

Learned Behaviors

Young chimpanzees learn how to perform many tasks, some requiring the use of tools. Chimpanzees can learn to use leaves to drink water or to use rocks to crack open hard-shelled nuts and fruits. The chimpanzee in Figure 15 is using a twig to fish termites out of a mound. These are all examples of behaviors that must be learned. Chimpanzees are not born knowing how to use tools. They learn by watching and trying to imitate the behavior from their mother or other individuals in their social group.



Gather Evidence Why might some animals need to learn behaviors? What are some advantages of learned behaviors over those that are part of genetics?

Learning

Some aspects of behavior are influenced by genes, but many can be modified by experience. Learned behaviors are actions that change with experience. Learning takes many forms, ranging from changes in behaviors that are largely innate to problem-solving in new situations. In each case, learning involves the strengthening of nerve pathways. Most behaviors are not simple reactions to stimuli using preset pathways in the animal's brain. Instead, they represent a combination of innate tendencies influenced by learning and experience. Learning allows animals to quickly adapt to changes in their environment, increasing their ability to survive and reproduce.



Analyze Is learning genetically controlled? Consider the example of the chimpanzee learning to use tools. Can the chimpanzee pass on what it has learned? Can the chimpanzee pass on the ability to learn? Use evidence to support your claims.

Cultural Behavior

Cultural behavior is behavior that is spread through a population largely through learning, rather than selection. The key to cultural behavior is that the behavior is taught to one generation by another, known as *cultural transmission*.

For example, the orca shown in Figure 16 intentionally beaches itself to hunt seals in the shallow waters. Only orcas in certain parts of the world, and only certain groups, exhibit this behavior. Orcas learn this from their mothers and other members in their group and will teach it to their offspring as long as the behavior is advantageous.

The development of cultural behavior does not require living in complex societies. The transmission of birdsong in some taxonomic groups of birds is an example of cultural behavior. However, living close together in social groups may help to enhance the transmission and expression of cultural behaviors.



Explain Construct an explanation as to how learned and cultural behaviors can increase an individual's fitness.

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FIGURE 15: A chimpanzee termite fishing.



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FIGURE 16: Orcas learn to hunt through cultural transmission.

