

Wright City Science Curriculum

6th Grade

Grade	6
Unit of Study	Earth's Place in the Universe
Length of Unit	8 weeks
Sample Essential Questions	Sample Corresponding Big Ideas
How do the Earth, Moon, and Sun move, and how do these motions affect what we see from Earth?	The Earth, Moon, and Sun move in predictable ways, with the Moon orbiting Earth and Earth orbiting the Sun.
Why does the Moon appear to change shape over the course of a month?	The Moon appears to change shape over a month due to its position relative to the Earth and Sun.
How do the positions of the Earth, Moon, and Sun cause solar and lunar eclipses?	Solar and lunar eclipses happen when the Earth, Moon, and Sun align in specific ways.
How does the tilt and orbit of Earth affect sunlight angles, intensity, and the changing seasons?	Earth's tilt and orbit cause differences in sunlight angles and intensity, creating seasons and variations in climate.
How does gravity shape the motion of objects in space?	Gravity keeps planets, moons, and other objects in orbit.
How do differences in size, mass, and distance affect how objects in the solar system move and interact?	Objects in the solar system vary greatly in size, mass, and distance, which affects their motion and interactions.

Missouri Learning Standards

Priority Standards

6-8.ESS1.A.1 Develop and use a model of the Earth-sun-moon system to explain the cyclic patterns of lunar phases and eclipses of the sun and moon.

6-8.ESS1.A.2 Develop and use a model of the Earth-sun system to explain the cyclical pattern of seasons, which includes the Earth's tilt and directional angle of sunlights on different areas of Earth across the year.

6-8.ESS1.A.3 Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.

6-8.ESS1.B.1 Analyze and interpret data to determine scale properties of objects in the solar system.

Unit 1 Sequence			
MLS	Topic(s)	Learning Targets	Academic Vocabulary
6-8.ESS1.A.1	Moon Phases and Eclipses	I can describe the positions and motions of the Earth, Moon, and Sun, including how the Moon orbits the Earth and how the Earth orbits the Sun.	orbit rotate/rotation revolve/revolution axis moon phase new moon crescent quarter moon gibbous full moon waxing waning solar eclipse lunar eclipse
		I can explain why the Moon appears to change shape over a month.	
		I can identify and describe the sequence of lunar phases, such as new moon, crescent, quarter, gibbous, and full moon.	
		I can explain how the alignment of the Earth, Moon, and Sun causes solar and lunar eclipses.	
		I can create a model to show the positions and motions of the Earth, Moon, and Sun.	
6-8.ESS1.A.2	Earth/Sun System and Seasons	I can describe the position and motion of the Earth in relation to the Sun.	orbit revolve/revolution rotate/rotation axis equator pole
		I can describe the tilt of the Earth's axis and how it stays pointed in the same direction as Earth orbits the Sun.	

		I can explain how this tilt affects the angle and intensity of sunlight on different parts of Earth throughout the year.	hemisphere sunlight angle sunlight intensity season
		I can explain why different areas of Earth experience different seasons at different times of the year.	
		I can identify which hemisphere experiences summer, winter, spring, or fall based on Earth's tilt and orbit.	
		I can create a model that shows Earth's tilt, orbit, and sunlight angles throughout the year.	
		I can use my model to explain the pattern of seasons and the changes in sunlight intensity.	
6-8.ESS1.A.3	Role of Gravity in the Solar System and Galaxies	I can explain that gravity is a force that pulls objects toward one another.	gravity force mass weight orbit revolve/revolution rotate/rotation centripetal force trajectory planet galaxy
		I can describe how gravity acts between objects in space, including planets, moons, and stars.	
		I can explain how gravity keeps planets in orbit around the Sun and moons in orbit around planets.	
		I can create a model to show how gravity affects the motion of objects in the solar system and galaxies.	
		I can use my model to explain patterns of motion, such as orbits and the structure of galaxies.	
6-8.ESS1.B.1	Scale Properties of Objects in the Solar System	I can explain that objects in the solar system vary greatly in size, mass, and distance from one another.	size mass distance planet moon sun scale
		I can describe the concept of scale and why models are used to represent large distances and sizes in space.	
		I can gather or interpret data about the size, mass, and distance of planets, moons, asteroids, and the Sun.	
		I can compare objects to identify patterns in their properties, such as which are larger, smaller, closer, or farther away.	
		I can calculate or estimate relative sizes and distances of objects in the solar system using data.	
		I can use ratios, graphs, or scaled models to represent these relationships accurately.	

MLS	Learning Activities	
6-8.ESS1.A.1	Moon Phases Notes	Must Do ▾
6-8.ESS1.A.1	Moon Phases Simulation	Must Do ▾
6-8.ESS1.A.1	Moon Phase Coloring Activity	Can Do ▾
6-8.ESS1.A.1	Eclipse Activity	Can Do ▾
6-8.ESS1.A.2	Seasons Notes	Must Do ▾
6-8.ESS1.A.2	Light Intensity Observer DIY Activity	Can Do ▾
6-8.ESS1.A.3	Exploring Gravity Virtual Lab	Must Do ▾
6-8.ESS1.A.3	Gravity and Orbits Virtual Lab	Can Do ▾
6-8.ESS1.B.1	Solar System Scroll	Can Do ▾
		Option L... ▾

Assessments		
MLS	Description or Location	Rubric/Location
6-8.ESS1.A.1	Moon Phases and Eclipses	Pear Assessment
6-8.ESS1.A.2	Earth/Sun System and Seasons	Pear Assessment
6-8.ESS1.A.3	Role of Gravity in the Solar System and Galaxies	Pear Assessment
6-8.ESS1.B.1	Scale Properties of Objects in the Solar System	Pear Assessment

Additional Resources
Causes of Seasons Generation Genius Video