

Louisiana Believes

LEAP 2025 and OpenSciEd

2019 Teacher Leader Summit

Purpose

Quality science instruction requires that teachers

- understand the standards and the shifts called for by the standards,
- have access to a high quality curriculum, and
- understand what students will be held accountable for on the assessment.

This segment of the session will help you understand the connections between the standards, instruction, and assessment.

Instructional Shifts

In the classroom, students

On the test, students

Apply Content Knowledge (DCI)

- develop skills and content knowledge
- investigate and apply content knowledge to scientific phenomena

- answer questions that require skills and content knowledge
- use stimulus materials connected to a scientific phenomenon

Investigate, Evaluate, and Reason Scientifically (SEP)

- do more than learn about science concepts
- model and apply the practices of scientists and engineers
- investigate real-world phenomena and solve design problems

- do more than answer recall questions about science
- apply the practices of scientists and engineers
- investigate each real-world phenomenon and design solutions to given problems

Connect Ideas Across Disciplines (CCC)

- make connections across the domains of science: life science; physical science; earth and space science; environmental science; and engineering, technology, and applications of science

- respond to sets of questions that assess application of knowledge across the domains of science for a comprehensive picture of student readiness for their next grade or course in science

OpenSciEd and Assessment

The Open Sci Ed curricula and LEAP 2025 science assessments align to the instructional shifts inherent in the LSSS.

Students will **apply content knowledge and skills** as they **investigate, evaluate, and reason scientifically about a given phenomenon** that may require **connecting ideas across disciplines**.

Let's compare the Lesson 12 handout on forces and the constructed-response item set "Changes in the Earth's Magnetic Field" from the [LEAP 2025 Science Practice Test for Grade 6](#).

OpenSciEd and Assessment: Compare the Stimuli From Both Sets

Forces Unit, Lesson 12 Handout

First, gently cut the speaker cone from the speaker basket (the metal frame) and lift to show students what is inside. It will not come completely apart until you cut the spider from the frame.



Second, gently cut the spider from the speaker basket. The spider's main function is to hold the center voice coil in place.



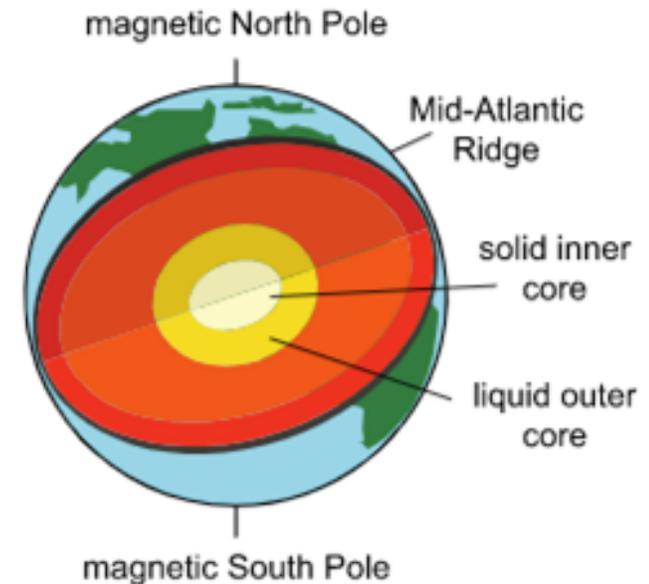
Lift the spider/voice coil from inside the speaker. Allow students time to make observations of the tiny coil of wire.



"Changes in Earth's Magnetic Field" from Practice Test

Earth has a magnetic field that extends from the North and South Poles of the planet and out into space. Many scientists suggest that Earth's magnetic field size, strength, and direction are related to the liquid iron outer core. Figure 1 shows a model of Earth's core.

Figure 1. Earth's Core



In Lesson 12, students engage in science and engineering practices to make sense of force-related phenomena. Like LEAP 2025 test items and sets, the questions and activities in the curriculum are anchored with a phenomenon specifically chosen to require student investigation, evaluation, and reasoning. Sets are anchored in a phenomenon and students need to use content knowledge, SEPs, and CCCs to make sense of the phenomenon and successfully answer assessment questions.

OpenSciEd and Assessment: Compare Page 1 of the Lesson 12 Handout and Question 26 from “Changes in Earth’s Magnetic Field”

Forces Unit, Lesson 12 Handout

Independent variable

- What part of the system will we test? _____

Difference in our independent variable between the two cups	
Cup speaker 1	Cup speaker 2

- Prediction: How do we think this will influence sound?

