

MAPPING GRADE 1 SCIENCE INSTRUCTION

Concept: Characteristics and Life Needs of Plants

PWC Strand: Life Science

PWC Objective: 1.2.1

The student will investigate and understand that plants have life needs and functional parts and can be classified according to certain characteristics. Key concepts include:

- needs (food, water, light, and a place to grow) **(SOL 1.4a)**
- parts (seeds, roots, stems, leaves, blossoms, fruit) **(SOL 1.4b)**
- characteristics (edible/non-edible, flowering/non-flowering, evergreen/deciduous) **(SOL 1.4c)**

What Students Should Know (Critical Attributes)	What Students Should Be Able To Do (Essential Skills)
<p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> • What do plants need to live and grow? • What are the parts of plants and what do they do? • What attributes or characteristics can we use to describe and classify plants? <p><u>Critical Attributes:</u></p> <p>1.4a Plants are living things and have needs that must be met in order for them to live and grow. Plants need air, water, nutrients, light, and space to live and grow.</p> <p>1.4b Plants have special parts that make them plants and help them meet their needs and live in their particular home. Roots hold plants in place and absorb water from the soil. Stems carry water and nutrients to the rest of the plant and hold the plant upright. Leaves help the plant make food using sunlight and the nutrients in the soil and water.</p> <p>1.4b Some plants also have flowers and seeds. These parts help the plant make new plants.</p> <p>1.4c We can use words to describe the attributes, or characteristics, of plants and to compare and classify them. Plants can be described as edible or non-edible; flowering or non-flowering; or evergreen or deciduous. Evergreen plants hold on to their leaves all year and do not lose them all at once. Deciduous trees lose their leaves in the fall and winter.</p>	<ul style="list-style-type: none"> • Identify the functions of the root, stem, leaf, and seed. • Create and interpret a model/drawing of a plant, including roots, stems, leaves, blossoms, fruits, and seeds. • Classify plants by the characteristics of edible/non-edible, flowering/non-flowering, and evergreen/deciduous using tables, charts, and picture graphs. • Conduct simple experiments/investigations related to plant needs by changing one variable at a time. (Students do not need to know the term variable.)

MAPPING GRADE 1 SCIENCE INSTRUCTION

Concept: Characteristics and Life Needs of Animals

PWC Strand: Life Science

PWC Objective: 1.2.2

The student will investigate and understand that animals, including people, have life needs and specific physical characteristics and can be classified according to certain characteristics. Key concepts include:

- life needs (air, food, water, and a suitable place to live) **(SOL 1.5a)**
- physical characteristics (body coverings, body shape, appendages, and methods of movement) **(SOL 1.5b)**
- other characteristics (wild/tame, water homes/land homes) **(SOL 1.5c)**

What Students Should Know (Critical Attributes)	What Students Should Be Able To Do (Essential Skills)
<p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> • What do animals, including people, need to live and grow? • What are some characteristics of animals that help them live in different habitats? <p><u>Critical Attributes:</u></p> <p>1.5a Animals, including humans, are living things and have needs that must be met for them to live and grow. Animals need water, food, shelter, and a suitable space to live.</p> <p>1.5b Animals have characteristics, or attributes, that make them animals. These characteristics help them meet their needs and live in a certain home, or habitat. We can use these characteristics to classify animals. Examples of physical characteristics are appendages. Appendages use parts with specific functions that extend from the main body of the animal such as fins. Fins help the fish to live and move in water. Legs allow dogs to live and move on land.</p> <p>1.5b Animals can have different kinds of body coverings including skin, fur, scales, and feathers, depending on where they live. They can also have different body shapes and features to help them crawl, swim, hop, walk, run, and fly in their habitats.</p>	<ul style="list-style-type: none"> • Describe the life needs of animals including air, food, water, and a suitable place to live. • Identify and chart simple characteristics by which animals can be classified, including body coverings (hair, fur, feathers, scales and shells), body shape, appendages (arms, legs, wings, fins, and tails), methods of movement (walking, crawling, flying, and swimming).

