

Plant Puzzlers

Summary

Students will be presented with data cards about plants and they will need to determine how to sort the data.

Group Size

Pairs

Materials

For each pair of students:

- Three lunch bags
- [Plant Puzzler Cards](#) (pdf)
- [Plant Puzzlers Student Worksheet](#) (pdf)
- [Plant Puzzler Journal](#) (pdf)

Additional Resources

- *Plants of the Rocky Mountains*
, by Linda J. Kershaw; ISBN 1-55105-088-7
- *Rocky Mountain Tree Finder*
, by Tom Watts (1972, Nature Study Guild, Berkeley); ISBN 0912550058
- *Rocky Mountain Plants and Animals Coloring Book*
, by Dot Barlowe (Dover Publications); ISBN 0486430456

Background for Teachers

This activity requires students to sort data about plants of Utah. Fourth grade students are to learn about plants that live in deserts, wetlands, and forests. Those listed in the Science Words to Know

section of the standard include:

cottonwood	Utah juniper	quaking aspen	pinyon pine
bulrushes	cattails	sagebrush	prickly pear
<i>Some other common Utah plants:</i>			
Douglas pine	sego lily	Blue spruce	fir
Gamble's oak			

Playing this game requires students to make inferences about why plants might live in a particular environment and how physical characteristics influence survival in these areas. A great resource to help students find answers, or for teacher information, is the 4th grade science Web page listed under Resources in the science section of the USOE Web site.

Intended Learning Outcomes

1. Use Science Process and Thinking Skills
3. Understand Science Concepts and Principles

Instructional Procedures

Invitation to Learn

Start a clapping rhythm such as knees, clap, snap fingers, clap, and keep it going while you say,
Plants, plants, everywhere

Let's name parts that plants all share.

Continue the clapping rhythm and call on a student who will then recite a plant part that they know. This should all be to the rhythm.

Example:

Plants, plants, everywhere

Let's name parts that plants all share.

Knees, clap, snap, clap (call student name)

Knees, clap, snap, clap--FLOWERS

Continue until students run out of parts (e.g., branches, leaves, roots, seeds, etc.).

If you have studied plant adaptations, try this rhythm with them changing the second line to "Name adaptations plants can share" (e.g., color, thorns, waxy coating, etc.). This leads into the following activity.

Instructional Procedures

Prepare materials for the activity. Each pair of students should label their sacks (Where It Lives, How it Looks, and How it Survives) and cut up the *Plant Puzzler Cards*. Decide which sack the cards will go in.

This is a place where students will need to sort the data and make decisions about where to put it. Some pairs might put different cards in different places. For example, "furry leaves" is a physical characteristic, but it can also be a means of survival for some plants. Students will need to be able to explain their decisions if questioned.

Make sure the students understand all the words on the *Plant Puzzler Cards*. Tell them they will be looking at data about plants and then determining which plant might fit the characteristics. One team member will take a card from each bag. The other student will write the words on different squares in the correct column of the *Plant Puzzlers Student Worksheet*.

The next team member takes a turn. Continue until each member has filled in two rows across. As a team, look at the rows of words. Through research, determine a plant that can fulfill all the descriptors. For example, if a row lists desert, attracts pollinators, and spiny skin, students might determine that the name of the plant is the prickly pear cactus. Have the team draw an illustration of their plants in the space on the chart and label, or draw larger illustrations on another paper.

As students research each group, they might discover one that isn't solvable (e.g., wetland, spiny skin, loses leaves, etc.). If this happens, they might want to pick another card from the appropriate bag.

Students will present their findings to the class. They should be prepared to explain how the plant is suited for the environment it lives in.

Extensions

Art Target

Arrange subjects in a piece of art so some of them touch or extend out of its edges.

Journal Activity

The journal cover is made with leaf rubbings or leaf printing in two colors. Students will see that creating interesting combinations can require them to go off the page, or work "beyond the box."

The *Plant Puzzler Journal* can be any size, but using half of a 9" x 12" sheet of art paper (4 1/2" x 12") works well for the cover.

Fold the paper like a "wallet" (1). The approximate size is 5" x 5" with a foldover piece of two inches.

The inside pages can be made using one half of an 8 1/2" x 11" paper, folded (2).

You will also need to cut graph paper to the size of the inside pages for your perimeter leaf drawings (3).

Fold these in half and "tuck" into the book.

Punch a hole with a hole punch on the fold close to the top and bottom of the pages (4).

Insert the toothpick or skewer into the holes to create the book binding (5).

Secure the foldover by cutting a small slit in the front cover and tucking the piece into the slit.

Suggested activities for the journal contents:

Find some leaves with simple contour lines and trace them on the graph pages. Find the perimeter of the squares for simple leaves.

Use the journal to record any data students collect about plants and their physical characteristics. Record and answer any questions students might have about the plants they investigate during the activity.

Additional Extensions

- [Create a New Plant](#). (pdf)

Use [Environmental Tree Page](#) (pdf) to extend the activity further. Pick an environment. Choose an unusual or uncommon plant from Utah. In the branches provided, list physical characteristics of these organisms.

Family Connections

List different environments (forests, wetlands, deserts) in three columns on a page. Keep a tally of plants your family sees over the weekend, either at home, on television, in books, newspapers, etc. Which is most common?

Assessment Plan

Plant Puzzlers Student Worksheet with plants identified correctly is a good assessment tool.

Using the [Create a New Plant Rubric](#) will help determine if students have grasped the intended learning outcomes for this lesson.

The *Plant Puzzler Journal* can also be used if it includes entries where students have recorded information about the physical characteristics of plants.

Authors

[Utah LessonPlans](#)