



Our science curriculum focuses on creating opportunities for learners to interact with the world in a scientific way: observing, questioning, hypothesizing, predicting, investigating, interpreting, and communicating.

Forces and Motion	
Skill Developed	Lesson/ Materials
<ul style="list-style-type: none"> Understand how forces (pushes or pulls) affect the motion of an object. Understand the relationship between sound and vibrating objects. Understand motion and factors that affect motion. 	<ul style="list-style-type: none"> Creation story 3 States of Matter Forces of attraction (attraction and gravity) 3 Part Cards Chemistry experiments <ul style="list-style-type: none"> Simple Machines Magnetism
State Standards Alignment	
<p>1.P.1 Understand how forces (pushes or pulls) affect the motion of an object.</p> <p>1.P.1.1 Explain the importance of a push or pull to changing the motion of an object .</p> <p>1.P.1.2 Explain how some forces (pushes and pulls) can be used to make things move without touching them, such as magnets .</p> <p>1.P.1.3 Predict the effect of a given force on the motion of an object, including balanced forces .</p> <p>2.P.1 Understand the relationship between sound and vibrating objects.</p> <p>2.P.1.1 Illustrate how sound is produced by vibrating objects and columns of air .</p> <p>2.P.1.2 Summarize the relationship between sound and objects of the body that vibrate – eardrum and vocal cords .</p> <p>3.P.1 Understand motion and factors that affect motion.</p> <p>3.P.1.1 Infer changes in speed or direction resulting from forces acting on an object .</p> <p>3.P.1.2 Compare the relative speeds (faster or slower) of objects that travel the same distance in different amounts of time .</p> <p>3.P.1.3 Explain the effects of earth’s gravity on the motion of any object on or near the earth .</p>	

Matter: Properties and Change	
Skill Developed	Lesson/ Materials
<ul style="list-style-type: none"> Understand properties of solids and liquids and the changes they undergo Understand the structure and properties of matter before and after they undergo a change. 	<ul style="list-style-type: none"> 3 States of Matter experiments <ul style="list-style-type: none"> Properties of Solids, liquid, gasses Separation Solution Mixtures Suspension/deposit Chemical Reactions Crystallization Matter changes depending on heat
State Standards Alignment	
<p>2.P.2 Understand properties of solids and liquids and the changes they undergo.</p> <p>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 .</p> <p>2.P.2.2 Compare the amount (volume and weight) of water in a container before and after freezing .</p> <p>2.P.2.3 Compare what happens to water left in an open container over time as to water left in a closed container .</p> <p>3.P.2 Understand the structure and properties of matter before and after they undergo a change.</p> <p>3.P.2.1 Recognize that air is a substance that surrounds us, takes up space and has mass .</p> <p>3.P.2.2 Compare solids, liquids, and gases based on their basic properties .</p> <p>3.P.2.3 Summarize changes that occur to the observable properties of materials when different degrees of heat are applied to them, such as melting ice or ice cream, boiling water or an egg, or freezing water.</p>	

Energy Conservation and Transfer	
Skill Developed	Lesson/ Materials
<ul style="list-style-type: none"> • Recognize how energy can be transferred from one object to another. 	<ul style="list-style-type: none"> • Sun and Earth lesson Sequence <ul style="list-style-type: none"> ○ Geography impressionistic Charts ○ Day and night ○ Seasons and solstices ○ Time zones ○ Climates and Biomes • Attraction and gravity experiments • States of matter experiments • Composition of the Earth
State Standards Alignment	
<p>3.P.3 Recognize how energy can be transferred from one object to another. 3.P.3.1 Recognize that energy can be transferred from one object to another by rubbing them against each other . 3.P.3.2 Recognize that energy can be transferred from a warmer object to a cooler one by contact or at a distance and the cooler object gets warmer .</p>	

Earth in the Universe	
Skill Developed	Lesson/ Materials
<ul style="list-style-type: none"> • Recognize the features and patterns of the earth/moon/sun system as observed from Earth. • Recognize the major components and patterns observed in the earth/moon/sun system. 	<ul style="list-style-type: none"> • Sun and Earth lesson sequence <ul style="list-style-type: none"> ○ Day and night ○ Seasons and solstices ○ Time zones ○ Climates and Biomes • Montessori Charts • Solar system nomenclature • Planet card work • Phases of the moon • Teacher made material
State Standards Alignment	
<p>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 .</p> <p>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 .</p>	

