



Public Schools of North Carolina  
 State Board of Education | Department of Public Instruction  
 North Carolina Extended Essential Standards  
 Science 3-5

The *Alternate Achievement Standards for Students With the Most Significant Cognitive Disabilities Non-Regulatory Guidance* states, “...materials should show a clear link to the content standards for the grade in which the student is enrolled, although the grade-level content may be reduced in complexity or modified to reflect pre-requisite skills.” Throughout the Standards descriptors such as, describe, classify, identify, compare, etc, should be interpreted to mean that the students will be taught and tested according to their mode of communication.

| 3 <sup>rd</sup> Grade Physical Science<br>Forces and Motion   |  |   |
|---|--|---|
| Essential Standard  | Essence  | Extended Essential Standard   |
| <b>3.P.1 Understand motion and factors that affect motion.</b>  | <b>Understand the factors that affect motion</b> | <b>EX.3.P.1 Understand the factors that affect motion.</b>  |
| <b>Clarifying Objectives</b><br>3.P.1.1 Infer changes in speed or direction resulting from forces acting on an object.<br>3.P.1.2 Compare the relative speeds (faster or slower) of objects that travel the same distance in different amounts of time.<br>3.P.1.3 Explain the effects of Earth’s gravity on the motion of any object on or near the Earth. |  | <b>Clarifying Objectives</b><br>EX.3.P.1.1 Identify different ways objects move (to include falling to the ground when dropped): <ul style="list-style-type: none"> <li>• Straight</li> <li>• Up and Down</li> <li>• Fast and slow</li> </ul> EX.3.P.1.2 Describe the effect of a push or a pull on the motion of an object (e.g. how far, direction, magnitude).<br>EX.3.P.1.3 Compare objects (e.g., ramps and barriers) that may change the direction or speed of things that are already in motion. |



| 3 <sup>rd</sup> Grade Physical Science<br>Matter, Property and Change  |  |  |
|--|--|--|
| Essential Standard   | Essence                                    | Extended Essential Standard  |
| <b>3.P.2 Understand the structure and properties of matter before and after they undergo a change.</b>   | <b>Understand the properties of matter</b> | <b>EX.3.P.2 Understand the properties of matter before and after they undergo change.</b>  |
| <b>Clarifying Objectives</b><br>3.P.2.1 Recognize that air is a substance that surrounds us, takes up space and has mass.<br>3.P.2.2 Compare solids, liquids, and gases based on their basic properties.<br>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. |  | <b>Clarifying Objectives</b><br>EX.3.P.2.1 Identify liquids and how they take the shape of their container.<br>EX.3.P.2.2 Compare properties of water to other objects (e.g. objects that can sink, float or stay suspended in water).<br>EX.3.P.2.3 Identify processes (e.g. heating, cooling, cutting, smashing) that result in a physical change.<br>EX.3.P.2.4 Compare the effect of temperature change on matter (e.g. melting ice or ice cream, boiling water, or freezing water). |



| 3 <sup>rd</sup> Grade Earth and Environmental Science<br>Earth Systems, Structures and Processes |  |  |  |  |
|--|--|--|--|--|
| Essential Standard   |  | Essence  | Extended Essential Standard                                      |  |
| 3.E.1 Recognize the major components and patterns observed in the earth/moon/sun system.         |  | Understand how characteristics of the Earth change | EX.3.E.1 Understand how changes in the seasons effect the Earth. |  |
| Clarifying Objectives  | 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.<br><br>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. |  | Clarifying Objectives  | EX.3.E.1.1 Identify common characteristics of the 4 seasons (winter, spring, summer, and fall).<br><br>EX.3.E.1.2 Compare the changes which occur during each season (e.g. temperature changes, leaves falling, snow, wind blowing, flowers blooming). |



| 3 <sup>rd</sup> Grade Life Science<br>Structures and Functions of Living Organisms   |  |   |
|--|--|---|
| Essential Standard   | Essence  | Extended Essential Standard   |
| <b>3.L.1 Understand human body systems and how they are essential for life: protection, movement and support.</b>  | <b>Understanding functions of the human body</b> | <b>EX.3.L.1 Understand basic functions of the human body.</b>   |
| <b>Clarifying Objectives</b><br>3.L.1.1 Compare the different functions of the skeletal and muscular system.<br>3.L.1.2 Explain why skin is necessary for protection and for the body to remain healthy. |  | <b>Clarifying Objectives</b><br>EX.3.L.1.1 Identify basic functions of the human body (e.g. eating, breathing, moving, sleeping).<br>EX.3.L.1.2 Identify basic needs of the human body (e.g. food, water, rest, protection).<br>EX.3.L.1.3 Understand how the functions and basic needs of the human body are essential for life. |



