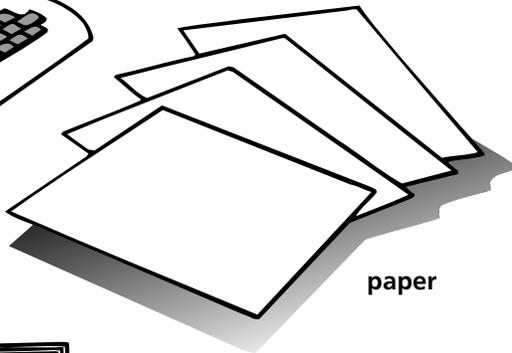


# Classifying Living Things

## WHAT YOU NEED



Internet or library access



paper



15 classroom photos of plants and animals



assortment of published field guides of plants and animals

### Find Out

Do this activity to see how living things can be classified based on their physical characteristics.

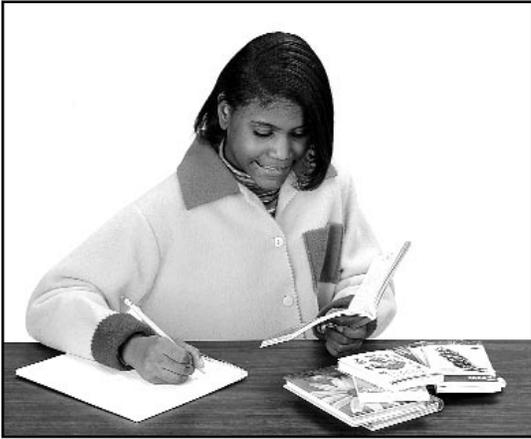
### Process Skills

- Observing
- Classifying
- Communicating
- Interpreting Data

### Time

- 30 minutes the first day
- 10 minutes each day for three weeks

# WHAT TO DO



1. The dichotomous key can be used to classify many common plants and animals. Choose two photos of plants and animals. Follow the dichotomous key to **identify** your selections.
2. **List** 20–30 animals and plants that you know about. Use these to create your own classification key based on the features the organisms have in common.
3. Use the Internet or the library to find out more information about 15 different animals and plants. **Write** the name of each new organism on the chart. Each day, **record** information about the organism. Use your key to **classify** it into one of the groups.
4. As you find out about new plants and animals, modify your key to reflect any characteristics that you did not originally include.
5. When you have finished, **compare** your classmates' keys with yours.

## Dichotomous Key

- |   |              |
|---|--------------|
| a. Multicellular organism that photosynthesizes                     | Go to b      |
| Organism that does not photosynthesize and does not have cell walls | Go to e      |
| b. Plant with vascular tissue                                       | Go to c      |
| Plant without vascular tissue                                       | Bryophyte    |
| c. Plant without flowers  | Go to d      |
| Plant with flowers  | Angiosperm   |
| d. Seed producing   | Gymnosperm   |
| Spore producing   | Fern         |
| e. Animal with backbone   | Go to f      |
| Animal without backbone   | Invertebrate |
| f. Warm-blooded vertebrate  | Go to g      |
| Cold-blooded vertebrate   | Go to h      |
| g. Warm-blooded with feathers                                       | Bird         |
| Warm-blooded with fur or hair                                       | Mammal       |
| h. Cold-blooded and lives on land                                   | Reptile      |
| Cold-blooded and lives in water                                     | Go to i      |
| i. Breathes through gills only                                      | Fish         |
| Breathes through gills and lungs                                    | Amphibian    |

### Classification of Organisms

Day	Organism's Name	Characteristics	Classification
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			



Name \_\_\_\_\_



# ACTIVITY

## Observing Fungi

**Draw** a picture of the mushroom you examine.

**Make a sketch** of what the underside of the mushroom cap looks like through the hand lens.

**Make a sketch** of what the hyphae look like under the microscope.

Name \_\_\_\_\_

## **Conclusions**

**1** What did the underside of the cap of the mushroom look like?

**2** What did the mushroom hyphae look like under the microscope?

**3** Were the cells of the hyphae similar?

## **Asking New Questions**

**1** How do your sketches compare to the illustration on page A10?

**2** How are different mushrooms similar?

**3** What other questions about fungi do you have?

Name \_\_\_\_\_



# ACTIVITY

## Observing Plant Parts

**List** the names of the flowering plants, their colors, and the number of petals each flower has. For the flower you choose, also **list** the number of stamens and the number of pistils.

<b>Flowering Plant Name</b>	<b>Color</b>	<b>How Many Petals?</b>	<b>How Many Stamens?</b>	<b>How Many Pistils?</b>

**Make a sketch** of the way the pollen grains from your group's flowers look.

**Make a sketch** of the way the ovules from your group's flowers look.

Name \_\_\_\_\_

## Conclusions

1 Were the pollen grains from all of the flowers in your group the same under the microscope? Describe the similarities and differences.

2 Were the ovules from the pistils from all of the flowers in your group the same under the microscope? Describe the similarities and differences.

3 **Record** whether the flowers in your group contained both stamens and pistils.

## Asking New Questions

1 With your group, **discuss** ways that pollen from the stamens can be transferred to the pistil.

2 Can you find conditions under which the pollen grains will germinate outside the flower?

Name \_\_\_\_\_



# ACTIVITY

## Comparing Bones

**Sketch** and **label** the bird bone and the mammal bone cross sections.

How are the bones alike?

How are the bones different?

Which bone do you think is stronger?

Which bone is more dense?

**Sketch** and **label** the bird bone and the mammal bone (whole bones).

How are the bones alike?

How are the bones different?

Name \_\_\_\_\_

## **Conclusions**

**1** What similarities between the two types of bones did you **observe**?

**2** Which type of bone is more dense?

**3** What other differences between the two types of bones did you **observe**?

## **Asking New Questions**

**1** What advantage do solid bones have?

**2** What advantage do hollow bones have?