

# Investigation Eight - Classifying Utah Plants and Animals

<b>Standard V</b> Students will understand the physical characteristics of Utah's wetlands, forests, and deserts and identify common organisms for each environment.
<b>Objective 3</b> Use a simple scheme to classify Utah plants and animals.
<b>Intended Learning Outcomes</b> 1. Use science process and thinking skills

**Standard**  
V  
**Objective**  
3

## Background Information

When a scientist discovers a new species of plant or animal, they don't create their own classification scheme. They will use an existing scheme which was created by grouping plants that share the similar characteristics. In this activity, the students will need to make choices between the similarities and differences between their object and the classification scheme.

## Pre-Assessment/Invitation to Learn

Have the students bring one or two leaves from home. In small groups have the students start classifying the leaves into different groups. Remind the students that they need to look for similar characteristics. The students will need to look at shapes of the leaves, how many leaves are on the stem and if the leaves have teeth or lobes. The students will need to justify their classification scheme and groups. As a class, discuss the students' classification schemes and reasoning. Discuss that when a new species of plant is discovered scientists use existing classification schemes. The students will be using some today. (See performance assessment at the end of this unit to assess the students' learning.)

## Instructional Procedures

1. Hand out the two different tree keys.
2. Refer back to the student literacy section on classification.
3. Model the process by showing a picture of one of the trees and walking through the choices. Remember to state the similar and different characteristics of choices given.
4. Start with the tree diagram. Model the stops and tell about the characteristics and decisions you make. Note: The quaking aspen tree was modeled in the student literacy.

### Materials

- Preserve 5-10 leaves of each tree listed on the tree key. Clear packing tape can be used to tape the leaf to card stock. Do not identify the leaves.
- Classification key for trees for student. Make an overhead copy for the teacher.
- Student literacy section on classification.
- Pictures of the following trees: Juniper, Spruce, Pine, Willow, Quaking Aspen, Cottonwood, Oak and Maple.

5. Look at the tree key. Explain and draw on the board each of the descriptions of trees. Model the same tree through the different key. Make sure you write down the steps it took to get the answer. Example 1b, 4a, 5a, 6b, 7a. (quaking aspen)
6. Divide the students into small groups. Give each group a picture and a sample leaf from the unknown tree and have the students practice determining which tree it is. The students can record their findings on the tree worksheet.
7. After five to ten minutes have the groups rotate the pictures and leaves.
8. When all the groups have seen the pictures and leaves, start a class discussion on the students' findings and processes.
9. In a journal, have the students answer the following question:  
Journal entry: What is the difference between existing classification schemes and creating your own classification scheme? If you found a new species, what scheme would you use and why should you use it?

## Curriculum Extensions

### *Science-*

- The previous activity can be made simpler by breaking up the two different classification keys into a two day activity. This would give the students more time to practice classifying the Utah trees. If you do this, you will need to bring in more pictures and leaves of Utah trees. (ILO 1)
- The next pages of animal keys can be used with pictures from previous activities for additional practice in classification.

## Assessment Suggestions




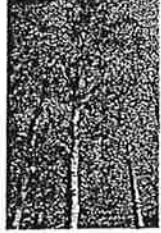






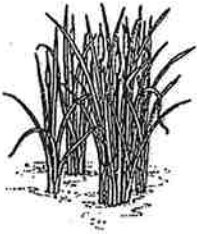

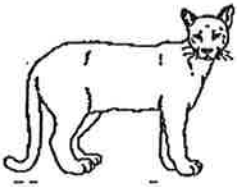
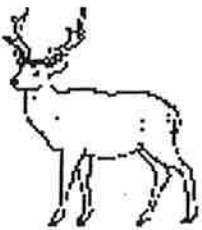


- An assessment for classifying leaves can be found at the end of the unit. You can use it as an assessment after the students have practiced with this activity.
- Read notes written in the students' journals to see if understanding was accomplished.

