

Plant Parts Rap

Objective: To learn the main parts of a plant and their roles.

Time: 15 minutes.

Materials: Rhythm sheets (in the Appendix and JMG Handbook), Plant Parts Page (Appendix).

Say the rap to the gardeners so they can learn its rhythm. As you do, build a plant by attaching parts to the poster as you rap about them. Have the gardeners use their rhythm sheets and do the Plant Parts Rap as a group.

Plant Parts Rap

Plants are our friends, we give them special care.

They feed, they shelter, they give us fresh air.

Without plants in our world, we simply could not live,
Because of all of the awesome gifts that they give.

The tiny plant begins as a seed that germinates.
And from this moment on, here's the journey that it takes.

The roots are in the dirt to help the plant grow
And hold it in place when the winds blow.

Just like a soda straw, they suck up H₂O.
And when the plant gets water, stand back and watch it grow.

Stems hold the plant up, they carry water to
The leaves, flowers, fruit and seeds. . .that's what the stems do.

Leaves grow from the stem. They soak up lots of sun.
When they change it into food, then their job is done.

The food is for the plant—it gives it strength and power.
It helps it to grow and make a nice flower.

Wind, birds, and bees. . .these are a flower's friend.
They help the life cycle to start once again.

The flower makes a fruit with a seed deep inside.
Some are eaten, some are blown, or some just hitch a ride.

Once a fruit is dried and a little seed comes out,
The seed will find the dirt and a new plant will sprout.

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Plant People

Objective: To show through creative arts an understanding of plant needs.

Time: 30 minutes.

Materials: Nylon stockings, grass seed, potting soil, soda can, plastic eyes, miscellaneous art supplies.

Ask the gardeners to recall what plants need. Ask them where plants grow. Point out that plants can grow in many places—in the ground, a pot and even a crack in the sidewalk. Tell them they will make plant people. Explain that plant people are growing, living things that will need to be cared for. Show the group all the materials. Demonstrate how to create one, then help the students make their own.

Pour 1 to 2 tablespoons of grass seed into the stocking toe (Note: If the section of stocking does not have a toe, tie a knot at one end and turn the stocking inside out. Each section of stocking should be about 10 inches long). Pour soil on top of the seeds and tie a knot to hold in the dirt. Add enough soil to form a baseball-sized shape.

The seeds will grow from the end to form the hair of the plant person. Glue eyes to the “head” of the person. Once the glue has dried, submerge the head in water to allow water to penetrate the soil.

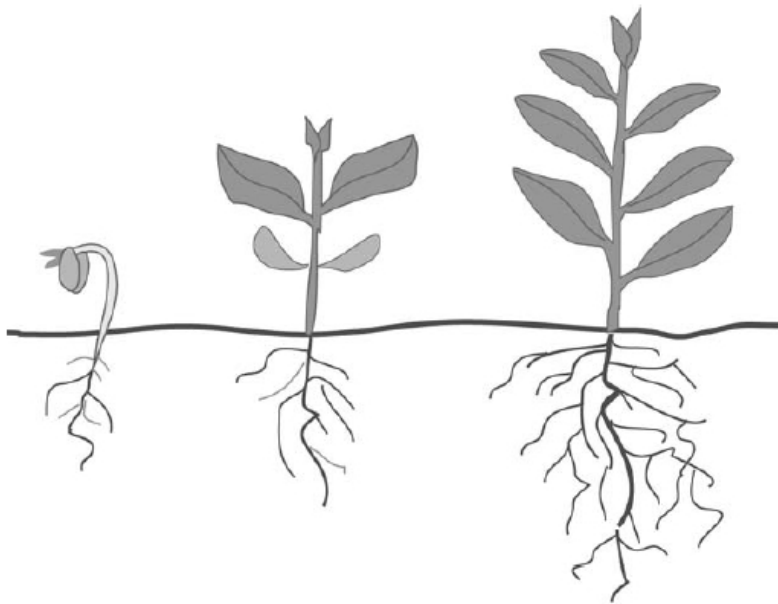
Set the head aside. Use various art supplies to decorate an empty soda can to be the plant person’s body. It can be wrapped in a strip of construction paper. The gardeners can add paper or pipe cleaner arms and legs to complete the effect. Fill the decorated can with water and set the head on the can top. Push the excess stocking into the can opening to help wick water to the soil of the plant person.

