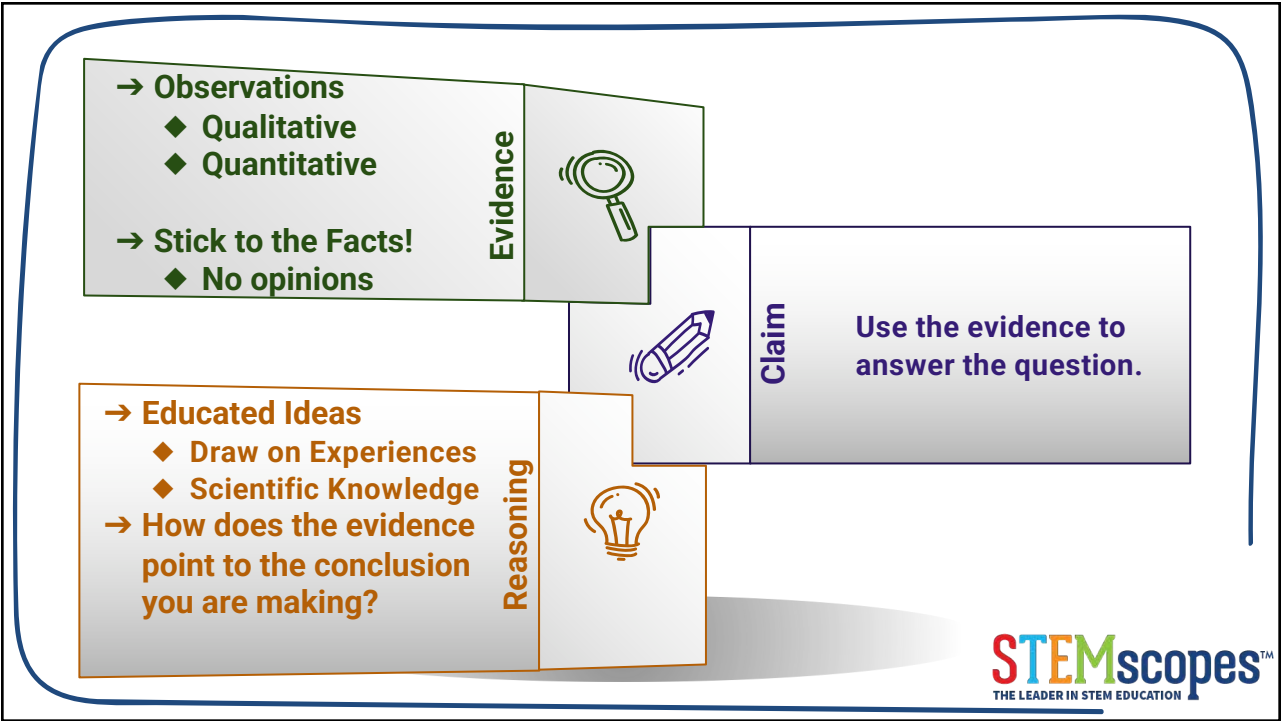
Feedback & Score			
	Specifications	Feedback	Score
Claim	Answers the Question: <i>Would you play in this water?</i>		/4
Evidence	Provide at least <u>three</u> pieces of evidence from your observations of the image.		/6
Reasoning	How does your evidence point to the conclusion you are making? Include the terms: → Environment → Contamination → Toxins		/6

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How does your **EVIDENCE** point to the conclusion you are making?
Include the terms:
Contamination, Toxins, Environment



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→ Six people wearing yellow suits and green gloves are around the water.

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→ There is dark brown plant life in the water.

→ The water is near a Subway.


→ Some type of barrier is on the water's surface.

→ There is a hose/pipe behind the individuals.

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→ A golf cart is on the grass.

Evidence




→ Hazmat suits indicate the clean-up of toxic waste. The group is going to pump the contaminated water to remove toxic waste.

→ The individuals have placed a barrier in the stream to stop the toxic waste in the water from spreading.

→ The dark brown plants may be dead due to the toxins.


