

# EDUCATIONAL LEADERS

## SESSION 3:

# The Immersion Experience



Anji Garza (5min)



1. Start Up: Introductions, Desired Outcomes, Participant Guidelines
2. NGSS Overview
3. Open SciEd Overview - Not an endorsement, just an example
4. Science Lesson Practice
5. Coaching Science Teachers
6. Close: Resources, Q&A, +/- $\Delta$



# INTRODUCTIONS

October – June 2026 Professional

Synchronous virtual sessions, Asynchronous virtual sessions (spring 2026), Face to Face Session (June 2026). All professional learning supported by funds through the Illinois State Board of Education.

## IL SCIENCE STEERING COMMITTEE

**Meagan Budke, ISBE**

**Anji Garza, PD & Ed Service Director, ROE 47**

Heather Galbreath, 6th Grade Science Teacher Galesburg, IL

Brian Gibbs, Educator, Bradley School District 61

**Sarah Meador, Director of ROE Services, ROE 8**

Dawn Novak, Professional Learning Architect, Northwestern

Nate Nugent

**Kristin Rademaker, Professional Learning Specialist, NSTA**

Misty Richmond, Middle School Science Teacher, CPS

**Richard Stokes, University of Illinois – Springfield**

Nicole Vick

**You! Breakout Participant, Speaker**



# Purpose & Desired Outcomes

## Purpose

To deepen your understanding of the Illinois Science Standards, build your capacity to teach science, and support greater student success.

## Desired Outcome



By the end of this meeting we will have:

- *Clarity on what science instruction looks and feels like*
- *A deeper understanding of modeling and argumentation*
- *A list of ways to coach science teachers through 3 Dimensional Learning as related to modeling and argumentation*

# Participant Guidelines

Cameras on if possible

Participate though chat, hands up feature, and breakout sessions

Resist the temptation to multitask

Take care of your own needs

*Rick Stokes* (10 min)

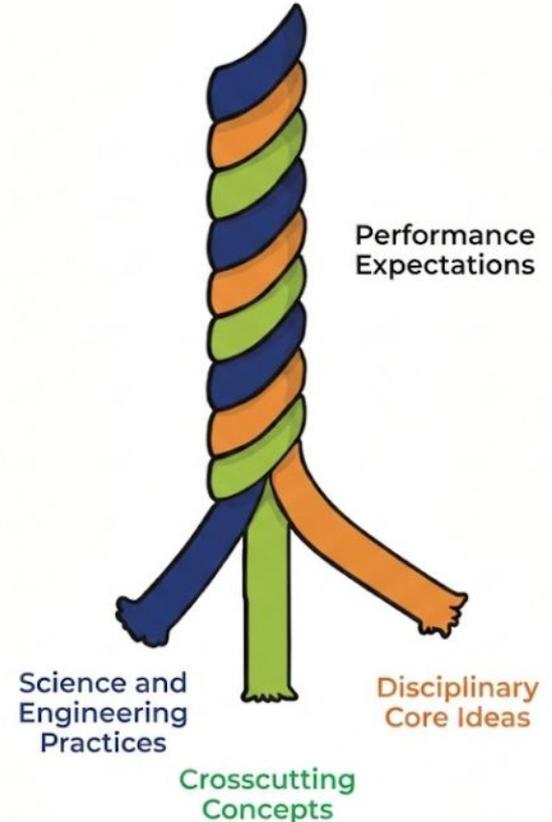


# NGSS Overview



# Next Generation Science Standards

- 3-Dimensional standards that weaves together
  - **Disciplinary Core Ideas**
    - What students know
  - **Science and Engineering Practices**
    - What students do
  - **Crosscutting Concepts**
    - How students think
- Depth over breadth." Fewer topics, but explored rigorously.
- Should be taught at multiple levels



# Disciplinary Core Ideas (DCI)

## Most Important Aspects of Science

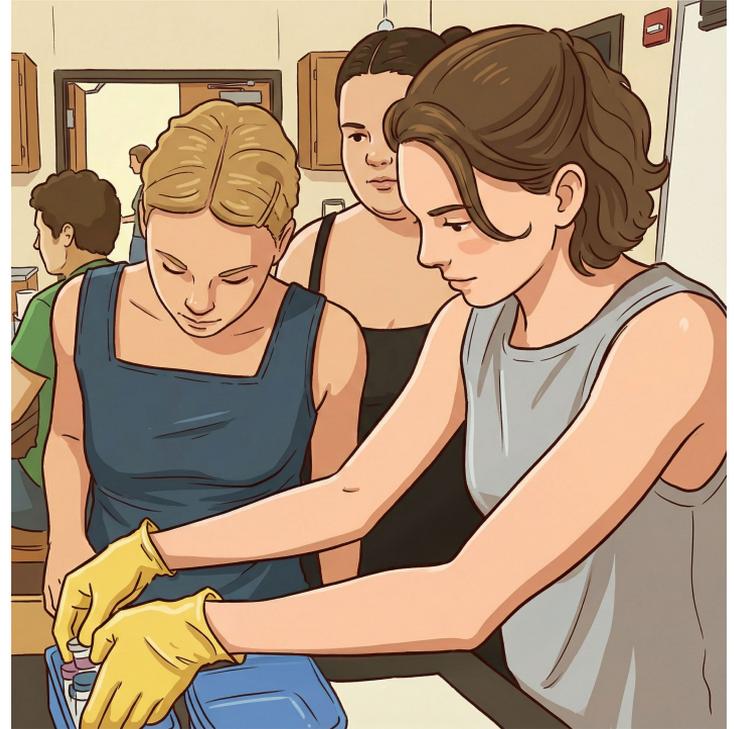
- Broad importance or key principle
- Fundamental for understanding or investigating more complex ideas or problems.
- Relate to students' lives or societal concerns
- Taught multiple grades at increasing levels of depth and sophistication

Physical Sciences (PS)	Life Sciences (LS)
PS1: Matter and Its Interactions PS2: Motion and Stability: Forces and Interactions PS3: Energy PS4: Waves and Their Applications in Technologies for Information Transfer	LS1: From Molecules to Organisms: Structures and Processes LS2: Ecosystems: Interactions, Energy, and Dynamics LS3: Heredity: Inheritance and Variation of Traits LS4: Biological Evolution: Unity and Diversity
Earth & Space Sciences (ESS)	Engineering & Technology (ETS)
ESS1: Earth's Place in the Universe ESS2: Earth's Systems ESS3: Earth and Human Activity	ETS1: Engineering Design ETS2: Links Among Engineering, Technology, Science, and Society

