

**Haddon Township Science
Grade Four**

In fourth grade science classes, students will use a hands-on curriculum to investigate electrical circuits, ecosystems, and motions and design. The New Jersey Core Content Standards will be explored using a variety of instructional strategies with an emphasis on scientific inquiry, observation, and discovery. Science knowledge will be communicated through discussion and written evaluation. Students will communicate their developing understandings about science through discussions, projects, and written evaluations.

ESSENTIAL LEARNINGS: All fourth grade students will demonstrate an understanding of the following NJ Core Curriculum Content Standards:

Scientific Practices (NJ 5.1)

- Demonstrate understanding of the interrelationships among fundamental concepts in the physical, life, and Earth systems sciences.
- Use outcomes of investigations to build and refine questions, models, and explanations.
- Use scientific facts, measurements, observations, and patterns in nature to build and critique scientific arguments.
- Design and follow simple plans using systematic observations to explore questions and predictions.
- Measure, gather, evaluate, and share evidence using tools and technologies.
- Formulate explanations from evidence.
- Communicate and justify explanations with reasonable and logical arguments.
- Monitor and reflect on one's own knowledge regarding how ideas change over time.
- Revise predictions or explanations on the basis of learning new information.
- Present evidence to interpret and/or predict cause-and-effect outcomes of investigations.
- Actively participate in discussions about student data, questions, and understandings.
- Work collaboratively to pose, refine, and evaluate questions, investigations, models, and theories.
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- Demonstrate how to safely use tools, instruments, and supplies.

Physical Sciences (NJ 5.2)

- Categorize objects based on the ability to absorb or reflect light and conduct heat or electricity.
- Compare various forms of energy as observed in everyday life and describe their applications.
- Draw and label diagrams showing several ways that energy can be transferred from one place to another.
- Demonstrate through modeling that motion is a change in position over a period of time.
- Identify the force that starts something moving or changes its speed or direction of motion.
- Investigate and categorize materials based on their interaction with magnets.
- Investigate, construct, and generalize rules for the effect that force of gravity has on balls of different sizes and weights.

Life Science (NJ 5.3)

- Develop and use evidence-based criteria to determine if an unfamiliar object is living or nonliving.
- Compare and contrast structures that have similar functions in various organisms, and explain how those functions may be carried out by structures that have different physical appearances.
- Identify sources of energy (food) in a variety of settings (farm, zoo, ocean, forest).
- Predict the biotic and abiotic characteristics of an unfamiliar organism's habitat.
- Explain the consequences of rapid ecosystem change (e.g., flooding, wind storms, snowfall, volcanic eruptions), and compare them to consequences of gradual ecosystem change (e.g., gradual increase or decrease in daily temperatures, change in yearly rainfall).
- Compare the physical characteristics of the different stages of the life cycle of an individual organism, and compare the characteristics of life stages among species.
- Model an adaptation to a species that would increase its chances of survival, should the environment become wetter, dryer, warmer, or colder over time.
- Evaluate similar populations in an ecosystem with regard to their ability to thrive and grow.

Earth Systems Science (NJ 5.4)

- Observe daily cloud patterns, types of precipitation, and temperature, and categorize the clouds by the conditions that form precipitation.
- Develop a general set of rules to predict temperature changes of Earth materials, such as water, soil, and sand, when placed in the Sun and in the shade.
- Describe the relationship between the Sun and plant growth