Louisiana Guide to Implementing Amplify: Grade 6

To assist teachers with the implementation of the sixth grade Amplify curriculum, this document provides guidance regarding 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 goes a step further to point out places in which teachers may need to make strategic decisions considering student needs.

The Amplify Science Grade 6 units may include performance expectations from future grade levels. These units are intentionally designed to provide students the opportunity to incrementally make sense of phenomena to build understanding and abilities over time through a coherent storyline. Modification to the sequence or content of lessons within these units could undermine the design, and therefore should be approached with caution and careful consideration.

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.

Updated October 26, 2022
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## Standards by Unit

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<th>Unit 6 Earth, Moon, and Sun</th>
<th>Unit 7 Light Waves</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Lessons</td>
<td>11 lessons</td>
<td>19 lessons</td>
<td>19 lessons</td>
<td>19 lessons</td>
<td>19 lessons</td>
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<td>Anchor Phenomenon</td>
<td>How can having 100 trillion</td>
<td>What caused the size of the moon</td>
<td>Why did the biodome</td>
<td>Why did the tests of</td>
<td>How can an astrophotographer</td>
<td>Why is there a</td>
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<td>Question</td>
<td>microorganisms on and in the</td>
<td>jelly population in Glacier Sea to</td>
<td>ecosystem collapse?</td>
<td>a magnetic spacecraft</td>
<td>plan for the best times to</td>
<td>higher rate of</td>
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<td>human body keep us healthy?</td>
<td>increase?</td>
<td></td>
<td>launcher not go as</td>
<td>take photos of specific</td>
<td>skin cancer in</td>
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<td></td>
<td></td>
<td></td>
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<td>planned?</td>
<td>features of the moon?</td>
<td>Australia than</td>
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<td>Louisiana</td>
<td>6-LS1-1*</td>
<td>6-LS2-1</td>
<td>6-LS1-2</td>
<td>6-PS2-1</td>
<td>6-ESS1-1†</td>
<td>other parts of</td>
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<td>Students</td>
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<td>6-LS2-2</td>
<td>6-LS1-2</td>
<td>6-PS2-2</td>
<td>6-ESS1-2</td>
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<td>6-LS2-3</td>
<td>6-LS2-3</td>
<td>6-PS2-3</td>
<td>6-ESS1-3†</td>
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<td>Science²</td>
<td>6-ESS3-4</td>
<td>6-PS1-1</td>
<td>6-PS1-1</td>
<td>6-PS2-4*</td>
<td>6-ESS1-4</td>
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<td>7-LS1-7</td>
<td>6-PS2-2</td>
<td>7-LS1-6</td>
<td>6-PS2-5</td>
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<td>8-PS3-5</td>
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<td>7-ESS3-5</td>
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<td>Engineering</td>
<td>Force and Motion</td>
<td>Standards: 6-PS2-1; 6-PS2-2; 6-PS2-4;</td>
<td>Recommended to follow</td>
<td>Engineering Internship</td>
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<td>Internship Unit</td>
<td>Engineering Internship</td>
<td>MS-ETS1-2; MS-ETS1-3; MS-ETS1-4</td>
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<td>(Optional)</td>
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<td>10 lessons</td>
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</tbody>
</table>