# Scientific and Engineering Practices

Describes the Behaviors of Scientists

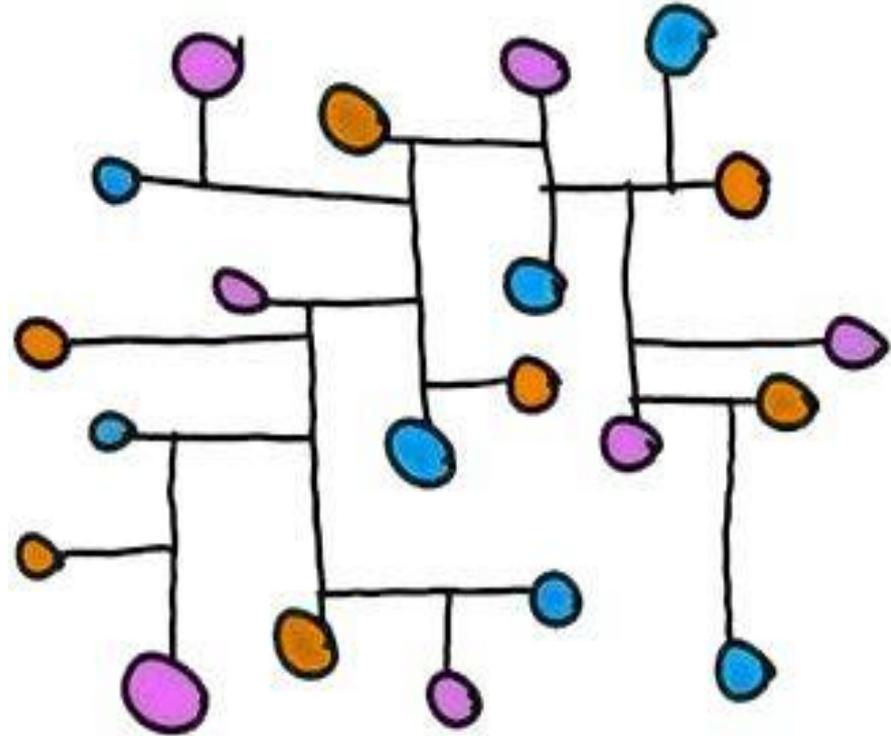
- Making observations
- Asking questions and defining problems
- Developing and using models
- Planning and carrying out investigation
- Analyzing and interpreting data
- Using mathematics and computational thinking
- Constructing explanations and designing solutions
- Obtaining, evaluating and communicating information
- Engaging in argument from evidence



# Crosscutting Concepts

## Big Ideas to Make Connections

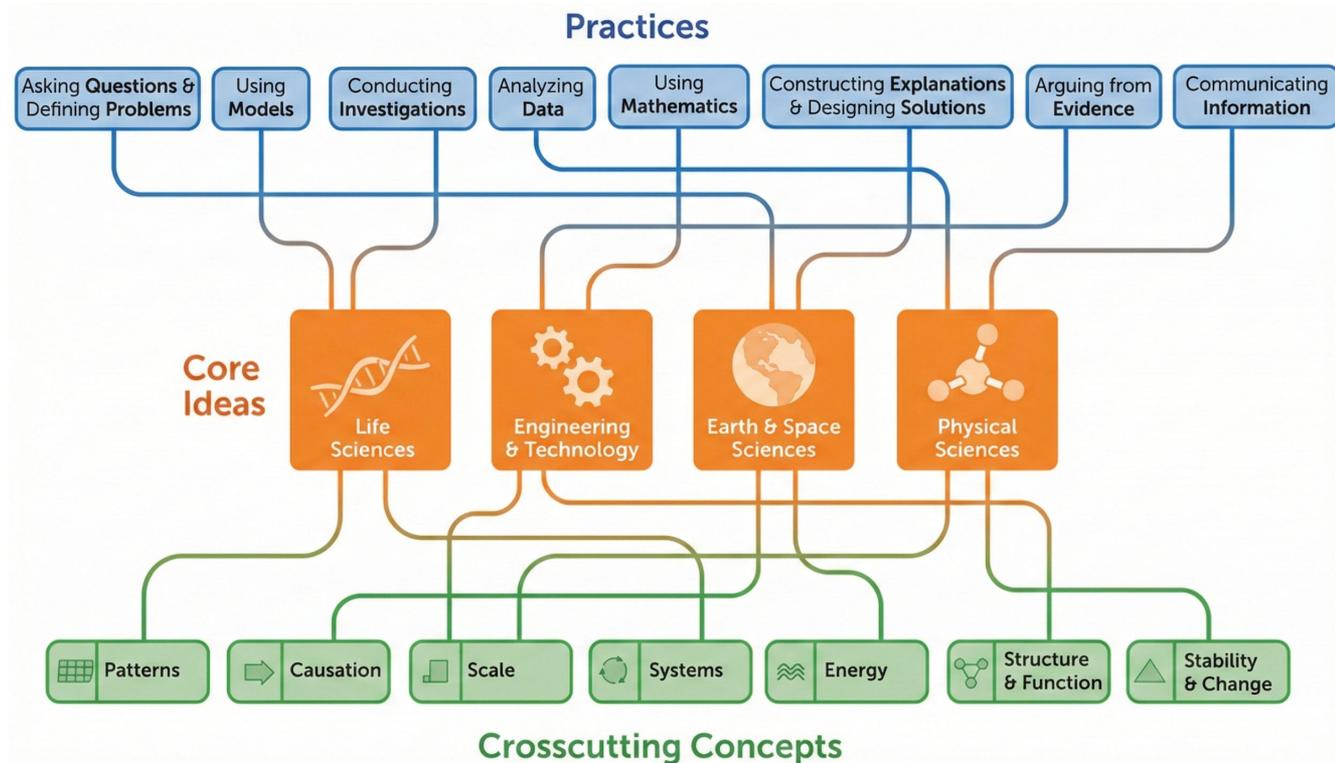
- Ideas that connect different science disciplines and help student make connections across topics
- **Patterns**
- **Cause and Effect**
- **Scale, Proportion and Quantity**
- **Systems and System Models**
- **Energy and Matter**
- **Structure and Function**
- **Stability and Change**



# Next Generation Science Standards

## Focus on Performance Expectations

- 3 Dimensions come together in **Performance Expectations**
- Tells that student should be able to do, not know
- Will NOT be achieved in a single class period