Dependent variable

- What will we measure to see if our independent variable had an influence?
- How will we measure it?
- How many times do we need to measure it?
- How will we make sure our data is not biased?

“Changes in Earth’s Magnetic Field” from Practice Test

Scientists will study how Earth's magnetic field changes as distance from Earth changes. Satellites will be placed at different distances from Earth and will be used to measure the strength of Earth's magnetic field.

Drag the correct label into **each** box in the table to identify the dependent and independent variables in the investigation.

Not all labels will be used.

magnetic field strength

distance from Earth

size of satellite

mass of satellite

gravitational force of Earth

Variable	Property
dependent variable	
independent variable	

OpenSciEd and Assessment: Compare Page 1 of the Lesson 12 Handout and Question 26 from “Changes in Earth’s Magnetic Field”

Forces Unit, Lesson 12 Handout

“Changes in Earth’s Magnetic Field” from Practice Test

Like LEAP 2025 test items and sets, the questions and tasks in this curriculum require students to determine what of the content knowledge and skills they’ve acquired through their course of study can and should be used to answer questions and solve problems about the phenomenon.

Both sets include questions that have students use information from the phenomenon and their own science knowledge to ask scientific questions and define engineering problems.

What content knowledge and skills do students need to have to answer these questions?

OpenSciEd and Assessment: Read Page 4 and Compare to Question 27 from “Changes in the Earth’s Magnetic Field”

Forces Unit, Lesson 12 Handout

Does your data help you answer your investigation question? If it does, write a claim in the space below that answers the question. If it does not, write this in a statement in the space below.

What evidence did you find from your investigation to support this claim? If you did not have evidence to make a claim, explain why your data does not help you answer the question, and what additional data you would need.

“Changes in Earth’s Magnetic Field” from Practice Test

Scientists are planning an investigation to collect evidence to help predict future magnetic pole reversals of Earth’s magnetic field. Using the information in Figure 3, describe how scientists can collect data on changes in Earth’s magnetic poles and explain how this data can be used to predict future magnetic pole reversals.

Like LEAP 2025 test items and sets, the questions and tasks in the Open Sci Ed curricula allow students to pull in understanding of Crosscutting Concepts to determine cause and effect relationships in natural or designed systems.

Both sets include questions that have students predict outcomes based on their understanding of how a change in a study may affect the outcome.

Resources

LEAP 2025 Assessment Guides for [Grade 6](#), [Grade 7](#), and [Grade 8](#)

[LEAP 2025 Practice Tests](#)

- **Teacher Access:**
 - Google Chrome browser: <https://wbte.drctdirect.com/LA/#portal/la/510848/ott/8/username/password/false>
 - Teacher Access paper version in [DRC INSIGHT Portal \(eDirect\)](#)
- **Student Access** (available Fall 2019): requires INSIGHT; available online or braille
- **Materials** for administering, scoring, and using
 - [Practice Test Quickstart Guide](#)
 - LEAP 2025 Practice Test Answer Keys for [Grade 6](#), [Grade 7](#), and [Grade 8](#)
 - [LEAP 2025 Science Practice Test Guidance](#)
 - [LEAP 2025 Practice Test Webinar for Teachers](#)
 - Annotated Student Responses for Practice Test Extended-Response Tasks (available Fall 2019)

Open Sci Ed Grade 6 EAGLE and Practice Test Items

Grade 6 Open Sci Ed	EAGLE and Practice Test Items	
Unit 1	<ul style="list-style-type: none"> ● Moons (6-ESS1-1) ● Midnight_Sun (6-ESS1-1) ● Spitzer (6-ESS1-2) 	<ul style="list-style-type: none"> ● Dwarf Planets (6-ESS1-3) ● Asteroids in the Solar System (6-ESS1-2, 6-ESS1-3)
Unit 3	<ul style="list-style-type: none"> ● Trials (6-PS4-1) 	<ul style="list-style-type: none"> ● Ocean Waves (6-PS4-1)
Unit 4	<ul style="list-style-type: none"> ● Gr6 Minerals (6-LS1-1) ● Models (6-PS1-1) 	<ul style="list-style-type: none"> ● Organelles (6-LS1-1, 6-LS1-2)
Unit 5	<ul style="list-style-type: none"> ● Soccer Ball (6-PS2-2) ● Satellite (6-PS2-1) 	<ul style="list-style-type: none"> ● Deer (6-LS2-1) ● Anasazi and the Great Drought (6-LS2-1, 6-LS2-2)
Unit 6	<ul style="list-style-type: none"> ● Electric Motor (6-PS2-3) ● Gr6 Moons (6-PS2-4) ● Popcorn (6-PS2-5) 	<ul style="list-style-type: none"> ● Marbles (6-PS3-1, 6-PS3-2) ● Changes in the Earth's Magnetic Field (6-PS2-3, 6-PS2-5)
Unit 7	<ul style="list-style-type: none"> ● Gr6 Red Snapper (6-ESS3-4) 	
Not Covered	<ul style="list-style-type: none"> ● Mass Energy (6-PS3-1) 	<ul style="list-style-type: none"> ● Bowling (6-PS3-1, 6-PS2-2)

