

- 3** A farmer keeps bees to pollinate crops. The farmer makes several observations about the bees.

- Bees make return trips to drink sugar water from a bowl placed 40 meters from their hive.
- Bees have dark eyes and black-and-yellow stripes.
- Bees produce honey from the nectar they collect.
- Bees will sting when threatened or disturbed.

Which of these observations describes a learned behavior?

- A** Bees make return trips to drink sugar water from a bowl placed 40 meters from their hive.
 - B** Bees have dark eyes and black-and-yellow stripes.
 - C** Bees produce honey from the nectar they collect.
 - D** Bees will sting when threatened or disturbed.
- 41** A group of students made the observations listed below about the size, shape, and appearance of their hands.

1. Two students have scars on their hands.
2. Five students have pointer fingers that are longer than their ring fingers.
3. Nine students have ring fingers that are longer than their pointer fingers.
4. Six students have rings on their fingers.
5. Seven students have pointer fingers and ring fingers that are the same length.

Which of the students' observations describe inherited traits?

- A** Observations 2 and 5 only
- B** Observations 1, 3, and 4 only
- C** Observations 2, 3, and 5 only
- D** All the observations

30 Some traits of living organisms are inherited, while some behaviors must be learned. Which statement related to inherited traits or learned behaviors is **not** correct?

- F** The ability of a figure skater to spin on ice is related to both inherited traits and learned behaviors.
- G** The ability of lions to use camouflage to hide in grassy fields is an inherited trait only.
- H** The number and type of legs a cricket has is an inherited trait only.
- J** The behavior of a dog guiding a blind person on a walk through a neighborhood is an inherited trait only.

6 For a science assignment a student was asked to observe some organisms and then make a table to classify the organisms' traits as inherited or learned. The student's table is shown below.

Observations of Some Organisms

Trait	Inherited or Learned?
Colt able to walk right after birth	
Student texting a message	
Spider spinning a web	
Brown fur on a bear	
Child using a fork to eat	
Woman driving a car	
Green leaves on a tree	
Lion jumping through a hoop	

How many of these observations describe learned behaviors and how many describe inherited traits?

- F** 1 learned behavior, 7 inherited traits
- G** 2 learned behaviors, 6 inherited traits
- H** 3 learned behaviors, 5 inherited traits
- J** 4 learned behaviors, 4 inherited traits

30 Which of these is a learned behavior of a dog?

- F** Begging for food
- G** Drinking water
- H** Panting on a hot day
- J** Chewing on a bone

3 The caterpillars of monarch butterflies eat milkweed leaves. Milkweed leaves contain sap that is toxic to many animals but not to monarch butterfly caterpillars. This sap makes the monarch butterfly caterpillars toxic to predators and protects them from being eaten.



Which of these is an inherited trait of monarch butterfly caterpillars?

- A** The size of the milkweed leaves that the caterpillars eat
- B** The ability of the caterpillars to eat toxic leaves without being harmed
- C** The number of milkweed leaves the caterpillars eat each day
- D** The number of leaves on the milkweed plants that the caterpillars visit each summer

29 Which of these is a behavior that a person learns rather than inherits?

- A** Swallowing a sweet liquid
- B** Having a pleasant dream
- C** Digesting a chocolate-covered strawberry
- D** Identifying the scent of a rose

- 15** A group of students visited a park and collected leaves from many different trees in order to study them. They recorded their observations about the leaves.

Which of these observations does NOT describe an inherited trait?

- A** The leaves vary in shape and size.
- B** Some leaves have holes made by insects chewing on them.
- C** Some leaves are smooth on one side and rough on the other.
- D** The colors of the leaves range from light green to dark green.

- 30** Students record characteristics of a tomato plant. One student's list is shown.

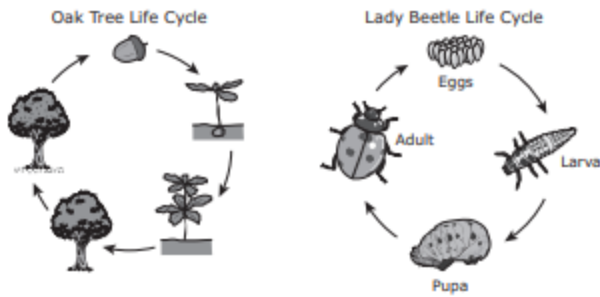
Tomato Plant Characteristics

- Stems with branches that have many wide leaves
- Roots growing out of lower stem into the ground
- Small yellow flowers
- Seven large red tomatoes
- Four small green tomatoes

Which tomato plant characteristic is least likely to be inherited?

- F** Flower color
- G** Leaf shape
- H** Type of roots
- J** Number of tomatoes

- 17 Students observe these diagrams showing the life cycles of an oak tree and a lady beetle.



Which inference can be made by comparing these diagrams?

- A Plants require less energy than insects require to undergo changes from a young organism to a mature organism.
 - B Insects and plants follow a series of changes that allows them to survive and reproduce.
 - C Insects are more likely than plants are to adapt to changes in the environment to survive.
 - D Insects and plants are dependent on one another for survival.
- 6 Students made a chart classifying animal behaviors.

Animal Behaviors	
Inherited	Learned
Bear looking for food in a trash can	Dog coming when its name is called
Owl being active at night	Pony pulling a cart
Turtle burying eggs	Squirrel getting seeds from a bird feeder

Which animal behavior is NOT correctly classified?

