

Haddon Township Science

Grade One

In first grade science classes, students will use a hands-on curriculum designed to provide a basic understanding of rainbows, color and light, and of organisms. 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 understanding about science through discussions, projects, and written evaluations.

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

Scientific Practices (NJ 5.1)

- 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.
- 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.
- Demonstrate how to safely use tools, instruments, and supplies.
- Handle and treat organisms humanely, responsibly, and ethically

Physical Science (NJ 5.2)

- Sort and describe objects based on the materials of which they are made and their physical properties.
- Compare, citing evidence, the heating of different colored objects placed in full sunlight.
- Apply a variety of strategies to collect evidence that validates the principal that if there is no light, objects cannot be seen.
- Present evidence that represents the relationship between a light source, solid objects, and the resulting shadow.
- Illustrate and explain what happens when light travels from air into water.

Life Science (NJ 5.3)

- Group living and nonliving things according to the characteristics that they share.
- 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.
- Describe the interactions of systems involved in carrying out everyday life activities.
- Describe the requirements for the care of plants and animals related to meeting their energy needs.
- Compare how different animals obtain food and water.
- Identify the characteristics of a habitat that enable the habitat to support the growth of many different plants and animals.
- Communicate ways that humans protect habitats and/or improve conditions for the growth of the plants and animals that live there, or ways that humans might harm habitats.
- Record the observable characteristics of plants and animals to determine the similarities and differences between parents and their offspring.
- Determine the characteristic changes that occur during the life cycle of plants and animals by examining a variety of species, and distinguish between growth and development.
- 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.
- Describe similarities and differences in observable traits between parents and offspring.
- Describe how similar structures found in different organisms (e.g., eyes, ears, mouths) have similar functions and enable those organisms to survive in different environments.
- 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)

- Describe the relationship between the Sun and plant growth.
- Identify and categorize the basic needs of living organisms as they relate to the environment.