Open Sci Ed Grade 7 EAGLE and Practice Test Items

Grade 7 Open Sci Ed	EAGLE and Practice Test Items	
Unit 1	<ul style="list-style-type: none">● Eric_BrassBall (7-PS1-4)● Carbon Dioxide (7-PS1-4)● Kayla (7-PS3-4)	<ul style="list-style-type: none">● Melting Icebergs (7-PS1-4, 7-PS3-4)● Spider Plants (7-PS1-4, 7-PS3-4)
Unit 2	<ul style="list-style-type: none">● Water Cycle (7-MS-ESS2-4)	<ul style="list-style-type: none">● Arizona Monsoon (7-ESS2-5, 7-ESS2-6)
Unit 3	<ul style="list-style-type: none">● Substances (7-MS-PS1-2)● Kiara (7-MS-PS1-2)	<ul style="list-style-type: none">● Pesticides (7-MS-PS1-5)
Unit 5	<ul style="list-style-type: none">● 1014621 (7-LS3-2)● Siblings (7-LS3-2)● 1014623 (7-LS3-2)● Amoebas (7-LS3-2)● 1014619 (7-LS4-5)	<ul style="list-style-type: none">● Anoles (7-LS4-4)● Feral Chickens (7-LS4-4)● Coral (7-LS2-4, 7-LS4-4)● Dead Zone (7-LS1-7, 7-LS2-5)
Unit 6	<ul style="list-style-type: none">● Zebra Mussels (7-LS2-4, 7-LS2-5)	<ul style="list-style-type: none">● Volcanic Carbon (7-ESS3-5, 7-PS1-5)
Not Covered	<ul style="list-style-type: none">● Louisiana Swamplands (7-LS1-7, 7-LS1-6)	

Open Sci Ed Grade 8 EAGLE and Practice Test Items

Grade 8 Open Sci Ed	EAGLE and Practice Test Items	
Unit 2	<ul style="list-style-type: none"> ● Embryo Development (8-LS4-2) 	
Unit 3	<ul style="list-style-type: none"> ● 1014720 (8-PS1-3) ● Sailboat (8-PS3-5) 	<ul style="list-style-type: none"> ● Solar Cooker (8-PS3-3, 8-PS3-5)
Unit 5	<ul style="list-style-type: none"> ● Daisies (8-LS1-5) ● Pollutants (8-ESS3-3) ● Hummingbird (8-LS4-6) 	<ul style="list-style-type: none"> ● Potato Experiment (8-PS3-3) ● Surviving in Desert Landscapes (8-LS1-5, 8-LS1-4)
Unit 6	<ul style="list-style-type: none"> ● SARocks (8-ESS2-1) ● Mushroom Rock (8-ESS2-2) 	<ul style="list-style-type: none"> ● Planet_Earth (8-ESS2-3)
Unit 7	<ul style="list-style-type: none"> ● Marbles (8-PS1-1) ● NCSlides (8-ESS3-2, 8-ESS2-2) ● Opal (8-ESS3-1, 8-ESS3-3) ● Tornado_8 (8-ESS3-2) 	<ul style="list-style-type: none"> ● NCSlides (8-ESS3-2, 8-ESS2-2) ● Tsunamis and the Louisiana Coast (8-ESS3-2, 8-ESS2-1) ● Nitinol (8-PS1-3, 8-PS1-1)
Not Covered	<ul style="list-style-type: none"> ● Miles Davis (8-LS3-1) 	<ul style="list-style-type: none"> ● Glowing Jellyfish (8-LS3-1, 8-LS4-6)

Questions about Assessment?

- What questions do you have concerning the instructional shifts in assessment?
- What questions do you have about the LEAP 2025 Biology assessment or the resources?
- What other assessment-related questions do you have?

Next Steps

- Dig into your curriculum and the built-in assessments.
- Examine how the science instructional shifts are evidenced throughout.
- Discuss these findings with teachers in your school and school system.

Email assessment@la.gov with any assessment and/or accountability questions.

Email Lydia.Hill@la.gov with content questions.

Thank you!