## 5.Space Systems: Stars and the Solar System

5.Space Systems: Stars and the Solar System		
Students who demonstrate understanding can:		
<p><b>5-PS2-1. Support an argument that the gravitational force exerted by Earth on objects is directed down.</b> [Clarification Statement: "Down" is a local description of the direction that points toward the center of the spherical Earth.] [Assessment Boundary: Assessment does not include mathematical representation of gravitational force.]</p> <p><b>5-ESS1-1. Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from Earth.</b> [Assessment Boundary: Assessment is limited to relative distances, not sizes, of stars. Assessment does not include other factors that affect apparent brightness (such as stellar masses, age, stage).]</p> <p><b>5-ESS1-2. Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.</b> [Clarification Statement: Examples of patterns could include the position and motion of Earth with respect to the sun and selected stars that are visible only in particular months.] [Assessment Boundary: Assessment does not include causes of seasons.]</p>		
The performance expectations above were developed using the following elements from the NRC document <i>A Framework for K-12 Science Education</i> .		
Science and Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
<p><b>Analyzing and Interpreting Data</b> Analyzing data in 3–5 builds on K–2 experiences and progresses to introducing quantitative approaches to collecting data and conducting multiple trials of qualitative observations. When possible and feasible, digital tools should be used.</p> <ul style="list-style-type: none"> <li>Represent data in graphical displays (bar graphs, pictographs and/or pie charts) to reveal patterns that indicate relationships. (5-ESS1-2)</li> </ul> <p><b>Engaging in Argument from Evidence</b> Engaging in argument from evidence in 3–5 builds on K–2 experiences and progresses to critiquing the scientific explanations or solutions proposed by peers by citing relevant evidence about the natural and designed world(s).</p> <ul style="list-style-type: none"> <li>Support an argument with evidence, data, or a model. (5-PS2-1),(5-ESS1-1)</li> </ul>	<p><b>PS2.B: Types of Interactions</b></p> <ul style="list-style-type: none"> <li>The gravitational force of Earth acting on an object near Earth's surface pulls that object toward the planet's center. (5-PS2-1)</li> </ul> <p><b>ESS1.A: The Universe and its Stars</b></p> <ul style="list-style-type: none"> <li>The sun is a star that appears larger and brighter than other stars because it is closer. Stars range greatly in their distance from Earth. (5-ESS1-1)</li> </ul> <p><b>ESS1.B: Earth and the Solar System</b></p> <ul style="list-style-type: none"> <li>The orbits of Earth around the sun and of the moon around Earth, together with the rotation of Earth about an axis between its North and South poles, cause observable patterns. These include day and night; daily changes in the length and direction of shadows; and different positions of the sun, moon, and stars at different times of the day, month, and year. (5-ESS1-2)</li> </ul>	<p><b>Patterns</b></p> <ul style="list-style-type: none"> <li>Similarities and differences in patterns can be used to sort, classify, communicate and analyze simple rates of change for natural phenomena. (5-ESS1-2)</li> </ul> <p><b>Cause and Effect</b></p> <ul style="list-style-type: none"> <li>Cause and effect relationships are routinely identified and used to explain change. (5-PS2-1)</li> </ul> <p><b>Scale, Proportion, and Quantity</b></p> <ul style="list-style-type: none"> <li>Natural objects exist from the very small to the immensely large. (5-ESS1-1)</li> </ul>
<p><i>Connections to other DCIs in fifth grade:</i> N/A</p> <p><i>Articulation of DCIs across grade-levels:</i> <b>1.ESS1.A</b> (5-ESS1-2); <b>1.ESS1.B</b> (5-ESS1-2); <b>3.PS2.A</b> (5-PS2-1),(5-ESS1-2); <b>3.PS2.B</b> (5-PS2-1); <b>MS.PS2.B</b> (5-PS2-1); <b>MS.ESS1.A</b> (5-ESS1-1),(5-ESS1-2); <b>MS.ESS1.B</b> (5-PS2-1),(5-ESS1-1),(5-ESS1-2); <b>MS.ESS2.C</b> (5-PS2-1)</p> <p><i>Common Core State Standards Connections:</i></p> <p><i>ELA/Literacy –</i></p> <p><b>RI.5.1</b> Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text. (5-PS2-1),(5-ESS1-1)</p> <p><b>RI.5.7</b> Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently. (5-ESS1-1)</p> <p><b>RI.5.8</b> Explain how an author uses reasons and evidence to support particular points in a text, identifying which reasons and evidence support which point(s). (5-ESS1-1)</p> <p><b>RI.5.9</b> Integrate information from several texts on the same topic in order to write or speak about the subject knowledgeably. (5-PS2-1),(5-ESS1-1)</p> <p><b>W.5.1</b> Write opinion pieces on topics or texts, supporting a point of view with reasons and information. (5-PS2-1),(5-ESS1-1)</p> <p><b>SL.5.5</b> Include multimedia components (e.g., graphics, sound) and visual displays in presentations when appropriate to enhance the development of main ideas or themes. (5-ESS1-2)</p> <p><i>Mathematics –</i></p> <p><b>MP.2</b> Reason abstractly and quantitatively. (5-ESS1-1),(5-ESS1-2)</p> <p><b>MP.4</b> Model with mathematics. (5-ESS1-1),(5-ESS1-2)</p> <p><b>5.NBT.A.2</b> Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote powers of 10. (5-ESS1-1)</p> <p><b>5.G.A.2</b> Represent real world and mathematical problems by graphing points in the first quadrant of the coordinate plane, and interpret coordinate values of points in the context of the situation. (5-ESS1-2)</p>		

*Rick Stokes* (5 min)