→ People might be at risk of being exposed to the contaminants in the water

Reasoning

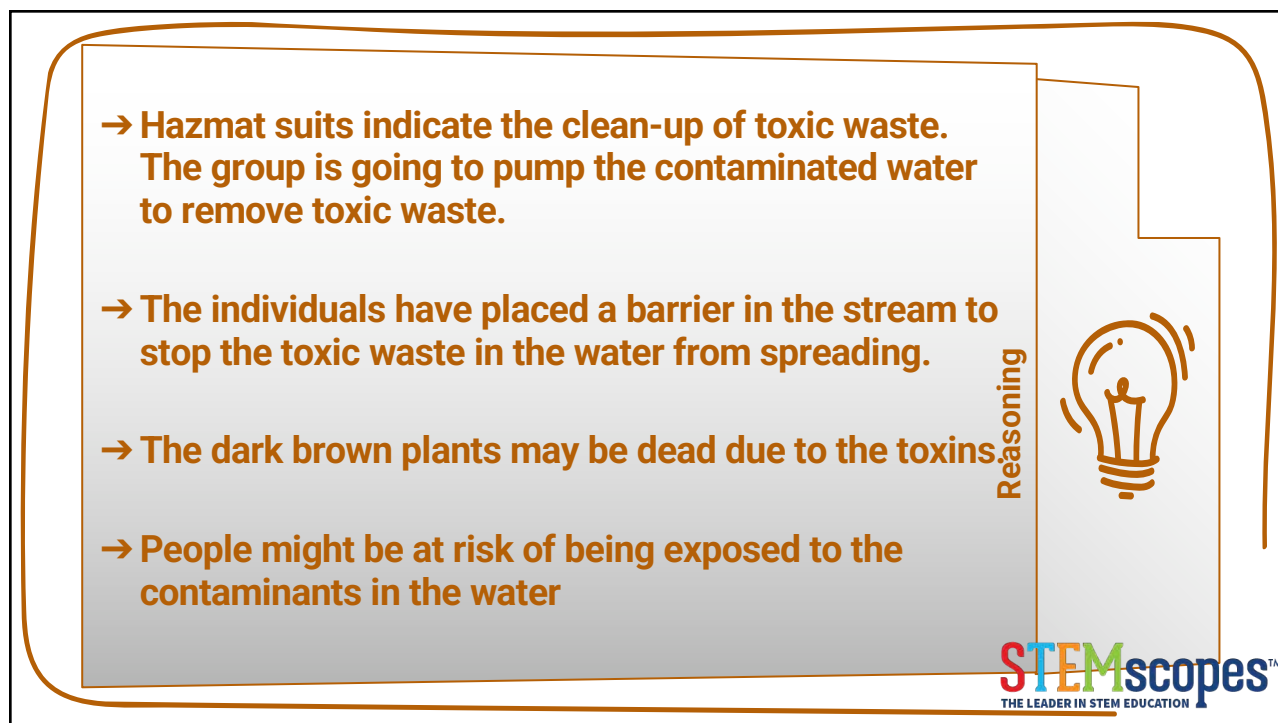


Claim

I would **not** play in this water.



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→ Hazmat suits indicate the clean-up of toxic waste. The group is going to pump the contaminated water to remove toxic waste.

→ The individuals have placed a barrier in the stream to stop the toxic waste in the water from spreading.

