

Starry Night Middle School Next Generation Science Standards (NGSS)

Standard	Description	Corresponding Lesson Plans
5-ESS1-1	Support an argument that differences in the apparent brightness of the sun compared to other stars is due to their relative distances from the Earth.	G2 - The Stars
5-ESS1-2	Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.	A1 - Day and Night Cycle A2 - The Year and Seasons
MS-ESS1-1	Develop and use a model of the Earth-sun-moon system to describe the cyclic patterns of lunar phases, eclipses of the sun and moon, and seasons.	A2 - The Year and Seasons A3 - The Moon A4 - Phases of the Moon A5 - Eclipses
MS-ESS1-2	Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.	A1 - Day and Night Cycle B1 - Overview of the Solar System H1 - The Milky Way Galaxy
MS-ESS1-3	Analyze and interpret data to determine scale properties of objects in the solar system.	B2 - Size and Scale of the Solar System

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Standard	Description	Corresponding Lesson Plans
HS-ESS1-1	Develop a model based on evidence to illustrate the life span of the sun and the role of nuclear fusion in the sun's core to release energy in the form of radiation.	F1 - The Sun as a Source of Energy
HS-ESS1-2	Construct an explanation of the Big Bang theory based on astronomical evidence of light spectra, motion of distant galaxies, and composition of matter in the universe.	H3 - The Origin and Evolution of the Universe
HS-ESS1-3	Communicate scientific ideas about the way stars, over their life cycle, produce elements.	G2 - The Stars
HS-ESS1-4	Use mathematical or computational representations to predict the motion of orbiting objects in the solar system.	C2 - Motion of the Planets

Starry Night Elementary Next Generation Science Standards (NGSS)

Standard	Description	Corresponding Lesson Plans	
		K-2	3-4
K-ESS2-1	Use and share observations of local weather conditions to describe patterns over time.	1 - Day and Night	2 - The Seasons
1-ESS1-1	Use observations of the sun, moon, and stars to describe patterns that can be predicted.	1 - Day and Night 3 - Motion in the Sky 4 - The Moon	1 - The Solar System 2 - The Seasons 3 - The Constellations
1-ESS1-2	Make observations at different times of year to relate the amount of daylight to the time of year.	1 - Day and Night 3 - Motion in the Sky 4 - The Moon	1 - The Solar System 2 - The Seasons
3-ESS2-1	Represent data in tables and graphical displays to describe typical weather conditions expected during a particular season.	1 - Day and Night	2 - The Seasons
3-ESS2-2	Obtain and combine information to describe climates in different regions of the world.	1 - Day and Night	2 - The Seasons
5-ESS1-1	Support an argument that the apparent brightness of the sun and stars is due to their relative distances from the Earth.	1 - Day and Night 2 - How Big Is It? 3 - Motion in the Sky	1 - The Solar System 3 - The Constellations
5-ESS1-2	Represent data in graphical displays to reveal patterns of daily changes in length and direction of shadows, day and night, and the seasonal appearance of some stars in the night sky.	1 - Day and Night 3 - Motion in the Sky 4 - The Moon	1 - The Solar System 2 - The Seasons 3 - The Constellations

Layered Earth Geology Middle School Next Generation Science Standards (NGSS)

Standard	Description	Corresponding Lesson Plans
5-ESS2-1	Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact.	A1 - Earth as a System A2 - Earth's Layered Structure
MS-ESS1-4	Construct a scientific explanation based on evidence from rock strata for how the geologic time scale is used to organize Earth's 4.6-billion-year-old history.	G1 - Age of the Earth G2 - The Geologic Timescale
MS-ESS2-2	Construct an explanation based on evidence for how geoscience processes have changed Earth's surface at varying time and spatial scales.	D1 - Shaping Earth's Surface D2 - Mass Movement D3 - Water and Ice Landforms D4 - Wind Landforms
MS-ESS2-3	Analyze and interpret data on the distribution of fossils and rocks, continental shapes, and seafloor structures to provide evidence of the past plate motions.	B1 - Continental Drift B2 - Seafloor Spreading and Paleomagnetism
MS-ESS3-1	Construct a scientific explanation based on evidence for how the uneven distributions of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.	B3 - The Theory of Plate Tectonics
MS-ESS3-2	Analyze and interpret data on natural hazards to forecast future catastrophic events and inform the development of technologies to mitigate their effects.	E5 - Living with Earthquakes F3 - Living with Volcanoes

