

Inherited Traits and Learned Behaviors Study Guide

All notes are available in the Science Binder.

- Some traits are passed down by your parents, and others you learn on your own.
 - **Traits**- a quality or characteristic of a living thing
 - Example: red hair, color of eyes
- **Inherited Traits**
 - Physical characteristics that are passed from parents to their babies (**offspring**)
 - Example: hair color, freckles, skin color
 - **Heredity**- the passing of traits
- Animals and plants have inherited traits also
 - 2 black cats will have black kittens
 - Seeds from a pink rose bush will produce more pink rose bushes
- Some inherited traits:
 - Attached or detached ear lobes
 - Crossing right or left thumb over the other
 - Rolling your tongue
 - Dimples
 - Right-handed or left-handed
 - Freckles
 - Widow's peak
 - Second toe longer than the first
- **Acquired Physical Traits**

- a physical trait that living things might get during their lifetime
- Acquired traits are not passed down
- Acquired means “to get”

● Inherited Behaviors

- Behavior- a way of acting
 - These can be inherited to. They are called instincts.
 - Babies are born with certain instincts:
 - Crying
 - Drinking milk
 - Animal Instincts
 - When the weather becomes cold, animals prepare for winter by instinct
 - Birds protect their eggs and babies.
 - Frogs are not born with this instinct
 - They leave their eggs to hatch or die.

● Learned Behaviors

- What is something that you are better at doing than other members of your family?
 - You learned how to do this; you did not inherit it from your parents
 - We learn many behaviors
 - Riding a bike

- Making a sandwich
- Using good manners
- Animals also learn behaviors
 - Raccoons learn to open trash cans
 - Birds learn where the best bird feeders are located
 - A mother bear will show her cubs how to find berries for food
 - A pet cat may learn that food appears in its bowl after it hears the sound of a can opener
- Humans learn how to speak

***Students must be able to determine if traits are inherited or learned/acquired

- Genes
 - Traits move from parent to their offspring through genes
 - A gene is a tiny part of a cell that contains traits
 - Genes contain instructions that control the growth of that plant or animal
 - Example: Every human has genes that control hair color
 - The instructions in those genes are different (black, red, blonde)

- Birds have genes that control their size, shape, and color
 - Hawks genes: hooked beak, sharp claws to tear apart mice and other small animals
- Plants have genes to control size, shape and color of its leaves
- How genes work:
 - Genes are found in our body's **chromosomes**
 - We each have 46 chromosomes
 - 23 from mom
 - 23 from dad
 - Chromosomes come in pairs
 - Fathers have XY chromosomes and mothers have XX chromosomes
 - One chromosome from mom and one chromosome from dad combine together
 - When they combine, the baby then has pairs of chromosomes
 - (XX=girl, XY=boy)
 - The baby may inherit the mothers dimples and the father's curly hair
- Changing Genes
 - Scientists can change genes in plants to make them grow better and faster
 - Example: They can change genes of apple trees to make sweeter or juicier apples

- They can also mix genes of different plants to create new ones
- Scientists have also found ways to help crops resist, or stand up to , certain diseases
 - They change genes and mix them with “stronger” genes from other plants