

<b>Fourth Grade Science Course Overview</b>	
<b>Course Description</b>	
<b>Credits</b>	<b>Prerequisites</b>
NA	NA
<b>Board Approved</b>	<b>Revised</b>
Pending Board Approval 5/24/21	NA
<b>Required Assessments</b>	
District-wide, standards-based assessments identified	
<b>Textbooks/Resources</b>	
<a href="https://mysteryscience.com/lessons/seasonal/spring">https://mysteryscience.com/lessons/seasonal/spring</a>	
<b>AASD Science Goals for K-12 Students</b>	<b>As a result of successfully completing this course, students will be able to...</b>
<p><b>AASD Science Goals</b></p> <ul style="list-style-type: none"> <li>• Students will demonstrate an understanding of key science concepts and apply them to their world.</li> <li>• Students will demonstrate knowledge and understanding that scientific knowledge is continually undergoing revision and refinement based on new experiments and data.</li> <li>• Students will demonstrate knowledge and understanding that the process of science is based on questioning and providing empirical evidence to support claims.</li> <li>• Students will apply scientific concepts and processes to evaluate consequences and make informed, responsible choices (regarding self, others, environment).</li> <li>• Students will demonstrate an understanding that science and technology are critical in order to provide and evaluate alternative solutions to problems in our world.</li> <li>• Students will engage in STEM experiences as both scientists and engineers in order to prepare for postsecondary and career readiness.</li> </ul> <p><b>AASD Science Mission Statement</b></p> <p><b>AASD Science Guiding Principles</b></p>	<ul style="list-style-type: none"> <li>• Use science and engineering practices, crosscutting concepts, and an understanding of <i>Human Machine</i> to make sense of phenomena and solve problems.</li> <li>• Use science and engineering practices, crosscutting concepts, and an understanding of <i>The Birth of Rocks</i> to make sense of phenomena and solve problems.</li> <li>• Use science and engineering practices, crosscutting concepts, and an understanding of <i>Waves of Sound</i> to make sense of phenomena and solve problems.</li> <li>• Use science and engineering practices, crosscutting concepts, and an understanding of <i>Energizing Everything</i> to make sense of phenomena and solve problems.</li> </ul>
<b>Essential Questions</b>	
<p><i>What thought-provoking questions will foster inquiry, meaning-making, and transfer?</i></p> <p><b>Unit 1</b></p> <ul style="list-style-type: none"> <li>• Why do your biceps bulge? (4-LS1-1)</li> <li>• What do people who are blind see? (4-LS1-1, 4-LS1-2, 4-PS4-2)</li> <li>• How can some animals see in the dark? (4-LS1-1, 4-LS1-2, 4-PS4-2)</li> <li>• How does your brain control your body? (4-LS1-1, 4-LS1-2)</li> </ul> <p><b>Unit 2</b></p> <ul style="list-style-type: none"> <li>• Could a volcano pop up where you live? (4-ESS1-1, 4-ESS2-2)</li> <li>• Why do some volcanoes explode? (4-ESS1-1)</li> <li>• Will a mountain last forever? (4-ESS1-1, 4-ESS2-1)</li> <li>• How could you survive a landslide? (4-ESS2-1, 4-ESS3-2)</li> </ul> <p><b>Unit 3</b></p> <ul style="list-style-type: none"> <li>• How far can a whisper travel? (4-PS4-1, 4-PS4-3)</li> <li>• What would happen if you screamed in outer space? (4-PS4-1)</li> <li>• Why are some sounds high and some sounds low? (4-PS4-1)</li> </ul> <p><b>Unit 4</b></p> <ul style="list-style-type: none"> <li>• How is your body similar to a car? (4-PS3-1, 4-PS3-4)</li> <li>• What makes roller coasters go so fast? (4-PS3-1, 4-PS3-3)</li> <li>• Why is the first hill of a roller coaster always the highest? (4-PS3-3)</li> <li>• Could you knock down a building using only dominoes? (4-PS3-4, 3-5-ETS1-1)</li> <li>• Can you build a chain reaction machine? (4-PS3-4, 3-5-ETS1-1, 3-5-ETS1-2, 3-5-ETS1-3)</li> </ul>	

- What if there were no electricity? (4-PS3-2, 4-PS3-4)
- How long did it take to travel across the country before cars and planes? (4-PS3-2, 4-PS3-4)
- Where does energy come from? (4-ESS3-1)

## Unit Overview

### Unit #1 - Human Machine

Your body is like a machine or robot. It has parts for moving around, sensors, a built-in computer (and it all even runs on power-but that's a topic for a later time).

**Instructional Standards:** 4-LS1-1, 4-LS1-2, 4-PS4-2

**Assessed Standards:**

### Unit #2 - Birth of Rocks

Every rock has a story that it tells, if you know how to "read" it, i.e. by identifying *patterns* and knowing the causes of how the various rocks are formed. Take any place that seems mundane to people now-like a parking lot-and a rock will tell you something extraordinary about what that place *used* to be like: it may well have been the site of a volcano. You will soon discover that nowhere on earth has been mundane forever. One of the most seemingly dull things you can imagine-a simple rock-is actually the relic of something astounding.

**Instructional Standards:** 4-ESS1-1, 4-ESS2-1, 4-ESS2-2, 4-ESS3-2

**Assessed Standards:**

### Unit #3 - Waves of Sound

Even though "sound" might seem like a short-lived phenomenon without any real form, it is very much a physical thing, a wave of vibrations traveling through the air. Sound has properties: it takes time to travel, it can be transmitted over a string, manipulated to become high or low, turned into music, even captured and frozen in time. Equipped with this understanding, students can begin to make sense of how sound and music work.

**Instructional Standards:** 4-PS4-1, 4-PS4-3

**Assessed Standards:**

### Unit #4 - Energizing Everything

"Energy" is a real thing-not just some vague term-almost like a power or substance that causes objects to move, speed up, or slow down. This power or substance can be transferred between objects when they collide. Thinking about the world in terms of energy helps us to make sense of how and why things speed up and slow down.

**Instructional Standards:** 4-PS3-1, 4-PS3-2 4-PS3-3, 4-PS3-4, 3-5-ETS1-1, 3-5-ETS1-2, 3-5-ETS1-3, 4-ESS3-1

**Assessed Standards:**