

## Inherited & Learned Traits

Features of an offspring that result from genes passed on by parents are called **inherited traits**, or *characteristics*.

### Inherited Traits

The features of an organism that were inherited from its parents are called **inherited traits**, or *inherited characteristics*. Traits are determined before birth and cannot be permanently changed. Some examples of visible human traits are: eye color, dimples, height, ability to roll the tongue, type of earlobes (attached or detached). Other traits are not necessarily visible. For example, blood type and immunity to certain diseases are also inherited characteristics.



The picture on the left shows a detached earlobe, while the picture on the right shows an attached earlobe.

During sexual reproduction, offspring inherit half of their genes from each parent. This is why children often look similar to their parents. However, this does not mean that children will look exactly like their parents. One reason is that some of the genes that are passed on to children stay hidden.

### Learned Characteristics

People get some of their characteristics through choices or experiences. These characteristics are called **learned** characteristics, or sometimes *acquired* characteristics. Scars, tattoos, clothing, hairstyles, and pierced ears are acquired characteristics because they are not inherited from parents.

Any characteristic that a person gains from experience is also learned, rather than inherited. For example, dislikes of certain foods are learned. And children can acquire things, such as a love of music, from their parents. However, this is something that the children have learned and not something they inherited.



Though this boy may have inherited an athletic build from his father, he will still have to learn how to play baseball.

### **Inherited Traits in Plants**

Plants inherit traits from their parent plants. Some common inherited characteristics are flower color, flower position, seed color, seed shape, seed pod shape, pod color, leaf pattern, and stem length.



This hibiscus flower inherited its shape and color from its parent plants.

The traits that are seen in plant offspring (sometimes called daughter plants) depend on the genes of the parent plants and how they combine in the daughter plant. This means that some characteristics will be shared with parent plants, while others will differ.

### **Inherited Traits in Animals**

Animals also inherit traits from their parents. Some common inherited characteristics are fur color, fur length, eye color, height, length of tail, ear shape, and patterns such as spots, stripes, or patches.

A horse's color, the color of the mane, and the horse's height are all inherited characteristics. These are features that differ among horses. However, all horses inherit an ability to eat and digest certain foods, such as grass.



This horse inherited its light color and dark mane and tail from its parents.

Animal characteristics such as having docked tails (tails that have been cut short) are acquired rather than inherited.

### **Inherited & Learned Behaviors**

*Behavior is usually determined partially by heredity and partially by experience. Behaviors determined by genetics are **inherited**. Behaviors determined by experience are **learned**.*

#### **Inherited Behaviors**

Some behaviors are inborn. Behaviors of this type are called *instincts*. Organisms do not have to learn how to do things that are instincts. Some examples of instincts are breathing, hibernating, and migrating. Instinct also includes reflexes, which are rapid, automatic responses to certain signals or events. Sneezing when your nose is tickled is an example of a reflex.



Sneezing is an inherited behavior. People do not need to be taught how to sneeze.

Other examples of inherited behaviors include:

- people and animals crying or howling when in pain
- people and animals eating when hungry
- fish knowing how to swim
- birds knowing how to build nests

### **Learned Behaviors**

Learned behaviors are actions carried out by an animal or human based on *acquired* or gained experience. Because of this, learned behaviors are also called *acquired behaviors*.

For example, eating apples because you like the taste would be a learned behavior that was acquired by eating apples. Speaking English is a learned behavior. While most humans are born with some ability to make sounds, people have to learn to speak English, or any other language. Other learned behaviors include:

- skipping
- reading
- having good manners
- having pink as a favorite color
- wearing brightly colored clothes
- riding a bike



Riding a bike is a behavior that is learned.