

6 Science Unit 1: Space

Content Area: **Science**
Course(s):
Time Period: **Marking Period 1**
Length: **12 Weeks**
Status: **Published**

Unit Overview

The Earth-Sun-Moon System

Patterns of the apparent motion of the sun, the moon, and stars in the sky can be described, predicted, and explained with models. Develop your own model of the Earth-sun-moon system, using it to create a film that explains the cyclic patterns of lunar phases, eclipses of the sun and moon, and the seasons.

The Solar System

Each of the eight planets in the solar system share some characteristics and patterns with the other planets, but each also has its own unique set of characteristics. Advise the "members" of the International Astronomical Union as to the best way to classify the eight planets.

The Solar System and Beyond

Learn about gravity's role in the formation of the solar system, the growth of planets in the solar system, the existence of stars beyond our solar system, and the structure of the Milky Way and other galaxies. As a consultant, help a movie director shooting a film about space to make sure the end product accurately reflects the laws of physics and space.

Standards

Science and Engineering Practices

- Analyzing and Interpreting Data
- Asking Questions and Defining Problems
- Constructing Explanations and Designing Solutions
- Developing and Using Models
- Engaging in Argument from Evidence
- Obtaining, Evaluating, and Communicating Information
- Planning and Carrying Out Investigations
- Using Mathematics and Computational Thinking

Crosscutting Concepts

- Cause and Effect
- Patterns

- Scale, Proportion, and Quantity
- Stability and Change
- Structure and Function
- Stems and System Models

6-8.MS-ESS1-1	Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.
6-8.MS-ESS1-3	Analyze and interpret data to determine scale properties of objects in the solar system.
6-8.MS-ESS1-2	Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.

Materials

Core Materials:

- TCI Space Text and Online Resources
 - The Earth-Sun-Moon System
 - The Solar System
 - The Solar System and Beyond
- Teacher Created Labs

Supplemental Materials:

- [Gizmos](#)
- [BrainPop resources](#)
- [GRC Lessons](#)
- [Nearpod Activities](#)

Technology

CS.6-8.8.1.8.DA.1	Organize and transform data collected using computational tools to make it usable for a specific purpose.
CS.6-8.8.2.8.ED.2	Identify the steps in the design process that could be used to solve a problem.
CS.6-8.8.2.8.ED.3	Develop a proposal for a solution to a real-world problem that includes a model (e.g., physical prototype, graphical/technical sketch).
TECH.9.4.8.CT.1	Evaluate diverse solutions proposed by a variety of individuals, organizations, and/or agencies to a local or global problem, such as climate change, and use critical thinking skills to predict which one(s) are likely to be effective (e.g., MS-ETS1-2).
TECH.9.4.8.IML.1	Critically curate multiple resources to assess the credibility of sources when searching for information.

Evidence of Learning/Assessment

Formative Assessment

- Teacher Observation
- Quizzes
- Exit Tickets
- Labs

Summative Assessment

- Unit Tests
- Benchmark Tests
- Alternative Assessments: Performance Tasks & Projects

Accommodations & Modifications

Special Education

Follow IEP Plan which may contain some of the following examples...

- In class/pull out support with special ed teacher
- Additional time during intervention time
- Preferred seating
- Questions read aloud
- Extended time for completing tasks
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Study Guides
- Limit number of questions
- Scribe
- Newsela leveled reading passages

504

Follow 504 Plan which may contain some of the following examples...

- In class/pull out support with special ed teacher
- Additional time during intervention time
- Preferred seating
- Questions read aloud
- Extended time for completing tasks
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Study Guides
- Limit number of questions

- Scribe

ELL

- Translation device/dictionary
- In class/pull out support with ESL teacher
- In class/pull out support with special ed teacher
- Additional time during intervention time
- Preferred seating
- Questions read aloud
- Extended time for completing tasks
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Study Guides
- Limit number of questions
- Scribe

At-risk of Failure

- Extra time during intervention
- In class/pull out support with special ed teacher
- Additional time during intervention time
- Preferred seating
- Questions read aloud
- Extended time for completing tasks
- Graphic organizers
- Vocabulary support
- Mnemonic devices
- Songs/videos to reinforce concepts
- Study Guides
- Limit number of questions
- Scribe

Gifted & Talented

- Independent projects
- STEM Projects

Interdisciplinary Connections

Connections to NJSL - English Language Arts

Reading

RI.6.1. Cite several pieces of textual evidence and make relevant connections to support analysis of what the text says explicitly as well as inferences drawn from the text.

RI.6.2. Determine two or more central ideas in a text and analyze their development over the course of the text; provide an objective summary of the text.

RI.6.7. Integrate information presented in different media or formats (e.g., visually, quantitatively) as well as in words to develop a coherent understanding of a topic or issue. RI.6.8. Trace and evaluate the argument and specific claims in a text, distinguishing claims that are supported by reasons and evidence from claims that are not.

RI.6.9. Compare, contrast and reflect on (e.g. practical knowledge, historical/cultural context, and background knowledge) one author's presentation of events with that of another (e.g., a memoir written by and a biography on the same person).

Writing

W.6.1. Write arguments to support claims with clear reasons and relevant evidence.

W.6.2. Write informative/explanatory texts to examine a topic and convey ideas, concepts, and information through the selection, organization, and analysis of relevant content.

Connections to NJSL - Mathematics

Math Practices

Make sense of problems and persevere in solving them.

Construct viable arguments and critique the reasoning of others.

Use appropriate tools strategically.

Math Content Standards

6EEC. Represent and analyze quantitative relationships between dependent and independent variables.

6RPA3 Use ratio and rate reasoning to solve real-world and mathematical problems

Career Readiness, Life Literacies, and Key Skills

TECH.9.4.8.DC.1	Analyze the resource citations in online materials for proper use.
TECH.9.4.8.TL.1	Construct a spreadsheet in order to analyze multiple data sets, identify relationships, and facilitate data-based decision-making.
TECH.9.4.8.TL.3	Select appropriate tools to organize and present information digitally.
TECH.9.4.8.IML.12	Use relevant tools to produce, publish, and deliver information supported with evidence for an authentic audience.

Career Ready Practices

- CRP2. Apply appropriate academic and technical skills.
- CRP4. Communicate clearly and effectively and with reason.
- CRP6. Demonstrate creativity and innovation.
- CRP7. Employ valid and reliable research strategies.
- CRP8. Utilize critical thinking to make sense of problems and persevere in solving them.
- CRP11. Use technology to enhance productivity.
- CRP12. Work productively in teams while using cultural global competence