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What Students Should Know (Critical Attributes)	What Students Should Be Able To Do (Essential Skills)
<p>1.5c We can also classify animals according to where they live. Some animals live in water and some live on land. Some animals have characteristics that make them good house pets. Other animals are better suited to be wild and live outdoors.</p> <p>1.5c People share some characteristics with other animals, but they are more like one another than they are like other animals.</p>	<ul style="list-style-type: none">• Identify and chart how animals can be classified according to whether they are wild or tame,• Classify animals by where they live (their homes).• Distinguish between wild and tame animals and recognize examples of each.• Make and communicate observations of live animals, including people, about their needs, physical characteristics, and where they live.

MAPPING GRADE 1 SCIENCE INSTRUCTION

Concept: Seasonal Changes and Weather Effects on Living Things

PWC Strand: Life Science

PWC Objective: 1.2.3

The student will investigate and understand the relationship of seasonal change and weather (including changes in temperature, light, and precipitation) to the activities and life processes of plants and animals. Key concepts include:

- plants (growth, budding, falling leaves, and wilting) **(SOL 1.7a)**
- animals (behaviors, hibernation, migration, body covering, and habitat) **(SOL 1.7b)**
- people (dress, recreation, work) **(SOL 1.7c)**

What Students Should Know (Critical Attributes)	What Students Should Be Able To Do (Essential Skills)
<p><u>Essential Questions:</u></p> <ul style="list-style-type: none"> • How do seasonal changes affect plant growth processes? • How do seasonal changes affect the life patterns of animals? • How do seasonal changes affect the life patterns of people? • What are the behaviors of some common animals (squirrels, chipmunks, butterflies, bees, ants, bats, and frogs) during summer and winter? <p><u>Critical Attributes:</u></p> <p>Stem Living things change as they interact with their surroundings. As the seasons change, plants and animals, including humans, respond to changes in temperature, the amount of light, and the type of precipitation (rain, snow, ice).</p>	<ul style="list-style-type: none"> • Compare and contrast the four seasons of spring, summer, fall (autumn) and winter in terms of temperature, light, and precipitation. • Identify types of precipitation as rain, snow, and ice and the temperature conditions that result in each one. • Relate a temperature and precipitation chart to the corresponding season (daily or weekly).

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What Students Should Know (Critical Attributes)	What Students Should Be Able To Do (Essential Skills)
<p>1.7a Plants respond to changes in the seasons. We observe more growth in plants during warm weather than during cold weather. New buds and leaves form in the early spring as the weather warms and light increases, and plants become greener as spring rains fall. Some plants wilt in response to little or no rain in summer. Leaves drop from deciduous trees in the fall, in preparation for little activity during winter.</p>	<ul style="list-style-type: none">• Measure and chart changes in plants, including budding, growth, wilting, and losing leaves. Recognize in what season budding and wilting will most likely occur.• Predict how an outdoor plant would change through the seasons.• Compare and contrast how some common plants (e.g., oak trees, pine trees and lawn grass) appear during summer and winter.
<p>1.7b Animals respond to changes in the seasons. We can observe that animals change their behavior in response to the changing seasons. Some animals migrate (move to other areas in search of food) in the fall and spring and some animals become less active during extreme temperatures in summer and winter (hibernate). We can also observe changes in the physical characteristics of animals with the changing of the seasons, including appearance of body coverings such as fur, feathers, scales, and skin.</p>	<ul style="list-style-type: none">• Comprehend the concepts of hibernation, migration, and habitat, and describe how these relate to seasonal changes. It may be useful to recognize common Virginia animals that hibernate and migrate, but a specific name of animals is not the focus of student learning here.• Compare and contrast the activities of some common animals (squirrels, chipmunks, butterflies, bees, ants, bats, and frogs) during summer and winter by describing changes in their behaviors and body covering.
<p>1.7c Seasonal changes also cause changes in the daily lives of people. As the temperature changes, people respond to it by changing how they dress and may become more or less active.</p>	<ul style="list-style-type: none">• Infer from people's dress, recreation activities, and work activities what the season is.