# What is



# OpenSciEd



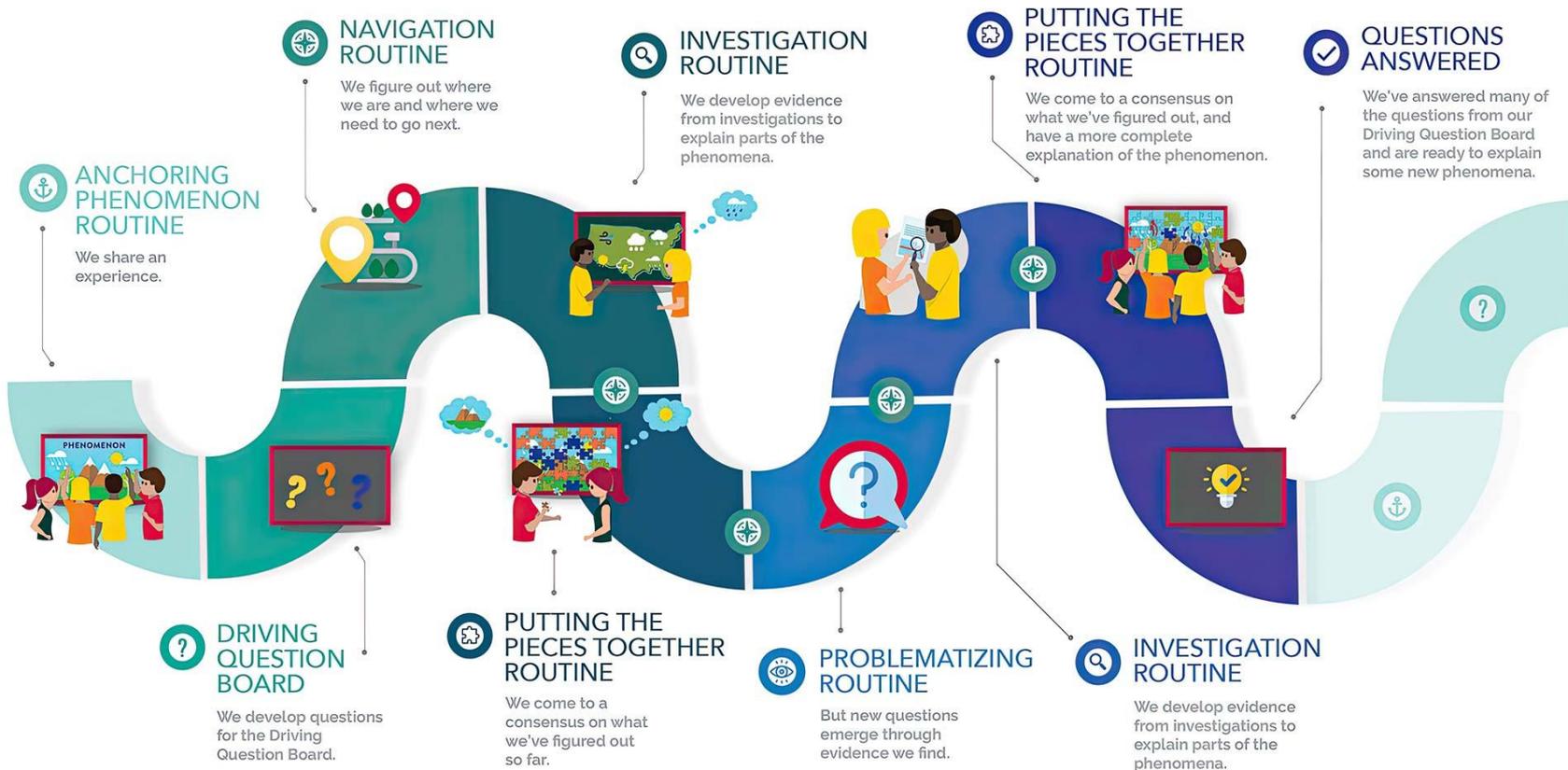


A nonprofit organization that aims to improve science education through the development and implementation of high-quality, freely available science instructional materials from elementary to high school.



- Designed and written in collaboration between:
  - Science Experts
  - Curriculum Experts
  - Teachers
- A full curriculum (including slides, assessments, resources, teacher guides) that has...
  - been field tested
  - student interest input
  - reviewed by an external review team and been deemed high quality
  - been designed for NGSS/Framework aligned standards





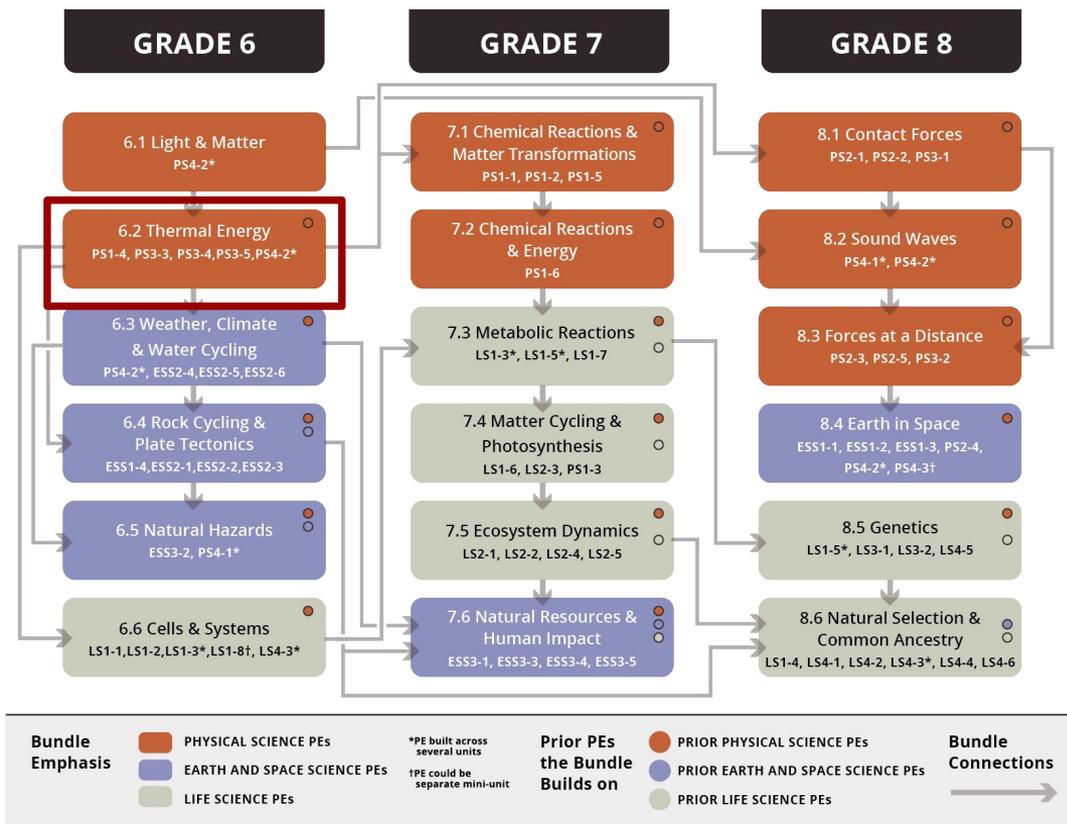
*Kristin Rademaker* (45 min)



# Science Lesson Practice



# OpenSciEd Scope and Sequence



# Switching Hats to Support Professional Learning

## Student Hat

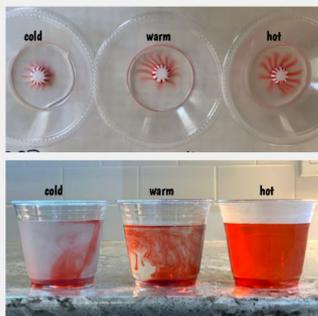
- Thinking like a middle schooler.
- *What do you anticipate a middle school student might think?*
- *What might they say?*

Slide B

Question we are trying to answer

 With the class

- Why do particles move more in hot liquids?
- How can we figure this out?



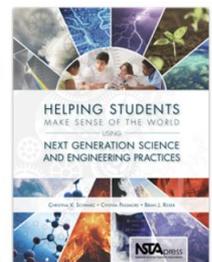
## Educator Hat

- Thinking like an educator.
- *Reflecting on pedagogical approach, instructional routines, classroom culture, logistics/supports, NGSS, etc...*

### How Do We Support Equitable Sensemaking?

“Realizing this potential [of the NGSS] is particularly important in relation to **students of color, students who speak first languages other than English, and students from low-income communities** who, despite numerous waves of reform, have had limited access to high-quality, meaningful opportunities to learn in science.” (p. 33)

-Bang, Brown, Calabrese Barton, Rosebery & Warren (2017)



# Facilitator Notes

## Modified Student Hat Slides

Slide H

### Data Analysis



 **Discuss and record**

- What patterns do we notice?
- Are there any parts of the system without a clear pattern?
- What does this make us think?

