



Fourth Grade Curriculum Pacing Guide

Crosscutting Concepts: Patterns; Scale, Proportion, and Quantity; Systems & System Models Stars, Planets, and Moon

Estimated Time: 7 weeks

Anchoring Phenomenon	Standard	Instructional Segments	Disciplinary Core Ideas	Science and Engineering Practices	Instructional Notes
Where is the edge of the Solar System? SpaceX CRS-12 Launches to the ISS	S4E1a, b, c, d S4E2a, b, c S4P1c	Stars, Planets, and Moon	From A Framework for K-12 Science Education : <i>By the end of grade 5</i> ESS1.A: THE UNIVERSE AND ITS STARS <ul style="list-style-type: none"> The sun is a star that appears larger and brighter than other stars because it is closer. Stars range greatly in their size and distance from Earth. ESS1.B: EARTH AND THE SOLAR SYSTEM <ul style="list-style-type: none"> Some objects in the solar system can be seen with the naked eye. Planets in the night sky change positions and are not always visible from Earth as they orbit the sun. The orbits of Earth around the sun and of the moon around Earth, together with the rotation of Earth about an axis between its North and South poles, cause observable patterns. These include day and night; daily and seasonal changes in the length and direction of shadows; phases of the moon; and different positions of the sun, moon, and stars at different times of the day, month, and year. The patterns of an object’s motion in 	<ul style="list-style-type: none"> Asking questions Planning and carrying out investigations Developing and using models Constructing explanations Engaging in argument from evidence Obtaining, evaluating, and communicating information 	Background: By the end of this unit, students are using the following language in their speaking and writing during EXPLAIN or ELABORATE. <ul style="list-style-type: none"> Relative size Moon phases Crescent Quarter moon Gibbous Full moon New moon Orbit Tilt Composition Satellite International Space Station Planets Stars Light Refraction

			<p>various situations can be observed and measured; when past motion exhibits a regular pattern, future motion can be predicted from it. (Boundary: Technical terms, such as magnitude, velocity, momentum, and vector quantity, are not introduced at this level, but the concept that some quantities need both size and direction to be described is developed.)</p> <p>PS4.C: INFORMATION TECHNOLOGIES AND INSTRUMENTATION</p> <ul style="list-style-type: none"> • Lenses can be used to make eyeglasses, telescopes, or microscopes in order to extend what can be seen. The design of such instruments is based on understanding how the path of light bends at the surface of a lens. • At whatever stage, communicating with peers about proposed solutions is an important part of the design process, and shared ideas can lead to improved designs. <p>PS4.B: ELECTROMAGNETIC RADIATION</p> <ul style="list-style-type: none"> • Because lenses bend light beams, they can be used, singly or in combination, to provide magnified images of objects too small or too far away to be seen with the naked eye. 		
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This instructional segment will connect to the flow of energy in water and its relation to weather patterns and forecasting.