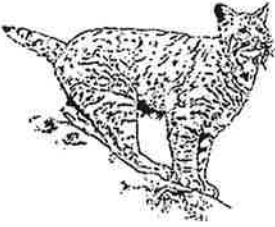






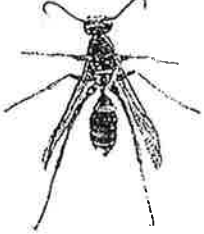


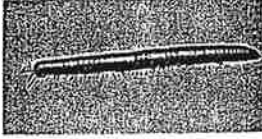
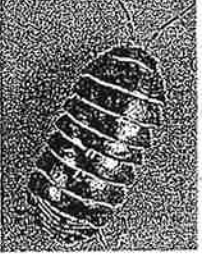


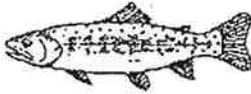

## Resources

- [www.livingthings.com](http://www.livingthings.com)
- [www.usoe.k12.ut.us/curr/science](http://www.usoe.k12.ut.us/curr/science)

## Homework and Family Connections

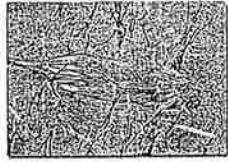
- Encourage students to check at home for any potato chips they might have to classify with family members.
- As a family, walk around the neighborhood and pick leaves off some trees. Classify the leaves how you want. Put them on posterboard. Go to the library to find a book about trees. Find the leaves in the tree books and write their names under the leaves. You can make a key if you'd like. Bring to school to share.

 <p><b>Sagebrush</b></p>	 <p><b>Pinyon Pine</b></p>	 <p><b>Fir</b></p>	 <p><b>Quaking Aspen</b></p>
 <p><b>Utah Juniper</b></p>	 <p><b>Spruce</b></p>	 <p><b>Scrub Oak Brush</b></p>	 <p><b>Cottonwood</b></p>
 <p><b>Moose</b></p>	 <p><b>Coyote</b></p>	 <p><b>Bulrush</b></p>	 <p><b>Cattail</b></p>
 <p><b>Cougar</b></p>	 <p><b>Mule Deer</b></p>	 <p><b>Red Fox</b></p>	 <p><b>Prickly Pear Cactus</b></p>

 <p>Bobcat</p>	 <p>Grasshopper</p>	 <p>Butterfly</p>	 <p>Bee</p>
 <p>Ant</p>	 <p>Moth</p>	 <p>Housefly</p>	 <p>Wasp</p>
 <p>Cottontail Rabbit</p>	 <p>Jack Rabbit</p>	 <p>Millipede</p>	 <p>Pill Bug</p>
 <p>Elk</p>	 <p>Crow</p>	 <p>Trout</p>	 <p>Catfish</p>



