

Unit	Indicators	Major Topics/Concepts
Earth’s Atmosphere and the Water Cycle	4.E.2A.1 4.E.2A.2 *4.S.1A.2 *4.S.1A.8	Obtain and communicate information about some of the gases in the atmosphere (including oxygen, nitrogen, and water vapor) to develop models that exemplify the composition of Earth’s atmosphere where weather takes place. Develop and use models to explain how water changes as it moves between the atmosphere and Earth’s surface during each phase of the water cycle (including evaporation, condensation, precipitation, and runoff).
Weather and Climate	4.E.2B.1 4.E.2B.2 4.E.2B.3 *4.S.1A.4 *4.S.1A.6 *4.S.1A.8	Analyze and interpret data from observations, measurements, and weather maps to describe patterns in local weather conditions (including temperature, precipitation, wind speed/direction, relative humidity, and cloud types), and predict changes in weather over time. Obtain and communicate information about severe weather phenomena (including thunderstorms, hurricanes, and tornadoes) to explain steps humans can take to reduce the impact of severe weather phenomena. Construct explanations about regional climate differences using data from the long-term weather conditions of the region.
Weather and Climate Unit Benchmark**		
Light	4.P.4A.1 4.P.4A.2 4.P.4A.3 4.P.4A.4 4.P.4A.5 *4.S.1A.2 *4.S.1A.3 *4.S.1A.4 *4.S.1A.7 *4.S.1A.8	Construct scientific arguments to support the claim that white light is made up of different colors. Analyze and interpret data from observations and measurements to describe how the apparent brightness of light can vary as a result of the distance and intensity of the light source. Obtain and communicate information to explain how the visibility of an object is related to light. Develop and use models to describe how light travels and interacts when it strikes an object (including reflection, refraction, and absorption) using evidence from observations. Plan and conduct scientific investigations to explain how light behaves when it strikes transparent, translucent, and opaque materials.
Sound	4.P.4B.1 4.P.4B.2 4.P.4B.3	Plan and conduct scientific investigations to test how different variables affect the properties of sound (including pitch and volume).

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	*4.S.1A.3 *4.S.1A.4 *4.S.1B.1	Analyze and interpret data from observations and measurements to describe how changes in vibration affect the pitch and volume of sound. Define problems related to the communication of information over a distance, and design devices or solutions that use sound to solve the problem.
Light and Sound Unit Benchmark**		
Stars and the Solar System	4.E.3A.1 4.E.3A.2 4.E.3A.3 *4.S.1A.2 *4.S.1A.6 *4.S.1A.8	Develop and use models of Earth's solar system to exemplify the location and order of the planets as they orbit the Sun and the main composition (rock or gas) of the planets. Obtain and communicate information to describe how constellations (including Ursa Major, Ursa Minor, and Orion) appear to move from Earth's perspective throughout the seasons. Construct scientific arguments to support claims about the importance of astronomy in navigation and exploration (including the use of telescopes, astrolabes, compasses, and sextants).
Earth, Sun, and Moon Patterns	4.E.3B.1 4.E.3B.2 4.E.3B.3 4.E.3B.4 *4.S.1A.2 *4.S.1A.4 *4.S.1A.6	Analyze and interpret data from observations to describe patterns in the (1) location, (2) movement, and (3) appearance of the Moon throughout the year. Construct explanations of how day and night result from Earth's rotation on its axis. Construct explanations of how the Sun appears to move throughout the day using observations of shadows. Develop and use models to describe the factors (including tilt, revolution, and angle of sunlight) that result in Earth's seasonal changes.
Stars and the Solar System Unit Benchmark**		
Plant and Animal Classification, Growth, and Characteristics	4.L.5A.1 4.L.5A.2 4.L.5A.3 4.L.5A.4 *4.S.1A.2 *4.S.1A.4 *4.S.1A.7 *4.S.1A.8	Obtain and communicate information about the characteristics of plants and animals to develop models which classify plants as flowering or nonflowering and animals as vertebrate or invertebrate. Analyze and interpret data from observations and measurements to compare the stages of growth and development of different seed plants. Develop and use models to compare the stages of growth and development in various animals. Construct scientific arguments to support claims that some characteristics of organisms are inherited from parents, and some are influenced by the environment.
Adaptations	4.L.5B.1 4.L.5B.2 4.L.5B.3 *4.S.1A.2 *4.S.1A.6	Develop and use models to compare how humans and other animals use their senses and sensory organs to detect and respond to signals from the environment. Construct explanations for how structural adaptations (such as the types of roots, stems, or leaves; color of flowers; or seed dispersal) allow plants to survive and reproduce. Construct explanations for how structural adaptations (such as methods for defense, locomotion, obtaining

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		resources, or camouflage) allow animals to survive in the environment.
Characteristics and Growth of Organisms Unit Benchmark** OR Districts may opt for a Final Comprehensive Benchmark*** that covers content in all four units.		

*Please note that the indicators of Standard 4.S.1 address science and engineering practices that are not intended for teaching, learning, or assessment in isolation. As stated by the SC Academic Standards Support document, this standard describes “how students should learn and demonstrate knowledge of the content outlined in other standards.” For this reason, the pacing guide identifies key indicators that should be incorporated into instruction for each unit. The list provided for each unit, however, is not exhaustive. Any and all of the science and engineering practices outlined by Standard 4.S.1 could be incorporated into instructional methods or assessment items in each unit of study.

**There are four non-cumulative unit benchmarks which can be given in any sequence.

*****The final comprehensive benchmark tests all indicators and is an optional assessment that replaces the last unit assessment.**