

## North Carolina Science Standards

### ***Biology***

LS.Bio.5 Understand ecosystem dynamics, functioning, and resilience.

- LS.Bio.5.1 Use mathematics and computational thinking to explain how interactions between organisms (predator/prey, competition) affect carrying capacity and maintain stability in an ecosystem.

LS.Bio.10 Analyze evolutionary relationships among organisms.

- LS.Bio.10.1 Construct explanations to illustrate how varying environmental conditions may result in: changes in the number of individuals of a species, the emergence of new species over time, or the extinction of other species.

### ***Environmental Science***

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.
- ESS.EES.4.4 Construct an explanation to predict how potential changes in abiotic factors could impact biodiversity and species distribution.
- ESS.EES.4.5 Obtain, evaluate, and communicate information to explain how biodiversity impacts ecosystem resilience.

### ***Grade 6***

LS.6.2 Understand the flow of energy through ecosystems and the responses of populations to the biotic and abiotic factors in their environment.

- LS.6.2.2 Analyze and interpret data to predict how the abiotic factors (such as temperature, water, sunlight, and soil quality) and biotic factors affect the ability of organisms to grow and survive in different biomes (freshwater, marine, temperate forest, rainforest, grassland, desert, taiga, tundra).

### ***Grade 8***

LS.8.2 Understand how organisms interact with and respond to the biotic and abiotic factors in their environment.

- LS.8.2.1 Carry out investigations to explain how changing biotic and abiotic factors such as food, water, shelter, and space affect populations in an ecosystem.
- LS.8.2.2 Construct an explanation to summarize the relationships among producers, consumers, and decomposers including the positive and negative consequences of such interactions including coexistence and cooperation, competition (predator/prey), parasitism, and mutualism.

## **Science & Engineering Practices**

- Developing and using models
- Analyzing and interpreting data
- Using mathematics and computational thinking
- Engaging in argument from evidence
- Obtaining, evaluating and communicating information