



**Lab-Aids Correlations for
2023 NORTH CAROLINA
STANDARD COURSE OF STUDY K-12 Science, Earth and Environmental Science**
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This document is intended to show how the Lab-Aids *EDC Earth Science* materials align with the [2023 North Carolina Standard Course of Study K-12 Science, Earth and Environmental Science](#) standards.

ABOUT OUR PROGRAMS

Lab-Aids has based its home offices and operations in Ronkonkoma, NY, since 1963. We publish over 200 kits and core curriculum programs to support science teaching and learning, grades 6-12. All core curricula support an inquiry-driven pedagogy, with support for literacy skill development and with assessment programs that clearly show what students know and are able to do as a result of program use. All programs have extensive support for technology and feature comprehensive teacher support. For more information, please visit www.lab-aids.com and navigate to the program of interest.

ABOUT EDC EARTH SCIENCE

EDC Earth Science – Revised (EDC-R), Copyright 2021, is a full year, activity-driven high school earth science course developed by the Education Development Center (EDC), with support from the National Science Foundation. *EDC Earth Science* is designed around the belief that students are capable of rigorous and in-depth explorations in science when given adequate support, structure, and motivation for learning.

SCOPE AND SEQUENCE

EDC Earth Science		
Unit Title	Core Science Content	Suggested Time
1 Hydrosphere: Water in Earth's Systems	Water cycle; surface water, groundwater, assessing and protecting water supplies, Global patterns of ocean circulation; how wind and density differences drive ocean currents; global conveyor belt; El Niño	3-4 weeks
2 Atmosphere and Climate	Climate and weather; influence of latitude, atmospheric circulation, proximity to ocean, elevation, land features, and prevailing winds on regional climate, energy balance, albedo effect, greenhouse effect, carbon cycle, positive and negative feedback loops; Paleoclimatology, climate proxies, climate change in Earth's past, Milankovitch cycles, tectonic processes that influence climate, human impact on climate	5-8 weeks
3 Earth's Place in the Universe	Life and death of stars, solar nebular condensation hypothesis, Kepler's Laws, Earth's interior structure and composition, internal sources of heat energy, seismic waves, introduction to plate tectonic theory, driving forces of plate movement	3-4 weeks
4 Plate Tectonics	Transform-fault boundaries, earthquakes, physical and computer models Subduction zones, volcanoes, formation of igneous rocks, field-measurement technologies for volcano monitoring seafloor spreading, paleomagnetism, plate tectonics summary, landforms associated with plate boundaries	5-7 weeks
5 The Rock Cycle	Erosion and deposition, deltaic processes, formation of sedimentary rock, The nature of rocks and minerals, rock cycle	3-6 weeks
6 Earth Resources	The geologic processes by which mineral ores are formed; mineral extraction and processing, fossil fuel formation, petroleum resources and exploration technologies	3-6 weeks

