

Inheritance of Traits



Everyone has traits: characteristics and qualities that make us who we are. We have physical traits, like brown hair, blue eyes, long legs, freckles and funny-looking toes. We also have personality, or character traits. Those include things like being great at telling jokes, compassion, intelligence, warmth, creativity.

Where do traits come from? It's easy to spot certain physical traits that were passed down genetically from parents to offspring. Traits like red hair and knobby knees are inherited. What's more complex, and, many would argue, more interesting, is to find the source of traits that could have formed from individual reactions to a certain environment. Many traits exist in a gray area between these two extremes—inheritance and development.

One example is body type. This might seem like an easy one. People are genetically predisposed to their body type. But once diet becomes a factor, environment begins to play a major role in how the body develops. So body type is one example of a trait that is a combination of inheritance and interaction with an individual's environment.

So many of our most defining traits have been learned, rather than inherited. For instance, if you're really great at video games, it's not because one or both of your parents passed down skills in some video game mastery gene. It's because you practiced, played a lot of video games, and developed those skills yourself. If you have kids who turn out to be great at video

games, it will be because they put in the hours, learned the skills, and memorized the moves necessary to master the video game.

Of course, there are ways our brains can form that are more advantageous to advanced video game playing. Say you were born with an extra-large, extra-powerful section of your brain that commands hand-eye coordination. That's inherited. What you do with it, how you choose to develop that advantage, is up to you.

You can pierce your nose, get a tattoo, dye your hair, shave your head, get your kidneys removed, put on a silly hat—it doesn't matter how much you alter your body during your lifetime. None of those things will translate into genetic material to be passed down to the next generation. Of course, if your children grow up in an environment with role models who are pierced, funny-hatted and covered in tattoos, that is very likely to affect how likely they are to get piercings, tattoos, and funny hats!

Name: _____ Date: _____

1. What are traits?

- A interactions with an individual's environment
- B characteristics and qualities that make us who we are
- C gray areas between two extremes
- D people with brown hair, blue eyes and long legs

2. How does the author compare inherited traits with learned traits?

- A by explaining the difference between inherited physical traits like hair color and learned traits like video game skills
- B by explaining the similarities between inherited traits like hair color and learned traits like video game skills
- C by explaining the differences and similarities between inherited physical traits and learned traits like video game skills
- D by explaining that all inherited traits and learned traits are affected by one's environment

3. In the passage, the author writes that people are genetically predisposed to their body type. But once diet becomes a factor, environment begins to play a major role in how the body develops. Based on this evidence, what conclusion can be made?

- A If one changes one's diet, one can avoid looking like one's parents.
- B Body type is a trait influenced by both genetics and environment.
- C People raised in the same environment will all look alike.
- D Body type is a trait that one cannot control.

4. Video game skills can only be learned, not inherited. What evidence in the text supports this conclusion?

- A People who are good at video games get this ability from their parents.
- B People who are good at video games have to practice and memorize moves.
- C People who are good at video games can only come from certain countries.
- D People who are good at video games also do well in school.

5. What is this passage mainly about?

- A how to play video games
- B different types of traits
- C why red hair is rare
- D how environment affects people's inherited traits

6. Read the following sentences: "Of course, there are ways our brains can form that are more **advantageous** to advanced video game playing. Say you were born with an extra-large, extra-powerful section of your brain that commands hand-eye coordination. That's inherited. What you do with it, how you choose to develop that advantage, is up to you."

As used in the passage, what does the word "**advantageous**" mean?

- A harmful
- B useful
- C cheerful
- D difficult

7. Choose the answer that best completes the sentence below.

Traits like red hair and knobby knees are inherited. _____, many of our most defining traits, such as the ability to play video games well, have been learned, rather than inherited.

- A For example
- B On the other hand
- C As a result
- D In conclusion

8. Why is body type used as an example of a trait that is a combination of inheritance and interaction with an individual's environment?

9. Is putting on a silly hat an inherited behavior, a learned behavior, or a combination of the two?

10. A woman who is born with brown hair has chosen to dye her hair blue. Will her future children have blue hair? Why or why not? Use evidence from the text to support your conclusion.