| 3 <sup>rd</sup> Grade Life Science<br>Ecosystem   |  |   |
|---|--|---|
| Essential Standard  | Essence                                      | Extended Essential Standard   |
| <b>3.L.2 Understand how plants survive in their environments.</b>   | <b>Understand characteristic s of plants</b> | <b>EX.3.L.2 Understand how plants survive in their environment.</b>   |
| <p><b>Clarifying Objectives</b></p> <p>3.L.2.1 Remember the function of the following structures as it relates to the survival of plants in their environments: Roots – absorb nutrients; Stems – provide support; Leaves – synthesize food; Flowers – attract pollinators and produce seeds for reproduction.</p> <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> |  | <p><b>Clarifying Objectives</b></p> <p>EX.3.L.2.1 Identify the structures (leaf, flower, roots and stem) of a plant and their functions.</p> <p>EX.3.L.2.2 Compare basic needs of plants (e.g. air, water, light, soil, food, space) to humans.</p> <p>EX.3.L.2.3 Compare soil components (sand/clay) and their capacity to retain water.</p> |



| 4 <sup>th</sup> Grade Physical Science<br>Forces and Motion             |  |   |  |
|---|--|---|--|
| Essential Standard  |  | Essence   | Extended Essential Standard  |
| <b>4.P.1 Explain how various forces affect the motion of an object.</b> |  | <b>Understand how force affects the motion of an object</b> | <b>EX.4.P.1 Understand how force affects the motion of an object.</b>  |
| <b>Clarifying Objectives</b>  | 4.P.1.1 Explain how magnets interact with all things made of iron and with other magnets to produce motion without touching them.<br>4.P.1.2 Explain how electrically charged objects push or pull on other electrically charged objects and produce motion. |   | <b>Clarifying Objectives</b><br>EX.4.P.1.1 Describe the motion of a moving object (away from or closer).<br>EX.4.P.1.2 Define force as a push or a pull.<br>EX.4.P.1.3 Predict how forces can change the speed or direction of moving objects. |



| 4 <sup>th</sup> Grade Physical Science<br>Matter, Properties and Change  |   |   |
|--|---|---|
| Essential Standard   | Essence   | Extended Essential Standard   |
| <p><b>4.P.2 Understand the composition and properties of matter before and after they undergo a change or interaction.</b></p>   | <p><b>Understand the physical properties of solid materials</b></p> | <p><b>EX.4.P.2 Compare solid materials by their physical properties.</b></p>  |
| <p><b>Clarifying Objectives</b></p> <p>4.P.2.1 Compare the physical properties of samples of matter: (strength, hardness, flexibility, ability to conduct heat, ability to conduct electricity, ability to be attracted by magnets, reactions to water and fire).</p> <p>4.P.2.2. Explain how minerals are identified using tests for the physical properties of hardness, color, luster, cleavage, and streak.</p> <p>4.P.2.3 Classify rocks as metamorphic, sedimentary or igneous based on their composition, how they are formed and the processes that create them.</p> |   | <p><b>Clarifying Objectives</b></p> <p>EX.4.P.2.1 Identify different types of solid materials (wood, rock, plastic, rubber, glass, metal).</p> <p>EX.4.P.2.2 Compare physical properties of solid materials (weight, texture, hardness, flexibility, and strength).</p> |