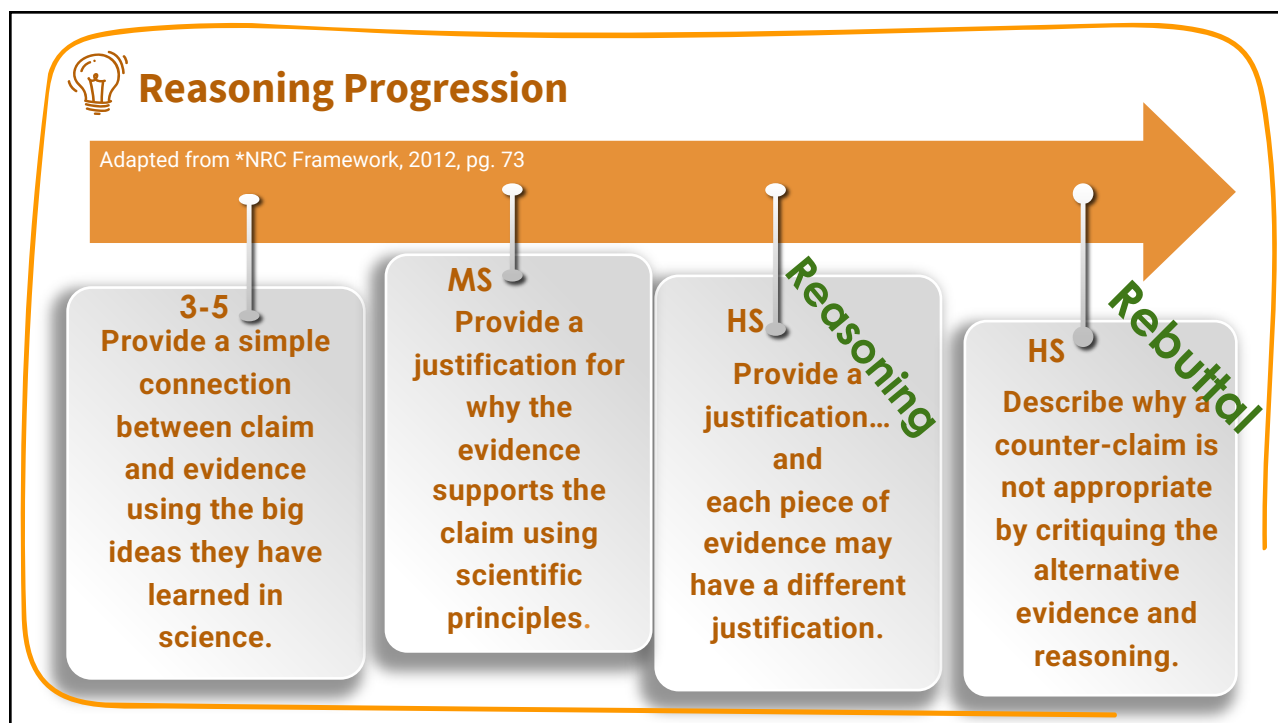
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Reasoning


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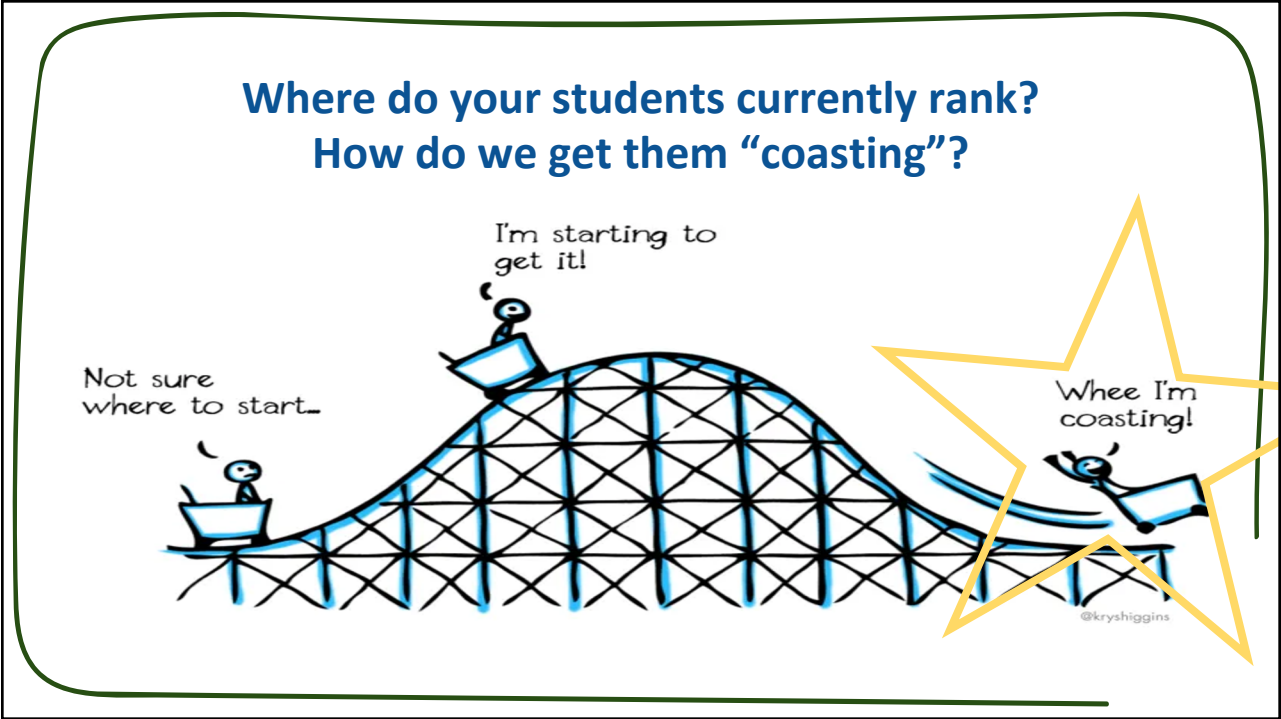


