



<u>Course Title:</u> <b>First Grade Science</b>		
<u>Description:</u> In first grade, students begin to develop answers to questions as their fluency with language and inquiry skills improve. They will conduct investigations and use models to help them make predictions about the natural and designed world.		
<i>Physical Sciences</i>		
<u>Reporting Topic</u>	<u>Grade Level Standards</u>	<u>Standard Summary</u>
<u>Sound Waves</u>	<ul style="list-style-type: none"><li>Plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate (for example, conduct an experiment to show that vibrating materials—such as tuning forks and plucked, stretched strings—can make sound and that sound can make materials vibrate—such as a piece of paper held near a speaker or an object held near a vibrating tuning fork). (1-PS4-1)</li></ul>	Students will: <ul style="list-style-type: none"><li>Explain a plan of how to test an item on whether it will make a sound or not.</li></ul>
<u>Information Technology</u>	<ul style="list-style-type: none"><li>Use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance (for example, design a device that allows people to communicate over a distance—such as signals through light flashes, a paper cup and string “telephone,” or a pattern of drum beats—and construct the device using tools and materials). (1-PS4-4)</li></ul>	Students will: <ul style="list-style-type: none"><li>Design and build a device that can communicate over a distance</li></ul>
<u>Electromagnetic Radiation</u>	<ul style="list-style-type: none"><li>Make observations to construct an evidence-based account that objects can be seen only when illuminated (for example, make observations in a completely dark room, with a pinhole box, or about a video of a cave explorer with a flashlight, and use those observations to support the claim that objects can only be seen when they are illuminated, either from an external light source or by an object giving off its own light). (1-PS4-2)</li><li>Plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light (for example, conduct an experiment to figure out what happens when objects that have different transparencies—whether they are fully transparent, such as clear plastic; translucent, such as wax paper; opaque, such as cardboard; or reflective, such as a mirror—are placed in the path of a beam of light). (1-PS4-3)</li></ul>	Students will: <ul style="list-style-type: none"><li>Share observations of how objects are illuminated and/or can give off their own light</li><li>Create an investigation using objects and a beam of light</li></ul>



## *Life Sciences*

<u>Reporting Topic</u>	<u>Grade Level Standards</u>	<u>Standard Summary</u>
<u>Growth and Development of Organisms</u>	<ul style="list-style-type: none"> <li>Read texts and use media to determine patterns in behavior of parents and offspring that help offspring survive (for example, read grade-appropriate scientific texts and use other types of media to identify behavioral patterns of survival among parents and offspring, such as signals that offspring make [including crying, cheeping, and other vocalizations] and the responses of parents [including feeding, comforting, and protection]). (1-LS1-2)</li> </ul>	Students will: <ul style="list-style-type: none"> <li>Describe patterns of animal behaviors</li> <li>Explain how animals grow and survive</li> </ul>
<u>Structure and Function</u>	<ul style="list-style-type: none"> <li>Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs (for example, figure out a solution to a human problem based on plant and animal methods of survival—such as designing clothing or equipment to protect bicyclists by mimicking turtle shells, acorn shells, and animal scales; creating stabilizing structures by mimicking animal tails and roots on plants; fending off predators by mimicking thorns on branches and animal quills; and detecting predators by mimicking eyes and ears—and use teacher-provided materials to construct the design). (1-LS1-1)</li> </ul>	Students will: <ul style="list-style-type: none"> <li>Share how plants and/or animals uses their external parts to help them grow, survive, and meet their needs</li> </ul>
<u>Inheritance of Traits</u>	<ul style="list-style-type: none"> <li>Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents (for example, observe plants and animals that show evidence of inheritance—such as leaves from the same kind of plant that are the same shape but different in size or a puppy that looks similar to its parents— and use these observations to support the claim that young plants and animals are similar but not identical to their parents). (1-LS3-1)</li> </ul>	Students will: <ul style="list-style-type: none"> <li>Use evidence to explain similarities and differences of how baby plants and animals are alike and different</li> </ul>

## *Earth and Space Science*

<u>Reporting Topic</u>	<u>Grade Level Standards</u>	<u>Standard Summary</u>
	<ul style="list-style-type: none"> <li>Make observations at different times of year to relate the amount of daylight to the time of year (for example, use observations—firsthand or from media—to</li> </ul>	Students will:



<p><b><u>The Solar System</u></b></p>	<p>make relative comparisons of the amount of daylight in the winter to the amount in the spring or fall). (1-ESS1-2)</p>	<ul style="list-style-type: none"> <li>Describe how the amount of daylight changes with seasons</li> </ul>
<p><b><u>The Universe and Stars</u></b></p>	<ul style="list-style-type: none"> <li>Use observations of the sun, moon, and stars to describe patterns that can be predicted (for example, make observations—firsthand or from media—of the sun, moon, and stars to identify predictable patterns, such as the visibility of stars other than our sun at night but not during the day; the consistent movement of the sun and moon appearing to rise in one part of the sky, cross the sky, and set in an opposite part of the sky; and so on). (1-ESS1-1)</li> </ul>	<p>Students will:</p> <ul style="list-style-type: none"> <li>Observe and record the connection between the sun, moon, and stars</li> </ul>
<p><i>Engineering</i></p>		
<p><b><u>Reporting Topics</u></b></p>	<p><b><u>Grade Level Standards</u></b></p>	<p><b><u>Standard Summary</u></b></p>
<p><b><u>Defining Problems</u></b></p>	<ul style="list-style-type: none"> <li>Ask questions, make observations, and gather information about a situation people want to change to define a simple problem that can be solved through the development of a new or improved object or tool (for example, approach a situation that people want to change or create a problem to be solved through engineering, and ask questions, make observations, and gather information to clarify the problem, understanding that a problem must be clearly understood before a solution can be designed). (1-ETS1-1)</li> </ul>	<p>Students will:</p> <ul style="list-style-type: none"> <li>Ask questions and make accurate observations about a problem</li> </ul>
<p><b><u>Designing Solutions</u></b></p>	<ul style="list-style-type: none"> <li>Develop a simple sketch, drawing, or physical model to illustrate how the shape of an object helps it function as needed to solve a given problem (for example, convey a design solution through a sketch, drawing, or physical model in order to communicate problem-solving ideas to other people). (1-ETS1-2)</li> </ul>	<p>Students will:</p> <ul style="list-style-type: none"> <li>Explain how the shape of an object helps it solve a problem.</li> </ul>
<p><b><u>Evaluating and Testing Solutions</u></b></p>	<ul style="list-style-type: none"> <li>Analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs (for example, test two different solutions to the same problem and compare their performances). (1-ETS1-3)</li> </ul>	<p>Students will:</p> <ul style="list-style-type: none"> <li>Compare the strengths and weaknesses of two</li> </ul>



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