

## U.S. Curriculum Correlations by State

### Washington, D.C.

#### Grade 5

#### Earth Science

**5.3 The Solar System consists of planets and other bodies that orbit the Sun in predictable paths.**

	Starry Night Lesson Plans <i>In order of relevance</i>
1. Describe the Earth as part of a system called the Solar System that includes the Sun (a star), planets, comets, asteroids, and many moons.	B1 B2 C1 C2 C3 D1 D2 D3
2. Recognize that the Earth is the third planet from the Sun in our Solar System.	C1 C2
3. Demonstrate how the Earth orbits the Sun in a year's time, and Earth rotates on its axis about once every 24 hours.	A1 A2 E3
4. Describe that, like all planets and stars, the Earth is approximately spherical in shape.	C1 F3 G2
5. Explain that the alternation between day and night and the apparent movement of the Sun, Moon, and stars across the sky depend on the rotation of the Earth on its axis.	A1 A2 E1 E2 E3
6. Observe how telescopes are used to magnify images of distant objects in the sky, including the Moon and the planets and to gather enough light from very dim objects to make them visible.	C1 C2 D1 D2 D3 G3 G4
7. Observe and describe that stars vary in size, but they are so far away that they look like points of light.	G1 G2
8. Observe stars and identify ones that are unusually bright, and others that have unusual colors, such as red or blue.	E1 E2 E3 G2 F1 F2

## U.S. Curriculum Correlations by State

### Washington, D.C. Continued

#### Grade 6

#### Solar System

#### 6.3 Astronomy and planetary exploration reveal the structure and scale of the Solar System.

1. Recognize that the Solar System consists of the Earth, Moon, Sun, eight generally recognized other planets that orbit the Sun and their satellites, and smaller objects, such as asteroids and comets.
2. Describe how the planets move around the Sun in elliptical orbits; and the near-coplanarity of the orbits, along with the principle of conservation of momentum, is evidence essential to our understanding of how the Solar System was originally formed.
3. Explain that the Moon is the Earth's only natural satellite, but several of the other planets have natural satellites as well. Understand Earth also has many artificial satellites and that all of these satellites, artificial and natural, are in elliptical orbits around their primaries.
4. Explain that large numbers of chunks of rock and ices (asteroids and comets), much smaller than planets, orbit the Sun.
5. Describe, as seen from Earth, how planets change their position relative to the background of stars.
6. Construct models or drawings to explain that the seasons are caused by the tilt of the Earth's axis relative to the plane of its orbit and its revolution around the Sun. Explain how this results in uneven heating of the various parts of Earth's surface that varies over the course of the year.
7. Describe that as spring turns to summer at a particular place on Earth, the days grow longer and the Sun moves higher in the sky, resulting in more intense heating. In fall and winter, the opposite occurs. Explain how this variation in heating results in the seasons.
8. Recognize and describe that the Sun as a medium-sized star located near the edge of a disk-shaped galaxy of stars called the Milky Way, and that the Universe contains many billions of galaxies, and each galaxy contains many billions of stars.
9. Recognize that the Sun-Earth distance is such that it takes about eight minutes for light from the Sun to reach Earth. Know that the next nearest star is many thousands of times farther from Earth, and its light takes about four years to reach Earth.
10. Explain that gravity is a force of attraction that every mass in the Universe exerts on every other mass, and everything on or near Earth is pulled toward Earth's center by a gravitational force.
11. Describe that the Sun's gravitational attraction holds Earth and the other planets in their orbits, just as the planets' gravitational attraction keeps their moons in orbit around them.

#### Starry Night Lesson Plans

*In order of relevance*

A1-A5   B1-B2   C1-C3   D1-D3  
E1-E3   F1-F3   G1-G4

C2   F3   B1

C3   H1   C2

D1   D2   D3   F3

C2   E3   E1   E2

A2   E3

A2

G1   G2   G3   G4

G1   B2

F3   C2

F3   C2