



### GRADES 4-5

### MATERIALS

 cardboard or cardstock

#### **KEY WORDS**

- birds
- fish
- amphibians
- reptiles
- mammals

### **OBJECTIVES**

- Students will learn that scientists separate living things into different groups so that they may study them more easily.
- Students will learn that living things are grouped together (classified) according to their body characteristics.
- Students will learn that the more closely related two animals are the more taxonomic ranks they will both be found in.

### **PROCEDURE**

- Copy each of the generalized forms onto a piece of cardboard.
- Cut out the figure and label it mammal, bird, amphibian, fish, or reptile.
- Discuss with your students the difference between the five groups of vertebrates.
- Divide the class into two equal teams and have the teams line up, facing each other, about 50 feet apart.
- Have students count off and remember their numbers.
- Show the students the animal cut outs and explain that each represent a class of vertebrates. Place the cut outs in the middle of the two groups.
- Read one of the vertebrate clues, and then call out a number. The child on each team with that number must go to the center of the area and find the cut out that fits the clue and go back to his spot before being tagged.
- Score in the following way:
  - Plus 2 points: grabbing the correct cut out and reaching home
  - Plus 1 point (each team): grabbing correct cut out and getting tagged before reaching home
  - Minus 1 point (each team): grabbing incorrect cut out and getting tagged before reaching home

### **EXTENSIONS**

- Make a list of all the animal groups you have studied. See how many animals students can place in each group.
- List features that help make an animal belong to a specific classification.











### CLUES

- 1. These vertebrates have hollow bones. (birds)
- 2. These vertebrates are warm-blooded. (birds, mammals)
- 3. A turtle is an example of this group of vertebrates. (reptiles)
- 4. The largest animal ever to live is a member of this group. (mammals, blue whale)
- 5. These vertebrates are cold-blooded. (reptiles, amphibians, fish)
- 6. All of the vertebrates in this group breathe with gills. (fish)
- 7. Only these vertebrates have hair. (mammals)
- 8. These vertebrates never have claws and usually have four legs. (amphibians)
- 9. All of the vertebrates in this group nurse their young. (mammals)
- 10. This is the only group of vertebrates that has feathers. (birds)
- 11. These vertebrates have scales and lay eggs that usually have a leathery skin. (reptiles)
- 12. A few vertebrates in this group lay eggs, but almost all give birth to live young. (mammals)
- 13. Sweating helps keep many of the vertebrates in this group keep cool. (mammals)
- 14. These vertebrates have air sacs attached to their lungs. (birds)
- 15. Only these vertebrates have a muscular diaphragm that helps them fill their lungs with air. (mammals)
- 16. These vertebrates have the most fully developed brains. (mammals)
- 17. The vertebrates in this group have different kinds of teeth for eating different kinds of food. (mammals)
- 18. Many of these vertebrates have oil, milk, sweat, and scent glands in their skin. (mammals)
- 19. These vertebrates do not have teeth. (birds)







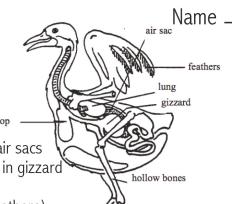
**Background information** 





### BIRDS

- Warm-blooded
- Feathers
- Breathe with lungs and have air sacs
- Store food in crop; grind food in gizzard
- Lay hard-shelled eggs
- Oil gland (helps waterproof feathers)
- Examples: ducks, penguins, warblers

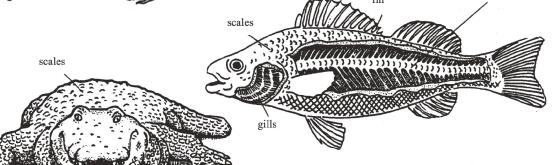


### FISH

- Fins
- Cold-blooded
- Scales
- Breathe with gills
- Eyes are usually on side of head
- Usually lays eggs in water
- Life cycle often includes a larval stage

backbone

• Examples, sharks, trout, minnows

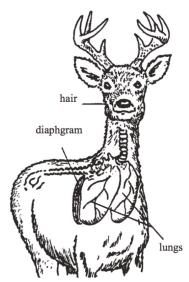


### **REPTILES**

- Cold-blooded
- Scales
- Breathe with lungs
- Many have four legs (with three to five clawed toes), but some have no legs
- Most lay leathery eggs; some give birth to live young

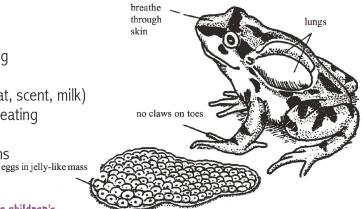
## **AMPHIBIANS**

- Cold-blooded
- Moist skin
- Breathe with lungs, skin, or gills
- Most have four legs but a few have two legs; toes never have claws
- Lays eggs usually in a jellylike mass in water
- Life includes a larval stage
- Examples: frogs, newts, salamanders



### MAMMALS

- Warm-blooded
- Most have hair
- Breathe with lungs; have a muscular diaphragm
- Most give birth to live young
- Nurse their young with milk
- Glands in the skin (oil, sweat, scent, milk)
- Different kinds of teeth for eating different kinds of food
- Large, well developed brains
- Examples: deer, kangaroos, humans





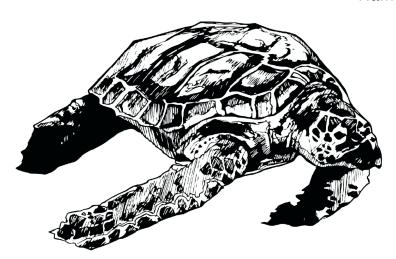


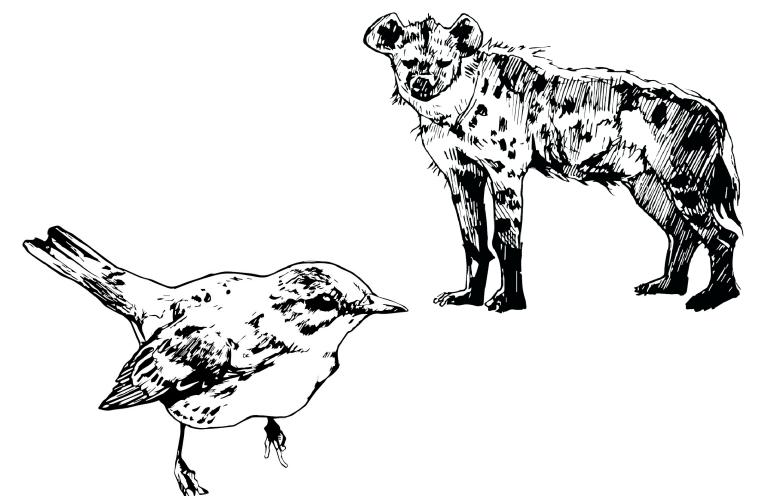






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