Strand: Earth's Place in the Universe		
Standard	Objectives	EDC: Earth Science Unit and Chapter pages
<i>ESS.EES.1 Explain how Earth's position relative to the sun influences conditions on Earth.</i>	ESS.EES.1.1 Use models to illustrate the formation of the solar system.	<i>Unit 3: Earth's Place in the Universe Ch 8: 203-207</i>
	ESS.EES.1.2 Use mathematics and computational thinking to analyze Earth's motion through space.	<i>Unit 3: Earth's Place in the Universe Ch 8: 208-209, Resource Supplement 8.2</i>
	ESS.EES.1.3 Use models to illustrate how the sun produces energy.	<i>Unit 3: Earth's Place in the Universe Ch 8: 200-201, Resource Supplement 8.0</i>
	ESS.EES.1.4 Construct an explanation to infer how incoming solar radiation interacts with Earth systems to support life.	<i>Unit 2: Atmosphere and Climate Ch 5: 116-123, 133-135</i>
<i>ESS.EES.2 Analyze how the geosphere is shaped by plate tectonics and the rock cycle.</i>	ESS.EES.2.1 Use models to explain how mantle convection powers plate tectonics.	<i>Unit 3: Earth's Place in the Universe Ch 9: 241-244</i> <i>Unit 4: Plate Tectonics Ch 12: 342-352</i>
	ESS.EES.2.2 Analyze and interpret data to predict locations of volcanoes and earthquakes based on plate boundaries.	<i>Unit 4: Plate Tectonics Ch 10: 260-265; Ch 11: 293-297, 317-322; Ch 12: 336-345, 350-352</i>
	ESS.EES.2.3 Use models to explain how plate tectonics influence topography.	<i>Unit 4: Plate Tectonics Ch 10: 255-269; Ch 11: 293-303, 317-322; Ch 12: 333-348, 350-352</i>
	ESS.EES.2.4 Carry out investigations to explain how the rock cycle and rates of weathering, erosion, and soil formation influence Earth's systems.	<i>Unit 2: Atmosphere and Climate Ch 5: 124-132</i> <i>Unit 5: The Rock Cycle Ch 13: 358-380; Ch 14: 425-426, RS 14.1</i>
	ESS.EES.2.5 Analyze and interpret data to explain how volcanic activity influences changes in Earth's atmosphere, geosphere, biosphere, and hydrosphere.	<i>Unit 2: Atmosphere and Climate Ch 5: 124-132</i> <i>Unit 5: The Rock Cycle Ch 14: 425-426, RS 14.1</i>

Strand: Earth's Systems		
Standard	Objectives	EDC: Earth Science Unit and Chapter pages
ESS.EES.3 Analyze how the interactions between the hydrosphere and atmosphere transfer energy and influence climate.	ESS.EES.3.1 Carry out investigations to explain the properties of water.	<i>Unit 1: Hydrosphere: Water in Earth's Systems Ch 2: 27-28</i>
	ESS.EES.3.2 Use models to explain how water is an agent of energy transfer.	<i>Unit 1: Hydrosphere: Water in Earth's Systems Ch 3: 58-74 Unit 2: Atmosphere and Climate Ch 4: 99-103</i>
	ESS.EES.3.3 Analyze and interpret data to explain how major greenhouse gases influence climate.	<i>Unit 2: Atmosphere and Climate Ch 5: 115-120, 133-135; Ch 6: 141-145, 160-178</i>
	ESS.EES.3.4 Analyze and interpret data to attribute how atmospheric composition and surface conditions influence heat retention in the troposphere.	<i>Unit 2: Atmosphere and Climate Ch 5: 115-124, 133-135; Ch 6: 141-145, 160-178</i>
	ESS.EES.3.5 Construct an explanation to conclude that heat exchange between the ocean and atmosphere results in local, regional, global weather phenomena, and climate patterns.	<i>Unit 2: Atmosphere and Climate Ch 4: 102-103</i>
ESS.EES.4 Analyze the connections between the biosphere and other Earth systems (geosphere, hydrosphere, atmosphere).	ESS.EES.4.1 Use models to explain how abiotic/biotic interactions shape various ecosystems.	<i>Unit 2: Atmosphere and Climate Ch 4: 92-96; Ch 5: 124-135; Ch 6: 160-162</i>
	ESS.EES.4.2 Analyze and interpret data to explain how carbon cycling influences various ecosystems.	<i>Unit 2: Atmosphere and Climate Ch 5: 124-135</i>
	ESS.EES.4.3 Analyze and interpret data to explain past climate trends.	<i>Unit 2: Atmosphere and Climate Ch 6: 141-164</i>
	ESS.EES.4.4 Construct an explanation to predict how potential future changes in abiotic factors could impact biodiversity and species distribution.	<i>Unit 2: Atmosphere and Climate Ch 6: 141-145, 160-163, 165-175, 178-179</i>
	ESS.EES.4.5 Obtain, evaluate and communicate information to explain how biodiversity impacts ecosystem resilience.	<i>Unit 2: Atmosphere and Climate Ch 4: 92-94 (indirectly addressed)</i>

