Louisiana Guide to Implementing Amplify: Grade 8

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Purpose

To assist teachers in implementing the Amplify curriculum for grade 8, this document guides how Amplify units correlate with the Louisiana Student Standards for Science (LSSS). The Amplify curriculum provides ample instructional guidance for teachers. This Louisiana Guide for Implementing Amplify takes it a step further by highlighting areas where teachers may need to make strategic decisions that consider student needs.

The Amplify Science Grade 8 units may include performance expectations from future grade levels. These units are intentionally designed to provide students with the opportunity to incrementally make sense of phenomena, building understanding and abilities over time through a coherent storyline. Modifications to the sequence or content of lessons within these units could undermine the design and should therefore be approached with caution and careful consideration.

This guidance document is considered a 'living' document, reflecting the expectation that teachers and other educators will continue to identify opportunities for improvement as it is applied in practice. Please send feedback to STEM@la.gov so that the Louisiana Department of Education can incorporate your suggestions when updating this guide.

Standards by Unit[1]

	Unit 1 Geology on Mars	Unit 2 Plate Motion	Plate Motion Engineering Internship Unit	Unit 3 Rock Transformations	Unit 4 Thermal Energy	Unit 5 Natural Selection	Unit 6 Evolutionary History	Natural Selection Engineering Internship Unit
Number of Lessons	11 lessons	19 lessons *1 companion lesson*	10 lessons	19 lessons *2 companion lessons*	19 lessons *1 companion lesson*	19 lessons *2 companion lessons*	19 lessons	10 lessons
Anchor Phenomenon or Design Problem	How can we search for evidence that other planets were once habitable?	Why are fossils of *Mesosaurus* separated by thousands of kilometers of ocean when the species once lived all together?	Tsunamis happen in particular places. Design a better tsunami warning system for Sri Lanka.	Why are rock samples from the Great Plains and from the Rocky Mountains composed of such similar minerals, when they look so different and come from different areas?	Which heating system will best heat Riverdale School?	What caused the newt population in Oregon State Park to become more poisonous?	Is this Mystery Fossil more closely related to wolves or to wolves?	Design a malaria treatment that minimizes drug-resistant malaria.
Louisiana Students Standards for Science[2]	8-MS-ESS2-2 6-MS-ESS1-3	8-MS-ESS1-4 8-MS-ESS2-2 8-MS-ESS2-3	8-MS-ESS2-2 8-MS-ESS2-3 8-MS-ESS3-2	8-MS-ESS2-2 8-MS-ESS3-1 8-MS-ESS3-3 8-MS-PS1-3† 8-MS-ESS2-1† *Companion lesson:* 8-MS-PS1-1	8-MS-PS3-3† 8-MS-PS3-5 8-MS-PS1-6 7-MS-PS3-4	8-MS-LS3-1 8-MS-LS4-6 8-MS-LS1-5† 7-MS-LS4-4 *Companion lesson:* 8-MS-LS1-4†	8-MS-LS4-1 8-MS-LS4-2 8-MS-LS4-3	8-MS-LS3-1 8-MS-LS4-6
Pacing	11 days	21 days	10 days	23 days	22 days	22 days	19 days	10 days

** The performance expectation is only partially addressed using the identified phenomenon. The performance expectation is addressed in other unit(s).*
†The performance expectation is only partially addressed in the Grade 8 scope and sequence.
[2]Performance expectations which are unique to the Next Generation Science Standards for Middle School have not been included in this table.
[1] Adapted from guidance developed by Amplify Science, but does not include supporting standards.

Companion Lesson Guidance[1]

Guidance provided in the Amplify Louisiana Grade 8 Companion Teacher Booklet has strategically added lessons to the storyline to address the Louisiana Student Standards for Science for grade 8, which are not fully addressed in the core unit materials. These companion lessons ensure that the Louisiana Student Standards for Science for grade 8 are covered by building on what students are learning in core units and extending their understanding of the unit concepts.

