



Louisiana Believes

Louisiana Guide to Implementing PhD Science: Grade 5

To assist teachers with the implementation of the fifth Grade PhD Science curriculum, this document provides guidance regarding how PhD Science modules correlate with the Louisiana Student Standards for Science (LSSS). The PhD Science curriculum provides ample instructional guidance for teachers. This Louisiana Guide for Implementing PhD Science goes a step further to point out places in which teachers may need to make strategic decisions considering student needs.

This guidance document is considered a “living” document as we believe that teachers and other educators will find ways to improve the document as they use it. Please send feedback to STEM@la.gov so that we may use your input when updating this guide.

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Standards by Module ¹

	Module 1 Matter	Module 2 Ecosystems	Module 3 Earth Systems	Module 4 Orbit and Rotation
Approximate Time Frame	26 days	26 days	27 days	26 days
Anchor Phenomenon	Changes to the Statue of Liberty's Appearance	Life Around a Mangrove Tree	Balinese Rice Farming	Views From Earth and Space
Essential Question	What caused the Statue of Liberty to change over time?	How can trees support so much life?	How has Balinese rice farming endured for 1,000 years?	How can we explain our observations of the Sun, Moon, and stars from Earth?
Instructional Texts	<i>Statue of Liberty: A Tale of Two Countries</i>	<i>The Mangrove Tree Living Sunlight</i>	<i>Cycle of Rice, Cycle of Life</i> <i>The Buffalo are Back</i>	<i>Look to the Stars</i> <i>Look Up! Henrietta Leavitt</i> <i>Pioneering Woman Astronomer</i>
Standards	5-PS1-1 5-PS1-2 5-PS1-3 5-PS1-4	5-LS1-1 5-LS2-1 5-PS3-1	5-ESS2-1 5-ESS2-2 5-ESS3-1	5-ESS1-1 5-ESS1-2 5-PS2-1

¹ Adapted from guidance developed by PhD Science

Concept Focus by Module¹

Module	Concept Focus Questions
Module 1 Matter	Concept 1: How do we describe different materials? Concept 2: How do temperature changes affect substances? Concept 3: What happens when substances are mixed? Engineering Challenge: How can we apply our knowledge of substances to solve a problem? Application of Concept
Module 2 Ecosystems	Concept 1: How do plants grow? Concept 2: Where does life's matter come from? Concept 3: Where does life's energy come from? Engineering Challenge: How can the balance of an ecosystem change? How can we reduce the damage an invasive species causes to an ecosystem? Application of Concepts
Module 3 Earth Systems	Concept 1: Where does freshwater come from? Concept 2: How do water and land interact? Concept 3: How do Earth's systems respond to change? Engineering Challenge: How can we apply our knowledge of Earth's systems to conserve fresh water? Application of Concepts
Module 4 Orbit & Rotation	Concept 1: How can we explain our observations of the Sun? Science Challenge: How can we use the Earth-Sun system to tell time at different locations on Earth? Concept 2: How can we explain our observations of the Moon? Concept 3: How can we explain our observations of stars? Application of Concepts

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LDOE Formative Assessment Resources

Created by Louisiana educators to support formative assessment in the classroom, the Department has released a library of discrete items and item sets correlated to the Louisiana Student Standards for Science. These items, along with LEAP 2025 Practice Test Items, may be used in conjunction with guidance from high-quality curriculum as opportunities for students to demonstrate what they have learned. LDOE Formative Assessment Resources can be found on the [K-12 Science Planning](#) webpage.

Module	Discrete Items	Item Sets and Practice Test Items
Module 1 Matter	SoccerBalls (5-PS1-1) Gas Particles (5-PS1-1) Coolers (5-PS1-2) Burning Wood (5-PS1-2) Mixing Substances (5-PS1-2) Water Quality (5-PS1-3) Hoey (5-PS1-4)	Practice Test Item Set Mineral Identification (5-PS1-3 and 5-PS1-1) Practice Test Item Set Mixing Liquids (5-PS1-2 and 5-PS1-4) Diamond Mining (5-PS1-3 and 5-PS1-4)
Module 2 Ecosystems	Plant Project (5-LS1-1) Atchafalaya Basin (5-LS1-1) Water Hyacinths (5-LS2-1) African Ecosystems (5-LS2-1) Walter’s Food Web (5-LS2-1) Pond (5-PS3-1)	Practice Test Item Rafflesia (5-LS1-1 and 5-LS2-1) Australia (5-LS2-1* and 5-PS3-1) Biomes (5-ESS3-1 and 5-LS1-1)
Module 3 Earth Systems	Briksdal (5-ESS2-1) Precipitation (5-ESS2-1) Water Distribution (5-ESS2-2) Air Pollution (5-ESS-3-1) Dust Storms (5-ESS-3-1)	Practice Test Louisiana Black Bears (5-ESS3-1) Controlling Runoff (5-ESS2-1 and 5-ESS3-1)

Module	Discrete Items	Item Sets and Practice Test Items
Module 4 Orbit and Rotation	Gravity (5-PS2-1) Skies (5-ESS1-1) Two Stars (5-ESS1-1) Constellations (5-ESS1-2) Moon Cycle (5-ESS1-2)	Practice Test Item Set Brightness and Shadows (5-ESS1-1 and 5-ESS1-2)