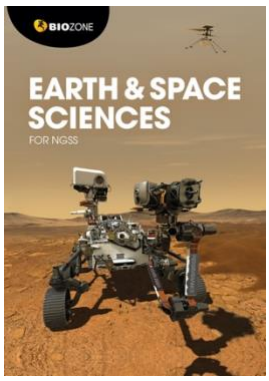

Alignment of BIOZONE's Biology for NGSS (3rd edition)
to North Carolina Earth and Environmental Standards (July 2023)

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Note 1: Correlation locations are activity numbers (not page numbers).
Note 2: Correlations do not usually include reference to the science practices chapter.
Note 3: Correlations to the standard statement include background material to address the specific objectives.

North Carolina Earth and Environmental Standards

Source: https://drive.google.com/drive/folders/1iFGnI4uqvt180DJKQ2m5tkdQLiQjoq9k

TITLE: Earth and Space Sciences for NGSS (3ed)

Correlation locations are activity numbers (not page numbers)**.**

Strand: Earth's Place in the Universe

Standard	Objectives	Correlation location
ESS.EES.1 *Explain how Earth's position relative to the Sun influences conditions on Earth.*		Activities 11 - 26, 27 - 42, 87 - 89
	ESS.EES.1.1 Use models to illustrate the formation of the solar system.	Activities 29, 30
	ESS.EES.1.2 Use mathematics and computational thinking to analyze Earth's motion through space.	Activities 30, 31, 32, 33, 34, 37, 38, 39
	ESS.EES.1.3 Use models to illustrate how the sun produces energy.	Activities 18, 19, 21, 22, 24
	ESS.EES.1.4 Construct an explanation to infer how incoming solar radiation interacts with Earth systems to support life.	Activities 88, 89,

Strand: Earth's Systems		
Standard	**Objectives**	**Correlation location**
ESS.EES.2 *Analyze how the geosphere is shaped by plate tectonics and the rock cycle.*		Activities 68 - 75, 76 - 86
	ESS.EES.2.1 Use models to explain how mantle convection powers plate tectonics.	Activities 69, 70, 71, 74
	ESS.EES.2.2 Analyze and interpret data to predict locations of volcanoes and earthquakes based on plate boundaries.	Activities 71, 72, 75
	ESS.EES.2.3 Use models to explain how plate tectonics influence topography.	Activities 72
	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.	Activities 80, 82, 83
	ESS.EES.2.5 Analyze and interpret data to explain how volcanic activity influences changes in Earth's atmosphere, geosphere, biosphere, and hydrosphere.	Activity 64
ESS.EES.3 *Analyze how the interactions between the hydrosphere and atmosphere transfer energy and influence climate.*		Activities 59, 60, 64, 65, 77, 78, 80 - 83, 87 - 102, 150, 156
	ESS.EES.3.1 Carry out investigations to explain the properties of water.	Activity 77
	ESS.EES.3.2 Use models to explain how water is an agent of energy transfer.	Activities 80 - 83
	ESS.EES.3.3 Analyze and interpret data to explain how major greenhouse gases influence climate.	Activities 93, 94, 100, 101, 150, 156
	ESS.EES.3.4 Analyze and interpret data to attribute how atmospheric composition and surface conditions influence heat retention in the troposphere.	Activities 64, 65, 91
	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.	Activities 88, 91
ESS.EES.4 *Analyze the connections between the biosphere and other Earth systems (geosphere, hydrosphere, atmosphere).*		Activities 87 - 102, 133, 147 - 156

	ESS.EES.4.1 Use models to explain how abiotic/biotic interactions shape various ecosystems.	Activities 92, 93
	ESS.EES.4.2 Analyze and interpret data to explain how carbon cycling influences various ecosystems.	Activities 98, 99, 102
	ESS.EES.4.3 Analyze and interpret data to explain past climate trends.	Activities 93, 100, 101, 150, 151, 156
	ESS.EES.4.4 Construct an explanation to predict how potential future changes in abiotic factors could impact biodiversity and species distribution.	Activities 146, 152, 153,
	ESS.EES.4.5 Obtain, evaluate and communicate information to explain how biodiversity impacts ecosystem resilience.	Activity 133

Strand: Earth and Human Activity		
Standard	**Objectives**	**Correlation location**
ESS.EES.5 *Evaluate how human consumption patterns impact Earth's systems.*		Activities 87 - 102, 103 - 121, 132 - 146
	ESS.EES.5.1 Analyze and interpret data to explain the impacts of land use on Earth's systems.	Activities 110, 113, 114, 115, 118, 142
	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.	Activities 107, 108,
	ESS.EES.5.3 Construct an argument to evaluate the ways that human activities influence atmospheric composition.	Activities 93, 98, 99, 100, 101, 102
	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.	Activities 108, 111
	ESS.EES.5.5 Construct an argument to evaluate potential solutions that will ensure sustainable consumption of Earth's resources.	Activities 119, 136, 137, 140, 143
	ESS.EES.5.6 Construct an argument to evaluate a range of solutions to mitigate impacts of human activities on Earth's systems.	Activities 101, 112, 114, 116, 117, 144, 146, 154
ESS.EES.6 *Analyze how Earth's systems impact humans and the biosphere.*		Activities 103 - 121, 122 -131, 132 - 146
	ESS.EES.6.1 Analyze and interpret data to infer how use of natural resources impacts ecosystems and human populations, including human health.	Activities 105, 107, 108, 110, 113, 115
	ESS.EES.6.2 Construct an argument to infer how some natural hazards (such as flooding and wildfires) are increasing in frequency and intensity due to human activities.	Activities 126, 128, 129, 131
	ESS.EES.6.3 Construct an argument to explain how natural hazards and other environmental problems may impact some human populations more than others.	Activities 124, 125