	1	2	3	4	5	6	7	8	9	10
1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1	1	1

→ Be prepared to share these with the whole class.



“Teacher Hat”: An aside during student hat that provides additional context or explains how learner experience will differ from students’ experience.

Slide H

### Compare Diagrams

**Students would normally share their models in small groups before discussing their ideas as a class.**

1. Give each group member an opportunity to share their diagram with the group.
2. When it is your turn, turn your science notebook around to so your diagram faces others in your group.
3. As your group notices things about each diagram, record the following:
  - Place a ✓ by parts of your diagrams that are similar.
  - Place a ? by parts of your diagrams that are different or where your group is less certain.



# Welcome 6th Grade Students!



# Staying Cool

I've been buying iced drinks for years using the regular cup, but my drink always warms up and waters down. The designers of the fancy cup claim the cup can keep a drink colder for longer.

Fancy cup

Regular cup



## Turn and Talk

**Type your ideas in the chat window.**

- Why does the drink in the regular cup warm up?
- How could the fancy cup keep the drink from warming up?

Slide A

Fancy cup



Regular cup



# Claim: The fancy cup works better than the regular cup.

How could we test this claim?

What evidence could we collect to prove or disprove the claim?

Fancy cup

Regular cup



## Stop and jot

Type your ideas in the chat window.

1. Write the claim.
2. Write how you could test the claim and the evidence you want to collect.

→ Be prepared to share with the class.

# Cold Cup Test

We have students draw a data table in their science notebooks.



Below your Stop and Jot ideas, draw a data table following your teacher's instructions.

	1 min	10 min	20 min	30 min	Temp change
Regular cup					
Fancy cup					

# Systems we are trying to explain

## The Cup Systems



Fancy cup

Regular cup

**Type your ideas in the chat window.**



- Type
- What are the parts of each cup system?
  - What does each part do in the system?
  - How do the parts work together to keep a drink cold?

# Cup Systems Models

Draw systems models for the regular cup and fancy cup.

Your models should explain how the drink in the regular cup warms up and how the fancy cup could keep the drink colder for longer.



## *Cup System Models*

*Regular cup*

*Fancy cup*

**Individually  
draw a model of  
the cup systems.  
Be prepared to  
share you model  
in small groups.**

# Cup Systems Models



4

minutes

Draw systems models for the regular cup and fancy cup.

Your models should explain how the drink in the regular cup warms up and how the fancy cup could keep the drink colder for longer.



## *Cup System Models*

*Regular cup*

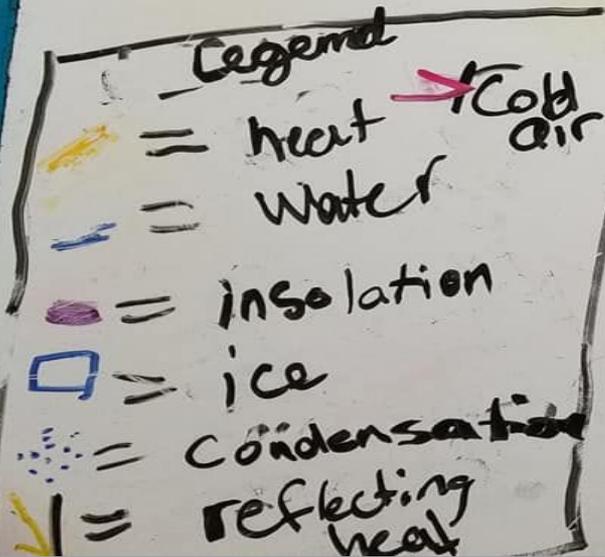
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*Fancy cup*

**In small groups, compare your models. As you compare, notice similarities and differences between your model and the others in your small group.**