*The performance expectation is only partially addressed using the identified phenomenon and is addressed in other unit(s).  
†The identified phenomenon only partially addresses the performance expectation. Further instruction of the performance expectation should be explored by incorporating the Grade 6 Louisiana Scope and Sequence units as needed.  
²Performance 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.
Guidance provided in the Amplify Louisiana Grade 6 Companion Teacher Booklet has strategically added lessons to the storyline to address Louisiana Student Standards for Science for 6th grade not fully addressed in the core unit materials. These companion lessons ensure that the Louisiana Student Standards for Science for grade 6 are covered by building on what students are learning in core units and extending their understanding of unit concepts.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Companion Lesson</th>
<th>Lesson Placement</th>
<th>Time Frame</th>
<th>Standards</th>
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<tbody>
<tr>
<td><strong>Unit 2</strong></td>
<td>Lesson 1, p. 12 Protecting Our Natural Resources</td>
<td>Insert any time after Lesson 3.4</td>
<td>55 minutes (can be spread across multiple class periods)</td>
<td>6-ESS3-4 6-LS2-1</td>
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<tr>
<td>Populations and Resources</td>
<td>Lesson 2, p. 34 Reading “What’s the Matter in Ecosystems?”</td>
<td>Insert after Lesson 1.2</td>
<td>80 minutes (first and second reads can be spread across two class periods)</td>
<td>6-PS1-1</td>
</tr>
<tr>
<td><strong>Unit 3</strong></td>
<td>Lesson 3, p. 48 Modeling Chemical Reactions in Ecosystems</td>
<td>Insert after Lesson 2.2</td>
<td>45 minutes</td>
<td>6-PS1-1</td>
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<tr>
<td>Matter and Energy in Ecosystems</td>
<td>Lesson 4, p. 59 Reading “Sugarcane Farm and Pine Forest: The Nitrogen Cycle”</td>
<td>Insert after Lesson 3.4</td>
<td>60 minutes (first and second reads can be spread across two class periods)</td>
<td>6-LS2-3</td>
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<tr>
<td><strong>Unit 7</strong></td>
<td>Lesson 5, p. 71 Explaining Rainbows and Blue Skies</td>
<td>Insert any time after Lesson 3.3</td>
<td>80 minutes (can be spread across multiple class periods)</td>
<td>6-PS4-2</td>
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<tr>
<td>Light Waves</td>
<td></td>
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1 Adapted from guidance developed by Amplify.
### Investigative Phenomena by Unit

<table>
<thead>
<tr>
<th>Units</th>
<th>Investigative Phenomena Questions</th>
</tr>
</thead>
</table>
| **Unit 1** Microbiomes | Chapter 1: How small are the microorganisms that live on and in the human body?  
Chapter 2: How can fecal transplants cure patients infected with harmful bacteria? |
| **Unit 2** Populations and Resources | Chapter 1: What cause the size of the moon jelly population in the Glacier Sea to increase?  
Chapter 2: What could have caused the births to increase or the deaths to decrease in the moon jelly population?  
Chapter 3: How could a population besides the zooplankton or sea turtles have caused the moon jelly population to increase?  
Chapter 4: What was the main cause of the decrease in the size of the orange-bellied parrot population? |
| **Unit 3** Matter and Energy in Ecosystems | Chapter 1: Why didn’t the plants and animals in the biodome have enough energy storage molecules?  
Chapter 2: What caused carbon dioxide to decrease in the air (abiotic matter) of the biodome?  
Chapter 3: What happened to the carbon that used to be in the air (abiotic matter) of the biodome?  
Chapter 4: Why does deforestation lead to increased carbon dioxide in the air? |
| **Unit 4** Force and Motion | Chapter 1: What caused the pod to change direction?  
Chapter 2: The thrusters on the ACM pod exerted the same strength force as thrusters on other pods, so why did this pod move differently?  
Chapter 3: After collision, how does the pod’s motion compare to the motion of the space station?  
Chapter 4: Why did Vehicle 2 fall off the cliff in Claire’s test of the collision scene, but Vehicle 2 did not fall off the cliff in the film *Iceworld Revenge*? |

*Adapted from guidance developed by Amplify.*
| Unit 5  | Magnetic Fields | Chapter 1: How can the launcher make the model spacecraft move without touching it?  
Chapter 2: Where did the energy to launch the model spacecraft come from?  
Chapter 3: Why was there so much more potential energy stored in the launcher system on Wednesday than on Tuesday?  
Chapter 4: Which design will launch the roller coaster cart the fastest? |
|---------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Unit 6  | Earth, Moon, and Sun | Chapter 1: Why is there a border between light and dark on the Moon?  
Chapter 2: Why does the border between light and dark on the Moon change location?  
Chapter 3: What are the conditions that cause a lunar eclipse?  
Chapter 4: During a year, will there be a lunar eclipse of the moon of Kepler-47c? |
| Unit 7  | Light Waves | Chapter 1: How does light from the sun cause skin cancer?  
Chapter 2: How can the same amount of sunlight cause different rates of skin cancer?  
Chapter 3: Why does Australia get more ultraviolet light than other parts of the world?  
Chapter 4: Can the crabs see the plankton they eat near the ocean floor? |
| Engineering Design Unit | Force and Motion | Research Phase  
Design Phase  
Proposal Phase  
Application of science content |