Paper Pot

Objective: To create recyclable pots, and to propagate plants by seed.
Time: Day 1: 20 minutes; Day 2: 15 minutes; Day 3: 10 minutes.
Materials: Newspapers, plastic tub, plastic cups, pencil, soil, seed.

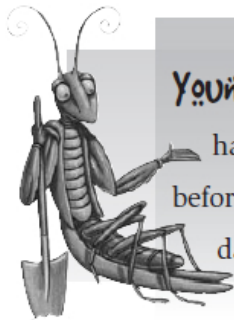
For this activity, the gardeners need to shred several newspapers into small pieces (about the size of business cards) and allow them to soak in a tub of water overnight before the activity.

Here are the steps the gardeners should take in making a paper pot: Blend the paper mixture for several minutes by hand—wiggling fingers and tearing pieces. Take a handful of the mixture and drop it into a plastic cup. Form the mixture against the inside bottom and sides of the plastic cup. Create a layer over the entire interior of the cup. Tilt the cup to drain the water as it is pressed out of the mixture. Use a pencil to push apart an empty space in the middle to create a drainage hole for the pot. It is also a good idea to push a second cup into the first to create a thinner layer. Allow a few days of drying time in a warm place such as outdoors or in a window sill. Then pop the paper pots out of the plastic cups. (The plastic cups can be used again.)



Explain that some plants propagate best by seed. Decide which plants the gardeners will plant in their chosen area and have them plant those seeds in the cups. After the seedlings have sprouted, have the students keep watch for the plant to produce its second set of leaves. These TRUE LEAVES are the signal that they are ready for transplant.

When these young plants are ready to be transplanted, the entire plant and paper cup can be transplanted directly into the ground.



Young plants accustomed to being indoors need to be hardened off before being transplanted outdoors. A few days before planting them in the ground, take them outside each day to spend a few hours in their original pots.







ACTIVITIES

Hamburger Plant

Objective: To learn that we depend on plants as the original source of most food.

Time: 30 minutes.

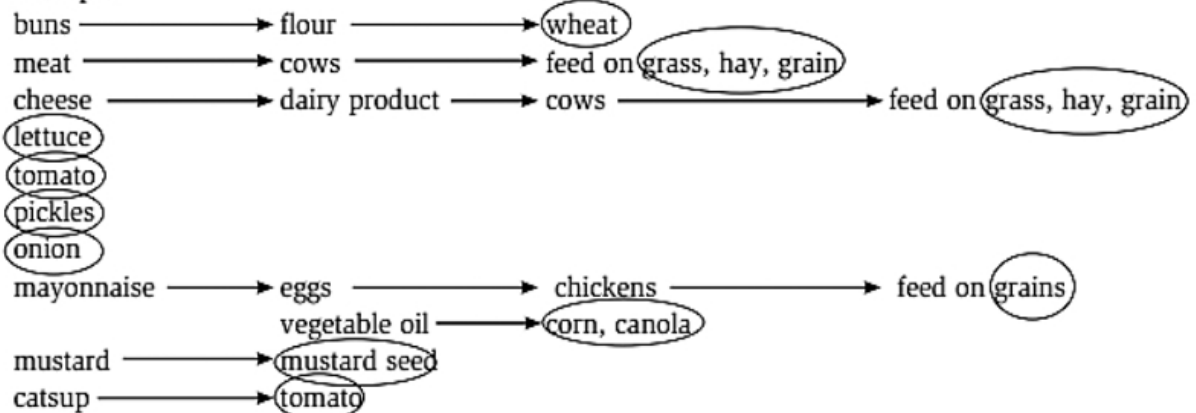
Materials: Paper, crayons or colored pencils, chalkboard or poster.

Ask the junior gardeners if they know that hamburgers come from plants. Have them imagine what a hamburger plant might look like. Ask volunteers to describe it for you. Assign them to draw what they think a hamburger plant looks like.

