

# 4th Science Sequencing Map

## Term 1

Term 1			
Core Strand/ Standard (s)	Dates	Student Learning Objective  Organisms in the Environment	Example Tasks
4.1.1 *This is an ESLO		I can construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.	<a href="#">4.1   seedstorylines</a>  <a href="#">Strand 4.1 Organisms Functioning in their Environment</a>  <a href="#">Classroom Activities</a>  <a href="#">Structure and Function Video For Kids   3rd, 4th &amp; 5th Grade</a>
4.1.2		I can use a model to describe how animals receive different types of information through their senses, process the information in their brains, and respond to the information in different ways.	<a href="#">4.1   seedstorylines</a>  <a href="#">Classroom Activities</a>  <a href="#">Structure and Function Video For Kids   3rd, 4th &amp; 5th Grade</a>  <a href="#">Animal &amp; Plant Adaptations Video For Kids   3rd, 4th &amp; 5th Grade</a>
4.1.3		I can use fossil data to provide evidence of how organisms and environments change or stay the same over time. I can make inferences about ancient organisms.	Students observe shells fossilized in rock, then construct an explanation of why and how the shells became fossilized. Explore by discovering

			<p>patterns and similarities of living and once living organisms. Through fossil evidence students evaluate patterns of stability and change in organisms and environments <a href="#">4.1   seedstorylines</a> (Scroll to 4.1.3)</p> <p>The investigation has students gather evidence of structure and function relationships from pictures and text. Make sure fossils are Utah Fossils.  <a href="#">3-LS4-1 Staying Alive Maui Jan 16 2020.docx</a></p>
4.1.4		<p>I can prove how an environment has changed over time using evidence from patterns within rock layers and fossils in those layers.</p> <p>I can identify the relationships between fossils and past environments.</p>	<p>Students observe patterns in the layers of rock, create a model to explain what causes the formation of horizontal layers in rocks. The rock layer model includes fossil patterns in each layer. Students discuss how patterns relate to past environments. <a href="#">4.1   seedstorylines</a> (Scroll to 4.1.4)</p> <p>The investigation looks at how the age of layers of lava is determined.  <a href="#">4-ESS1-1 Changing the 'Aina NGSS PLEASE GRC 2018.docx</a></p>

## Term 2

Term 2			
Core Strand/ Standard (s)	Dates	Student Learning Objective  Energy Transfers	Example Tasks

4.2.1		I can describe the cause and effect relationship between the speed of an object and the energy of that object.	<a href="#">4.2   seedstorylines</a> <a href="#">Energy &amp; Collision Storyboard/Slides</a> <a href="#">drop-and-pop-energy-and-speed-exploration (better lesson resource)</a> <a href="#">Put More Energy into that Throw</a>
4.2.2 *This is an ESLO		I can ask questions and observe changes in energy when objects collide.	<a href="#">Strand 4.2</a> <a href="#">Moving Pennies (Better Lesson Resource)</a> <a href="#">colliding-marbles (better Lesson resource)</a> <a href="#">Get the Ball Rolling</a>
4.2.3		I can gather evidence by observing that energy can be transferred by sound, light, heat and electrical currents.	<a href="#">Energy transfer lesson</a> <a href="#">Storyboard Slides</a>
4.2.4		I can use an engineering process to create a device that changes energy from one form to another.	<a href="#">Pinwheel</a> <a href="#">Solar Oven</a> <a href="#">Solar Cooking Jar &amp; other ideas</a>

**Term 3**

Core Strand/ Standard (s)		Student Learning Objective  Wave Patterns	Example Tasks  <a href="#">4.3 Strand Storylines</a> <a href="#">Better Lesson-Wave Lesson Plans</a>
4.3.1 *This is an ESLO		I can use models to understand amplitude and wavelength as it relates to patterns of waves.	<a href="#">Wave Forms</a> <a href="#">Better Lesson 4.3.1</a>
4.3.2		I can understand and model that the ability to see objects is due to the reflection of light waves.	<a href="#">Rose Colored Glasses</a> <a href="#">Better Lesson 4.3.2</a>
4.3.3		I can design a way to transfer information using wave patterns (sound waves, light waves, etc.)	<a href="#">The Detective and the Mute</a> <a href="#">Better Lesson 4.3.3</a>
<b>Term 4</b>			
Core Strand/ Standard (s)		Student Learning Objective  Patterns in the Sky	Example Tasks

4.4.1

I can construct an explanation to compare the brightness of the sun from other stars due to their distance from the Earth.