1 Adapted from guidance developed by Amplify.
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.

<table>
<thead>
<tr>
<th>Unit</th>
<th>Discrete Items</th>
<th>Item Sets and Practice Test Items</th>
</tr>
</thead>
</table>
| Unit 1 | Minerals (6-LS1-1)  
Slugs and Chloroplasts (6-LS1-2)  
Plant Cells (6-LS1-2)  
Cherry Tree (6-LS2-2)  
Wolves and Moose (6-LS2-2) | Deer (6-LS2-1)  
Organelles (6-MS-LS1-1; 6-MS-LE1-2) |
| Unit 2 | Cherry Tree (6-LS2-2)  
Wolves and Moose (6-LS2-2)  
Microplastics (6-LS2-3) | Deer (6-LS2-1) |
| Unit 3 | Slugs and Chloroplasts (6-LS1-2)  
Plant Cells (6-LS1-2)  
Cherry Tree (6-LS2-2)  
Wolves and Moose (6-LS2-2)  
Microplastics (6-LS2-3)  
Models (6-PS1-1) | Anasazi and the Great Drought (6-MS-LS2-1, 6-MS-LS2-2) |
| Unit 4 | Satellite (6-PS2-1)  
Shin Guard Design (6-PS2-1)  
Juan’s Skateboard (6-PS2-2)  
Soccer Ball (6-PS2-2)  
Sports Balls (6-PS3-1) | Bowling (6-PS3-1 and 6-PS2-2) |
| Unit 5 | Magnetic Fields | Electric Motor (6-PS2-3)  
|        |                | Moons (6-PS2-4)  
|        |                | Popcorn (6-PS2-5)  
|        |                | Sports Balls (6-PS3-1)  
|        |                | Bowling (6-PS3-1 and 6-PS2-2)  
|        |                | Changes in the Earth's Magnetic Field (6-MS-PS2-3, 6-MS-PS3-5)  
|        |                | Marbles (6-MS-PS3-1, 6-MS-PS3-2)  
| Unit 6 | Earth, Moon, and Sun | Midnight Sun (6-ESS1-1)  
|        |                | Spitzer (6-ESS1-2)  
|        |                | Dwarf Planet (6-ESS1-3)  
|        |                | Moons (6-ESS1-1 and 6-PS2-4)  
|        |                | Asteroids in the Solar System (6-MS-ESS1-2, 6-MS-ESS1-3)  
| Unit 7 | Light Waves | Trials (6-PS4-1)  
|        |                | Reverberation (6-PS4-1)  
|        |                | Spectral Signature (6-PS4-2)  
|        |                | Telescopes (6-PS4-2)  
|        |                | Minerals (6-LS1-1)  
|        |                | Slugs and Chloroplasts (6-LS1-2)  
|        |                | Plant Cells (6-LS1-2)  
|        |                | Ocean Waves (6-PS4-1)  
|        |                | Properties of Light and Sound Waves (6-MS-PS4-1, 6-MS-PS4-2)  
| Engineering Design Unit | Force and Motion Engineering | Satellite (6-PS2-1)  
|        | internship | Shin Guard Design (6-PS2-1)  
|        |                | Juan’s Skateboard (6-PS2-2)  
|        |                | Soccer Ball (6-PS2-2)  
|        |                | Moons (6-PS2-4)  
|        |                | Bowling (6-PS3-1 and 6-PS2-2)  
|        |                |