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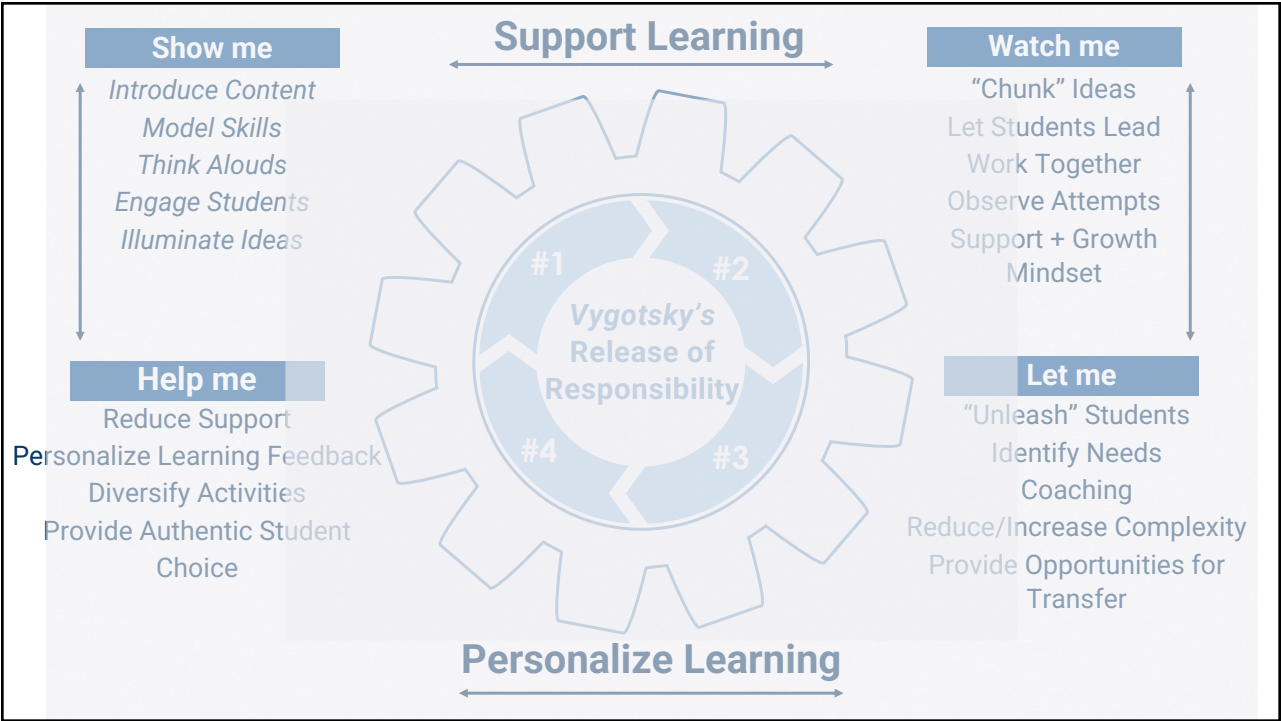
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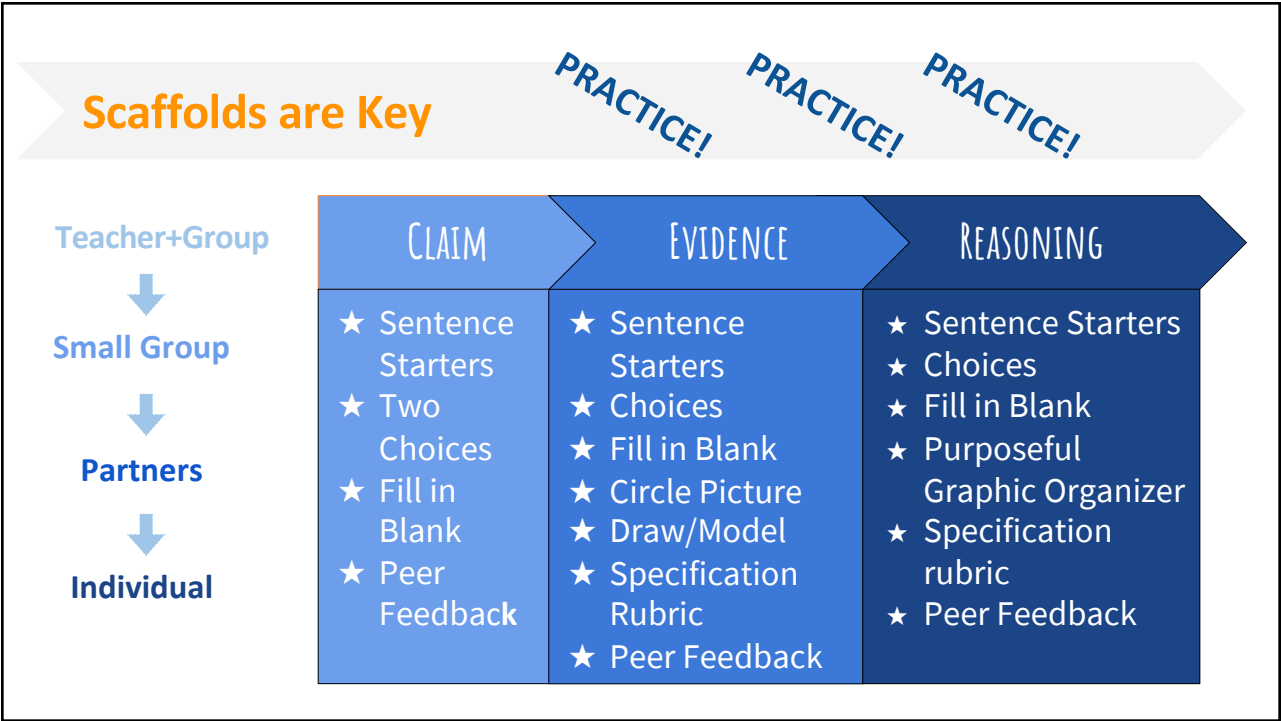
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Support Learning Model + Examples

<https://padlet.com/mgreen154/5weolptgiwyoyh0p>


Anchor Charts




Chunk Information




Graphic Organizers






Students Lead





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→What is happening with this bear?

- ◆ How do you know?
- ◆ What is your evidence?
- ◆ What is reasonable?

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- ❑ Using **Storylines** to Enhance Student Voice and Learning - **July 20**
- ❑ **Claim-Evidence-Reasoning**: Scientific Explanations to Increase Student Voice - **July 21**
- ❑ Focusing on **Social and Emotional Learning** with STEMscopes Math - **July 22**
- ❑ Strategies to Support **English Learners** in the Science Classroom - **July 27**
- ❑ Taking Care of the **Social and Emotional Needs** of Students and Teachers - **July 28**
- ❑ Engaging **Student Engineers**: Designing Engineering Solutions for Your Classroom - **July 29**

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Thank you for attending this Lunch & Learn webinar.
We appreciate you teaching and taking care of children.

Have a great upcoming school year!

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Contact Susan Arnette at sarnette@acceleratelearning.com

Contact Mindy Stroup at mstroup@acceleratelearning.com

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