

A Key to Trees

Name _____

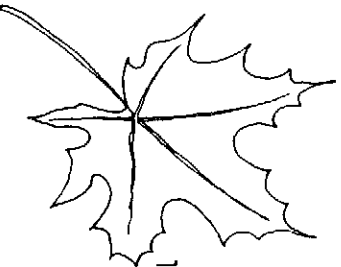
A scientist may use a key to identify a tree by its leaves.

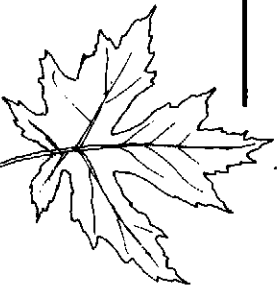
Use the following key to identify the leaves pictured on this page.
The first one is done for you.

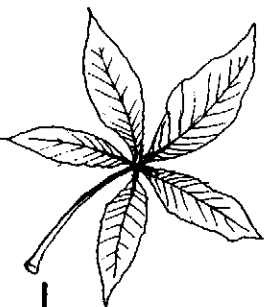


white pine

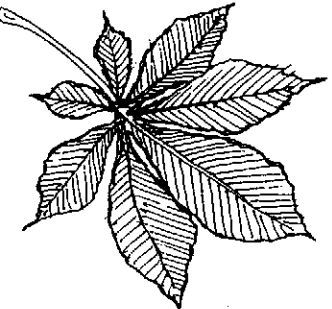
1. a. The tree has needles go to 2
b. The tree has leaves go to 5
2. a. The needles are in bundles go to 3
b. The needles are scale-like white cedar
3. a. There are 5 needles white pine
b. There are 2 needles go to 4
4. a. The needles are thick and spread
away from each other jack pine
b. The needles are long and thin red pine
5. a. The leaves are simple go to 8
b. The leaves are compound go to 6
6. a. The leaflets radiate from one point go to 7
b. The leaflets do not radiate from one point white ash
7. a. There are 5 leaflets buckeye
b. There are 7 leaflets horse chestnut
8. a. The leaf has notches go to 9
b. The leaf does not have notches go to 10
9. a. The notches are pointed silver maple
b. The notches are rounded sugar maple
10. a. The leaf is tapered at both ends dogwood
b. The leaf is heart-shaped catalpa

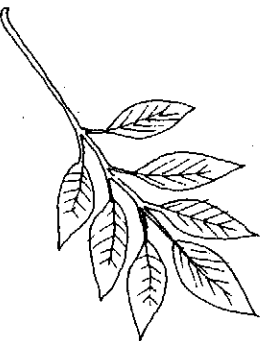


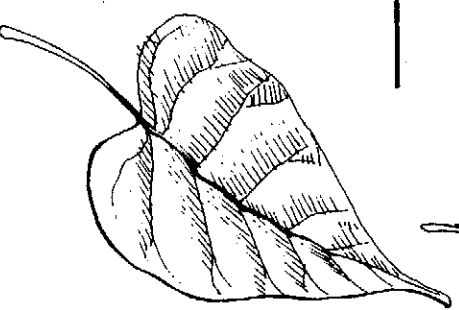












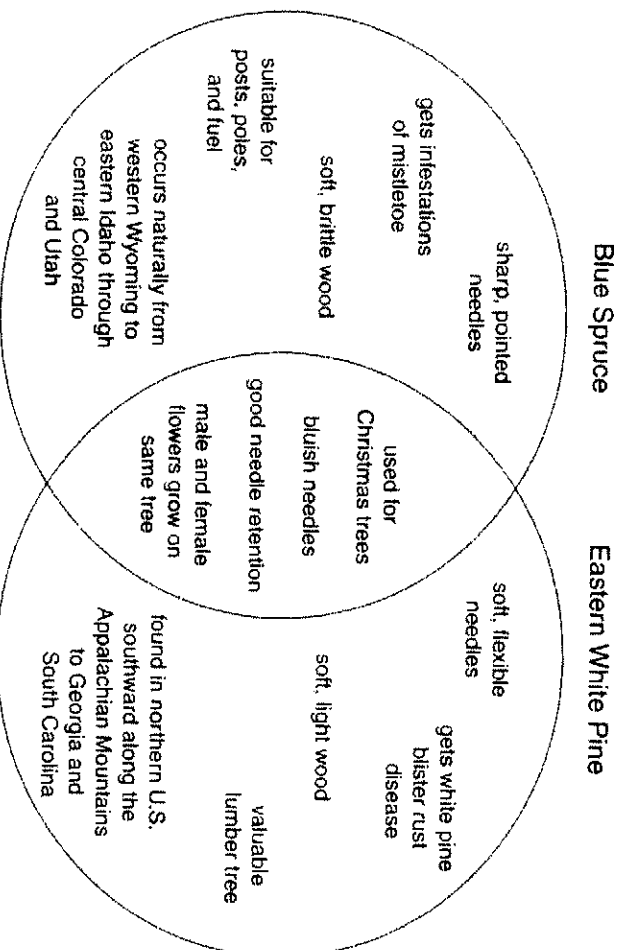




Venn Diagram: Illustrating Similarities and Differences

Cardinals and robins are both birds. That makes them alike. On the other hand, cardinals are seed-eaters, while robins are worm-eaters. That makes them different. Sometimes it's easier to understand similarities and differences between plants, animals, or objects if we can "see" the comparison with a Venn diagram.

