Forest Divided

Animal traits and behaviors in a changing habitat

ZOO.10.1 "Understand the characteristics and behaviors that distinguish mammals from other phyla and use characteristics and behaviors to distinguish the major orders, including primates..."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline two traits that identify mammals, and circle one trait that identifies each of the three mammal orders. Number two ways the road or lights change how animals move or feed.

Across the Forest Road

1. At the edge of a tropical forest, a squirrel, an insect-eating bat, and a monkey may look unrelated. Yet all three are mammals, a class of animals within the phylum Chordata. Like birds and reptiles, they have backbones. Unlike birds or reptiles, female mammals produce milk to feed their young, and mammals have hair at some point in life. Birds also maintain a steady internal body temperature, so warmth alone cannot identify a mammal. An insect living on the same tree belongs to a different phylum, Arthropoda, and has an external skeleton instead of a backbone.

2. Watch how each mammal uses the forest. The monkey, a primate, grips branches with hands that have grasping digits and uses forward-facing eyes to judge distances between trees. The squirrel, a rodent, gnaws hard seeds with incisors that grow throughout its life. The bat belongs to the order Chiroptera. Its elongated finger bones support wing membranes, allowing powered flight as it hunts insects at dusk. These traits help identify orders within Mammalia, not separate phyla. A bird can fly, too, but feathers and the absence of milk distinguish it from the bat.

3. Now a road cuts through the forest, and new lights line its edges. A wide clearing breaks the canopy, forcing monkeys to cross open ground or take longer routes between trees. Some bats hunt insects attracted to the lights, but traffic and fewer dark feeding areas may change where they forage. Squirrels may find seeds in the remaining trees, yet the road divides their habitat and can make travel between patches dangerous. The road does not change which order each animal belongs to. It changes the conditions under which their inherited traits and behaviors help them survive.

2 ANSWER WITH EVIDENCE

Use the passage

1. Why are the squirrel, bat, and monkey classified as mammals rather than birds or insects? Use two traits from the passage.

2. Which traits distinguish the monkey's order from the squirrel's order?

3. Both a bat and a bird can fly. What evidence in the passage identifies the bat as a mammal in the order Chiroptera instead of a bird?

4. How could the road and its lights change the behavior of monkeys and bats in different ways?

3 YOUR TURN

Your own words

In four or five sentences, propose one change the town could make to the road or its lights. Explain how it could help two different mammal orders in the passage, using one trait or behavior of each, and name one problem your change would not solve.

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PART 1 · READ AND MARK

Underline two traits that identify mammals, and circle one trait that identifies each of the three mammal orders. Number two ways the road or lights change how animals move or feed. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Why are the squirrel, bat, and monkey classified as mammals rather than birds or insects? Use two traits from the passage.	**They have hair at some point in life, and females produce milk. Unlike insects, they also have backbones.**
2	Which traits distinguish the monkey's order from the squirrel's order?	**The primate monkey has grasping digits and forward-facing eyes. The rodent squirrel has incisors that grow throughout its life.**
3	Both a bat and a bird can fly. What evidence in the passage identifies the bat as a mammal in the order Chiroptera instead of a bird?	**The bat's elongated finger bones support wing membranes, a trait of Chiroptera. As a mammal, it has hair at some point in life, and females produce milk, unlike birds.**
4	How could the road and its lights change the behavior of monkeys and bats in different ways?	**The canopy break may make monkeys cross open ground or take longer routes. Lights may attract insects that some bats hunt, while traffic and fewer dark areas may change where bats forage.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

The town could build a canopy bridge over the road to link the remaining trees. Monkeys could grip its supports and move between trees without crossing traffic. Squirrels could use it to reach seed-bearing trees in the other patch and gnaw seeds with their growing incisors. This bridge would not restore dark feeding areas for bats.

Accept other workable changes if the response explains benefits for two distinct mammal orders using accurate traits or behaviors from the passage and identifies a plausible remaining problem.