Unit	Companion Lesson	Lesson Placement	Time Frame	Standards
Unit 2 Plate Motion	Lesson 1, p. 12 Reading "Using rock as a Clock: Dating the Dinosaur Extinction"	Insert after Lesson 3.3	90 minutes (can be spread across multiple class periods)	8-MS-ESS1-4 8-MS-ESS2-2
Unit 3 Rock Transformations	Lesson 2, p. 27 Reading "From Living Things to Plastic: A Journey Through Rock"	Insert after Lesson 1.5	80 minutes (can be spread across multiple class periods)	8-MS-PS1-1 8-MS-PS1-3 8-MS-ESS3-3
	Lesson 3, p. 48 Reading "Bryce Canyon Hoodoos"	Insert after Lesson 2.6	60 minutes (can be spread across multiple class periods)	8-MS-PS1-1 8-MS-PS1-3
Unit 4 Thermal Energy	Lesson 4, p. 63 Designing Hot Packs and Cold Packs	Insert after Lesson 2.5	105 minutes (can be spread across multiple class periods)	8-MS-PS1-6
Unit 5 Natural Selection	Lesson 5, p. 85 Reading About Plant and Animal Reproduction	Insert after Lesson 4.4	60 minutes (can be spread across multiple class periods)	8-MS-LS1-4
	Lesson 6, p. 96 Reading "Growing Giant Pumpkins"	Insert after Lesson 4.4	60 minutes (can be spread across multiple class periods)	8-MS-LS1-5

[1]*Adapted from guidance developed by Amplify.*

Investigative Phenomena by Unit[1]

Unit	Investigative Phenomena Question
Unit 1 Geology on Mars	Chapter 1: What geologic process could have formed the channel on Mars? Chapter 2: How can we gather more evidence about whether lava or water formed the channel on Mars? Chapter 3: How can we decide which geologic process formed the channel on Mars?
Unit 2 Plate Motion	Chapter 1: What is the land like where *Mesosaurus* fossils are found? Chapter 2: How did the South American Plate and the African Plate move? Chapter 3: How did the *Mesosaurus* fossils on the South American Plate and the African Plate get so far apart? Chapter 4: Students apply what they learn to a new question: What best explains the patterns of volcanic formations and earthquakes on the Jalisco Block?
Unit 3 Rock Transformations	Chapter 1: How did the rock of the Great Plains and the rock of the Rocky Mountains form? Chapter 2: Where did the magma and sediment that formed the rock of the Great Plains and the rock of the Rocky Mountains come from? Chapter 3: How could rock from one of the regions have transformed into a different type of rock in the other region? Chapter 4: Students apply what they learn to a new question: What rock transformation processes are happening on Venus?
Unit 4 Thermal Energy	Chapter 1: What is happening when the air in the school gets warmer? Chapter 2: What causes air molecules inside the school to speed up? Chapter 3: Which heating system will warm the air in the school more? Chapter 4: Students apply what they learn to a new question: Why wasn't the water pasteurized?
Unit 5 Natural Selection	Chapter 1: What caused the newt population to become more poisonous? Chapter 2: How did the trait for increased poison level become more common in the newt population? Chapter 3: How did a poison-level trait that wasn't always present in the newt population become the most common trait?

Unit	Investigative Phenomena Question
	Chapter 4: Students apply what they learn to a new question: What caused the stickleback population to have less armor and become faster?
Unit 6 Evolutionary History	Chapter 1: Where in the museum does this new fossil belong? Chapter 2: How did wolves, whales, and the Mystery Fossil become so different from their common ancestor population? Chapter 3: How can we tell if the Mystery Fossil is more closely related to wolves or whales? Chapter 4: Students apply what they learn to a new question: Is the Tometti fossil more closely related to ostriches or crocodiles?
Engineering Design Unit Plate Motion Engineering Internship	Research Phase Design Phase Proposal Phase Application of Science Content
Engineering Design Unit Natural Selection Engineering Internship	Research Phase Design Phase Proposal Phase Application of Science Content

[1] *Adapted from guidance developed by Amplify Science*

LDOE Formative Assessment Resources

LDOE formative assessment resources include a library of Louisiana educator-created discrete items and sets, LEAP Practice Test Items, and LEAP Assessment Guide Items correlated to the Louisiana Student Standards for Science. These resources can be used alongside guidance from a high-quality curriculum to provide opportunities for students to showcase their learning.