Deer Moose



Muskrat



Carp



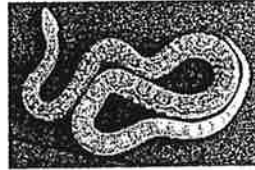
Rattlesnake



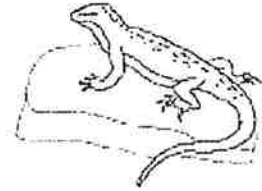
Kangaroo Rat



Beaver



Gopher snake



Lizard



Robin



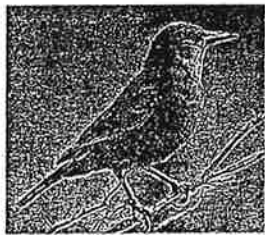
Barn Owl



Frog



Tortoise



Pinyon Jay



Lark



Salamander



Red-tailed Hawk



Magpie

Name \_\_\_\_\_

## Classifying Utah Trees

Characteristics of the tree \_\_\_\_\_  
\_\_\_\_\_

List the steps you took on the classification keys. \_\_\_\_\_  
\_\_\_\_\_

What tree do you think this is? \_\_\_\_\_

*Draw a picture of the leaf.*

Characteristics of the tree \_\_\_\_\_  
\_\_\_\_\_

List the steps you took on the classification keys. \_\_\_\_\_  
\_\_\_\_\_

What tree do you think this is? \_\_\_\_\_

*Draw a picture of the leaf.*

Characteristics of the tree \_\_\_\_\_  
\_\_\_\_\_

List the steps you took on the classification keys. \_\_\_\_\_  
\_\_\_\_\_

What tree do you think this is? \_\_\_\_\_

*Draw a picture of the leaf.*

Characteristics of the tree \_\_\_\_\_  
\_\_\_\_\_

List the steps you took on the classification keys. \_\_\_\_\_  
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What tree do you think this is? \_\_\_\_\_

*Draw a picture of the leaf.*

Characteristics of the tree \_\_\_\_\_  
\_\_\_\_\_

List the steps you took on the classification keys. \_\_\_\_\_  
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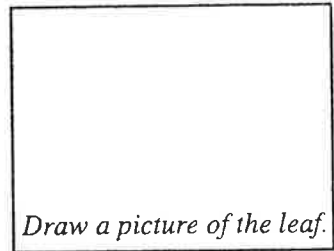
What tree do you think this is? \_\_\_\_\_

*Draw a picture of the leaf.*

Characteristics of the tree \_\_\_\_\_

List the steps you took on the classification keys. \_\_\_\_\_

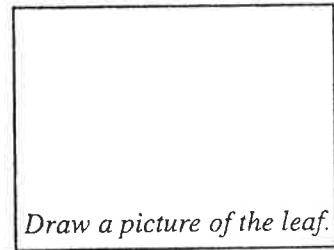
What tree do you think this is? \_\_\_\_\_



Characteristics of the tree \_\_\_\_\_

List the steps you took on the classification keys. \_\_\_\_\_

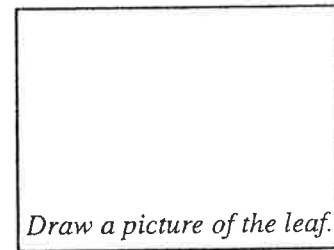
What tree do you think this is? \_\_\_\_\_



Characteristics of the tree \_\_\_\_\_

List the steps you took on the classification keys. \_\_\_\_\_

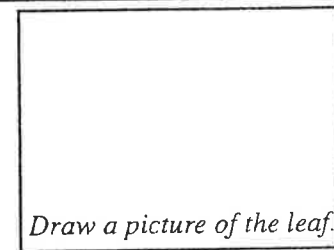
What tree do you think this is? \_\_\_\_\_



Characteristics of the tree \_\_\_\_\_

List the steps you took on the classification keys. \_\_\_\_\_

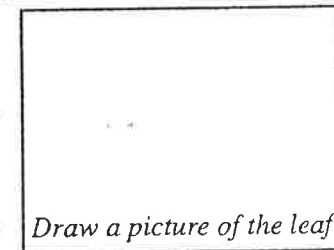
What tree do you think this is? \_\_\_\_\_



Characteristics of the tree \_\_\_\_\_

List the steps you took on the classification keys. \_\_\_\_\_

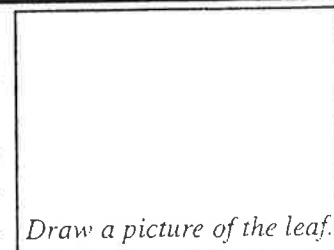
What tree do you think this is? \_\_\_\_\_



