NGSS and TEKS Alignment by The Science Duo
Earth and Space Science Standards

Middle School Science

Alignment of NGSS Earth and Space Science Standards (MS-ESS) to Texas Essential Knowledge and Skills Standards (6-8th Grade)

Quick Guide Version (with product links)

Earth and Space Science

MS-ESS1 Earth's Place in the Universe		
NGSS Standard	TEKS	Bundle Links in The Science Duo Shop
MS-ESS1-1	6.9A, 6.9B, 7.9B	6.9A, 6.9B, 7.9B
MS-ESS1-2	6.7A, 6.8A, 8.9B	6.7A, 6.8A, 8.9B
MS-ESS1-3	7.9A, 8.9A, 8.9B	7.9A, 8.9A(stars), 8.9A(H-R), 8.9B
MS-ESS1-4	6.10B, 6.10C, 7.9C, 7.10A, 7.10B, 8.9C	6.10B, 6.10C, 7.9C, 7.10A, 7.10B, 8.9C

MS-ESS2 Earth's Systems		
NGSS Standard	TEKS	Bundle Links in The Science Duo Shop
MS-ESS2-1	6.10B, 6.10C, 7.10A, 7.10B, 8.11A, 8.11C	6.10B, 6.10C, 7.10A, 7.10B, 8.11A, 8.11C
MS-ESS2-2	6.10B, 6.10C, 7.10A, 7.10B, 8.11A, 8.11C	6.10B, 6.10C, 7.10A, 7.10B, 8.11A, 8.11C
MS-ESS2-3	6.10B, 6.10C, 7.10A, 7.10B, 8.11A, 8.11C	6.10B, 6.10C, 7.10A, 7.10B, 8.11A, 8.11C
MS-ESS2-4	6.9A, 6.10A, 8.10A, 8.10B, 8.10C, 8.11C	6.9A, 6.10A, 8.10A, 8.10B, 8.10C, 8.11C
MS-ESS2-5	6.9A, 6.10A, 8.10A, 8.10B, 8.10C	6.9A, 6.10A, 8.10A, 8.10B, 8.10C
MS-ESS2-6	6.9A, 8.10A, 8.10B, 8.10C	6.9A, 8.10A, 8.10B, 8.10C

MS-ESS3 Earth and Human Activity		
NGSS Standard	TEKS	Bundle Links in The Science Duo Shop
MS-ESS3-1	6.11A, 6.11B, 7.11A, 7.11B, 8.11A, 8.11B, 8.11C, 8.12A	6.11A, 6.11B, 7.11A, 7.11B, 8.11A, 8.11B, 8.11C, 8.12A
MS-ESS3-2	6.11A, 6.11B, 7.11A, 7.11B, 8.11A, 8.12A	6.11A, 6.11B, 7.11A, 7.11B, 8.11A, 8.12A
MS-ESS3-3	6.11A, 6.11B, 7.11A, 7.11B, 8.11B, 8.12A, 8.12B	6.11A, 6.11B, 7.11A, 7.11B, 8.11B, 8.12A, 8.12B
MS-ESS3-4	6.11A, 6.11B, 7.11A, 7.11B, 8.11A, 8.11B, 8.12A, 8.12B	6.11A, 6.11B, 7.11A, 7.11B, 8.11A, 8.11B, 8.12A, 8.12B
MS-ESS3-5	6.11A, 6.11B, 7.11A, 7.11B, 8.11A, 8.11B, 8.11C, 8.12A, 8.12B	6.11A, 6.11B, 7.11A, 7.11B, 8.11A, 8.11B, 8.11C, 8.12A, 8.12B

Extended Version with Standards (no links)

MS-ESS1 Earth’s Place in the Universe

NGSS Standard	TEKS
MS-ESS1-1 Develop and use a model of the Earth-sun-moon system to describe the cyclical patterns of lunar phases, eclipses of the sun and moon, and seasons.	6.9A model and illustrate how the tilted Earth revolves around the Sun, causing changes in seasons.
	6.9B describe and predict how the positions of the Earth, Sun, and Moon cause daily, spring, and neap cycles of ocean tides due to gravitational forces.
	7.9B describe how gravity governs motion within Earth's solar system.
MS-ESS1-2 Develop and use a model to describe the role of gravity in the motions within galaxies and the solar system.	6.7A identify and explain how forces act on objects, including gravity, friction, magnetism, applied forces, and normal forces, using real-world applications.
	6.8A compare and contrast gravitational, elastic, and chemical potential energies with kinetic energy.
	8.9B categorize galaxies as spiral, elliptical, and irregular and locate Earth's solar system within the Milky Way galaxy.
MS-ESS1-3 Analyze and interpret data to determine scale properties of objects in the solar system.	7.9A describe the physical properties, locations, and movements of the Sun, planets, moons, meteors, asteroids, comets, Kuiper belt, and Oort cloud.
	8.9A describe the life cycle of stars and compare and classify stars using the Hertzsprung-Russell diagram.
	8.9B categorize galaxies as spiral, elliptical, and irregular and locate Earth's solar system within the Milky Way galaxy.
MS-ESS1-4 Construct a scientific explanation based on evidence from rock strata for how the geologic time scale us used to organize Earth’s 4.6-billion-year-old history.	6.10B model and describe the layers of Earth, including the inner core, outer core, mantle, and crust.
	6.10C describe how metamorphic, igneous, and sedimentary rocks form and change through geologic processes in the rock cycle.
	7.9C analyze the characteristics of Earth that allow life to exist such as the proximity of the Sun, presence of water, and composition of the atmosphere.
	7.10A describe the evidence that supports that Earth has changed over time, including fossil evidence, plate tectonics, and superposition.
	7.10B describe how plate tectonics causes ocean basin formation, earthquakes, mountain building, and volcanic eruptions, including supervolcanoes and hot spots.
	8.9C research and analyze scientific data used as evidence to develop scientific theories that describe the origin of the universe.

