April Grade 1 Unit 6: Objects and Patterns in the Sky

Content Area: **Science**
Course(s):
Time Period: **April**
Length: **6-8 Weeks**
Status: **Published**

Unit Overview

In this unit, students will

- identify and describe objects in the sky;
- use evidence to describe predictable patterns of the sun, moon and stars;
- observe and model patterns of the moon's phases;
- use observations to describe characteristics of each season;
- predict patterns of change that take place from season to season;
- use observations to compare the amount of daylight from season to season;
- explore how seasons affect people and animals.

Enduring Understandings

The sun, moon and sky have predictable patterns.

The moon has phases.

These patterns are related to our seasons and the changes in each season.

Seasons affect plants, animals and people.

Essential Questions

What do the patterns in the sky tell us about the sun, moon and stars?

How do these patterns affect the seasons on earth?

How do the seasons affect life on earth?

Instructional Strategies & Learning Activities

- Field Trip to Raritan Valley Community College Planetarium

Unit 6: Objects and Patterns in the Sky

Teacher Edition

Objects and Patterns in the Sky: 3D Unit Planning

Planning resources are available for each lesson and hands-on activity in the unit "Objects and Patterns in the Sky."
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- Unit 6: Objects and Patterns in the Sky

  Teacher Edition

  Objects and Patterns in the Sky: Connecting with NGSS

  These opportunities for informal science learning provide local context and extend and enhance concepts from the unit "Objects and Patterns in the Sky."
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- Unit 6: Objects and Patterns in the Sky

  Online Assessment

  Objects and Patterns in the Sky: Unit Pretest

  The interactive Unit Pretest for "Objects and Patterns in the Sky" focuses on prerequisite knowledge. The test is composed primarily of DOK 1 items that evaluate student preparedness for the upcoming content.
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- Unit 6: Objects and Patterns in the Sky

  Teacher eBook

  Objects and Patterns in the Sky: Unit Project: Explore the Moon's Phases

  During the unit project "Explore the Moon's Phases," children will:
  - Observe the interaction of the sun, Earth, and our moon to investigate and describe pattern of the moon's phases.
  - Collect data to use as evidence to answer a question.
  - Construct an argument using evidence to support a claim.

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- Unit 6: Objects and Patterns in the Sky

Assessment Guide

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Unit 6: Objects and Patterns in the Sky

Home Letter

Objects and Patterns in the Sky: Home Letter

This is the home letter for the unit "Objects and Patterns in the Sky."
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Unit 6: Objects and Patterns in the Sky

Student Edition

Objects and Patterns in the Sky: Unit At a Glance

Unit at a Glance for "Objects and Patterns in the Sky" includes the unit table of contents, unit vocabulary words, and the vocabulary game, Show the Word. In this unit, children will:

- identify and describe objects in the sky;
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Unit 6: Objects and Patterns in the Sky

Assessment Guide

Objects and Patterns in the Sky: Unit Test

The Unit Test for "Objects and Patterns in the Sky" assesses students' ability to apply knowledge to solve problems and explain phenomena in relation to the Performance Expectations associated with the unit. In this unit, children:

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- Unit 6: Objects and Patterns in the Sky

  Teacher Edition

  Objects and Patterns in the Sky: Unit Opener

  The Unit Opener introduces the unit "Objects and Patterns in the Sky" and the unit project, Explore the Moon's Phases.
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- Unit 6: Objects and Patterns in the Sky

  Teacher Edition

  Objects and Patterns in the Sky: Integrating the NGSS* Three Dimensions of Learning

  This section details the Performance Expectations covered in the unit "Objects and Patterns in the Sky."
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- Unit 6: Objects and Patterns in the Sky

  Teacher Edition

  Objects and Patterns in the Sky: Differentiate Instruction

  This page provides differentiated support for this unit's Science & Engineering Leveled Readers, "How Can We Observe and Record Weather?" "How Does the Sky Seem to Change?" "Move It!" and "A Closer Look at Telescopes."
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- Unit 6: Objects and Patterns in the Sky

  Teacher Edition

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  Assessment Guide

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  The Unit Opener for "Objects and Patterns in the Sky" introduces the unit project, Explore the Moon's Phases. During this unit project, children will:

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Unit 6: Objects and Patterns in the Sky

Leveled Readers Teacher's Guide

Topic 7: Objects in the Sky

The Leveled Readers Teachers Guide provides teaching strategies and support (as well as reproducible English and Spanish worksheets) for the Unit 6 readers "How Does the Sky Seem to Change?" and "A Closer Look at Telescopes." On-Level and Extra-Support worksheets focus on vocabulary development, while Enrichment worksheets reinforce and enrich content.
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- Unit 6: Objects and Patterns in the Sky

