



Teaching and Learning

# Louisiana Guide to Implementing Great Minds PhD Science: Grade 5

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To assist teachers with the implementation of the PhD Science curriculum for grade 5, this document provides guidance regarding how PhD Science units correlate with the [Louisiana Student Standards for Science](#) (LSSS). The PhD Science curriculum provides ample instructional guidance for teachers. This Louisiana Guide for Implementing Great Minds 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](mailto:STEM@la.gov) so that we may use your input when updating this guide.

Updated February 3, 2025

# Table of Contents

<a href="#"><u>Standards by Module</u></a>	3
<a href="#"><u>Concept Focus by Module</u></a>	4
<a href="#"><u>LDOE Formative Assessment Resources</u></a>	5

## Standards by Module<sup>1</sup>

	Module 1	Module 2	Module 3	Module 4
	Matter	Ecosystems	Earth Systems	Orbit & 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</i> <i>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

<sup>1</sup>Adapted from guidance developed by PhD Science

## Concept Focus by Module<sup>1</sup>

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

<sup>1</sup>Adapted from guidance developed by PhD 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.

Module	Discrete Items	Item Sets and Practice Test Items
<p><b>Module 1</b></p> <p><b>Matter</b></p>	<p><b><u>LDOE Formative Assessment Items</u></b> <b>(PasswordEducate2020):</b></p> <ul style="list-style-type: none"> <li>Gas Particles (5-PS1-1)</li> <li>Coolers, Burning Wood, Mixing Substances (5-PS1-2)</li> <li>Water Quality (5-PS1-3)</li> <li>Hoey (5-PS1-4)</li> </ul> <p><b><u>LEAP Practice Test Standalone Items:</u></b></p> <ul style="list-style-type: none"> <li>35 (5-PS1-1)</li> <li>22, 32 (5-PS1-2)</li> <li>41 (5-PS1-3)</li> <li>14 (5-PS1-4)</li> </ul> <p><b><u>LEAP Assessment Guide Items:</u></b></p> <ul style="list-style-type: none"> <li>Milk Investigation (5-PS1-4)</li> </ul>	<p><b><u>LDOE Formative Assessment Sets</u></b> <b>(PasswordEducate2020):</b></p> <ul style="list-style-type: none"> <li>Diamond Mining (5-PS1-3 and 5-PS1-4)</li> </ul> <p><b><u>LEAP Practice Test Sets:</u></b></p> <ul style="list-style-type: none"> <li>Item Set: Mineral Identification (5-PS1-3 and 5-PS1-1)</li> <li>Item Set: Mixing Liquids (5-PS1-2 and 5-PS1-4)</li> </ul> <p><b><u>LEAP Assessment Guide Sets:</u></b></p> <ul style="list-style-type: none"> <li>N/A</li> </ul>
<p><b>Module 2</b></p> <p><b>Ecosystems</b></p>	<p><b><u>LDOE Formative Assessment Items</u></b> <b>(PasswordEducate2020):</b></p> <ul style="list-style-type: none"> <li>Plant Project, Atchafalaya Basin (5-LS1-1)</li> <li>Water Hyacinths, African Ecosystems, Walter's Food Web (5-LS2-1)</li> <li>Pond (5-PS3-1)</li> </ul> <p><b><u>LEAP Practice Test Standalone Items:</u></b></p> <ul style="list-style-type: none"> <li>23, 38 (5-PS3-1)</li> <li>13, 33 (5-LS1-1)</li> <li>15 (5-LS2-1)</li> </ul> <p><b><u>LEAP Assessment Guide Items:</u></b></p> <ul style="list-style-type: none"> <li>Forest Ecosystem (5-PS3-1)</li> </ul>	<p><b><u>LDOE Formative Assessment Sets</u></b> <b>(PasswordEducate2020):</b></p> <ul style="list-style-type: none"> <li>Australia (5-LS1-1 and 5-PS3-1)</li> <li>Biomes (5-ESS3-1 and 5-LS1-1)</li> </ul> <p><b><u>LEAP Practice Test Sets:</u></b></p> <ul style="list-style-type: none"> <li>Item Set: Rafflesia (5-LS1-1 and 5-LS2-1)</li> </ul> <p><b><u>LEAP Assessment Guide Sets:</u></b></p> <ul style="list-style-type: none"> <li>Item Set: Cordgrass Ecosystem (5-LS1-1 and 5-LS2-1)</li> </ul>

Module	Discrete Items	Item Sets and Practice Test Items
<p><b>Module 3</b></p> <p>Earth Systems</p>	<p><b><u>LDOE Formative Assessment Items</u></b>  <b>(PasswordEducate2020):</b></p> <ul style="list-style-type: none"> <li>• Briksdal, Precipitation (5-ESS2-1)</li> <li>• Water Distribution (5-ESS2-2)</li> <li>• Air Pollution, Dust Storms (5-ESS-3-1)</li> </ul> <p><b><u>LEAP Practice Test Standalone Items:</u></b></p> <ul style="list-style-type: none"> <li>• 34, 39 (5-ESS2-2)</li> </ul> <p><b><u>LEAP Assessment Guide Items:</u></b></p> <ul style="list-style-type: none"> <li>• Water on Earth (5-ESS2-2)</li> </ul>	<p><b><u>LDOE Formative Assessment Sets</u></b>  <b>(PasswordEducate2020):</b></p> <ul style="list-style-type: none"> <li>• Controlling Runoff (5-ESS2-1 and 5-ESS3-1)</li> <li>• Biomes (5-ESS3-1 and 5-LS1-1)</li> </ul> <p><b><u>LEAP Practice Test Sets:</u></b></p> <ul style="list-style-type: none"> <li>• Louisiana Black Bears (5-ESS3-1)</li> </ul> <p><b><u>LEAP Assessment Guide Sets:</u></b></p> <ul style="list-style-type: none"> <li>• N/A</li> </ul>
<p><b>Module 4</b></p> <p>Orbit &amp; Rotation</p>	<p><b><u>LDOE Formative Assessment Items</u></b>  <b>(PasswordEducate2020):</b></p> <ul style="list-style-type: none"> <li>• Gravity (5-PS2-1)</li> <li>• Skies, Two Stars (5-ESS1-1)</li> <li>• Constellations, Moon Cycle (5-ESS1-2)</li> </ul> <p><b><u>LEAP Practice Test Standalone Items:</u></b></p> <ul style="list-style-type: none"> <li>• 40 (5-PS2-1)</li> <li>• 37 (5-ESS1-1)</li> <li>• 21, 36 (5-ESS1-2)</li> </ul> <p><b><u>LEAP Assessment Guide Items:</u></b></p> <ul style="list-style-type: none"> <li>• Sky Patterns (5-ESS1-2)</li> </ul>	<p><b><u>LDOE Formative Assessment Sets</u></b>  <b>(PasswordEducate2020):</b></p> <ul style="list-style-type: none"> <li>• N/A</li> </ul> <p><b><u>LEAP Practice Test Sets:</u></b></p> <ul style="list-style-type: none"> <li>• Item Set: Brightness and Shadows (5-ESS1-1 and 5-ESS1-2)</li> </ul> <p><b><u>LEAP Assessment Guide Sets:</u></b></p> <ul style="list-style-type: none"> <li>• Task Set: Landslides (5-PS2-1 and 5-ESS2-1)**</li> </ul>