1. Look at or think about a slice of bread and a hamburger bun. Create a Venn diagram on a separate sheet of paper. Write the characteristics that are different in the appropriate circle. Write the characteristics that both objects share, such as "they're both used for sandwiches," in the shared part of the circles.
2. Look at the completed Venn diagram below. Which characteristics do the two trees have in common?



3. Create a Venn diagram to show the similarities and differences of two animals.

Community Link

Select two stores or businesses in your community that sell the same product or service. Create a Venn diagram to show the similarities and differences between the two businesses. Share your findings with an adult member of your household.

Parent or Legal Guardian Signature _____

Student Signature _____



How are living things classified?

Directions: Answer the following questions using information from the textbook.

1. Why don't scientists use common names to identify organisms?

2. Why are scientific names important? Give four functions for scientific names.

a. _____

b. _____

c. _____

d. _____

Directions: Use the key to species of birch trees below to answer the questions that follow.

Key to Species of Birch Trees

1. a. bark dark, reddish-brown, yellowish-brown to black, go to 2
b. bark creamy white, pinkish, or gray, go to 6
2. a. bark and twigs with wintergreen fragrance when cut, go to 3
b. bark and twigs without a fragrance when cut, go to 5
3. a. leaves with 8–12 pairs of veins, go to 4
b. leaves with 4–6 pairs of veins, *Betula uber*
4. a. bark dark red to almost black; scales smooth, 6–12 mm long, *Betula lenta*
b. bark reddish brown, peeling in loose, ragged sheets, scales hairy, 5–7 mm, *Betula alleghaniensis*
5. a. branchlets covered near tip with many small glands, Rocky Mountains or Western Canada, *Betula occidentalis*
b. branchlets smooth, shiny, no glands present, eastern U.S., *Betula nigra*
6. a. leaves hairy on lower surface, go to 7
b. leaves smooth, hairless underside, go to 8
7. a. leaves 5–13 cm long, pointed tip, *Betula papyrifera*
b. leaves 3–7 cm long, pointed tip, winter buds shiny, *Betula pendula*
8. a. bark dull gray to grayish-white, smooth and not peeling, *Betula populifolia*
b. bark white to pinkish-white, peeling, go to 9
9. a. leaves 6–10 cm, round base, *Betula caerulea*
b. leaves 3–5 cm, squared base, *Betula pubescens*

3. Are the leaves of *Betula populifolia* hairy or smooth on the lower surface? _____

4. How many pairs of veins are on the leaves of *Betula lenta*? _____

5. What is a characteristic of the bark of *Betula alleghaniensis*? _____

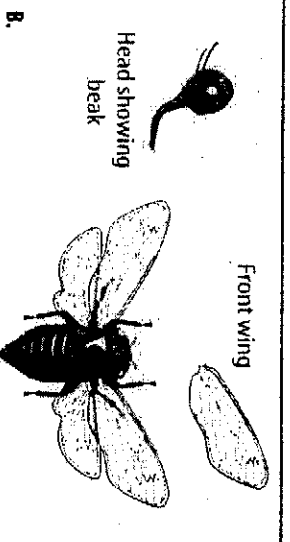
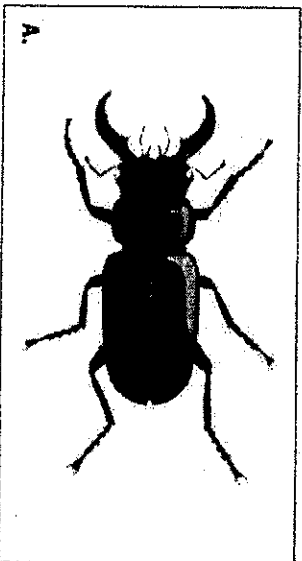
6. When a twig of *Betula nigra* is broken, does it give off a wintergreen fragrance? _____



Enrichment

A bug or a beetle?

Often we pick up an insect and casually refer to it as a bug or a beetle. Using scientific definitions, the insect may not belong to either of these orders of insects. Bugs belong to the order Hemiptera and beetles belong to the order Coleoptera. Look carefully at these two pictures and use the key below to find out which order these insects belong to. The key is not complete for all orders of insects, but it should help you tell the difference between bugs and beetles. There are a few wingless bugs that are not covered by this key. Use other references if needed.

**Meeting Individual Needs****Key (partial) to Orders of Insects**

1. Wing type
 - a. wings transparent, go to 2
 - b. front wings hard or leathery and covering hind wings, go to 2
2. Type of mouthparts
 - a. mouthparts chewing, go to 3
 - b. no chewing mouthparts, go to 4
3. Wing venation
 - a. front wings with veins, Orthoptera
 - b. front wings without veins, Coleoptera
4. Front wing texture
 - a. front wings nearly always thickened at the base; membranous at tip; beak comes from front or bottom of head; antennae have 4 or 5 segments, Hemiptera
 - b. front wings of uniform texture; beak comes from hind part of head, Homoptera

1. Which insect is a true bug and which is a true beetle?

2. What are some of the distinguishing characteristics of the insects shown? List them below.

Bug

Beetle

Order

Wings

Antennae

Mouthparts

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