Unit	Discrete Items	Sets
Unit 1 **Geology on Mars**	***LDOE Formative Assessment Items* (Password: Educate2020)** • Mushroom Rock (8-MS-ESS2-2) ***LEAP Practice Test Standalone Items:*** • N/A ***LEAP Assessment Guide Items:*** • N/A ***LEAP Science Released Items:*** • N/A	***LDOE Formative Assessment Sets* (Password: Educate2020)** • Item Set: North Carolina Landslides (8-MS-ESS3-2 and 8-MS-ESS3-2) ***LEAP Practice Test Sets:*** • N/A ***LEAP Assessment Guide Sets:*** • N/A ***LEAP Science Released Items:*** • N/A
Unit 2 **Plate Motion**	***LDOE Formative Assessment Items* (Password: Educate2020)** • Fossils, California Rock Formation (8-MS-ESS1-4) • Pangea (8-MS-ESS2-3) ***LEAP Practice Test Standalone Items:*** • 15, 33 (8-MS-ESS1-4) • 13, 35 (8-MS-ESS2-3) ***LEAP Assessment Guide Items:*** • N/A ***LEAP Science Released Items:*** • N/A	***LDOE Formative Assessment Sets* (Password: Educate2020)** • N/A ***LEAP Practice Test Sets:*** • N/A ***LEAP Assessment Guide Sets:*** • N/A ***LEAP Science Released Items:***

Unit	Discrete Items	Sets
Engineering Design Unit **Plate Motion Engineering Internship**	***LDOE Formative Assessment Items* (Password: Educate2020)** • Cascadia (8-MS-ESS3-2) ***LEAP Practice Test Standalone Items:*** • 37 (8-MS-ESS3-2) ***LEAP Assessment Guide Items:*** • N/A ***LEAP Science Released Items:*** • N/A	***LDOE Formative Assessment Sets* (Password: Educate2020)** • Item Set: Tornadoes (8-MS-ESS3-2) ***LEAP Practice Test Sets:*** • Task Set: Tsunamis & the Louisiana Coast (8-MS-ESS2-1 and 8-MS-ESS3-2) ***LEAP Assessment Guide Sets:*** • N/A ***LEAP Science Released Items:*** • N/A
Unit 3 **Rock Transformations**	***LDOE Formative Assessment Items* (Password: Educate2020)** • Mixing Liquids (8-MS-PS1-3) • South America (8-MS-ESS2-1) • Petroleum (8-MS-ESS3-1) • Pollutants (8-MS-ESS3-3) ***LEAP Practice Test Standalone Items:*** • 36 (8-MS-ESS2-2) • 40 (8-MS-ESS3-1) ***LEAP Assessment Guide Items:*** • Tire Materials (8-MS-PS1-3) • Sedimentary Rock (8-MS-ESS2-1) ***LEAP Science Released Items:*** • River Erosion (8-MS-ESS2-2)	***LDOE Formative Assessment Sets* (Password: Educate2020)** • N/A ***LEAP Practice Test Sets:*** • Item Set: Opal (8-MS-ESS3-1 and 8-MS-ESS3-3) • Task Set: Tsunamis & the Louisiana Coast (8-MS-ESS2-1 and 8-MS-ESS3-2) ***LEAP Assessment Guide Sets:*** • Task Set: Aquifers in Louisiana (8-MS-ESS3-1 and 8-MS-ESS3-3) ***LEAP Science Released Items:*** • Task Set: Gulf Oil (8-MS-ESS3-1 and 8-MS-ESS3-3)

