



6th Grade Astronomy Unit *Our Solar System*

Unit Overview

Students of all ages, but particularly those in middle school, have an innate curiosity about our nearest neighbors – the Sun and Moon – and about the eight planets, their moons, and asteroids, comets, and meteoroids within our solar system. Using the *Earth in Space* module by Carolina Biological Company, students clarify what they have learned from previous astronomy units about the solar system and Earth as a planet. Students will have an opportunity to perform a series of engaging hands-on activities through which they extend and enrich their knowledge.

Sun-Earth-Moon System

Students will investigate the relative sizes, motions, and positions of the Sun, Earth, and Moon. Shadows, phases, eclipses, and seasons are used as evidence of these relationships. Students investigate the Sun as an energy source and sunspots as evidence of changes in solar energy patterns.

Solar System

Students begin by considering the scale of the solar system, an exercise that helps prepare them for understanding phenomena within the system. They investigate planetary processes, such as impact cratering, wind and water erosion, landslides, volcanism, and tectonics. Students conduct investigations of gravity, orbital motion, and tides that result from gravitational forces. Throughout the unit, students are challenged to model these phenomena and to recognize that their models need to be compared with empirical data. A reading series on NASA missions to each planet tie together the lessons.

Earth's History as a Planet

Students compare asteroids, meteoroids, and comets and examine the effects of asteroid impact throughout Earth's history. Students explore fossils as evidence of life on Earth and its planetary changes and simulate the excavation and formation of fossils. Students compare the characteristics of Earth as a planet to the other planets in the solar system, and consider Earth's state of equilibrium needed to support life.

Essential/Unit Questions:

1. What are the characteristics of the sun, moons, and planets in our solar system? How are these objects similar and different? What are the characteristics and behaviors of comets, meteors, and asteroids?
2. What causes the seasons?
3. What causes the phases of the moon?
4. How do forces affect the motion of objects in our solar system?
5. What is the relationship among our solar system, stars, galaxies, and the universe?
6. How do rocks provide evidence about Earth's history?

Reference: The descriptive paragraphs about the *Earth in Space* module have been quoted and paraphrased from the Teacher's Guide and STC/MS Carolina web site.