

Louisiana Believes

Using High-Quality Materials in Science
February 2020

Purpose

During today's presentation, you will understand how high-quality science curriculum integrates the science shifts and supports teachers with the implementation of the [Louisiana Student Standards for Science](#).

Schedule

Shifts in Science

High-Quality Science Curriculum

Next Steps

Instructional Shifts

As school systems support teachers with the implementation of the [Louisiana Student Standards for Science](#), they should consider adopting [High-Quality Science Curricula](#) aligned with the key instructional [shifts](#):

- Apply Content Knowledge
- Investigate, Evaluate, and Reason Scientifically
- Connect Ideas Across Disciplines

Today, we will dive deeper into each of these shifts as we review a high-quality unit from the [OpenSciEd](#) curriculum.

Instructional Shifts

Apply content knowledge

Content knowledge is critical and evident in the standards in the **Disciplinary Core Ideas**, the key ideas in science that have broad importance within or across multiple science or engineering disciplines. However, simply having content knowledge is not enough. Students must investigate and apply content knowledge to scientific phenomena.

Investigate, evaluate, and reason scientifically

Scientists do more than learn about science; they “do” science. Science instruction must integrate the practices, or behaviors, of scientists and engineers as they investigate real-world phenomena and design solutions to problems.

Connect ideas across disciplines

For students to develop a coherent and scientifically-based view of the world, they must make connections across the domains of science (life science, physical science, earth and space science, environmental science, and engineering, technology, and applications of science). The crosscutting concepts have applications across all domains.

Louisiana Student Standards for Science Framework

Coding and Descriptor

Performance Expectation: States what students should be able to do to demonstrate that they have met the standard. Performance expectations are built on the foundation of the science and engineering practices, disciplinary core ideas, and crosscutting concepts.

Clarification Statement: Provides examples or additional clarification of the performance expectation.

Science and Engineering Practices: Detail the behaviors that students should engage in that mimic those of scientists and engineers.

Disciplinary Core Ideas: Describe the most essential ideas (content) in the major science disciplines.

Crosscutting Concepts: Ideas that have applications across all areas of science.