Unit	Discrete Items	Sets
Unit 4 **Thermal Energy**	***LDOE Formative Assessment Items*** ***(Password: Educate2020)*** • Marbles (8-MS-PS1-1) • Potato Experiment (8-MS-PS3-3) • Sailboat (8-MS-PS3-5) ***LEAP Practice Test Standalone Items:*** • 22, 34 (8-MS-PS1-6) • 38 (8-MS-PS3-3) ***LEAP Assessment Guide Items:*** • Quartz (8-MS-PS1-1) ***LEAP Science Released Items:*** • Heated Pool (8-MS-PS3-3)	***LDOE Formative Assessment Sets*** ***(Password: Educate2020)*** • N/A ***LEAP Practice Test Sets:*** • Item Set: Solar Cooker (8-MS-PS3-3 and 8-MS-PS3-5) • Item Set: Nitinol (8-MS-PS1-1 and 8-MS-PS1-3) ***LEAP Assessment Guide Sets:*** • N/A ***LEAP Science Released Items:*** • N/A
Unit 5 **Natural Selection**	***LDOE Formative Assessment Items*** ***(Password: Educate2020)*** • Scotch Broom (8-MS-LS1-4) • Daisies (8-MS-LS1-5) • Miles Davis (8-MS-LS3-1) • Hummingbird (8-MS-LS4-6) ***LEAP Practice Test Standalone Items:*** • 21 (8-MS-LS1-4) • 41 (8-MS-LS1-5) ***LEAP Assessment Guide Items:*** • N/A ***LEAP Science Released Items:*** • DNA Sequence (8-MS-LS3-1)	***LDOE Formative Assessment Sets*** ***(Password: Educate2020)*** • N/A ***LEAP Practice Test Sets:*** • Item Set: Glowing Jellyfish (8-MS-LS3-1 and 8-MS-LS4-6) • Item Set: Surviving in Desert Landscapes (8-MS-LS1-5 and 8-MS-LS1-4) ***LEAP Assessment Guide Sets:*** • Item Set: Brown Pelicans (8-MS-LS1-4 and 8-MS-PS3-5)* ***LEAP Science Released Items:*** • N/A

Unit	Discrete Items	Sets
Unit 6 **Evolutionary History**	***LDOE Formative Assessment Items* (Password: Educate2020)** • Geo Time Scale (8-MS-LS4-1) • Horses, Bats, Embryo Development (8-MS-LS4-2) • Comparing Embryos (8-MS-LS4-3) ***LEAP Practice Test Standalone Items:*** • 32, 39 (8-MS-LS4-1) • 23 (8-MS-LS4-3) ***LEAP Assessment Guide Items:*** • Louisiana Sedimentary Rock (8-MS-LS4-1) ***LEAP Science Released Items:*** • Mouse Leg Structure (8-MS-LS4-2)	***LDOE Formative Assessment Sets* (Password: Educate2020)** • N/A ***LEAP Practice Test Sets:*** • N/A ***LEAP Assessment Guide Sets:*** • N/A ***LEAP Science Released Items:*** • Item Set: Evolution of the Eye (8-MS-LS4-1 and 8-MS-LS4-2)
Engineering Design Unit **Natural Selection Engineering Internship**	***LDOE Formative Assessment Items* (Password: Educate2020)** • Miles Davis (8-MS-LS3-1) • Hummingbird (8-MS-LS4-6) ***LEAP Practice Test Standalone Items:*** • N/A ***LEAP Assessment Guide Items:*** • N/A ***LEAP Science Released Items:*** • N/A	***LDOE Formative Assessment Sets* (Password: Educate2020)** • N/A ***LEAP Practice Test Sets:*** • Item Set: Glowing Jellyfish (8-MS-LS3-1 and 8-MS-LS4-6) ***LEAP Assessment Guide Sets:*** • N/A ***LEAP Science Released Items:*** • N/A