

## **LT3 2023 Science Session 4:**

### **Vertically-Aligning Middle and High School Science Instruction**

#### Connect (7 minutes)

How are students' learning and experiencing science in middle school?

1. Introduce yourself to your group, if you don't yet know each other.
2. Individually:
  - a. Look at the overview of the Amplify Science Units: [Amplify Science: 6th, 7th, 8th Grade Sequential Unit Overview](#)
3. Discuss in your group:
  - a. How is the integrated approach in middle school different from past instruction?
  - b. What do you notice about which core content areas are addressed in which grades?
  - c. 6th grade struggles to find designated science time to work through all the units. What foundational pieces from 6th grade may need extra scaffolding in high school?

#### Explore (10 minutes)

1. Individually or with a partner, explore an Amplify Science instructional Unit of your choice, linked below. Consider the following as you explore the unit:
  - The unit layout (storyline with anchoring phenomena)
  - How students engage in the sensemaking Science and Engineering practices to figure out the anchor phenomena
  - That there is no 'textbook'; students read articles, use simulations, observations, and investigations to gather evidence.
  - How students use Claim Evidence Reasoning (CER)

[Grade 6: Traits and Reproduction Unit](#)

[Grade 7: Chemical Reactions](#)

[Grade 8: Force and Motion](#)

2. Discuss in your group:
  - How does this approach to learning science differ from the traditional textbook-based instruction?
  - How might it 'feel' for a student going from middle school science to high school science?
  - What instructional shifts can be made in high school to align with the instructional foundation built in middle school with Amplify Science?

## Apply (5 minutes)

### What might shifted instruction look like and sound like in the classroom?

Discuss in your group: What could the following look like in action in high school?

- Using phenomena to frame unit, module or lesson
- Having students use investigations and simulations (Gizmos or pHet) to gather evidence and engage in sense making.
- Use specific sections of the text or articles to find evidence for claims.
- Use CER as a common writing format in science.

## Reflect - What do I want to remember? (3 minutes)

Individually: Take time to write/record what you want to remember about building common labs to scaffold student-designed investigations in Science.

## Other Resources

### Lodi USD Science Resources:

- Lodi USD Science Website: [www.bit.ly/LodiScience](http://www.bit.ly/LodiScience)
- Lodi USD Shared Science Drives:
  - 6-8 Science Resource Library
  - High School Science Resource Library
- NGSS HS Core Course Google Classrooms for ESS Resources
  - Earth & Space Science Course Resources (Join Code: wr3l6gz)
  - Biology of the Living Earth ESS Resources (Join Code: 4fuzkpi)
  - Chem in the Earth System ESS Resources (Join Code: muiad7z)
  - Physics of the Universe ESS Resources (Join Code: k5jg6oe)