# Sample Student System Models

## Student A



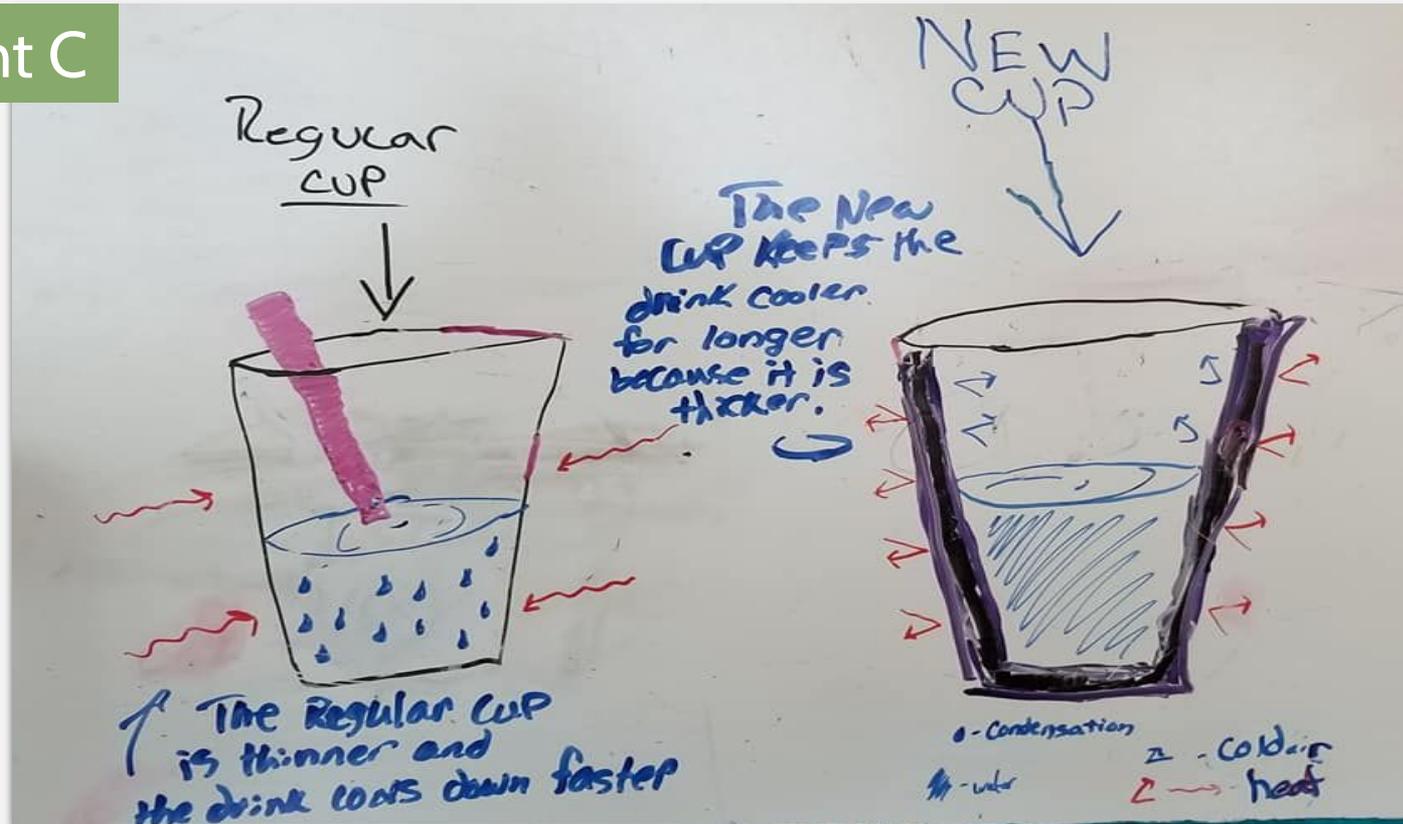
# Sample Student System Models

Student B



# Sample Student System Models

## Student C



**Claim: The fancy cup works better than the regular cup.**

## The Cup Systems



**What do you notice in the data?  
What patterns do you see?**



Fancy cup

Regular cup



## OUR DATA

	1min	10min	20min	30min	Temp change
Regular cup	5.5	6.5	8.0	9.0	+3.5°C
Fancy cup	5.5	6.0	7.0	7.8	+2.3°C

ROOM TEMP: 22 °C

What conclusions can we draw from the temperature data?



# Models help us explain how and why.

## The Cup Systems



Fancy cup

Regular cup

	1	10	20	30	Temp change
Regular cup	5.5	6.5	8.0	9.0	+3.5°C
Fancy cup	5.5	6.0	7.0	7.8	+2.3°C

*Why* does one cup system keep water cold for longer than the other cup system?



# Initial Consensus Model Discussion

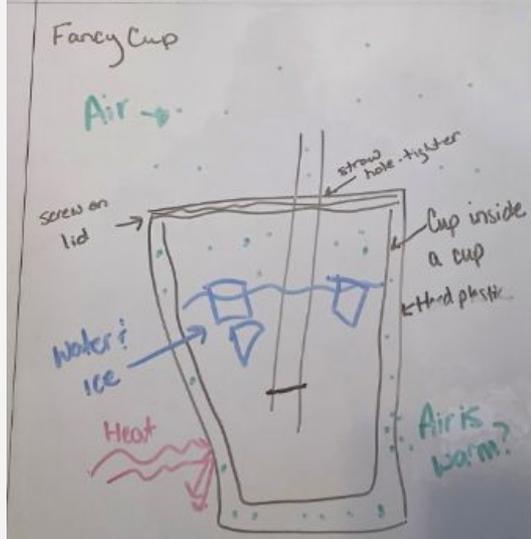
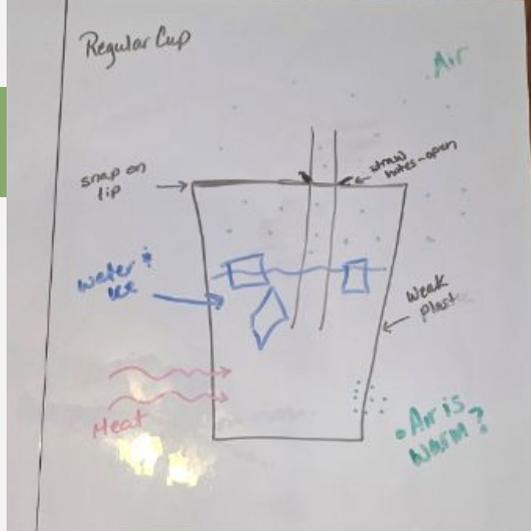
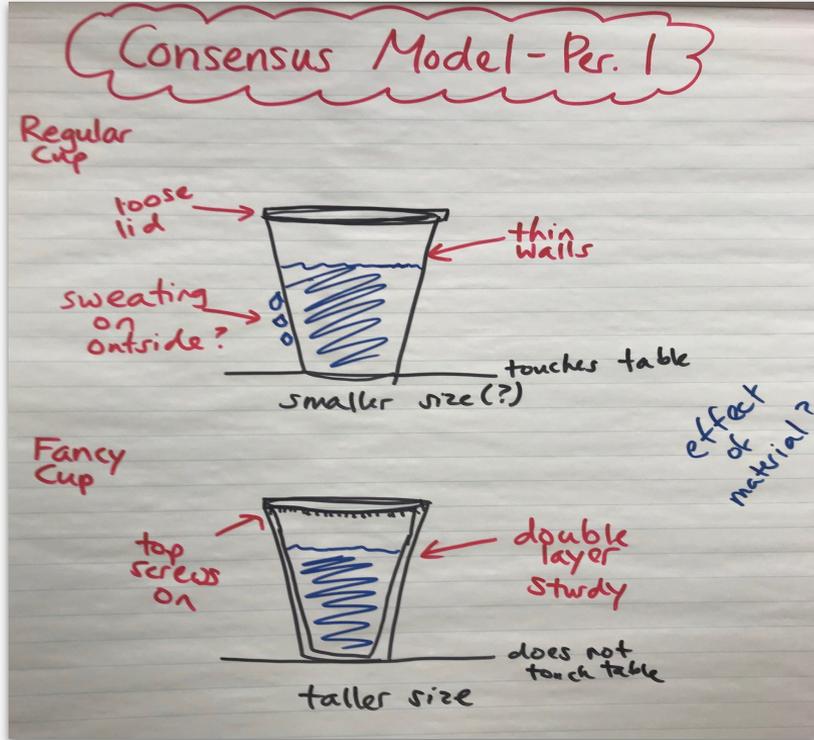


Develop a whole-group record of what we agree on and where we have competing ideas across our models.

- What do we all seem to agree on?
- What do we disagree on?
- What are some new ideas that we may want to consider?



# Sample Initial Consensus Model



## Related Phenomena



Share what you found out about similar systems and objects that can keep something inside them cold or hot.

- What kinds of systems and objects maintain the temperature of the stuff inside without using electricity?
- How do these things work?
- Are they the same or different depending on whether the stuff inside is cold or hot?

→ Be prepared to share your ideas with the class.

# Sample Related Phenomena

Related Phenomena - Per. 1

What is it?	Cold, Warm, or Both?	How does it work?
blanket →	Warm →	blocks cold air traps warm air + material
Thermal shirt →	Warm →	keeps body heat in + material
house insulation →	both →	traps warm/cold air
Cooler →	Cold →	insulation
Aluminum foil →	both →	The metal material makes it slower to change temp
ice packs →	Cold →	Stuff inside the ice pack freezes
Thermos →	<del>both</del> both →	metal walls

Related Phenomena - Per. 3

What is it?	Cold, Warm, or Both?	How does it work?
Coffee mug	Warm	Thickness/material
Thermos	Both	drink warm
Blanket	Warm	Metal keeps warm
<del>Freezer</del>	<del>Cold</del>	Traps heat ins
Cooler	Cold	<del>Ice</del> Ice,
Onesies	Warm	Body heat
Sun	Warm	Gas?
Beach umbrella	Cold	Blocks sunlight

## Connections to Our Prior Unit



**Pick 1 item from the Related Phenomena poster.**

**Draw a model to explain how *you think* the item works to keep something inside it cold or warm.\***

- Step 1: Diagram the important parts of the system--inside, outside, and any important structural features.
- Step 2: Use the model to answer these questions:
  - How does the thing inside warm up or cool down?
  - How do the parts of the system work together to keep this from happening?
- Step 3: Use colors, symbols, and words to help you.