Layered Earth Geology High School Next Generation Science Standards (NGSS)

Standard	Description	Corresponding Lesson Plans
HS-ESS1-5	Evaluate evidence of the past and current movements of continental and oceanic crust and the theory of plate tectonics to explain the ages of crustal rocks.	B1 - Continental Drift B2 - Seafloor Spreading and Paleomagnetism B3 - The Theory of Plate Tectonics
HS-ESS1-6	Apply scientific reasoning and evidence from ancient Earth materials, meteorites, and other planetary surfaces to construct an account of Earth's formation and early history.	G1 - Age of the Earth G2 - The Geologic Timescale
HS-ESS2-1	Develop a model to illustrate how Earth's internal and surface processes operate at different spatial and temporal scales to form continental and ocean-floor features.	B2 - Seafloor Spreading and Paleomagnetism D1 - Shaping Earth's Surface
HS-ESS2-2	Analyze geoscience data to make the claim that one change to Earth's surface can create feedbacks that cause changes to other Earth systems.	D1 - Shaping Earth's Surface D2 - Mass Movement D3 - Water and Ice Landforms D4 - Wind Landforms
HS-ESS2-3	Develop a model based on evidence of Earth's interior to describe the cycling of matter by thermal convection.	B3 - The Theory of Plate Tectonics
HS-ESS2-5	Plan and conduct an investigation of the properties of water and its effects on Earth materials and surface processes.	D3 - Water and Ice Landforms
HS-ESS2-6	Develop a quantitative model to describe the cycling of carbon among the hydrosphere, atmosphere, geosphere, and biosphere.	A1 - Earth as a System A2 - Earth's Layered Structure
HS-ESS2-7	Construct an argument based on evidence about the simultaneous coevolution of Earth's systems and life on Earth.	G1 - Age of the Earth G2 - The Geologic Timescale G3 - Catastrophic Events and Mass Extinctions G4 - Earth's Future

Layered Earth Meteorology Middle School Next Generation Science Standards (NGSS)

Standard	Description	Corresponding Lesson Plans
MS-ESS2-4	Develop a model to describe the cycling of water through Earth's systems driven by energy from the sun and the force of gravity.	D1 - The Water Cycle
MS-ESS2-5	Collect data to provide evidence for how the motions and complex interactions of air masses results in changes in weather conditions	D2 - Weather Patterns - Pressure Systems
MS-ESS2-6	Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.	E2 - Factors Affecting Climate
MS-ESS3-3	Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.	F4 - Natural Causes of Climate Change I - Solar Output
MS-ESS3-5	Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.	F4 - Natural Causes of Climate Change I - Solar Output

Layered Earth Meteorology High School Next Generation Science Standards (NGSS)

Standard	Description	Corresponding Lesson Plans
HS-ESS2-4	Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.	E2 - Factors Affecting Climate
HS-ESS3-5	Analyze geoscience data and the results from global climate models to make an evidence-based forecast of the current rate of global or regional climate change and associated future impacts to Earth systems.	F1 - Paleoclimates - Climates of the Past F2 - Recent Climate Change I - The Last Ice Age and Sea Level Changes F3 - Recent Climate Change II - Past Climates on Earth F4 - Natural Causes of Climate Change I - Solar Output
HS-ESS3-6	Use a computational representation to illustrate the relationships among Earth systems and how those relationship are being modified due to human activity.	F4 - Natural Causes of Climate Change I - Solar Output