

## Teacher's Guide

### Grade 5: Inherited Traits vs. Learned Characteristics



**TEKS 5.10: Organisms and Environments.** The student knows that organisms undergo similar life processes and have structures that help them survive within their environments. The student is expected to:

B) differentiate between inherited traits of plants and animals such as spines on a cactus or shape of a beak and learned behaviors such as an animal learning tricks or a child riding a bicycle;



**Background Information:** In this unit students will learn about various traits that describe living things, both how they look and how they behave. Both physical traits and behaviors help organisms to survive. While some traits are inherited, others must be learned.

Inherited traits are those traits that are passed to the offspring from their parents. They include physical traits such as hair/fur color, skin color, leaf shape, and beak shape, but they can also include animal behaviors known as instincts or instinctive behaviors, such as hibernating, migrating, web building, nest building and playing dead when threatened.

Learned traits are behaviors that animals must be taught. They are learned after birth and result from what the animal experiences during life.



**Prerequisite Knowledge:** Students know that organisms resemble their parents and have structures and processes that help them survive. They can identify and sort plants and animals by physical characteristics and they have observed the changes that are a part of life cycle of plants and animals. They have learned how physical characteristics and behaviors, known as adaptations, help animals and plants meet their basic needs and survive in their environment. They have also learned that some characteristics of organisms are inherited and some are learned in response to their environment. They can compare the life cycles of plants, animals and insects.



**Common Misconceptions:** In some cases students will have a hard time distinguishing a learned characteristic from an inherited trait. Both plants

and animals inherit traits from their parents, but only animals learn. It is important to emphasize that an inherited trait is present at birth and a learned characteristic is one that an animal learns after birth. For example, being able to speak a language is not inherited, it must be taught and learned.

Some students may think that boys inherit traits from fathers while girls inherit traits from mothers, but children inherit traits from both parents.

Students may see a trait as purely inherited or learned. In fact, some traits may be a combination of both. Someone who excels in a certain sport may have inherited a body type that helps him/her develop certain athletic skills. This provides an advantage as he/she learns to play the sport.



### **Essential Questions:**

1. What are at least three traits you inherited from your parents?

*(Answers will vary.) These could be eye, hair or skin color, height, size of nose, etc.*

2. What is a characteristic that you had to learn?

*(Answers will vary.) These could include riding a bike, playing piano, throwing a ball, swimming, etc.*

3. Choose either a lion or a dog. Identify an inherited trait and a learned characteristic for each one?

*(Answers will vary.) For the lion, an inherited trait might be fur color, mane size, and a learned characteristic could be stalking and hunting. A dog's fur color, its size, a keen sense of smell and hearing are inherited. A learned characteristic might be learning to beg, to catch a Frisbee or to shake hands.*

4. What are some inherited traits that help plants survive?

*(Answers will vary.) Plants, such as cacti, inherit spines which helps keep them from being eaten. They also inherit a stem that can store water which keeps them from dying in a very dry climate. Some plants, such as poison ivy, inherit the ability to produce poisons to protect them. Deciduous trees inherit the ability to lose their leaves when the weather turns colder to keep from freezing.*



**Notes:**