Milford Public Schools Curriculum

Department: SCIENCE
Course Name: Grade 1 Science

UNIT 1 - Patterns and Cycles in the Sky

This unit focuses on the motion of objects in our sky. Throughout the unit, students will explore science concepts using hands-on investigations and activities. Students will first learn how to describe motion using a reference point. Student understandings about motion will then be applied to the regular movements of the Sun and Moon. Students will then investigate what causes shadows and the changes in shadows throughout the day. Students will recognize that the daily motion and appearance of the Sun, Moon, and stars in the sky can be observed, described, and predicted.

During this unit, students visit the Coastal Audubon Center to learn about Milford's seashore and coastal ecology.

LEARNING GOALS

Enduring Understanding(s):	**Essential Question(s):**
Objects in the sky follow regular patterns of motion (rising, moving across the sky, and setting) and appearance. The amount of daylight changes throughout the year.	What are the objects in the sky and how do they seem to move? What causes day and night?

Content and Skills:

Students will know and be able to:

- Compare and contrast the relative positions of objects using words (in front of, behind, next to, inside of, above or below) and numbers (by measuring its distance from another object).
- Observe, record, and predict the sun's position at different times of day (morning, noon, afternoon or night).
- Conduct simple investigations of shadows and analyze how shadows change as the relative position of the sun (or an artificial light source) changes.
- Make observations of sunrise and sunset at different times of the year to discover patterns in the amount of daylight over the seasons. (ongoing throughout the year)
- Using observations, describe and predict the changes in the appearance and the patterns in the movement of the moon.
- Using observations, describe and predict the changes in the appearance of stars at night and during the day.
- Compare and contrast the relative amount of daylight in winter to the amount in spring or fall or summer. (ongoing throughout the year)

Standards Addressed:

CT Science Frameworks:
1.1 — The sun appears to move across the sky in the same way every day, but its path changes gradually over the seasons.
The Core Scientific Inquiry, Literacy and Numeracy Standards (A. INQ 1-10) are embedded in instruction throughout the unit

NGSS:
Disciplinary Core Ideas:
1-ESS1-1: Patterns of the motion of sun, moon, and stars in the sky can be observed, described, and predicted.
1-ESS1-2: Seasonal patterns of sunrise and sunset can be observed, described, and predicted.

Practices: Planning and Carrying out Investigations; Analyzing and Interpreting Data
Crosscutting Concepts: Patterns: Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.

UNIT 2 - Properties of Matter: Solids and Liquids

In this unit, students will explore the different types of matter that exist in our world and the observable properties of objects and materials in our world. Students will investigate differences between solids and liquids (which depend upon temperature), classify objects according to their characteristics and properties, and conduct investigations that include the creation of mixtures and separation and separation of mixtures. Students will also describe objects and materials using standard measurements.

LEARNING GOALS

Enduring Understanding(s):	**Essential Question(s):**
Materials can be classified as solids, liquids, or gases based upon their observable properties.	What is everything around us made of?

Content and Skills:

Students will know and be able to:

Use observations to identify properties (such as color, shape, size, texture, temperature) of different objects.
Compare and contrast how solids and liquids are classified based on their different properties.
Plan and conduct and investigation to classify objects and matter according to their observable properties.
Measure and compare the sizes of different solids.
Measure and compare the volume of liquid poured into different containers.
Compare and contrast the flow rates of different liquids.

Standards Addressed:

CT Science Frameworks:
2.1 – Materials can be classified as solid, liquid or gas based upon their observable properties.
The Core Scientific Inquiry, Literacy and Numeracy Standards (A. INQ 1-10) are embedded in instruction throughout the unit

UNIT 3 - Plant and Animal Structure and Function

In this unit, students first explore the difference between living and non-living things as they are introduced to the basic needs of plants and animals for survival. Investigations in this unit focus on the observable characteristics of organisms. Students will investigate, observe, compare, and categorize external structures and behaviors in various organisms, and in so doing they learn to identify properties of plants and animals and to sort and group organisms on the basis of these observable properties.

LEARNING GOALS

Enduring Understanding(s):	**Essential Question(s):**
Plants and animals have different structures and behaviors that allow them to survive.	How are plants and animals similar and different?

Content and Skills:
Students will know and be able to:

Infer from direct observation and print or electronic information that most animals and plants need water, food and air to stay alive.

Identify structures and behaviors used by mammals, birds, amphibians, reptiles, fish, and insects that move around, breathe, and obtain food and water (e.g., legs/wings/fins, gills/lungs, claws/fingers, etc.)

Sort and classify plants (or plant parts) by observable characteristics (e.g., leaf, shape/size, stem or trunk, covering, flower or fruit.)

Use senses and simple measuring tools to measure the effects of water and sunlight on plant growth.

Compare and contrast information about animals and plants found in fiction and nonfiction sources.

Standards Addressed:
CT Science Frameworks:
1.2 Living things have different structures and behaviors that allow them to meet their basic needs.
The Core Scientific Inquiry, Literacy and Numeracy Standards (A. INQ 1-10) are embedded in instruction throughout the unit

UNIT 4 - Plant and Animal Life Cycles

This unit of study includes the study of the life cycle of the painted lady butterfly. Students will observe, record, and describe in words and drawings the metamorphosis from caterpillar to chrysalis and from chrysalis to butterfly. Students will also learn about the life cycles of other animals such as frogs and humans as well as the life cycles of plants. Through these investigations, students will understand that the term "cycle" implies continuity and that life cycles exist for all living organisms.

LEARNING GOALS

Enduring Understanding(s):	**Essential Question(s):**
Plants and animals grow and change in their lives. Some organisms undergo metamorphosis during their life cycles; other organisms grow and change, but their basic form stays essentially the same.	How do living things change as they grow?

Content and Skills:

Students will know and be able to:

Explain that living things experience a life cycle that includes birth, growth, reproduction and death.

Distinguish between animals that are born alive (e.g., humans, dogs, cows) and those that hatch from eggs (e.g., chicken, sea, turtles, crocodiles).

Compare and contrast the changes in structure and behavior that occur during the life cycle of animals that undergo metamorphosis with those that do not.

Describe recorded observations to compare the metamorphosis stages of different animals and make predictions based on observed patterns

Standards Addressed:
CT Science Frameworks:

1.3 Organisms change in form and behavior as part of their life cycles.

The Core Scientific Inquiry, Literacy and Numeracy Standards (A. INQ 1-10) are embedded in instruction throughout the unit