**Earth Keeper Curriculum (K-2) (3-5) (5-8)**

\* Keeping science journals- We heavily use nature journals. Routine journaling etches details into our brains and allows children to explore the connection between nature and art.

\* Exposing children to the natural world allows them to see and experience with their whole selves the needs of living organisms around us.

\* Exploring the web of life together and not only learning the needs of a variety of different plants and animals but experiencing the interconnectedness we all share.

\* We work in a cooperative work environment

\* Using magnifying glasses to explore our world on a smaller scale

\* Using the Sun as a compass allows children to recognize our planets position in our solar system.

\* We explore nature cycles through orienteering with nature’s tools.

\* We encourage children to love their school’s wild/natural spaces and foster a sense of personal responsibility to their environment.

\* Animal life cycles - We use tracking as scientific inquiry. Encouraging students to ask questions instills a routine of intense inquiry. Who? What? When? Where? Why? How? We allow curiosity to lead the way and guides our learning process.

\* Weather patterns- Our classroom is outdoors! We get to experience weather patterns and teach how to read the signs on the wind. We experience the seasons through the bounty of fall and the crisp air of winter.

\* Water testing

\* We experience matter that changes when snow falls and then melts

\* Understand how plants survive in their environment- Plants are nature's grocery store and medicine cabinet. Activities, like plant ID, gathering wild edibles, cooking up a wild feast, and instilling a gratitude for plants is all part of our core curriculum.

\* Studying what plants thrive in what particular area

\* Using Field ID guides to identify edible, hazardous and medicinal plants.

\* Interdependence of plants and animals with their ecosystems

\* Earth Systems: comparing Earth's land features and recording our findings in our nature journal.

**NC Essential Standards in Science (K-2) (3-5) (5-8)**

1.L.2

Summarize the needs of living organisms for energy and growth.

1.L.2.1

Summarize the basic needs of a variety of different plants (including air, water, nutrients, and light) for energy and growth.

1.L.2.2

Summarize the basic needs of a variety of different animals (including air, water, and food) for energy and growth.

1.E.1

Recognize the features and patterns of the earth/moon/sun system as observed from Earth.

1.E.1.1

Recognize differences in the features of the day and night sky and apparent movement of objects across the sky as observed from Earth.

1.E.1.2

Recognize patterns of observable changes in the Moon’s appearance from day to day

1.L.1

Understand characteristics of various environments and behaviors of humans that enable

plants and animals to survive.

1.L.1.1

Recognize that plants and animals need air, water, light (plants only), space, food and shelter

and that these may be found in their environment.

1.L.1.2

Give examples of how the needs of different plants and animals can be

met by their environments in North Carolina or different places throughout the world.

1.L.1.3

Summarize ways that humans protect their environment and/or improve conditions for the growth of the plants and animals that live there (e.g., reuse or recycle products to avoid littering)

2.P.2

Understand properties of solids and liquids and the changes they undergo.

2.P.2.1

Give examples of matter that change from a solid to a liquid and from a liquid to a solid by heating and cooling.

2.P.2.2

Compare the amount (volume and weight) of water in a container before and after freezing.

2.P.2.3

Compare what happens to water left in an open container over time as to water left in a closed container

2.E.1.1

Summarize how energy from the sun serves as a source of light that warms the land, air and water.

2.E.1.2

Summarize weather conditions using qualitative and quantitative measures to describe

2.E.1.3

Compare weather patterns that occur over time and relate observable patterns to time of day and time of year.

2.E.1.4

Recognize the tools that scientists use for observing, recording, and predicting weather changes from day to day and during the seasons

2.L.1

Understand animal life cycles.

2.L.1.1

Summarize the life cycle of animals

3.E.1

Recognize the major components and patterns observed in the earth/moon/sun system

3.E.1.1

Recognize that the earth is part of a system called the solar system that includes the sun (a star), planets, and many moons and the earth is the third planet from the sun in our solar system.

3.E.1.2

Recognize that changes in the length and direction of an object’s shadow indicate the apparent changing position of the Sun during the day although the patterns of the stars in the sky, to include the Sun, stay the same

3.L.2

Understand how plants survive in their environments.

3.L.2.1

Remember the function of the following structures as it relates to the survival of plants in their environments

3.L.2.2

Explain how environmental conditions determine how well plants survive and grow.

3.L.2.3

Summarize the distinct stages of the life cycle of seed

plants.

3.L.2.4

Explain how the basic properties (texture and capacity to hold water) and components (sand, clay and humus) of soil determine the ability of soil to support the growth and survival

of many plants.

4.E.1

Explain the causes of day and night and phases of the moon.

4.E.1.1

Explain the cause of day and night based on the rotation of Earth on its axis.

4.E.1.2

Explain the monthly changes in the appearance of the moon, based on the moon’s orbit around the Earth

4.L.1

Understand the effects of environmental changes, adaptations and behaviors that enable animals (including humans) to survive in changing habitats.

4.L.1.1

Give examples of changes in an organism’s environment that

are beneficial to it and some that are harmful.

4.L.1.2

Explain how animals meet their needs by using behaviors in response to information received from the environment.

4.L1.3

Explain how humans can adapt their behavior to live in changing habitats (e.g., recycling wastes, establishing rain gardens, planting trees and shrubs to prevent flooding and erosion

4.L.1.4

Explain how differences among animals of the same population sometimes give individuals an advantage in surviving and reproducing in changing habitats.

4.L.2.1

Classify substances as food or non food items based on their ability to provide energy and materials for survival, growth and repair of the body.

5.P.2

Understand the interactions of matter and energy and the changes that occur.

5.P.2.1

Explain how the sun’s energy impacts the processes of the water cycle (including

evaporation, transpiration, condensation, precipitation and runoff).

5.E.1

Understand weather patterns and phenomena, making connections to the weather in a particular place and time.

5.E.1.1

Compare daily and seasonal changes in weather conditions (including wind speed and direction, precipitation, and temperature) and patterns.

5.E.1.2

Predict upcoming weather events from weather data collected through observation and measurements

5.L.2

Understand the interdependence of plants and animals with their ecosystem.

5.L.2.1

Compare the characteristics of several common ecosystems,

including estuaries and salt marshes, oceans, lakes and ponds, forests, and grasslands

5.L.2.2

Classify the organisms within an ecosystem according to the function they serve: producers, consumers, or decomposers (biotic factors).

5.L.2.3

Infer the effects that may result from the interconnected relationship of plants and animals to their ecosystem.

6.E.1

Understand the earth/moon/sun system, and the properties, structures and predictable motions of celestial bodies in the Universe.

6.E.1.1

Explain how the relative motion and relative position of the sun, Earth and moon affect the seasons, tides, phases of the moon, and eclipses.

6.L.2

Understand the flow of energy through ecosystems and the responses of populations to the

6.L.2.1

Summarize how energy derived from the sun is used by plants to produce sugars (photosynthesis) and is transferred within food chains and food webs (terrestrial and aquatic) from producers to consumers to decomposers.

8.L.3

Understand how organisms interact with and respond to the biotic and abiotic components of

their environment.

8.L.3.1

Explain how the flow of energy within food webs is interconnected with the cycling of matter (including water, nitrogen, carbon dioxide and oxygen