North Carolina Science

Grade 5

Matter and its Interactions

1 **Understand the interactions of matter and energy and the changes that occur.** PS.5.1

1 Carry out investigations to compare the weight of objects before and after an interaction. PS.5.1.1

2 Carry out investigations to explain whether the mixing of two or more substances results in new substances. PS.5.1.2

3 Carry out investigations to compare how heating and cooling affect some materials and how this relates to their purpose and practical applications. PS.5.1.3

Motion and Stability- Forces and Interactions

2 **Understand force, motion, and the relationship between them.** PS.5.2

1 Carry out investigations to explain how factors such as gravity, friction, and change in mass affect the motion of objects. PS.5.2.1

2 Use mathematics and computational thinking to infer the motion of an object (including position, direction, and speed). PS.5.2.2

From Molecules to Organisms- Structures and Processes

1 **Understand how structures and systems of the human body perform functions necessary for life.** LS.5.1

1 Use models to recognize the organizational structure of humans as a multicellular organism (cell, tissue, organ, system, organism). LS.5.1.1

2 Use models to compare the major systems of the human body (digestive, respiratory, circulatory, muscular, skeletal, nervous) as it relates to their functions necessary for life. LS.5.1.2

Ecosystems- Interactions, Energy, and Dynamics

2 **Understand the interdependence of plants and animals within their ecosystem.** LS.5.2

1 Engage in argument from evidence to compare the characteristics of several common ecosystems (including estuaries and salt marshes, oceans, lakes and ponds, rivers and streams, forests, and grasslands) in terms of their ability to support a variety of populations. LS.5.2.1

2 Use models to classify organisms within an ecosystem according to the function they serve: producers, consumers, or decomposers . LS.5.2.2

3 Use models to infer the effects that may result from the interconnected relationships of plants and animals to their ecosystem. LS.5.2.3

Heredity- Inheritance and Variation of Traits	3 **Understand some characteristics of an organism are inherited and other characteristics are acquired.** LS.5.3 1 Ask questions to compare instincts and learned behaviors. LS.5.3.1 2 Ask questions to compare inherited and acquired traits. LS.5.3.2
Earth's Systems	1 **Understand how Earth systems (hydrosphere and atmosphere) impact patterns of weather and climate.** ESS.5.1 1 Analyze and interpret data to compare daily and seasonal changes in weather conditions (including wind speed and direction, precipitation, and temperature) and patterns. ESS.5.1.1 2 Analyze and interpret weather data to explain current and upcoming weather conditions (including severe weather such as hurricanes and tornadoes) in a given location. ESS.5.1.2 3 Construct an explanation to summarize the ocean's influences on weather and climate in North Carolina. ESS.5.1.3 4 Use models to explain how the sun's energy drives the processes of the water cycle (including evaporation, transpiration, condensation, precipitation). ESS.5.1.4