  Teacher eBook

  Objects and Patterns in the Sky: Unit Performance Task: Explore Short and Long Days

  During the Performance Task "Explore Short and Long Days," children will observe the growth patterns of plants exposed to different amounts of sunlight, and collect and analyze data that explains how seasonal patterns of daylight affect plant growth.
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- Unit 6: Objects and Patterns in the Sky

  You Solve It

  Eyes on the Sky (Teacher)

  Teacher support materials are available for "Eyes on the Sky." During this activity, students will learn about the phases of the moon through modeling and prediction. First, students model the phases of the moon using a ball, stick, and flashlight. Then, students are given a particular phase of the moon and are asked to predict the remaining phases. Students can use a simulator to check the accuracy of their predictions.
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- Unit 6: Objects and Patterns in the Sky

  Leveled Readers - Blue

  On-Level: How Can We Observe and Record Weather?

  The leveled reader "How Can We Observe and Record Weather?" is designed for on-level readers and can be used to enrich key concepts from the unit "Objects and Patterns in the Sky."
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- Unit 6: Objects and Patterns in the Sky

  Unit Performance Task Worksheet

Objects and Patterns in the Sky: Unit Performance Task: Explore Short and Long Days (Editable)

This is the editable Unit Performance Task worksheet for "Explore Short and Long Days." During this task, children will observe the growth patterns of plants exposed to different amounts of sunlight, and collect and analyze data that explains how seasonal patterns of daylight affect plant growth.
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- Unit 6: Objects and Patterns in the Sky

  Leveled Readers - Red

  Extra-Support: How Can We Observe and Record Weather?

  The leveled reader "How Can We Observe and Record Weather?" is designed for below-level readers and can be used to reinforce key concepts from the unit "Objects and Patterns in the Sky."
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- Unit 6: Objects and Patterns in the Sky

  Leveled Readers - Blue

  On-Level: How Does the Sky Seem to Change?

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  Launch

- Unit 6: Objects and Patterns in the Sky

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- Unit 6: Objects and Patterns in the Sky

  Teacher Edition

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  Launch
- Unit 6: Objects and Patterns in the Sky

  Teacher eBook

  Objects and Patterns in the Sky: Unit Review

  The Unit Review assesses student understanding of key ideas and concepts from the unit "Objects and Patterns in the Sky."
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- Unit 6: Objects and Patterns in the Sky

  Leveled Readers - Green

Enrichment: Move It!

The leveled reader "Move It!" is designed for above-level readers and can be used to extend key concepts from the unit "Objects and Patterns in the Sky."
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- Unit 6: Objects and Patterns in the Sky

  Unit Project Worksheet

  Objects and Patterns in the Sky: Unit Project: Explore the Moon's Phases

  This is the Unit Project worksheet for "Explore the Moon's Phases." During this project, children will:
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  - Collect data to use as evidence to answer a question.
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- Unit 6: Objects and Patterns in the Sky

  Leveled Readers - Green

  Enrichment: A Closer Look at Telescopes

  The leveled reader "A Closer Look at Telescopes" is designed for above-level readers and can be used to extend key concepts from the unit "Objects and Patterns in the Sky."
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- Unit 6: Objects and Patterns in the Sky

  Student Edition

  Objects and Patterns in the Sky: Unit Review

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- Unit 6: Objects and Patterns in the Sky

  Unit Project Worksheet

  Objects and Patterns in the Sky: Unit Project: Explore the Moon's Phases (Editable)

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Integration of Career Exploration, Life Literacies and Key Skills

Students will establish and follow rules, routines, and responsibilities throughout the year

	Different types of jobs require different knowledge and skills.
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).
9.4.2.CT.3	Use a variety of types of thinking to solve problems (e.g., inductive, deductive).
	Digital tools and media resources provide access to vast stores of information that can be searched.
9.4.2.IML.1	Identify a simple search term to find information in a search engine or digital resource.
CRP.K-12.CRP1	Act as a responsible and contributing citizen and employee.
CRP.K-12.CRP4	Communicate clearly and effectively and with reason.
CRP.K-12.CRP5	Consider the environmental, social and economic impacts of decisions.
CRP.K-12.CRP6	Demonstrate creativity and innovation.
CRP.K-12.CRP8	Utilize critical thinking to make sense of problems and persevere in solving them.
CRP.K-12.CRP9	Model integrity, ethical leadership and effective management.
CRP.K-12.CRP12	Work productively in teams while using cultural global competence.