\*You do not need to explain it completely. Identify the things that *could* be happening that may explain how it works.



# What questions do you have now?

## Look back at

- your models for the regular cup and fancy cup,
- your model for the related phenomena, and
- what you noticed and wondered in the gallery walk.

Brainstorm with your partner how to turn your ideas into why and how questions to explain the cups and the related phenomena.

- *Type at least one question into the chat.*

# Driving Question Board



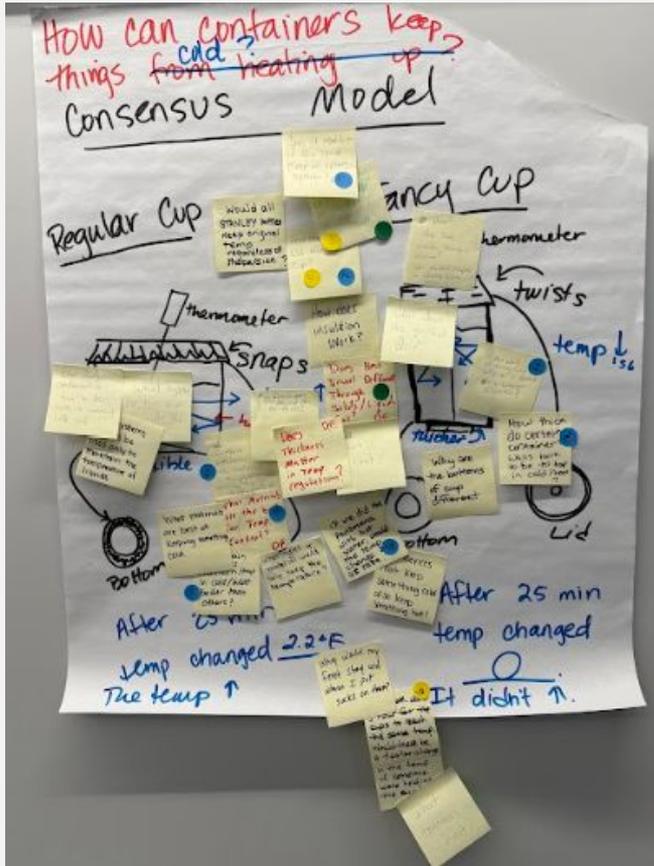
Bring your notecards with questions to our Scientists Circle, along with your science notebook.

**Let's build our Driving Question Board (DQB).**

A large, empty rectangular box with a thin black border, intended for students to write their questions on notecards and place them on the Driving Question Board.



# Sample Driving Question Board



- How does heat move through different cups?
- What materials are the best for keeping things hot or cold?
- How does insulation work?
- How thick do containers have to be to keep things hot or cold?
- Would all Stanley bottles keep their temp the same if they were different sizes?
- How does heat get into the cup?
- Does how the lid goes on make a difference?

# Ideas for Investigations



## Turn and Type

What kind of investigations could we do and/or what additional sources of data might we need to figure out the answers to our questions?

→ Be prepared to share these with the class.

*Ideas for Investigations*

# Sample Ideas for Investigation

## Ideas for Investigation Period 1

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• how long something takes to cool down.

• test the thickness of the cup

• Use different material cups

• relationship between temperature + water

• insulation level

## Ideas for Investigation Period 4

---

- Talk to an Expert
- Use other materials other than water
- Change the material of the cup
- Test different insulations
- Consult with manufacturer
- Test the number of layers

# Anchor Phenomenon Routine



Consider the steps of the anchoring phenomena routine and how they help support student thinking.

In small groups discuss:

- What did we ask students to do in the lesson?
- Was there anything in the lesson students couldn't do?
- What background knowledge did students need to have to participate?

Anchoring Phenomenon Routine Tracker				
	<b>Element 1:</b> Explore the Phenomenon  <i>What do we notice?</i>	<b>Element 2:</b> Attempt to Make Sense of the Phenomenon  <i>How can we explain this? Do our explanations agree?</i>	<b>Element 3:</b> Identify Related Phenomena  <i>Where else does something similar happen?</i>	<b>Element 4:</b> Develop Questions and Next Steps  <i>What should we do to figure out how to explain this?</i>
Notes about what you or the students did.				
How does this support <i>figuring out</i> ?				
How does this support a <i>classroom culture where all students have access?</i>				



# What happens next....?





Student 3: Like, you're freezing, it's compared to a candle and then to a huge just campfire around you.

Conductors! Some of them are conductors.



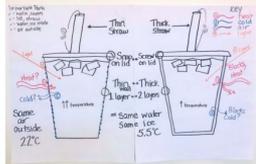
# The Unit Storyline

## UNIT STORYLINE

Unit Question: How can containers keep stuff from warming up or cooling down?

How students will engage with each of the phenomena



Lesson Question	Phenomena or Design Problem	What we do and figure out	How we represent it
<p><b>LESSON 1</b></p> <p>3 days</p> <p><b>Why does the temperature of the liquid in some cup systems change more than in others?</b></p> <p>Anchoring Phenomenon</p> 	 <p>Makers of a fancy plastic cup claim it keeps a drink cold for longer than a regular plastic cup.</p>	<p>We observe an iced drink in a regular cup warming up more quickly compared with an iced drink in a fancy cup. We develop systems models to explain what is happening in the two cups that one can better maintain the temperature of the drink. We brainstorm related phenomena and ask questions about design features that influence how well an object can keep something hot or cold. We figure out:</p> <ul style="list-style-type: none"> <li>The cup system includes the different parts of the cup and the water and air inside the cup. All of these parts work together (interact) to form the system.</li> <li>Some systems have structural features that help maintain the temperature of a substance inside the system, keeping the substance hot or cold longer compared with other systems.</li> <li>Heat can enter the cup system and/or cold can leave the cup system, and maybe gases can escape the system too.</li> </ul>	
<p>‡ Navigation to Next Lesson: We figured out that the fancy cup does keep a drink colder for longer than the regular cup. We are curious about the different parts of the cup systems and want to see if certain parts are more helpful in keeping the liquid inside cold. With more data to examine, we think we'll have a better understanding of the cup systems and how they work.</p>			
<p><b>LESSON 2</b></p> <p>2 days</p> <p><b>What cup features seem most important for keeping a drink cold?</b></p> <p>Investigation</p> 	 <p>There are features of a cup that are important for keeping a drink cold.</p>	<p>We plan and carry out an investigation to figure out 2 things. First, what cup features are important for keeping a drink cold? Second, how would changing the cup features cause the drink to warm up faster? We collect, organize, and publicly analyze data from our investigation to identify patterns to determine which cup features help maintain a drink's temperature. We figure out:</p> <ul style="list-style-type: none"> <li>Some systems have structural features that are designed to help maintain the temperature of a substance inside the system.</li> <li>The cup features that seem to play a significant role in keeping a drink cold are a lid, double walls, and maybe the type of cup material.</li> </ul>	
<p>‡ Navigation to Next Lesson: A cup with a lid and double walls keeps a drink cold for longer than one without a lid and only a single wall. We wonder whether the same cup features also keep a drink hot.</p>			