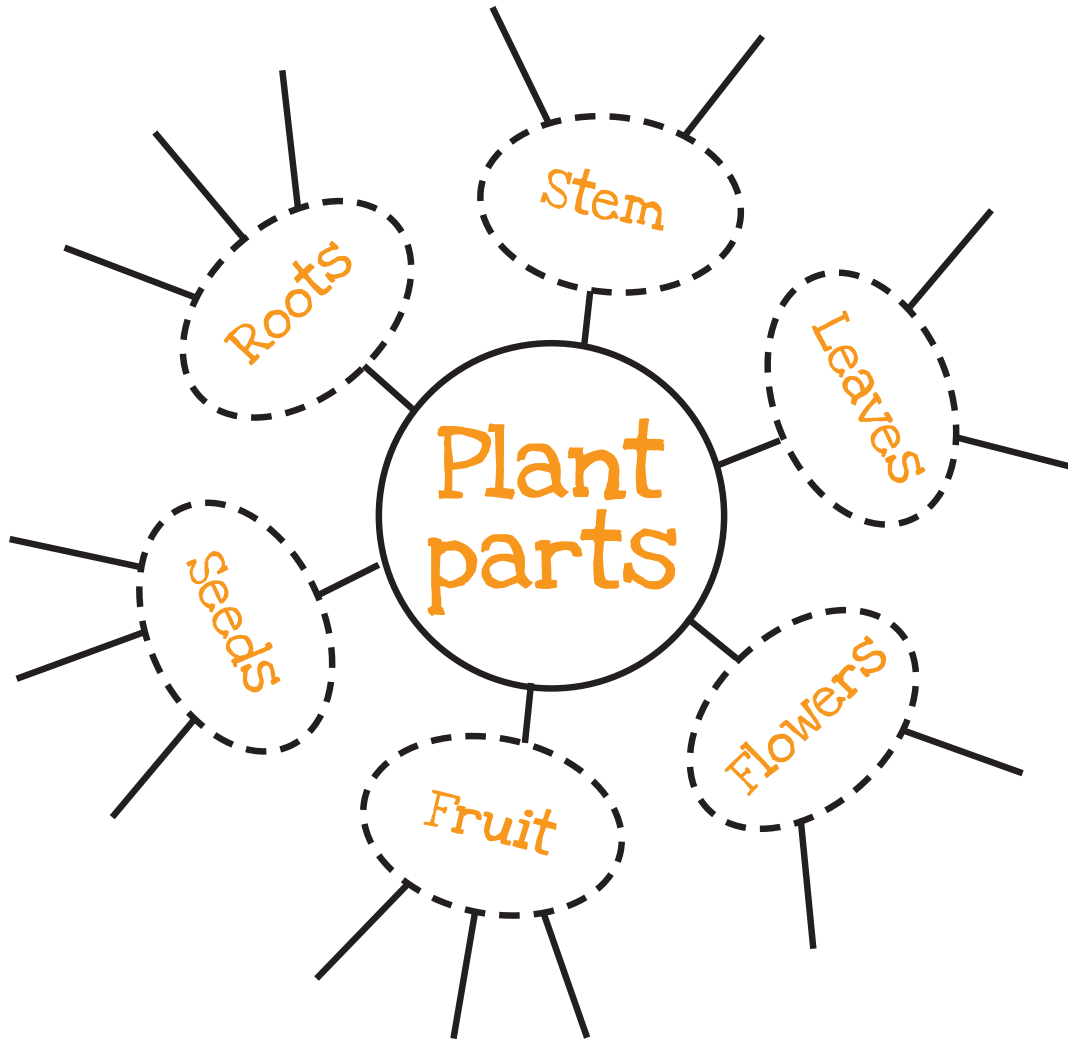
Explain that hamburgers really do come from plants, but there is no such thing as a real hamburger plant. Have the gardeners call out the ingredients found in hamburgers, and write the ingredients on a chalkboard or poster.

Tell them you will circle any word that names a plant. Go through each ingredient on the list that is not a plant and ask them where it comes from. Beside the ingredient, write where it originates until you find a link to plants.

Example:



Plant Parts Web



Plant tags:	Corn	Radishes	Sunflower seeds
Carrots	Celery	Asparagus	Lettuce
Spinach	Peppers	Tomatoes	Watermelon
Beet	Wheat	Broccoli	Cauliflower

P.L.A.N.T. Needs

- Objective: To become familiar with plants' needs.
Time: 20 minutes.
Materials: Poster, markers, handbook.

Start a discussion of what people need to be able to live. On a poster, make a list of the five basic needs all people share: food, water, air, shelter and clothing. Ask a student to circle the items that the group thinks plants must have to live. Ask if plants need anything that people do not. On the left side of a poster write the word PLANT and tell the gardeners that everything a plant needs is in that word. Complete the chart as shown below and challenge the gardeners to recall the list of plant needs without looking at the list.

P	Place	In a container or garden.
L	Light	Sun or artificial light.
A	Air	Oxygen and carbon dioxide.
N	Nutrients	Nitrogen, phosphorus, potassium.
T	Thirsty	Plants, like all living things, need water.
S	Soil	Or other material (sand, gravel, water) to grow roots in.

