SCIENCE PARENT GUIDE – UNIT 2 5

IMPORTANT CONCEPTS YOUR STUDENT SHOULD KNOW AND ACTIVITIES TO DO AT HOME
CLASSIFICATION AND INHERITANCE OF TRAITS
DESCRIPTION
This unit will examine the difference between inherited traits and learned behaviors. Students will then be introduced to the systems of classification that we use to determine relationships between organisms. Students should be able to group organisms and communicate their system of classification, while tying in the concepts of inherited traits.
KEY WORDS TO KNOW

• Learned behaviors: animal behavior that develops from observation or instruction • Inherited traits: a distinguishing quality or characteristic that is transmitted genetically from one generation to the next • Behavior-the way a person or animal acts in response to a particular situation or stimuli • Instincts/Acquired behavior-a behavior that an organism inherits • Environment- all the living and nonliving things that surround and affect an organism • Plants: types of organisms that get their energy directly from the Sun and are unable to move from place to place on their own	• Animals: living organisms that move on their own and feed on organic matter • Vertebrate: an organism with a backbone • Invertebrate: an organism that does not have a backbone • Fish: cold-blooded vertebrate with fins and gills that lives in water • Amphibian: any of various cold-blooded, usually smooth-skinned vertebrates, characteristically hatching as an aquatic larva with gills and then transforming into an adult having air-breathing lungs • Reptile: any of various usually cold-blooded, egg-laying vertebrates having dry skin covered with scales or plates and breathing by means of lungs

- Vascular plant- plants that have tissues that let the plant move resources like water and sugars in the plant
- Nonvascular plant- plants that do not have the tissues that vascular plants use to move resources.
- Deciduous- plants that shed their leaves every year
- Coniferous- plants that are classified as not losing their leaves
- Angiosperms- Flowering plants that protect their seeds by enclosing them in a structure such as a fruit
  Gymnosperms- Non-flowering plants that keep their seeds visible, usually in a cone.

- Bird: warm-blooded animal that has wings, two legs, feathers, beaks, and lays eggs
- Mammal: any of various warm-blooded vertebrate animals, including humans, characterized by a covering of hair on the skin and, in the female, milk-producing mammary glands for nourishing the young and usually birth of live young
- Classification-grouping similar things together

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CLASSIFICATION AND INHERITANCE OF TRAITS

Important Concepts Addressed in this Unit	Sample Problems	How You Can Help Your Child
S5L1. Obtain, evaluate, and communicate information to group organisms using scientific classification procedures. a. **Develop a model** that illustrates how animals are sorted into groups (vertebrate and invertebrate) and how vertebrates are sorted into groups (fish, amphibian, reptile, bird, and mammal) using data from multiple sources. b. **Develop a model** that illustrates how plants are sorted into groups (seed producers, non-seed producers) using data from multiple sources. S5L2. Obtain, evaluate, and communicate information showing that some characteristics of organisms are inherited and other characteristics are acquired.	1. Create a model that sorts animals into vertebrates and invertebrates. 2. Compare and contrast the characteristics of a reptile and a mammal. 3. Using a model of a fish and a bird, explain how the animals differ. 4. Create a model that sorts plants into seed producers and non-seed producers. 5. Using a dog as an example, explain inherited and learned behaviors and acquired and physical traits.	**Online Resources** • Science Curriculum: STEMscopes via MyBackpack • Milestones Assessment Guide https://lorpub.gadoe.org/xmlui/bitstream/handle/123456789/49665/Gr_05_Assessment_Guide_10.25.17.pdf?sequence=1 • Plants http://www.pbslearningmedia.org/resource/lsps07.sci.life.oate.plantparts/supermarket-botany/ • Plants with seeds http://studyjams.scholastic.com/studyjams/jams/science/plants/plant-with-seeds.htm • Invertebrates http://studyjams.scholastic.com/studyjams/jams/science/animals/invertebrates.htm

a. **Ask questions** to compare and contrast instincts and learned behaviors. b. **Ask questions** to compare and contrast inherited and acquired physical traits. (Clarification statement: Punnett squares and genetics are taught in future grades.)		• Vertebrates http://studyjams.scholastic.com/studyjams/jams/science/animals/vertebrates.htm

Changes to Science Standards: Students are expected to perform the practices while learning the content and understanding the crosscutting concepts.
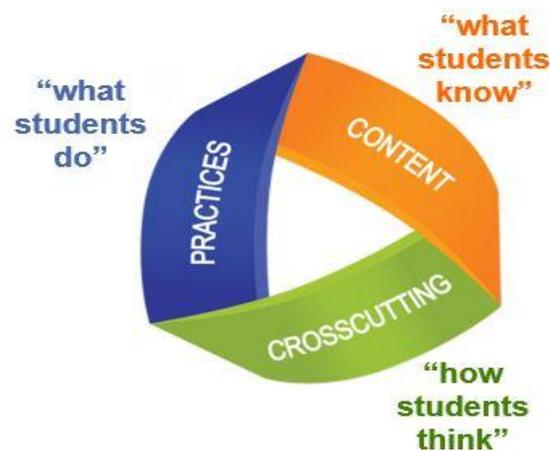
Science and Engineering Practices
Students can use their understanding to investigate the natural world through the practices of science inquiry, or solve meaningful problems through the practices of engineering design.

Crosscutting Concepts
Provide students with connections and intellectual tools that are related across the differing areas of disciplinary content and can enrich their application of practices and their understanding of core ideas.

Core Ideas
Core ideas cover the four domains: physical sciences, earth and space sciences, life science, and engineering and technology.

"what students do"
"what students know"
"what students think"
CONTENT
PRACTICES
CROSSCUTTING
"how students think"

Quoted text from Peter A'Hearn