# What materials make up an OpenSciEd Unit?

## Teacher Materials



Teacher Guide



Unit Storyline



Slides

## Professional Learning Materials for Teachers & Facilitators



PD Agendas



PD Slides

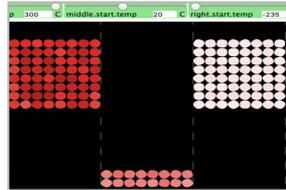
## Student Materials



Student Edition



Kit Materials Lists



Simulations & Videos



Classroom Videos



Resources

*Sarah Meador* (15 min)



# Coaching

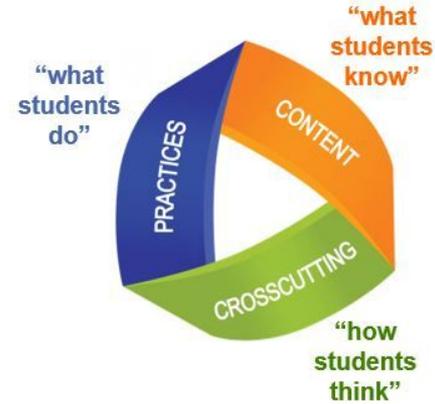


# 3 NGSS Coaching Questions

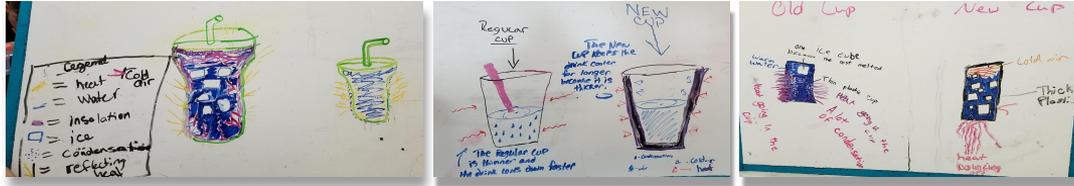
**What were students trying to explain today? (*Phenomenon*)**

**What evidence did students use? (*Data / observations / model / text*)**

**How did student thinking change? (*Revision over time*)**



# Models as Thinking Tools: What To Look For



## Student Evidence

Students are using a model to explain a phenomenon, not just labeling parts.

Students revise their model after new evidence (model changes over time).

Students can answer: “What does your model help you explain or predict?”

Students are comparing models: “Which model explains the data best and why?”

## Teacher Evidence

The teacher treats modeling as **routine**, not a one-time activity. The teacher prompts with questions like:

- “What does your model show is happening?”
- “What would your model predict if we changed \_\_\_?”
- “What part of your model needs updating based on today’s evidence?”





# Arguing From Evidence: What To Look For

## Student Evidence

Students are making claims that answer a question tied to the phenomenon.

Students use data/evidence from investigations, texts, or models.

Students explain why the evidence supports the claim (reasoning).

Students respond to peers using sentence frames (productive critique).

## Teacher Evidence

The teacher prompts with questions like:

- “Who can restate what \_\_\_ said?”
- “What evidence supports that idea?”
- “Do we have enough evidence to be confident?”
- “What would someone who disagrees say?”
- “What part of the data is most convincing?”



# Danielson Domains

## Domain 1: Plan/Prep

**1e (Designing Coherent Instruction):** Lesson sequence builds toward explaining a phenomenon through model revision.

**1f (Assessing Student Learning):** Criteria for strong models/arguments is clear (rubrics, exemplars, success criteria).

## Domain 2: Environment

**2a/2b (Respect & Culture for Learning):** Students critique ideas, not people; mistakes are treated as part of science.



## Domain 3: Instruction

**3b (Questioning & Discussion):** Students discuss evidence and reasoning, not just teacher-led Q&A.

**3c (Engaging Students in Learning):** Students are doing the sensemaking (modeling + arguing from evidence).

**3d (Assessment in Instruction):** Teacher checks for understanding through student models/claims and adjusts instruction



# Identify Red Flags

- Only one “perfect model” exists (teacher provides it at the end)
- Models are graded mainly for neatness or art
- No revisions happen
- Students give opinions with no evidence (“I think...because I think...”)
- Teacher confirms answers quickly (no peer critique)
- Evidence is only “the textbook said so”
- Only focusing on “facts”, missing all 3 Dimensions (DCIs, CCCs and Practices)
- Memorization in isolation, not to explain a phenomenon
- Only reading about science not doing science



Anji Garza (10 min)



# Close



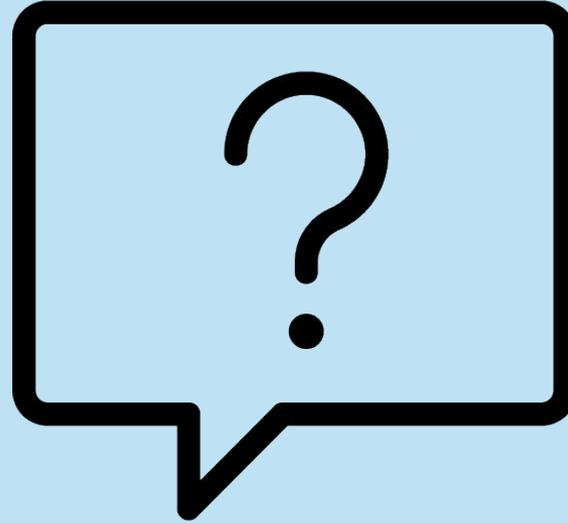
# Learn more about OpenSciEd

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- [Download the materials](#)
- Explore the [Teacher Handbook & other resources](#)
- Read some [articles about OpenSciEd](#)
- Explore the [Professional Learning resources](#)
- [Hear from teachers, students and administrators](#) about their experience with OpenSciEd
- 



# Q&A

what would be the best way to integrate NGSS within an elementary literacy framework to include hands on the DO part?



# Meeting Evaluation



## PLUS

- Informative and concise
- Coaching tips
- What to “look for”
- Efficient
- Played the role of students
- The coaching recommendations were very helpful!

## DELTA



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**THANK YOU!**