- F Bear looking for food in a trash can
 - G Owl being active at night
 - H Dog coming when its name is called
 - J Squirrel getting seeds from a bird feeder
- 32 A student raises a parrot from the time it hatches. Which of these behaviors did the parrot most likely learn from living in the student's home?
- F The parrot flaps its wings while sitting on a perch.
 - G The parrot has a loud scream that hurts the student's ears.
 - H The parrot imitates the family dog barking.
 - J The parrot tucks its head under its wing when it sleeps.

36 A group of students makes observations about fish in a small aquarium.

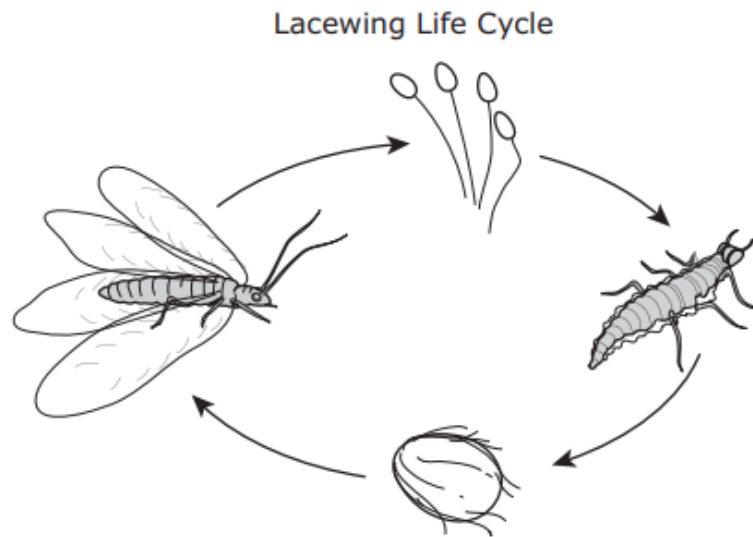
Observations of Fish in an Aquarium

1. Most are about 10 cm long.
2. One of the fish looks sick.
3. Eight of the fish have black stripes.
4. Some fish can squeeze through small openings between rocks.
5. The fish swim to the surface when food is held over the water.
6. Some fish have wide tail fins.

Which observations are about inherited traits?

- F** Observations 1, 3, and 6
- G** Observations 1, 2, and 4
- H** Observations 2, 3, and 5
- J** Observations 2, 5, and 6

- 1 Lacewings are insects that hatch from eggs.



Which of these correctly compares the lacewing life cycle with the frog life cycle?

- A Adult lacewings lay eggs, but adult frogs give birth to live larvae.
 - B When they hatch, young lacewings and young frogs look different from their adult forms.
 - C When they hatch, both lacewings and frogs have long legs for jumping.
 - D Both adult lacewings and adult frogs have more legs than they had as larvae.
- 22 A family takes a group picture in a park where bluebonnets are blooming. The family notices that some of the blooms are white and others are blue.

The color of the blooms is most likely determined by —

- F air temperature
- G the age of the plant
- H the types of consumers that eat the plant
- J inheritance from parent plants

- 10** A bright-red male cardinal comes to a school bird feeder every morning. Like other cardinals, this bird makes a sharp chirping sound as it hops around the bird feeder.

Which of these is a learned behavior of this bird?

- F** Having red feathers
 - G** Eating seeds during the day
 - H** Coming to the bird feeder each morning
 - J** Making a chirping sound
- 39** Crayfish live in water and often hide under rocks or plants. They come out to look for food and will eat both plants and animals.



Which of these is a trait that a crayfish most likely inherits from its parents?

- A** The average distance it travels each day
- B** The number of legs it has
- C** The amount of food it eats each day
- D** The type of plants in its habitat

- 19 A scientist observes sea otters using rocks to break open clamshells.



Which of these investigations would best help the scientist determine whether this skill is a learned or an inherited behavior?

- A Determining what sizes and kinds of rocks are used most often by sea otters
 - B Determining whether shellfish are an important food source in the diet of sea otters
 - C Raising young sea otters away from adult otters that use rocks and observing whether the young otters use rocks
 - D Observing families of sea otters over time to see whether adults that use rocks have offspring that use rocks
- 13 Fox squirrels live in the trees of city parks throughout Texas. Each spring they build nests of twigs and leaves in the tops of the trees. Fox squirrels are often found near park benches, waiting to be fed by visitors.



Fox squirrel

For fox squirrels, which of these is a learned behavior?

- A Building a nest each spring
- B Taking food from people
- C Having a long, bushy tail
- D Having sharp claws

- 10** Students observe a gerbil in a cage. They write their observations as shown.

- It twitches its whiskers.
- It burrows in the bedding.
- It drinks water from a metal tube.
- It walks on four legs.

Which of these observations is most likely a learned behavior?

- F** Twitching its whiskers
 - G** Burrowing in the bedding
 - H** Drinking water from a metal tube
 - J** Walking on four legs
- 29** A group of students at a park used a collecting net to capture several insects. The teacher transferred the insects to small terrariums that allowed the students to observe the insects before releasing them outside.

Each of the following characteristics is likely an inherited trait EXCEPT —

- A** a fly's missing antenna
- B** a butterfly's black-and-yellow stripes
- C** a dragonfly's two sets of wings
- D** a beetle's green spots