MS-ESS2 Earth’s Systems

NGSS Standard	TEKS
MS-ESS2-1 Develop a model to describe the cycling of Earth’s materials and the flow of energy that drives this process.	6.10B model and describe the layers of Earth, including the inner core, outer core, mantle, and crust.
	6.10C describe how metamorphic, igneous, and sedimentary rocks form and change through geologic processes in the rock cycle.
	7.10A describe the evidence that supports that Earth has changed over time, including fossil evidence, plate tectonics, and superposition.
	7.10B describe how plate tectonics causes ocean basin formation, earthquakes, mountain building, and volcanic eruptions, including supervolcanoes and hot spots.
	8.11A use scientific evidence to describe how natural events, including volcanic eruptions, meteor impacts, abrupt changes in ocean currents, and the release and absorption of greenhouse gases influence climate.
	8.11C describe the carbon cycle.
MS-ESS2-2 Construct an explanation based on evidence for how geoscience processes have changed Earth’s surface at varying time and spatial scales.	6.10B model and describe the layers of Earth, including the inner core, outer core, mantle, and crust.
	6.10C describe how metamorphic, igneous, and sedimentary rocks form and change through geologic processes in the rock cycle.
	7.10A describe the evidence that supports that Earth has changed over time, including fossil evidence, plate tectonics, and superposition.
	7.10B describe how plate tectonics causes ocean basin formation, earthquakes, mountain building, and volcanic eruptions, including supervolcanoes and hot spots.
	8.11A use scientific evidence to describe how natural events, including volcanic eruptions, meteor impacts, abrupt changes in ocean currents, and the release and absorption of greenhouse gases influence climate.
	8.11C describe the carbon cycle.

NGSS Standard	TEKS
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.	6.10B model and describe the layers of Earth, including the inner core, outer core, mantle, and crust.
	6.10C describe how metamorphic, igneous, and sedimentary rocks form and change through geologic processes in the rock cycle.
	7.10A describe the evidence that supports that Earth has changed over time, including fossil evidence, plate tectonics, and superposition.
	7.10B describe how plate tectonics causes ocean basin formation, earthquakes, mountain building, and volcanic eruptions, including supervolcanoes and hot spots.
	8.11A use scientific evidence to describe how natural events, including volcanic eruptions, meteor impacts, abrupt changes in ocean currents, and the release and absorption of greenhouse gases influence climate.
	8.11C describe the carbon cycle.
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.	6.9A model and illustrate how the tilted Earth revolves around the Sun, causing changes in seasons.
	6.10A differentiate between the biosphere, hydrosphere, atmosphere, and geosphere and identify components of each system.
	8.10A describe how energy from the Sun, hydrosphere, and atmosphere interact and influence weather and climate.
	8.10B identify global patterns of atmospheric movement and how they influence local weather.
	8.10C describe the interactions between ocean currents and air masses that produce tropical cyclones, including typhoons and hurricanes.
	8.11C describe the carbon cycle.
MS-ESS2-5 Collect data to provide evidence for how the motions and complex interactions of air masses result in changes in weather conditions.	6.9A model and illustrate how the tilted Earth revolves around the Sun, causing changes in seasons.
	6.10A differentiate between the biosphere, hydrosphere, atmosphere, and geosphere and identify components of each system.
	8.10A describe how energy from the Sun, hydrosphere, and atmosphere interact and influence weather and climate.
	8.10B identify global patterns of atmospheric movement and how they influence local weather.
	8.10C describe the interactions between ocean currents and air masses that produce tropical cyclones, including typhoons and hurricanes.

