8.4 Earth in Space

Content Area: **Science**
Course(s): **Science 8**
Time Period: **Marking Period 3**
Length: **40 days**
Status: **Published**

Established Goals/Standards

SCI.MS-ESS1-2	Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.
SCI.MS-ESS1-3	Analyze and interpret data to determine scale properties of objects in the solar system.
SCI.MS-ESS1-4	Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-old history.
SCI.MS-ESS2-2	Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.
SCI.MS-ESS2-3	Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.

Technology Standards

TECH.8.1.8.D.3	Demonstrate an understanding of fair use and Creative Commons to intellectual property.
TECH.8.1.8.E.CS2	Locate, organize, analyze, evaluate, synthesize, and ethically use information from a variety of sources and media.
TECH.8.1.8.E.CS3	Evaluate and select information sources and digital tools based on the appropriateness for specific tasks.

NJ 21st Century Life and Careers/NJ Career Ready Practices

CAEP.9.2.8.B.4	Evaluate how traditional and nontraditional careers have evolved regionally, nationally, and globally.

Interdisciplinary Connections

ELA/Literacy -

SL.8.5 Integrate multimedia and visual displays into presentations to clarify information, strengthen claims and evidence, and add interest.*(MS-ESS1-1)*

Mathematics -

MP.4 Model with mathematics. *(MS-ESS1-1)*

6.RP.A.1 Understand the concept of a ratio and use ratio language to describe a ratio relationship between two quantities. *(MS-ESS1-1)*

7.RP.A.2 Recognize and represent proportional relationships between quantities. *(MS-ESS1-1)*

Essential Questions

- What is the role of gravity in the motions within galaxies and the solar system?
- What pattern in the Earth–sun–moon system can be used to explain lunar phases, eclipses of the sun and moon, and seasons?

Enduring Understanding

- Gravity is the force that holds together the solar system and Milky Way galaxy and controls orbital motions within them.

Content

- Determine if landforms were created by processes of erosion (e.g., wind, water, and/or ice) based on evidence in pictures, video, and/or maps.
- Examine Earth's surface features and identify those created on a scale of human life or on a geologic time scale.
- The Sun is the central and most massive body in our solar system, which includes eight planets and their moons, dwarf planets, asteroids, and comets.
- The Sun's gravity holds planets and other objects in the solar system in orbit, and planets' gravity holds moons in orbit.

Assessment

Summative assessment: Students who understand the concepts are able to:

• Students will develop and use a physical, graphical, or conceptual model to describe patterns in the apparent motion of the sun, moon, and stars in the sky.

- Students develop and use models to explain the relationship between the tilt of Earth's axis and seasons.

Formative Assessments

- Participation/Observations
- Questioning
- Discussion Circles
- Science Notebook
- Exit Slips
- Peer/Self Assessment
- Rubrics
- Teacher-created project-based assessment
- Turn & Talk

Alternate Assessments

- Teacher-created project-based assessment

- Alternate running records
- Discussion Circles
- Turn and Talks

Benchmark Assessments

- Teacher-created assessment

Accommodations and Modifications

Accommodations and Modifications according to student IEP, 504, I&RS goals, and/or gifted status.

Resources

- Discovery Education
- OpenSciEd