

Viewing Guide 19 FOR TEACHERS

USEFUL VOCABULARY

adaptation
barbel
boreal
camouflage
incisor
iris
larvae
mimicry
molar
morphology
peregrine falcon
pollination
raptor
retina
rodent/Rodentia
rods and cones
talon
triangulate

CHAPTER 2 (0:00–10:19)

1. List some ways in which animals use color to their advantage.
Some possible answers: Camouflage (to stay hidden from predators); coloration to warn predators (e.g., monarch butterflies have bright colors that signal bad taste/toxicity); mimicry (a harmless species may be colored like one that is venomous, e.g., the coloration of the nonvenomous scarlet king snake is similar to that of the venomous coral snake).
2. List some adaptations that help birds survive.
Some possible answers: Long legs for wading, long beaks for spearing fish, long beaks to get nectar from trumpet-shaped flowers (hummingbirds).
3. List some adaptations that help plants survive.
Some possible answers: Longleaf pine has thick bark that protects the tree from fire; cypress trees have a wide base and large root mats for support in wet soils; fraser fir and red spruce squeeze water from their cells to keep them from freezing in very low temperatures; maples have winged seeds that are lifted on the wind like helicopters and dispersed.
4. Squirrels, chipmunks and groundhogs are members of the Order _____.
Rodentia.
5. Describe how a beaver's incisors stay sharp.
Front of the incisors (large front teeth) has hard, red enamel; the back is soft and white. As beavers gnaw wood, the teeth wear differentially, giving the teeth a sharp, chiseled edge.
6. Describe the function of domes in several turtle species.
Some possible answers: Eastern box turtles compensate for lack of speed with a high dome that protects them from wolves and dogs; the dome of yellow-bellied sliders is not as high as the dome of eastern box turtles but may provide protection from alligators; river cooters have a flatter dome so are faster and quicker in the water (more hydrodynamic); soft-shelled turtles have the lowest dome, giving them blazing speed to escape enemies.

CHAPTER 3 (10:19–18:55)

7. What is the Latin meaning of the word *raptor*?

To seize or grab.

8. What is the largest hawk species in North Carolina?

Red-tailed hawk.

9. The peregrine falcon can dive as fast as _____ mph.

200.

10. List some examples of useful adaptations in raptors and their functions.

Some possible answers: Birds of prey have eight, razor-sharp talons and a curved or hooked beak to rip and tear meat; some hawks have large, broad wings adapted for soaring and hunting in large, open fields (red-tailed hawk), while some have short wings and a long tail for maneuvering in and out of trees while pursuing songbirds (Cooper's hawk); peregrine falcons have narrow, pointed wings for fast maneuvering: they can dive at speeds of 200 mph; a little bone in the bird's nose keeps air from shooting into the lungs during diving; hawks have acute vision that allows them to hunt from high altitudes.

11. List some specialized features that help owls survive.

Some possible answers: Owls have huge eyes and their retinas have lots of light-sensitive rods, giving them great night vision; they can turn their heads 270 degrees for a broad field of vision; they have flat faces (facial discs) adapted for catching sound waves; they have asymmetrically set ear openings so that sounds arrive at slightly different times, allowing the birds to triangulate the source of a noise; their feathers have fringed edges, allowing the birds to fly silently, compared to hawk feathers, which are stiff, allowing these birds to push off and gain more momentum and speed while hunting.

12. Why do turkey vultures and black vultures lack feathers on top of their heads?

Because they eat carrion, vultures have to put their heads inside of dead animals to feed. The bare heads are easier to keep clean. UV rays from the sun kill bacteria left on the head.

CHAPTER 4 (18:55–23:09)

13. What are some special adaptations of the mouths of fish that help these animals survive?

Some possible answers: Mountain trout and sunfish have mouths adapted for eating insects and insect larvae; carp and suckers have vacuum mouths for picking up plant and animal material off the bottom; catfish have whiskers/barbels, an extension of the mouth for tasting and sensing, which is useful when catfish feed at night.

14. The bowfin (or mudfish) has a special accessory-breathing organ. What does it enable the fish to do and why is it important?

It allows the bowfin to gulp air at the surface, which is critical because this species lives in shallow, swampy water with little oxygen.