NGSS Standard	TEKS
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.	6.9A model and illustrate how the tilted Earth revolves around the Sun, causing changes in seasons.
	8.10A describe how energy from the Sun, hydrosphere, and atmosphere interact and influence weather and climate.
	8.10B identify global patterns of atmospheric movement and how they influence local weather.
	8.10C describe the interactions between ocean currents and air masses that produce tropical cyclones, including typhoons and hurricanes.

MS-ESS3 Earth and Human Activity

NGSS Standard	TEKS
MS-ESS3-1 Construct a scientific explanation based on evidence for how the uneven distribution of Earth's mineral, energy, and groundwater resources are the result of past and current geoscience processes.	6.11A research and describe why resource management is important in reducing global energy poverty, malnutrition, and air and water pollution.
	6.11B explain how conservation, increased efficiency, and technology can help manage air, water, soil, and energy resources.
	7.11A analyze the beneficial and harmful influences of human activity on groundwater and surface water in a watershed.
	7.11B describe human dependence and influence on ocean systems and explain how human activities impact these systems.
	8.11A use scientific evidence to describe how natural events, including volcanic eruptions, meteor impacts, abrupt changes in ocean currents, and the release and absorption of greenhouse gases influence climate.
	8.11B use scientific evidence to describe how human activities, including the release of greenhouse gases, deforestation, and urbanization, can influence climate.
	8.11C describe the carbon cycle.
	8.12A explain how disruptions such as population changes, natural disasters, and human intervention impact the transfer of energy in food webs in ecosystems.

NGSS Standard	TEKS
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.	6.11A research and describe why resource management is important in reducing global energy poverty, malnutrition, and air and water pollution.
	6.11B explain how conservation, increased efficiency, and technology can help manage air, water, soil, and energy resources.
	7.11A analyze the beneficial and harmful influences of human activity on groundwater and surface water in a watershed.
	7.11B describe human dependence and influence on ocean systems and explain how human activities impact these systems.
	8.11A use scientific evidence to describe how natural events, including volcanic eruptions, meteor impacts, abrupt changes in ocean currents, and the release and absorption of greenhouse gases influence climate.
	8.12A explain how disruptions such as population changes, natural disasters, and human intervention impact the transfer of energy in food webs in ecosystems.
MS-ESS3-3 Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.	6.11A research and describe why resource management is important in reducing global energy poverty, malnutrition, and air and water pollution.
	6.11B explain how conservation, increased efficiency, and technology can help manage air, water, soil, and energy resources.
	7.11A analyze the beneficial and harmful influences of human activity on groundwater and surface water in a watershed.
	7.11B describe human dependence and influence on ocean systems and explain how human activities impact these systems.
	8.11B use scientific evidence to describe how human activities, including the release of greenhouse gases, deforestation, and urbanization, can influence climate.
	8.12A explain how disruptions such as population changes, natural disasters, and human intervention impact the transfer of energy in food webs in ecosystems.
	8.12B describe how primary and secondary ecological succession affect populations and species diversity after ecosystems are disrupted by natural events or human activity.

NGSS Standard	TEKS
MS-ESS3-4 Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.	6.11A research and describe why resource management is important in reducing global energy poverty, malnutrition, and air and water pollution.
	6.11B explain how conservation, increased efficiency, and technology can help manage air, water, soil, and energy resources.
	7.11A analyze the beneficial and harmful influences of human activity on groundwater and surface water in a watershed.
	7.11B describe human dependence and influence on ocean systems and explain how human activities impact these systems.
	8.11A use scientific evidence to describe how natural events, including volcanic eruptions, meteor impacts, abrupt changes in ocean currents, and the release and absorption of greenhouse gases influence climate.
	8.11B use scientific evidence to describe how human activities, including the release of greenhouse gases, deforestation, and urbanization, can influence climate.
	8.12A explain how disruptions such as population changes, natural disasters, and human intervention impact the transfer of energy in food webs in ecosystems.
	8.12B describe how primary and secondary ecological succession affect populations and species diversity after ecosystems are disrupted by natural events or human activity.
MS-ESS3-5 Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.	6.11A research and describe why resource management is important in reducing global energy poverty, malnutrition, and air and water pollution.
	6.11B explain how conservation, increased efficiency, and technology can help manage air, water, soil, and energy resources.
	7.11A analyze the beneficial and harmful influences of human activity on groundwater and surface water in a watershed.
	7.11B describe human dependence and influence on ocean systems and explain how human activities impact these systems.
	8.11A use scientific evidence to describe how natural events, including volcanic eruptions, meteor impacts, abrupt changes in ocean currents, and the release and absorption of greenhouse gases influence climate.
	8.11B use scientific evidence to describe how human activities, including the release of greenhouse gases, deforestation, and urbanization, can influence climate.
	8.11C describe the carbon cycle.
	8.12A explain how disruptions such as population changes, natural disasters, and human intervention impact the transfer of energy in food webs in ecosystems.
	8.12B describe how primary and secondary ecological succession affect populations and species diversity after ecosystems are disrupted by natural events or human activity.