Technology and Design Integration

Students will interact with the lessons through the Smartboard.

TECH.8.1.2	Educational Technology: All students will use digital tools to access, manage, evaluate, and synthesize information in order to solve problems individually and collaborate and to create and communicate knowledge.
TECH.8.1.2.A.4	Demonstrate developmentally appropriate navigation skills in virtual environments (i.e., games, museums).

Interdisciplinary Connections

Students go to the STEM lab bi-monthly to create hands-on projects that align with the unit.

Students will listen to and read non-fiction texts about planets and the solar system.

LA.RI.1.1	Ask and answer questions about key details in a text.
LA.RI.1.2	Identify the main topic and retell key details of a text.
LA.RI.1.3	Describe the connection between two individuals, events, ideas, or pieces of information in a text.
LA.RI.1.4	Ask and answer questions to help determine or clarify the meaning of words and phrases in a text.

LA.RI.1.5	Know and use various text features (e.g., headings, tables of contents, glossaries, electronic menus, icons) to locate key facts or information in a text.
LA.RI.1.6	Distinguish between information provided by pictures or other illustrations and information provided by the words in a text.
LA.RI.1.8	Identify the reasons an author gives to support points in a text and explain the application of this information with prompting as needed.
LA.RI.1.9	Identify basic similarities in and differences between two texts on the same topic (e.g., in illustrations, descriptions, or procedures).
LA.RI.1.10	With prompting and support, read informational texts at grade level text complexity or above.

Differentiation

- Understand that gifted students, just like all students, come to school to learn and be challenged.
- Pre-assess your students. Find out their areas of strength as well as those areas you may need to address before students move on.
- Consider grouping gifted students together for at least part of the school day.
- Plan for differentiation. Consider pre-assessments, extension activities, and compacting the curriculum.
- Use phrases like "You've shown you don't need more practice" or "You need more practice" instead of words like "qualify" or "eligible" when referring to extension work.
- Encourage high-ability students to take on challenges. Because they're often used to getting good grades, gifted students may be risk averse.

- **Definitions of Differentiation Components**:

    - Content – the specific information that is to be taught in the lesson/unit/course of instruction.
    - Process – how the student will acquire the content information.
    - Product – how the student will demonstrate understanding of the content.
    - Learning Environment – the environment where learning is taking place including physical location and/or student grouping

Differentiation occurring in this unit:

See suggestions in the teacher manual for differentiation for struggling and advanced learners.

Modifications & Accommodations

Refer to QSAC EXCEL SMALL SPED ACCOMMOCATIONS spreadsheet in this discipline.

Modifications and Accommodations used in this unit:

IEP and 504 accommodations will be utilized.

Benchmark Assessments

Benchmark Assessments are given periodically (e.g., at the end of every quarter or as frequently as once per month) throughout a school year to establish baseline achievement data and measure progress toward a standard or set of academic standards and goals.

Schoolwide Benchmark assessments:

Aimsweb benchmarks 3X a year

Linkit Benchmarks 3X a year

DRA

Additional Benchmarks used in this unit:

Unit related tests to show growth over time.

Formative Assessments

Assessment allows both instructor and student to monitor progress towards achieving learning objectives, and can be approached in a variety of ways. **Formative assessment** refers to tools that identify misconceptions, struggles, and learning gaps along the way and assess how to close those gaps. It includes effective tools for helping to shape learning, and can even bolster students' abilities to take ownership of their learning when they understand that the goal is to improve learning, not apply final marks (Trumbull and Lash, 2013). It can include students assessing themselves, peers, or even the instructor, through writing, quizzes, conversation, and more. In short, formative assessment occurs throughout a class or course, and seeks to improve student achievement of learning objectives through approaches that can support specific student needs (Theal and Franklin, 2010, p. 151).

Formative Assessments used in this unit:

Self-Check and Unit Reviews

Summative Assessments

Summative assessments evaluate student learning, knowledge, proficiency, or success at the conclusion of an instructional period, like a unit, course, or program. Summative assessments are almost always formally graded and often heavily weighted (though they do not need to be). Summative assessment can be used to great effect in conjunction and alignment with formative assessment, and instructors can consider a variety of

ways to combine these approaches.

Summative assessments for this unit:

Self-Check and Unit Reviews

Instructional Materials

HMH Science Dimensions prgram materials

Materials listed for hands on exploration.

Standards

	Examples of patterns could include that 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.
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-ESS1-2	Make observations at different times of year to relate the amount of daylight to the time of year.