

# Disciplinary Core Ideas

Learning Progressions K-5 | Earth and Space Science



DCI	DCI Description	Kindergarten	1 <sup>st</sup> Grade	2 <sup>nd</sup> Grade	3 <sup>rd</sup> Grade	4 <sup>th</sup> Grade	5 <sup>th</sup> Grade
ESS1 – Earth’s Place in the Universe							
ESS1.A	The Universe and Its Stars		Patterns of the motion of the sun, moon, and stars in the sky can be observed, described, and predicted. (1-ESS1-1)				The sun is a star that appears large <sup>3r</sup> and brighter than other stars because it is closer. Stars range greatly in their distance from Earth. (5-ESS1-1)
ESS1.B	Earth and the Solar System		Seasonal patterns of sunrise and sunset can be observed, described, and predicted. (1ESS1-2)				The orbits of Earth around the sun and 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 changes in the length and direction of shadows; and different positions of the sun, moon, and stars at different times of the day, month, and year. (5-ESS1-2)
ESS1.C	The History of Planet Earth			Some events happen very quickly; others occur very slowly, over a time period much longer than one can observe. (2-ESS1-1)		Local, regional, and global patterns of rock formations reveal changes over time due to earth forces, such as earthquakes. The presence and location of certain fossil types indicate the order in which rock layers were formed. (4-ESS1-1)	
ESS2 – Earth’s Systems							
ESS2.A	Earth Materials and Systems			Wind and water can change the		Rainfall helps to shape the land and affects the types	Earth’s major systems are the geosphere (solid and

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				shape of land. (2-ESS-1)		of living things found in a region. Water, ice, wind, living organisms, and gravity break rocks, soils, and sediments into smaller particles and move them around. (4-ESS2-1)	molten rock, soil, and sediments), the hydrosphere (water and ice), the atmosphere (air), and the biosphere (living things, including humans). These systems interact in multiple ways to affect Earth's surface materials and processes. The ocean supports a variety of ecosystems and organisms, shapes landforms, and influences climate. Winds and clouds in the atmosphere interact with the landforms to determine patterns of weather. (5-ESS2-1)
ESS2.B	Plate Tectonics and Large-Scale System Interactions			Maps show where things are located. One can map the shapes and kinds of land and water in any area. (2-ESS2-2)		The locations of mountain ranges, deep ocean trenches, ocean floor structures, earthquakes, and volcanoes occur in patterns. Most earthquakes and volcanoes occur in bands that are often along the boundaries between continents and oceans. Major mountain chains form inside continents or near their edges. Maps can help locate the different land and water features areas of Earth. (4-ESS2-2)	
ESS2.C	The Roles of Water in Earth's Surface			Water is found in the ocean, rivers, lakes, and ponds.			Nearly all of Earth's available water is in the ocean. Most fresh water is

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	Processes			Water exists as solid ice and in liquid form. (2-ESS2-3)			in glaciers or underground; only a tiny fraction is in streams, lakes, wetlands, and the atmosphere. (5-ESS2-2)
ESS2.D	Weather and Climate	Weather is the combination of sunlight, wind, snow or rain, and temperature in a particular region at a particular time. People measure these conditions to describe and record the weather and to notice patterns over time. (K-ESS2-1)			Scientists record patterns of the weather across different times and areas so that they can make predictions about what kind of weather might happen next. (3-ESS2-1)  Climate describes a range of an area's typical weather conditions and the extent to which those conditions vary over years. (3-ESS2-2)		
ESS2.E	Biogeology	Plants and animals can change their environment. (K-ESS2-2)				Living things affect the physical characteristics of their regions. (4-ESS2-1)	
ESS3 – Earth and Human Activity							
ESS3.A	Natural Resources	Living things need water, air, and resources from the land, and they live in places that have the things they need. Humans use natural					

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		resources for everything they do. (K-ESS3-1)					
ESS3.B	Natural Hazards	Some kinds of severe weather are more likely than others in a given region. Weather scientists forecast severe weather so that the communities can prepare for and respond to these events. (K-ESS3-2)			A variety of natural hazards result from natural processes. Humans cannot eliminate natural hazards but can take steps to reduce their impacts. (3-ESS3-1) (4-ESS3-2.)	A variety of natural hazards result from natural processes. Humans cannot eliminate natural hazards but can take steps to reduce their impacts. (3-ESS3-1) (4-ESS3-2.)	
ESS3.C	Human Impacts on Earth Systems	Things that people do to live comfortably can affect the world around them. But they can make choices that reduce their impacts on the land, water, air, and other living things. (K-ESS3-3) (secondary to K-ESS2-2)					Human activities in agriculture, industry, and everyday life have had major effects on the land, vegetation, streams, ocean, air, and even outer space. But individuals and communities are doing things to help protect Earth's resources and environments. (5-ESS3-1)
ESS3.D	Global Climate Change						