Characteristics of the tree \_\_\_\_\_

List the steps you took on the classification keys. \_\_\_\_\_

What tree do you think this is? \_\_\_\_\_



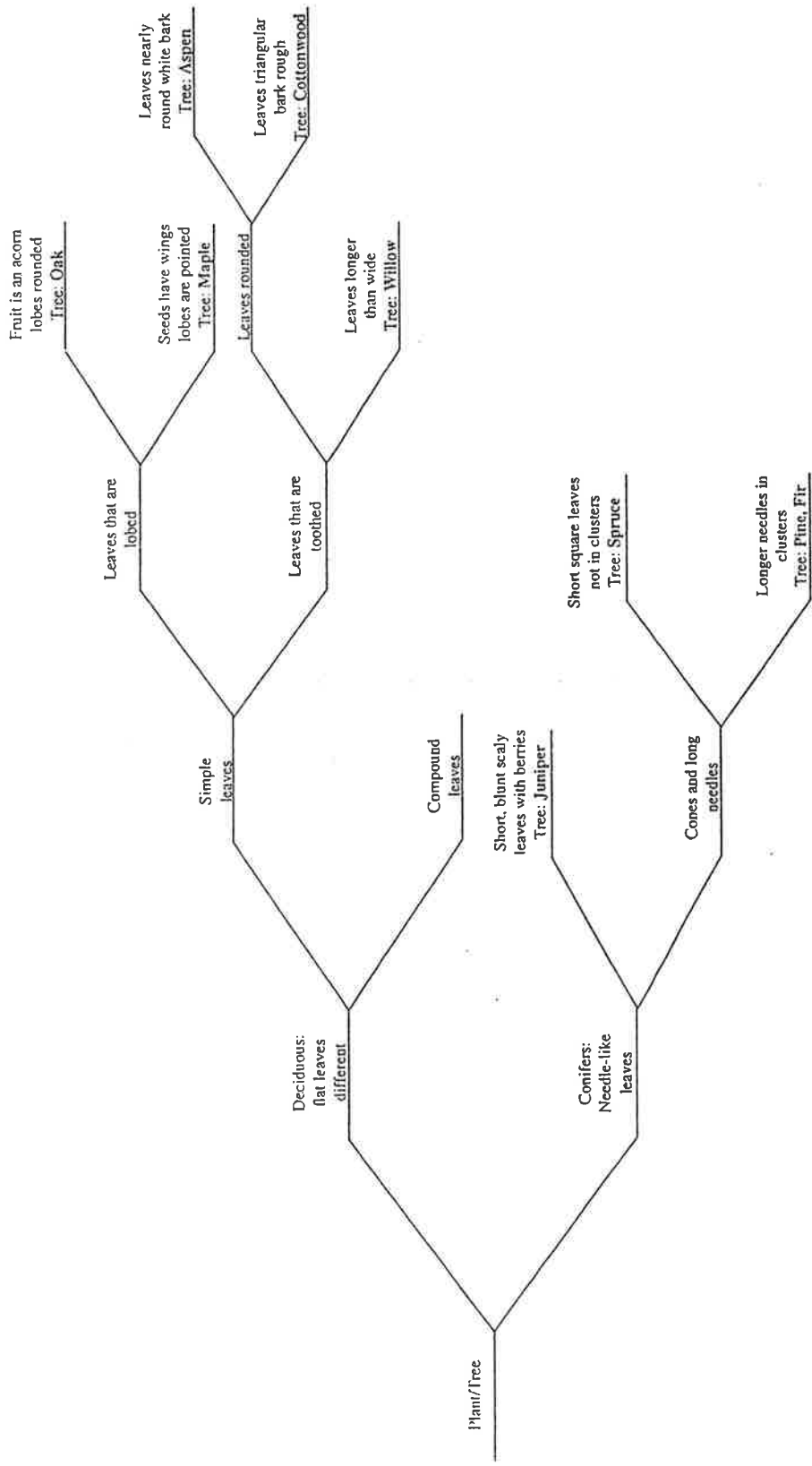
# Tree Key for Utah Trees

- 1a. Trees with needle-like or scaly leaves.....go to 2
- 1b. Trees with flat leaves of different widths.....go to 4
- 2a. Have cones and long thin needles.....go to 3
- 2b. Short, blunt, scaly leaves, berries instead of cones.....Juniper
- 3a. Shorter, square needles, not in clusters.....Spruce
- 3b. Longer needles in clusters.....Pine
- 4a. Trees with simple, single leaves.....go to 5
- 4b. Trees with compound leaves.....go to 6
- 5a. Edges of leaves are toothed.....go to 6
- 5b. Edges lobed.....go to 8
- 6a. Leaves longer than wide.....Willow
- 6b. Leaves rounded.....go to 7
- 7a. Leaf nearly round, white bark on tree.....Aspen
- 7b. Leaves triangular in shape, bark rough.....Cottonwood
- 8a. Fruit is an acorn, lobes rounded.....Oak
- 8b. Seeds have "wings" lobes are pointed.....Maple

