



Science (Grade 1)

Course Description:

The curriculum for this course is developed from the [Next Generation Science Standards](#). Throughout the first grade year, students will develop an understanding of the four disciplinary core ideas: physical sciences; life sciences; earth and space sciences; and engineering, technology, and applications of science. Students will begin to recognize patterns and formulate answers to questions about the world around them through real-world connections and investigative work.

Essential Understandings:

1. Scientists ask questions and define problems based on observations to find more information about the natural and/or designed world(s). (K-2-ETS1-1)
2. Using and developing models (i.e., diagram, drawing, physical replica, diorama, dramatization, or storyboard) represent concrete events or design solutions. (K-2-ETS1-2)
3. Investigations are planned and carried out to answer questions or test solutions to problems. (1-PS4-1, 1-PS4-3, 1-ESS1-2)
4. Information from observations is collected, recorded, and shared in order to analyze and interpret data. (1-ESS1-1, K-2-ETS1-3)
5. Evidence and ideas are used to construct explanations of natural phenomena and design solutions to problems. (1-LS3-1, 1-LS1-1, 1-PS4-2, 1-PS4-4)
6. Arguments from evidence are constructed by comparing ideas and representations about the natural and designed world(s). (1-LS1-2)
7. Observations and texts are used to obtain, evaluate, and communicate new information. (1-LS1-2)

Unit	Description of Unit and Learning Targets
Waves: Light and Sound <ul style="list-style-type: none">• What is the relationship between sound and vibrating materials?• How does light impact the ability to see objects?• How do light and sound travel from place to place?	<p>Students will develop an understanding of the relationship between sound and vibrating materials, as well as between the availability of light and the ability to see objects. Students will develop an understanding that light travels from place to place.</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none">• I can plan and conduct investigations to provide evidence that vibrating materials can make sound and that sound can make materials vibrate.• I can make observations to construct an evidence-based account that objects can be seen only when illuminated.• I can plan and conduct an investigation to determine the effect of placing objects made with different materials in the path of a beam of light.• I can use tools and materials to design and build a device that uses light or sound to solve the problem of communicating over a distance.
Structure, Function, and Information Processing <ul style="list-style-type: none">• How do plants and animals meet their needs?• What are the relationships between parents and their offspring?• How are young plants and animals	<p>Students will develop an understanding of how plants and animals survive, grow, and get their needs met. Students will learn how the relationships and behaviors between parents and offspring help the offspring survive.</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none">• I can use materials to design a solution to a human problem by mimicking how plants and/or animals use their external

different from their parents?	<p>parts to help them survive, grow, and meet their needs.</p> <ul style="list-style-type: none"> • I can read texts and use media to determine patterns in behavior in parents and offspring that help offspring survive. • I can make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.
Space Systems: Patterns and Cycles <ul style="list-style-type: none"> • What types of patterns are made between the sun, moon, and stars? • How does the amount of daylight change throughout the year? 	<p>Students will observe, describe, and predict some patterns of the movement of objects in the sky.</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> • I can use observations of the sun, moon, and stars to describe patterns that can be predicted. • I can make observations at different times of the year to relate the amount of daylight to the time of the year.
Engineering Design <ul style="list-style-type: none"> • How can the use of sketches, drawings, and models help to solve a given problem? • How will analyzing data help to solve a problem? • How can questions, observations, and gathering information define a problem that needs to be solved? 	<p>Students will strengthen their science and engineering practices by asking questions, making observations, and defining problems. Students will devise solutions to the identified problems through the development and use of models. Students will enhance their problem-solving and critical thinking skills through analyzing and interpreting data.</p> <p><u>Learning Targets:</u></p> <ul style="list-style-type: none"> • I can 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. • I can 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. • I can analyze data from tests of two objects designed to solve the same problem to compare the strengths and weaknesses of how each performs.