### Gather

How can we change the brightness of a light without changing its physical characteristics?

Design an investigation with the two flashlights that will make the brightness of the bulbs seem different without changing the flashlight or blocking the light.



### Gather

Can you make something appear larger than it is? Can you make something appear smaller than its actual size?

Can you make these objects appear to be the same size, even if they are not?



### [4.1 Storyline](#)

<https://betterlesson.com/lesson/639839/what-affects-the-brightness-of-stars?from=search>

<https://betterlesson.com/lesson/635919/investigating-star-brightness-distance?from=search>

**The relative brightness of stars and sun:**  
<https://docs.google.com/document/d/1r13HxWw8CsAeFvJdBbqhkVUAygOpB4HQoY3qaaogFyk/edit?usp=sharing>

			<p>Apparent Brightness and Distance:  <a href="#">5-ESS1-1 UT 4.1.1 Apparent Brightness Wandering Stars bdm (1) 2019.docx</a></p> <p>Observable Patterns in the Sky:  <a href="https://drive.google.com/file/d/1-Fr6zswxw2JM3ksotwqLhSFGURH-UzSR7/view?usp=sharing">https://drive.google.com/file/d/1-Fr6zswxw2JM3ksotwqLhSFGURH-UzSR7/view?usp=sharing</a></p>
<p><b>4.4.2</b>  <b>*This is an ESLO</b></p>		<p>I can analyze and interpret data of observable patterns to provide evidence that the Earth rotates on its axis and revolves around the sun.</p>	<div data-bbox="1478 532 2005 873" data-label="Image"> </div> <p>To begin, students make <b>observations</b> about the <u>cause</u> of night and day. In a small team, students <b>carry out an investigation</b> by creating a <b>model</b> of the Earth's movement. A large blow up ball or globe is held in the middle by one student. Another student shines a lamp or flashlight in a consistent spot on the model of the world. The student holding the globe rotates while others in the group construct explanations as to why night and day happen and why it is different depending on where you are in the world. Earth</p>

			<p>Storyline Slides - has multiple tasks laid out for every part of the standard with videos, tasks, and ideas for graphic organizers. <a href="#">4.4.2 StoryBoard</a></p> <p>What causes Day and Night? <a href="https://betterlesson.com/lesson/634775/what-makes-day-and-night?from=search">https://betterlesson.com/lesson/634775/what-makes-day-and-night?from=search</a></p> <p><a href="#">The Earth, Moon, and Sun - A Fourth Grade SMARTBoard Introduction</a> Introduction to Earth, Moon, and Sun terminology (rotation, axis, revolution, orbit, crater, phases, lunar eclipse, and solar eclipse)</p> <ul style="list-style-type: none"><li>• How day and night occur</li><li>• Explanation of apparent motion and shadows</li><li>• Discussion about seasons</li><li>• Apparent path of the Sun. Picture of Alaska at midday.</li><li>• How the Moon “lights up”</li></ul> <p>The apparent motion of stars: <a href="#">5-ESS1-2 Oct 2 Seasonal Changes of Stars in Night Sky 2019.docx</a></p> <p>Changes in Shadows: <a href="#">Patterns of Daily Changes in the Length and Direction of Shadows</a></p> <p>Rotation and Revolution of earth around the sun: <a href="https://betterlesson.com/lesson/635120/r">https://betterlesson.com/lesson/635120/r</a></p>
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[otation-and-revolution-of-the-earth-around-the-sun?from=search](https://www.betterlesson.com/lesson/645413/constellations-moving-patterns-in-the-night-sky?from=search)

Why constellations Appear to move throughout the year:

[https://betterlesson.com/lesson/645413/constellations-moving-patterns-in-the-night-sky?from=search](https://www.betterlesson.com/lesson/645413/constellations-moving-patterns-in-the-night-sky?from=search)

The Rotation of the Earth:

<https://drive.google.com/file/d/1-905oYVjR7VYvgLLrs565dqcjAsWTcnX/view?usp=sharing>

Exploring Daily Shadow Changes:

[https://betterlesson.com/lesson/636202/exploring-daily-shadow-changes?from=search](https://www.betterlesson.com/lesson/636202/exploring-daily-shadow-changes?from=search)

Human Sundial Shadow Experiment:

[Human Sundial Shadow Science Experiments](#)

Motions of the earth: Rotation and Revolution:

[Motions of the Earth: Rotation and Revolution by Juli Cannon Science](#)

Recording the Earth's Rotation with Shadows:

[Recording the Earth's rotation with shadows](#)