

# ACQUIRED OR INHERITED?

Name \_\_\_\_\_ /17

Just imagine you have received a call from a lawyer. He calls you into his office and you find out that a long lost and very wealthy great great uncle has suddenly passed away. He had worked hard all his life and had invested his money wisely. He had also invented several very small but extremely important computer parts which he had patents on. He has left you all his money and the rights to his patents. Sounds great right? This story illustrates two ideas in life. Your uncle worked hard and by his industry had **acquired (to get by one's own efforts)** his wealth. You on the other hand have **inherited (to receive from an ancestor)** your wealth. Animals and plants have traits that they either inherit or acquire.

## Traits

Traits are qualities, features or other things that distinguish the organism. They can include things like hair color, tooth shape, beak shape, bone size, intelligence, or muscle size. Traits come in two varieties: acquired and inherited.

## Acquired Traits

Just like your uncle, animals can acquire (get) useful abilities during their lifetimes. These acquired traits cannot be passed on genetically. You can't inherit your uncle's knowledge, skills, ideas or memories and it doesn't work that way with other organisms either. An anteater may learn which termite mounds have the most insects to eat, but its offspring will not be born with that knowledge. A small monkey may figure out how to use a stone to crack open a nut, but that trait will not be found in its babies. Acquired traits include things such as calluses on fingers, larger muscle size from exercise or from avoiding predators. Behaviors that help an organism survive would also be considered acquired characteristics most of the time. Things like where to hide, what animals to hide from, and the knowledge of avoiding cars on a highway would be examples. For plants acquired characteristics might include bending because of wind or growths resulting from insect bites. Seeds coming from these plants will not grow up to be bent like their parent.

## Inherited Traits

Like our story, some things can be inherited. In organisms, inherited traits must come from a parent or other ancestor. These traits are passed on through the genes. A trait may seem to skip a generation or even two or three, but if an inherited trait shows up it must have been present in an ancestor. Mutations are the exception to this rule. Sometimes genes get altered by a mutation, and so offspring end up different from all its ancestors. Inherited traits include things such as hair color, eye color, muscle structure, bone structure, and even features like the shape of a nose. Inheritable traits are traits that get passed down from generation to the next generation. This might include things like passing red hair down in a family. For animals it may include things like the stripes on a tiger, a skunk's ability to spray, or the flavor of fruit from an apple tree. All plants and animals that reproduce pass on traits to their offspring.

## Check your knowledge!

Listed below are several traits. Decide if each trait would be inherited or acquired, and PUT AN X:

	TRAIT	INHERITED	ACQUIRED
1	Flower petal color		
2	Tree height		
3	Professional athletic ability		
4	The ability of a mouse to learn a maze		
5	The color blindness of a person		
6	The scars on a person's face		
7	Your eye color		
8	The music ability of a piano player		
9	A widow's peak on a person's forehead		
10	The knowledge you have about your science class		
11	The length of the hair on your head		
12	Your pierced ears		
13	How big your feet are		
14	A person with a missing limb due to a car accident		
15	A person with a missing limb due to a genetic defect		
16	Your skin color		
17	Your hair color		