Schedule

Shifts in Science

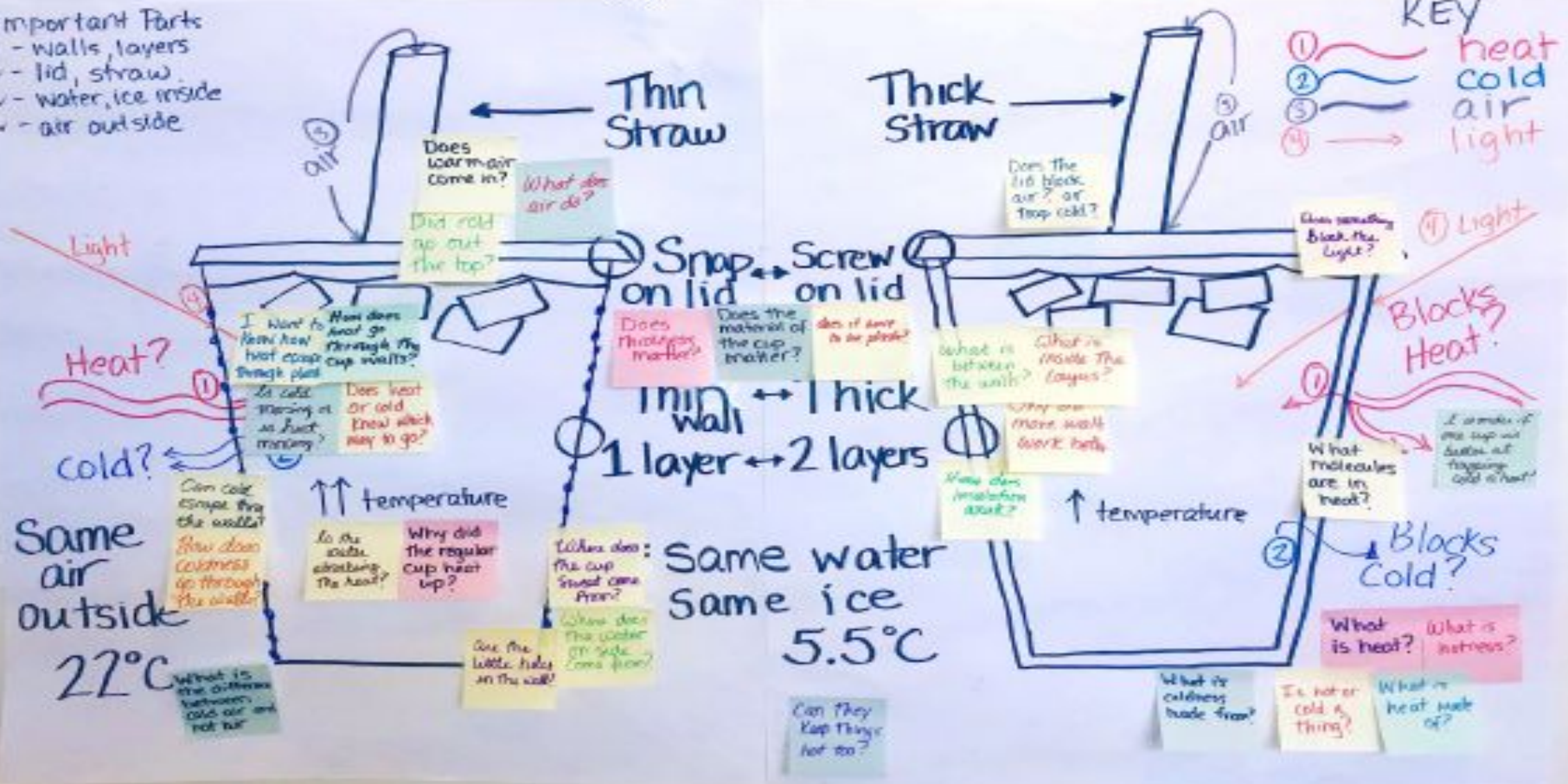
High-Quality Science Curriculum

Next Steps

High-Quality Science Curriculum

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

- Important Parts
- ✓ - walls, layers
 - ✓ - lid, straw
 - ✓ - water, ice inside
 - ✓ - air outside



High-Quality Science Curriculum

Exercise:

- Analyze the [Thermal Energy](#) teacher guide resources for your assigned lesson.

As a group, discuss the following:

- Provide a brief overview of the lesson.
- How do the lessons align with the instructional shifts? Use evidence from the lessons to support your response.
- What do students figure out by the end of the lesson?


High-Quality Science Curriculum


The video, [Students Making Sense of Phenomena](#), provides a summary of students' learning after they completed the Thermal Energy Unit.

How are the students' experiences in the video different from previous learning experiences?

Thermal Energy

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

 OpenSciEd
MIDDLE SCHOOL SCIENCE

 TEACHER EDITION

Schedule

Shifts in Science

High-Quality Science Curriculum

Next Steps

Next Steps

- Identify teachers to attend [Science Content Leader Training](#).

Science Content Leader Timeline

Science Content Leader Timeline	
Now-summer 2020	LDOE works with design partners (UT Dana Center, Great Minds PhD, Schoolkit, and Achievement Network) to develop the trainings
April 2020	Design partners brought to BESE for approval as Science Content Leader training providers
April-May 2020	Open enrollment training dates released and registrations open; school systems may also contract directly with providers for trainings
Summer 2020	Science Content Leader trainings begin

-Ensure science teachers in your school system [register](#) for and attend the annual [Teacher Leader Summit May 27-29](#). Full day tracks focused on implementation of each of the [high quality science curriculum options](#) will be offered.

Contact: STEM@la.gov with questions regarding instructional support.