Strand: Earth and Human Activity		
Standard	Objectives	EDC: Earth Science Unit and Chapter pages
ESS.EES.5 Evaluate how human consumption patterns impact Earth's systems.	ESS.EES.5.1 Analyze and interpret data to explain the impacts of land use on Earth's systems.	<i>Unit 1: Hydrosphere: Water in Earth's Systems</i> Ch 2: 38-40 <i>Unit 2: Atmosphere and Climate</i> Ch 5: 120-123 <i>Unit 5: The Rock Cycle</i> Ch 13: 359-362, 364-367, 387-390 <i>Unit 6: Earth Resources</i> Ch 15: 447-453; Ch 16: 482-484
	ESS.EES.5.2 Analyze and interpret data to evaluate how human use of ground and surface waters impacts water quality and availability in river basins, wetlands, estuaries, and aquifers.	<i>Unit 1: Hydrosphere: Water in Earth's Systems</i> Ch 2: 14-23, 38-40 <i>Unit 5: The Rock Cycle</i> Ch 13: 387-390 <i>Unit 6: Earth Resources</i> Ch 15: 447-453
	ESS.EES.5.3 Construct an argument to evaluate the ways that human activities influence atmospheric composition.	<i>Unit 2: Atmosphere and Climate</i> Ch 5: 124-132; Ch 6: 175-178
	ESS.EES.5.4 Construct an argument to evaluate the benefits and trade-offs of using non-renewable or renewable energy sources for electricity production and transportation fuels.	<i>Unit 2: Atmosphere and Climate</i> Ch 5: 127-132 (indirectly addressed)
	ESS.EES.5.5 Construct an argument to evaluate potential solutions that will ensure sustainable consumption of Earth's resources.	<i>Unit 1: Hydrosphere: Water in Earth's Systems</i> Ch 2: 14-24, 36-41 <i>Unit 6: Earth Resources</i> Ch 15: 447-451; Ch 16: 461-467 (indirectly addressed)
	ESS.EES.5.6 Construct an argument to evaluate a range of solutions to mitigate impacts of human activities on Earth's systems.	<i>Unit 1: Hydrosphere: Water in Earth's Systems</i> Ch 2: 14-24, 36-41 <i>Unit 2: Atmosphere and Climate</i> Ch 5: 127-132, 447-451; Ch 6: 127-135

Strand: Earth and Human Activity		
Standard	Objectives	<i>EDC: Earth Science Unit and Chapter pages</i>
		<i>Unit 6: Earth Resources Ch 15: 447-451; Ch 16: 461-467 (indirectly addressed)</i>
ESS.EES.6 Analyze how Earth's systems impact humans and the biosphere.	ESS.EES.6.1 Analyze and interpret data to infer how use of natural resources impacts ecosystems and human populations, including human health.	<i>Unit 1: Hydrosphere: Water in Earth's Systems Ch 2: 14-23, 38-40 Unit 2: Atmosphere and Climate Ch 5: 111-113, 127-132 Unit 5: The Rock Cycle Ch 13: 387-390 Unit 6: Earth Resources Ch 15: 447-453</i>
	ESS.EES.6.2 Construct an argument to infer how some natural hazards (such as flooding and wildfire) are increasing in frequency and intensity due to human activities.	<i>Unit 2: Atmosphere and Climate Ch 5: 111-113 Unit 5: The Rock Cycle Ch 13: 359-361, 387-390 (indirectly addressed)</i>
	ESS.EES.6.3 Construct an argument to explain how natural hazards and other environmental problems may impact some human populations more than others.	<i>Unit 1: Hydrosphere: Water in Earth's Systems Ch 2: 14-23, 38-40 Unit 2: Atmosphere and Climate Ch 5: 111-113 Unit 4: Plate Tectonics Ch 10: 250-254, 260-265; Ch 11: 289-297, 317-322; Ch 12: 350-352 Unit 5: The Rock Cycle Ch 13: 359-361, 387-390 Unit 6: Earth Resources Ch 15: 447-451; Ch 16: 461-467</i>