Earth Systems, Structures and Processes	
Skill Developed	Lesson/ Materials
<ul style="list-style-type: none"> • Understand the physical properties of Earth materials that make them useful in different ways. • Summarize the needs of living organisms for energy and growth. • Understand patterns of weather and factors that affect weather. • Compare the structures of the Earth’s surface using models or three-dimensional diagrams 	<ul style="list-style-type: none"> • Composition of the earth lessons • Work of Air/Wind lessons • Work of water lessons • Parts/functions of the plant • Parts of a seed • Use of thermometer/ rain gauge • River Model • Montessori Charts • Land and waterforms • Plant stories • Question/Answer game • 3 Part cards • Rock/Mineral Specimens • Experiments • Plate tectonics • Parts of a Mountain • Parts of a River • Parts of a volcano
State Standards Alignment	
<p>1.E.2 Understand the physical properties of Earth materials that make them useful in different ways. 1.E.2.1 Summarize the physical properties of Earth materials, including rocks, minerals, soils and water that make them useful in different ways . 1.E.2.2 Compare the properties of soil samples from different places relating their capacity to retain water, nourish and support the growth of certain plants .</p> <p>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 .</p> <p>2.E.1 Understand patterns of weather and factors that affect weather. 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: • Temperature • Wind direction • Wind speed • Precipitation 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 .</p> <p>3.E.2 Compare the structures of the Earth’s surface using models or three-dimensional diagrams. 3.E.2.1 Compare Earth’s saltwater and freshwater features (including oceans, seas, rivers, lakes, ponds, streams, and glaciers) . 3.E.2.2 Compare Earth’s land features (including volcanoes, mountains, valleys, canyons, caverns, and islands) by using models, pictures, diagrams, and maps .</p>	

Structure and Function of Living Organisms	
Skill Developed	Lesson/ Materials
<ul style="list-style-type: none"> • Understand animal life cycles. • Understand human body systems and how they are essential for life protection, movement and support. 	<ul style="list-style-type: none"> • Internal functions of vertebrates/ invertebrates • Story of the Great River • Story Card Material (Body functions) • Question/Answer game • Reading Resources • Specimens • Skeletal system card work • Nutrition card work and discussion • Independent Study • Teacher made material
State Standards Alignment	
<p>2.L.1 Understand animal life cycles. 2.L.1.1 Summarize the life cycle of animals: • Birth • Developing into an adult • Reproducing • Aging and death 2.L.1.2 Compare life cycles of different animals such as, but not limited to, mealworms, ladybugs, crickets, guppies or frogs .</p> <p>3.L.1 Understand human body systems and how they are essential for life: protection, movement and support. 3.L.1.1 Compare the different functions of the skeletal and muscular system . 3.L.1.2 Explain why skin is necessary for protection and for the body to remain healthy .</p>	

Ecosystems	
Skill Developed	Lesson/ Materials
<ul style="list-style-type: none"> • Understand characteristics of various environments and behaviors of humans that enable plants and animals to survive. • Understand how plants survive in their environments. 	<ul style="list-style-type: none"> • Classification: Living vs. non-living • Needs of the plant • Parts/functions of the plant • Parts of a seed • Botany/Zoology Nomenclature • Study of biomes • Montessori Charts • Interdependencies • Experiments • Teacher made materials
State Standards Alignment	
<p>1.L.1 Understand characteristics of various environments and behaviors of humans that enable plants and animals to survive.</p> <p>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 .</p> <p>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 .</p> <p>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) .</p> <p>3.L.2 Understand how plants survive in their environments.</p> <p>3.L.2.1 Remember the function of the following structures as it relates to the survival of plants in their environments:</p> <ul style="list-style-type: none"> • Roots – absorb nutrients • Stems – provide support • Leaves – synthesize food • Flowers – attract pollinators and produce seeds for reproduction . <p>3.L.2.2 Explain how environmental conditions determine how well plants survive and grow .</p> <p>3.L.2.3 Summarize the distinct stages of the life cycle of seed plants .</p> <p>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 .</p>	

Evolution and Genetics	
Skill Developed	Lesson/ Materials
<ul style="list-style-type: none"> • Organisms differ from or are similar to their parents based on the characteristics of the organism. 	<ul style="list-style-type: none"> • Nature Journal • Descriptive writing lessons • Venn Diagram work • Montessori charts • Card Material
State Standards Alignment	
<p>2.L.2 Remember that organisms differ from or are similar to their parents based on the characteristics of the organism.</p> <p>2.L.2.1 Identify ways in which many plants and animals closely resemble their parents in observed appearance and ways they are different .</p> <p>2.L.2.2 Recognize that there is variation among individuals that are related .</p>	