

Learning Target: I can read passages about the differences between inherited and acquired physical traits and use the information gathered to answer multiple choice comprehension questions.

Inherited vs. Acquired Physical Traits Reading for Meaning

Every living organism has traits, or characteristics, that make it unique. Some traits are **inherited**, meaning they are passed down from parents to offspring through genes. For example, the color of your eyes, the shape of your nose, and whether your hair is curly or straight are all inherited traits. These traits are coded in DNA and do not change simply because of your environment.

Other traits are **acquired**, meaning they develop during an organism's lifetime due to experiences, environment, or personal choices. For instance, a scar from falling off a bike, the ability to ride a skateboard, or learning to speak another language are all acquired traits. They are not written in your DNA, so they cannot be passed on to your children.

Sometimes, it can be tricky to tell the difference. For example, height is mostly inherited, but nutrition can affect how tall someone grows. Muscle size is influenced by both inherited factors (like body type) and acquired behaviors (like exercising). This shows that traits can sometimes be shaped by a combination of inheritance and environment.

Scientists study inherited and acquired traits to understand how organisms survive and adapt. Inherited traits allow species to continue, while acquired traits help individuals adjust to their surroundings. By comparing inherited and acquired traits, we see how nature and nurture work together to shape living things.

DOK 3 & 4 Multiple-Choice Questions

1. A student says that being able to roll your tongue is an acquired trait because you “learn” how to do it. Which reasoning best explains why this is incorrect?

- A. Tongue rolling is inherited because it is determined by genes.
- B. Tongue rolling is acquired because it is practiced in childhood.
- C. Tongue rolling is inherited because it depends on nutrition.
- D. Tongue rolling is acquired because it can be taught by parents.

2. Which of the following is the best example of a trait influenced by both inheritance and environment?

A. Eye color	B. Scars from injuries
C. Height	D. Tongue rolling

3. A child inherits straight hair from her parents, but she uses heat tools to curl it. Which statement best explains the difference between these two traits?

- A. Both straight and curly hair are inherited traits.
- B. Straight hair is inherited; curled hair is acquired.
- C. Both straight and curly hair are acquired traits.
- D. Straight hair is acquired; curled hair is inherited.

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4. A group of students lists the following traits:

- Scar on knee
- Brown eyes
- Ability to read music
- Freckles

Which traits are inherited?

A. Scar on knee, freckles
C. Reading music, freckles
B. Freckles, brown eyes
D. Brown eyes, reading music

5. Imagine two brothers. One is taller because he eats a healthy diet, while the other is shorter due to poor nutrition. Which statement explains why height is not *only* inherited?

A. Because genes do not affect growth.
B. Because nutrition can influence how inherited traits are expressed.
C. Because height is completely acquired.
D. Because traits change randomly in childhood.

6. A scientist studies a group of animals. Some have naturally thick fur, while others grow thicker fur after living in cold weather. Which conclusion best compares the traits?

A. Both are inherited traits.
B. Both are acquired traits.
C. Naturally thick fur is inherited; thicker fur from cold is acquired.
D. Naturally thick fur is acquired; thicker fur from cold is inherited.

7. A teacher asks students: "Why can you pass freckles to your children, but not a sunburn?" Which is the **BEST answer?**

A. Freckles are inherited; sunburn is acquired.
C. Both freckles and sunburn are acquired.
B. Both freckles and sunburn are inherited.
D. Freckles are acquired; sunburn is inherited.

8. Two plants of the same species are grown in different soils. One grows taller and has greener leaves, while the other is shorter and paler. What does this reveal about traits?

A. All traits are inherited.
B. Inherited traits can be influenced by environmental factors.
C. Traits are always acquired from the environment.
D. Genes are not involved in plant traits.

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9. If a scientist wanted to prove that a trait is inherited rather than acquired, which method would provide the strongest evidence?

- A. Observing if the trait changes with practice.
- B. Checking if the trait is common in families over generations.
- C. Testing whether the environment changes the trait.
- D. Asking individuals how they developed the trait.

10. Which situation **BEST demonstrates how inherited and acquired traits work together to benefit survival?**

- A. A person inherits the ability to roll their tongue and learns to whistle.
- B. A rabbit inherits strong back legs and learns how to escape predators faster.
- C. A child inherits eye color and acquires a scar from falling.
- D. A bird inherits feathers and grows taller from nutrition.