## Leaf Characteristics







Name \_\_\_\_\_

## Classifying Utah Animals

Characteristics of the animal \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

List the steps you took on the classification keys. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

What animal do you think this is? \_\_\_\_\_

*Draw a picture of the animal.*

Characteristics of the animal \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

List the steps you took on the classification keys. \_\_\_\_\_  
\_\_\_\_\_  
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What animal do you think this is? \_\_\_\_\_

*Draw a picture of the animal.*

Characteristics of the animal \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

List the steps you took on the classification keys. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

What animal do you think this is? \_\_\_\_\_

*Draw a picture of the animal.*

Characteristics of the animal \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

List the steps you took on the classification keys. \_\_\_\_\_  
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What animal do you think this is? \_\_\_\_\_

*Draw a picture of the animal.*

Characteristics of the animal \_\_\_\_\_  
\_\_\_\_\_  
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List the steps you took on the classification keys. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

What animal do you think this is? \_\_\_\_\_

*Draw a picture of the animal.*

Characteristics of the animal \_\_\_\_\_

\_\_\_\_\_

List the steps you took on the classification keys. \_\_\_\_\_

\_\_\_\_\_

What animal do you think this is? \_\_\_\_\_

*Draw a picture of the animal.*

Characteristics of the animal \_\_\_\_\_

\_\_\_\_\_

List the steps you took on the classification keys. \_\_\_\_\_

\_\_\_\_\_

What animal do you think this is? \_\_\_\_\_

*Draw a picture of the animal.*

Characteristics of the animal \_\_\_\_\_

\_\_\_\_\_

List the steps you took on the classification keys. \_\_\_\_\_

\_\_\_\_\_

What animal do you think this is? \_\_\_\_\_

*Draw a picture of the animal.*

Characteristics of the animal \_\_\_\_\_

\_\_\_\_\_

List the steps you took on the classification keys. \_\_\_\_\_

\_\_\_\_\_

What animal do you think this is? \_\_\_\_\_

*Draw a picture of the animal.*

Characteristics of the animal \_\_\_\_\_

\_\_\_\_\_

List the steps you took on the classification keys. \_\_\_\_\_

\_\_\_\_\_

What animal do you think this is? \_\_\_\_\_

*Draw a picture of the animal.*

Characteristics of the animal \_\_\_\_\_

\_\_\_\_\_

List the steps you took on the classification keys. \_\_\_\_\_

\_\_\_\_\_

What animal do you think this is? \_\_\_\_\_

*Draw a picture of the animal.*

# Animal Key

- 1a. Six legs.....Insect
- 1b. Less than six legs.....go to 2
  
- 2a. Four legs.....go to 3
- 2b. Two legs.....go to 6
- 2c. No legs.....go to 9
  
- 3a. Lives on land.....go to 4
- 3b. Lives in water.....go to 5
  
- 4a. Has large upright ears.....Rabbit
- 4b. Has short upright ears.....go to 8
- 4c. Has long floppy ears.....Dog
  
- 5a. Adult has visible tail.....Salamander
- 5b. Adult has no tail.....Frog
  
- 6a. Nest on or near water.....go to 7
- 6b. Nest in tall trees or high cliffs.....Eagle
  
- 7a. Has long legs.....Crane
- 7b. Has short legs.....Duck
  
- 8a. Has antlers.....Deer
- 8b. Has no antlers.....Fox
  
- 9a. Lives within a shell.....Snail
- 9b. Has no shell.....Snake
- 9c. Has fins and lives in water.....Fish

