1st Grade Unit 2 - Patterns of Change in the Night Sky

Content Area: **Science**
Course(s): **Science Grade 1**
Time Period: **MP2**
Length: **22 days**
Status: **Published**

NJSLS - Science

SCI.1-ESS1-1	Use observations of the sun, moon, and stars to describe patterns that can be predicted.
SCI.1-ESS1-2	Make observations at different times of year to relate the amount of daylight to the time of year.

Science and Engineering Practices

Planning and Carrying Out Investigations

Make observations (firsthand or from media) to collect data that can be used to make comparisons. (1-ESS1-2)

Analyzing and Interpreting Data

Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions. (1-ESS1-1)

Disciplinary Core Ideas

ESS1.A: The Universe and its Stars

Patterns of the motion of the sun, moon, and stars in the sky can be observed, described, and predicted. (1-ESS1-1)

ESS1.B: Earth and the Solar System

Seasonal patterns of sunrise and sunset can be observed, described, and predicted. (1-ESS1-2)

Crosscutting Concepts

Patterns

Patterns in the natural world can be observed, used to describe phenomena, and used as evidence. (1-ESS1-1, 1-ESS1-2)

Scientific Knowledge Assumes an Order and Consistency in Natural Systems

Science assumes natural events happen today as they happened in the past. (1-ESS1-1)

Many events are repeated. (1-ESS1-1)

Rationale and Transfer Goals

Can we predict how the sky will change over time?

In this unit of study, students observe, describe, and predict some patterns in the movement of objects in the sky. The crosscutting concept of patterns is called out as an organizing concept for the disciplinary core ideas. Students are expected to demonstrate grade-appropriate proficiency in planning and carrying out investigations and analyzing and interpreting data. Students are also expected to use these practices to demonstrate an understanding of the core ideas.

Enduring Understandings

Natural events happen today as they happened in the past and many events are repeated.

Seasonal patterns of sunrise and sunset can be observed, described, and predicted.

Essential Questions

What patterns of change can be predicted when observing the sun, moon, and stars?

What is the relationship between the amount of daylight and the time of year?

What are the predictable patterns caused by Earth's movement in the Solar System?

What is the universe, and what is Earth's place in it?

Content - What will students know?

- Science assumes that natural events happen today as they happened in the past.
- Many events are repeated.
- Patterns in the natural world can be observed, used to describe phenomena, and used as evidence.
- Patterns in the motion of the sun, moon, and stars in the sky can be observed, described, and predicted.
- Seasonal patterns of sunrise and sunset can be observed, described, and predicted.
- The sun and moon appear to rise in one part of the sky, move across the sky, and set.
- The shape of the moon appears to change over a period of time in a predictable pattern.
- Stars, other than our sun, are visible at night but not during the day.

Skills - What will students be able to do?

- Observe and use patterns in the natural world as evidence and to describe phenomena.
- Use observations (firsthand or from media) to describe patterns in the natural world in order to answer scientific questions.
- Use observations of the sun, moon, and stars to describe patterns that can be predicted. Examples of patterns could include: The sun and moon appear to rise in one part of the sky, move across the sky and set and stars other than our sun are visible at night but not during the day.

- Make observations at different times of the year to relate the amount of daylight to the time of year.
- Ask questions and use observations of the sun, moon, and stars to describe apparent patterns of change in each.

Activities - How will we teach the content and skills?

- Mystery Science Sun & Shadows Anchor Phenomenon
- Mystery Science Sun & Shadows Lesson 1
- Mystery Science Sun & Shadows Lesson 2
- Mystery Science Sun & Shadows Lesson 3
- Mystery Science Sun & Shadows Lesson 4
- Mystery Science Moon & Stars Anchor Phenomenon
- Mystery Science Moon & Stars Lesson 1
- Mystery Science Moon & Stars Lesson 2
- Mystery Science Moon & Stars Lesson 3
- Read Alouds
- Keep a moon journal

Evidence/Assessments - How will we know what students have learned?

- Mystery Science Sun & Shadows Lesson 1 Assessment
- Mystery Science Sun & Shadows Lesson 2 Assessment
- Mystery Science Sun & Shadows Lesson 3 Assessment
- Mystery Science Sun & Shadows Lesson 4 Assessment
- Mystery Science Sun & Shadows Performance Task
- Mystery Science Moon & Stars Lesson 1 Assessment
- Mystery Science Moon & Stars Lesson 2 Assessment

- Mystery Science Moon & Stars Lesson 3 Assessment
- Mystery Science Moon & Stars Performance Task
- Teacher Observation
- Student projects/models
- Individual and Group Participation
- Exit Tickets
- Tests/Quizzes
- Moon Journal
- Our Sky Performance Based Assessment
- Grade 1 Science Unit 2 Benchmark

Spiraling for Mastery

Content or Skill for this Unit	Spiral Focus from Previous Unit	Instructional Activity
Through experimentation students will observe, record, and display knowledge of the sun, moon, Earth, and stars and how they change. Predict the sun's movement. Understand phases of the moon. Understand seasons and the sun's effect on temperature and light in each season.	This is the first opportunity for students to encounter these ideas.	Read-Alouds Modeling/Think Alouds/Whole-Group Discussions Experimentation Moon Journal Multi Media Study Jams

		Our Sky PowerPoint Energy From The Sun Activity Where do the Stars go Lab Moon Phase Activity All About the Sun…Day, Night, and Shadows National Science Teaching Association Resources

21st Century Life and Careers

WRK.9.1.2.CAP.1	Make a list of different types of jobs and describe the skills associated with each job.

Career Readiness, Life Literacies, & Key Skills

TECH.9.4.2.CI.1	Demonstrate openness to new ideas and perspectives (e.g., 1.1.2.CR1a, 2.1.2.EH.1, 6.1.2.CivicsCM.2).
TECH.9.4.2.CI.2	Demonstrate originality and inventiveness in work (e.g., 1.3A.2CR1a).
TECH.9.4.2.CT.1	Gather information about an issue, such as climate change, and collaboratively brainstorm ways to solve the problem (e.g., K-2-ETS1-1, 6.3.2.GeoGI.2).
TECH.9.4.2.CT.2	Identify possible approaches and resources to execute a plan (e.g., 1.2.2.CR1b, 8.2.2.ED.3).
TECH.9.4.2.CT.3	Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
TECH.9.4.2.IML.3	Use a variety of sources including multimedia sources to find information about topics such as climate change, with guidance and support from adults (e.g., 6.3.2.GeoGI.2, 6.1.2.HistorySE.3, W.2.6, 1-LSI-2).

Interdisciplinary Connections/Companion Standards

NJSLS ELA

W.1.7 Participate in shared research and writing projects (e.g., explore a number of “how-to” books on a given topic and use them to write a sequence of instructions). (1-ESS1-1, 1-ESS1-2)

W.1.8 With guidance and support from adults, recall information from experiences or gather information from provided sources to answer a question. (1-ESS1-1, 1-ESS1-2)

NJSLS Math

MP.2 Reason abstractly and quantitatively. (1-ESS1-2)

MP.4 Model with mathematics. (1-ESS1-2)

MP.5 Use appropriate tools strategically. (1-ESS1-2)

1.OA.A.1 Use addition and subtraction within 20 to solve word problems involving situations of adding to, taking from, putting together, taking apart, and comparing, with unknowns in all positions, e.g., by using objects, drawings, and equations to represent the problem. (1-ESS1-2)

1.MD.C.4 Organize, represent, and interpret data with up to three categories; ask and answer questions about the total number of data points, how many in each category, and how many more or less are in one category than in another. (1-ESS1-2)