| 4 <sup>th</sup> Grade Earth and Environmental Science<br>Earth Systems, Structures and Processes |  |   |  |
|--|--|---|--|
| Essential Standard   |  | Essence                                       | Extended Essential Standard  |
| <b>4.E.1 Explain the causes of day and night and phases of the moon.</b>                         |  | <b>Understand the causes of day and night</b> | <b>EX.4.E.1 Use the tools for observing, recording and measuring changes in weather conditions.</b>  |
| <b>Clarifying Objectives</b>   | 4.E.1.1 Explain the cause of day and night based on the rotation of Earth on its axis.<br>4.E.1.2 Explain the monthly changes in the appearance of the moon, based on the moon's orbit around the Earth. |   | <b>Clarifying Objectives</b>   |
|  |  |   | EX.4.E.1.1 Use a thermometer to record temperature changes, during the day, from day to day, and season to season.<br>EX.4.E.1.2 Measure precipitation and note amounts (none, some, much) from day to day.<br>EX.4.E.1.3 Understand that moving air is wind and it affects the weather and our environment. |





| 4 <sup>th</sup> Grade Life Science<br>Structures and Functions of Living Organisms |   |   |
|--|---|---|
| Essential Standard   | Essence                                       | Extended Essential Standard   |
| <b>No student expectations.</b>  | <i>*Understand the needs of living things</i> | <b>EX.4.L.1 Understand the needs of living things.</b>  |
| Clarifying Objectives  |   | EX.4.L.1.1. Identify healthy and unhealthy food choices for humans.<br>EX.4.L.1.2 Understand the effects of healthy and unhealthy food choices on the body. |



| 4 <sup>th</sup> Grade Life Science<br>Ecosystems  |  |  |
|---|--|--|
| Essential Standard  | Essence  | Extended Essential Standard  |
| <b>4.L.1 Understand the effects of environmental changes, adaptations and behaviors that enable animals (including humans) to survive in changing habitats.</b>   | <b>Understand how animals survive in changing environments</b> | <b>EX.4.L.1 Understand the effects of environmental changes, adaptations and behaviors that enable plants and animals to survive in changing habitats.</b>   |
| <b>Clarifying Objectives</b><br>4.L.1.1 Give examples of changes in an organism’s environment that are beneficial to it and some that are harmful.<br>4.L.1.2 Explain how animals meet their needs by using behaviors in response to information received from the environment.<br>4.L.1.3 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 ).<br>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. |  | <b>Clarifying Objectives</b><br>EX.4.L.1.1 Describe how animals adapt to their environment (e.g. bears hibernate in the winter, birds fly south for the winter, lizards change color).<br>EX.4.L.1.2 Describe how plants adapt to their environments (e.g. plants grow towards the sun, leaves fall in the winter).<br>EX.4.L.1.3 Identify ways that plants and animals protect themselves.<br>EX.4.L.1.4 Understand why adaptations and changes in behavior are essential for survival. |



| 5 <sup>th</sup> Grade Physical Science<br>Forces and Motion              |   |  |  |
|--|---|--|--|
| Essential Standard   |   | Essence                                    | Extended Essential Standard  |
| <b>5.P.1 Understand force, motion and the relationship between them.</b> |   | <b>Understand how force changes motion</b> | <b>EX.5.P.1 Understand how force can change motion of objects.</b>   |
| <b>Clarifying Objectives</b>   | 5.P.1.1 Explain how factors such as gravity, friction, and change in mass affect the motion of objects.<br>5.P.1.2 Infer the motion of objects in terms of how far they travel in a certain amount of time and the direction in which they travel.<br>5.P.1.3 Illustrate the motion of an object using a graph to show a change in position over a period of time.<br>5.P.1.4 Predict the effect of a given force or a change in mass on the motion of an object. |  | <b>Clarifying Objectives</b>   |
|  |   |  | EX.5.P.1.1 Describe factors that would make it easier or harder to push or pull an object (wheels, round, flat, heavy, light).<br>EX.5.P.1.2 Compare changes in motion (speeding up, slowing down) under certain conditions (e.g., steeper ramp, more weight, more or less force). |



