



## FOURTH GRADE SCIENCE

### Course Overview

The performance expectations in fourth grade help students formulate answers to questions such as: “What are waves and what are some things they can do? How can water, ice, wind and vegetation change the land? What patterns of Earth’s features can be determined with the use of maps? How do internal and external structures support the survival, growth, behavior, and reproduction of plants and animals? What is energy and how is it related to motion? How is energy transferred? How can energy be used to solve a problem?” Fourth grade performance expectations include PS3, PS4, LS1, ESS1, ESS2, ESS3, and ETS1 Disciplinary Core Ideas from the Next Generation Science Standards. In the fourth grade performance expectations, students are expected to demonstrate grade-appropriate proficiency in asking questions, developing and using models, planning and carrying out investigations, analyzing and interpreting data, constructing explanations and designing solutions, engaging in argument from evidence, and obtaining, evaluating, and communicating information. Students are expected to use these practices to demonstrate understanding of the core ideas.

| Unit   | Estimated Class Time | Overview   |
|--|----------------------|--|
| <a href="#"><u>Unit 1</u></a><br><a href="#"><u>Energy</u></a>                         | 10 weeks             | Students will be able to independently use their learning to construct an evidence based account to prove that energy can be transferred or transformed in various ways. Students are expected to develop an understanding that energy can be transferred from place to place by sound, light, heat, and electric currents or from object to object through collisions. They apply their understanding of energy to design, test, and refine a device that converts energy from one form to another. |
| <a href="#"><u>Unit 2</u></a><br><a href="#"><u>Electricity</u></a>                    | 4 weeks              | Students will be able to independently use their learning to construct an evidence based account to prove that electric current can transfer energy from one place to another and transform energy into motion, light, heat, and sound.  |
| <a href="#"><u>Unit 3</u></a><br><a href="#"><u>Waves and Information Transfer</u></a> | 4 weeks              | Students will be able to independently use their learning to connect similarities and differences in patterns to analyze natural phenomena and designed products. Students are able to use a model of waves to describe patterns of waves in terms of amplitude and wavelength, and that waves can cause objects to move.  |
| <a href="#"><u>Unit 4</u></a><br><a href="#"><u>From Molecules to Organisms</u></a>    | 7 weeks              | Students will be able to independently use their learning to construct an evidence based account to analyze the parts of a system and the effects of their interactions. Fourth graders are expected to develop an understanding that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.  |
| <a href="#"><u>Unit 5</u></a><br><a href="#"><u>Earth’s Changing Land</u></a>          | 10 weeks             | Students will be able to independently use their learning to connect patterns and cause and effect relationships to analyze change. Students are expected to develop understanding of the effects of weathering or the rate of erosion by water, ice, wind, or vegetation. They apply their knowledge of natural Earth processes to generate and compare multiple solutions to reduce the impacts of such processes on humans.   |
| <a href="#"><u>Unit 6</u></a><br><a href="#"><u>Natural Disasters</u></a>              | 5 weeks              | Students will be able to independently use their learning to analyze cause and effect relationships to critique the impacts of Earth’s natural process on humans. In order to describe patterns of Earth’s features, students analyze and interpret data from maps.  |