



North Carolina Department of Public Instruction

INSTRUCTIONAL SUPPORT TOOLS

FOR ACHIEVING NEW STANDARDS

This document is designed to help North Carolina educators teach the Essential Standards (Standard Course of Study). NCDPI staff are continually updating and improving these tools to better serve teachers.

Essential Standards: Kindergarten Science • Unpacked Content

For the Essential Standards that will be effective in all North Carolina schools in the 2012-13 school year.

What is the purpose of this document?

To increase student achievement by ensuring educators understand specifically what the new standards mean a student must know, understand and be able to do.

What is in the document?

Descriptions of what each standard means a student will know, understand and be able to do. The “unpacking” of the standards done in this document is an effort to answer a simple question “What does this standard mean that a student must know and be able to do?” and to ensure the description is helpful, specific and comprehensive for educators.

How do I send Feedback?

We intend the explanations and examples in this document to be helpful and specific. That said, we believe that as this document is used, teachers and educators will find ways in which the unpacking can be improved and made ever more useful. Please send feedback to us at feedback@dpi.state.nc.us and we will use your input to refine our unpacking of the standards. Thank You!

Just want the standards alone?

You can find the standards alone at <http://www.ncpublicschools.org/docs/acre/standards/phase1/science/k-2.pdf> .

Forces and Motion

Essential Standard and Clarifying Objectives

K.P.1 Understand the positions and motions of objects and organisms observed in the environment.

K.P.1.1 Compare the relative position of various objects observed in the classroom and outside using position words such as: in front of, behind, between, on top of, under, above, below and beside.

K.P.1.2 Give examples of different ways objects and organisms move (to include falling to the ground when dropped):

- Straight
- Zigzag
- Round and round
- Back and forth
- Fast and slow

Unpacking

What does this standard mean a child will know, understand and be able to do?

K.P.1.1

Students know that their senses are used to make observations and learn about their environment. Students know that the position of an object can be described by locating the object relative to another object, fixed point, or background. Students know the difference between words used to describe the location of an object such as: (in front of, behind, between, on top of, under, above, below, beside) and can communicate using oral language so that all observers can agree on the position of an object in relation to another object.

K.P.1.2

Students know the various ways that living and nonliving things can move, to include falling to the ground when dropped unless something holds them up. Students know that earth pulls down on all objects. Students know how to observe, describe, and discuss all kinds of moving things—themselves, insects, birds, trees, doors, rain, fans, swings, volleyballs, wagons, etc.—keeping notes, drawing pictures to suggest their motion. Students know how to raise questions about the movement of various organisms to include: *Do they move in a straight line or zigzag?*

Is their motion fast or slow? How can you tell? How many ways does an organism move?

Matter: Properties and Change

Essential Standard and Clarifying Objectives

K.P.2 Understand how objects are described based on their physical properties and how they are used.

K.P.2.1 Classify objects by observable physical properties (including size, color, shape, texture, weight and flexibility).

K.P.2.2 Compare the observable physical properties of different kinds of materials (clay, wood, cloth, paper, etc) from which objects are made and how they are used.

Unpacking

What does this standard mean a child will know, understand and be able to do?

K.P.2.1

Students know objects and substances have properties. Students know objects can be described in terms of the materials they are made of (e.g., clay, cloth, paper) and their physical properties (e.g., color, size, shape, weight, texture, flexibility, magnetic attraction, floating or sinking in water). Students know some materials, such as clay and wood, make things hard and sturdy which helps to determine how they are used. Other materials such as cloth and paper make things flexible which gives them a different use compared to things that are hard.

K.P.2.2

Students know objects may be sorted based on a list of observable properties such as size, color, shape, texture, weight, and flexibility.

Earth Systems, Structures and Processes

Essential Standard and Clarifying Objectives

K.E.1 Understand change and observable patterns of weather that occur from day to day and throughout the year.

K.E.1.1 Infer that change is something that happens to many things in the environment based on observations made using one or more of their senses.

K.E.1.2 Summarize daily weather conditions noting changes that occur from day to day and throughout the year.

K.E.1.3 Compare weather patterns that occur from season to season.

Unpacking

What does this standard mean a child will know, understand and be able to do?

K.E.1.1

Students know how to use observation skills to note characteristics of their environment on a daily basis. Students know that the weather may be sunny one day and cloudy another day. Students know how to compare their observations and describe how each observation is similar to or different from a previous observation.

K.E.1.2

Students know that weather changes from day to day. Students know how to maintain a daily weather journal and describe how the weather changes daily.

K.E.1.3

Students build on the concept that change is something that happens to many things in the environment to include weather. Change can happen quickly or slowly. By observing daily weather changes, students can infer patterns that occur from season to season. Some weather patterns include sunny days, rainy days, windy or cloudy days, snowy days and stormy days. Students compare the weather patterns associated with each season: winter, spring, summer and fall (autumn). Students know seasons occur in a particular order and therefore the weather patterns associated with seasons occur in a particular order.

Structures and Functions of Living Organisms

Essential Standard and Clarifying Objectives

K.L.1 Compare characteristics of animals that make them alike and different from other animals and nonliving things.

K.L.1.1 Compare different types of the same animal (i.e. different types of dogs, different types of cats, etc.) to determine individual differences within a particular type of animal.

K.L.1.2 Compare characteristics of living and nonliving things in terms of their:

- Structure
- Growth
- Changes
- Movement
- Basic needs

Unpacking

What does this standard mean a child will know, understand and be able to do?

K.L.1.1

Students know that animals of the same type (i.e. dogs-spaniels/shepherds, cats- solids/tabby, birds-hawk/sparrow, etc.) have individual differences.

K.L.1.2

Students know living and nonliving things are made of parts and people give names to the parts that are different from the name of the whole object, plant or animal. Students know that the parts of living and nonliving things work best as a whole and some objects can easily be taken

apart and put back together again while other objects cannot be taken apart without damaging them (e.g., books, pencils, plants, and animals). Students know some of the characteristics that all animals share that can be used to compare living and nonliving things. Students know that all animals, including humans, have a basic structure that is similar in all animals of the same kind.

- **Structure:** Students know that the human body has distinct structures and that they serve different functions that is similar in other animals. Students know how to describe the structure of various animals, to include humans, and tell how the structures are alike and different and how each structure is used in a similar or different way.
- **Growth and Changes:** Students observe and compare how different organisms grow and develop over time. Students know that animals change as they grow. The distinct stages of growth and change are called a *life cycle*. The life cycle begins when the organism is born and begins to develop and ends when the organism dies.
- **Movement:** Students know how various animals move noting similarities and differences.
- **Basic needs:** Students know that all animals are living things that have basic needs to stay alive. Animals need air, water, food, and shelter for protection. If an organism does not get everything that it needs to stay alive, it will die. By comparing these characteristics of several animals, students begin to classify things as living and nonliving based on these characteristics.

Students know that animals (including humans) are living things that grow and develop, and need food, air, and water but nonliving things do not. At this grade level, it is appropriate to define living things as anything that is alive or has ever been alive and nonliving as anything that is not now and has never been alive.