| 5 <sup>th</sup> Grade Physical Science<br>Matter, Properties and Change                   |   |  |  |
|---|---|--|--|
| Essential Standard  |   | Essence  | Extended Essential Standard  |
| <b>5.P.2 Understand the interactions of matter and energy and the changes that occur.</b> |   | <b>Understand how chemical changes affect matter</b> | <b>EX.5.P.2 Understand the structure and properties of matter before and after they undergo a change.</b>  |
| <b>Clarifying Objectives</b>  | 5.P.2.1 Explain how the sun’s energy impacts the processes of the water cycle (including, evaporation, transpiration, condensation, precipitation).<br>5.P.2.2 Compare the weight of an object to the sum of the weight of its parts before and after an interaction.<br>5.P.2.3 Summarize properties of original materials, and the new material(s) formed, to demonstrate that a change has occurred. |  | <b>Clarifying Objectives</b>   |
|   |   |  | EX.5.P.2.1 Identify processes (e.g. burning or cooking) that result in a chemical change in matter.<br>EX.5.P.2.2 Compare physical and chemical changes of matter.<br>EX.5.P.2.3 Classify changes in matter as physical (reversible) or chemical (irreversible). |



| 5 <sup>th</sup> Grade Earth and Environmental Science<br>Earth Systems, Structures and Processes                          |   |   |   |
|---|---|---|---|
| Essential Standard  |   | Essence   | Extended Essential Standard   |
| <b>5.E.1 Understand weather patterns and phenomena, making connections to the weather in a particular place and time.</b> |   | <b>Understand weather conditions and patterns</b> | <b>EX.5.E.1 Understand dangerous weather conditions.</b>  |
| <b>Clarifying Objectives</b>  | 5.E.1.1 Compare daily and seasonal changes in weather conditions (including wind speed and direction, precipitation, and temperature) and patterns.<br>5.E.1.2 Predict upcoming weather events from weather data collected through observation and measurements.<br>5.E.1.3 Explain how global patterns such as the jet stream and water currents influence local weather in measurable terms such as temperature, wind direction and speed, and precipitation. |   | <b>Clarifying Objectives</b>  |
|   |   |   | EX.5.E.1.1 Describe different types of weather (e.g. rain showers, thunderstorms, hail, tornadoes, hurricanes, blizzards).<br>EX.5.E.1.2 Identify reasons for staying inside during severe weather (e.g. thunderstorms, hail, tornadoes, hurricanes). |



| 5 <sup>th</sup> Grade Life Science<br>Structures and Functions of Living Organisms  |  |   |   |
|---|--|---|---|
| Essential Standard  |  | Essence   | Extended Essential Standard   |
| <b>5.L.1 Understand how structures and systems of organisms (to include the human body) perform functions necessary for life.</b> |  | <b>Understand how structures and systems of the body perform essential life functions</b> | <b>EX.5.L.1 Understand how internal and external structures of the human body perform functions necessary for life</b>  |
| <b>Clarifying Objectives</b>  | 5.L.1.1 Explain why some organisms are capable of surviving as a single cell while others require many cells that are specialized to survive.<br>5.L.1.2 Compare the major systems of the human body (digestive, respiratory, circulatory, muscular, skeletal, and cardiovascular) in terms of their functions necessary for life. |   | <b>Clarifying Objectives</b>  |
|   |  |   | EX.5.L.1.1 Identify internal structures of the human body (e.g. heart, lungs, bones, stomach, muscles) and their functions.<br>EX.5.L.1.2 Understand how the functions of internal and external structures (e.g. eyes, nose, ears, mouth) of the human body are essential for life. |



| 5 <sup>th</sup> Grade Life Science<br>Ecosystem   |  |   |
|---|--|---|
| Essential Standard  | Essence  | Extended Essential Standard   |
| <b>5.L.2 Understand the interdependence of plants and animals with their ecosystem.</b>   | <b>Understand how plants and animals interact with their environment</b> | <b>EX.5.L.2 Understand the interdependence of plants and animals with their ecosystem</b>   |
| <b>Clarifying Objectives</b><br>5.L.2.1 Compare the characteristics of several common ecosystems, including estuaries and salt marshes, oceans, lakes and ponds, forests, and grasslands).<br>5.L.2.2 Classify the organisms within an ecosystem according to the function they serve: producers, consumers, or decomposers (biotic factors).<br>5.L.2.3 Infer the effects that may result from the interconnected relationship of plants and animals to their ecosystem. |  | <b>Clarifying Objectives</b><br>EX.5.L.2.1 Identify common ecosystems (e.g. oceans, lakes, deserts, forests, etc)<br>EX.5.L.2.2 Identify animals and plants found in common ecosystems (e.g. ocean, forest, lake, desert, arctic).<br>EX.5.L.2.3 Classify parts of different ecosystems as living and non-living. |