Know & Show Sombrero

- Objective: To make wearable works of art that show an understanding of the benefits of plants to people.
Time: 1 hour.
Materials: 2-inch clear tape, newspaper, miscellaneous art supplies (markers, yarn, glitter, pipe cleaners, tissue, etc.).

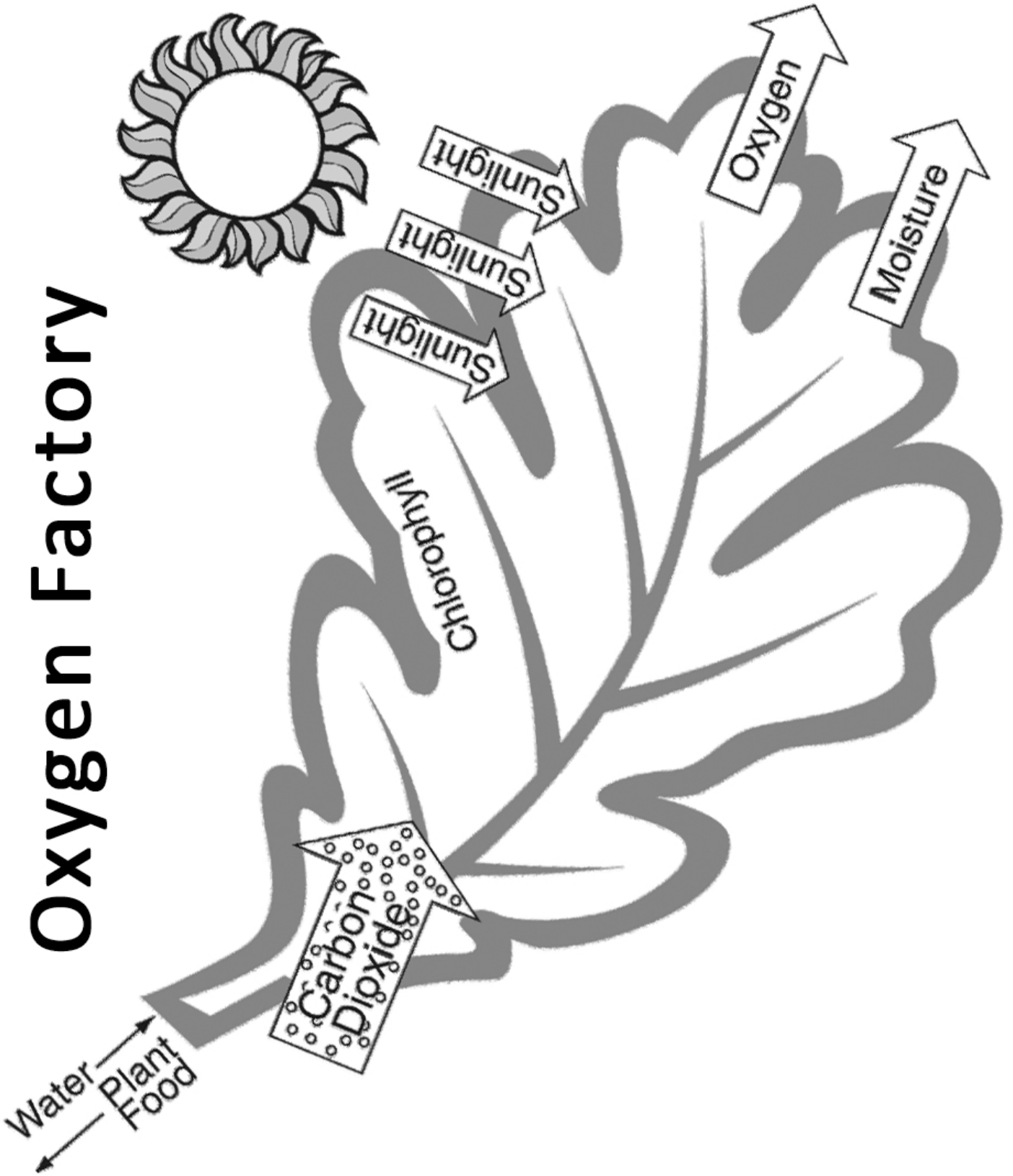
The junior gardeners will create pieces of wearable art: decorated newspaper hats. Help each individually or have the gardeners choose partners to help make a hat for each member of the JMG group.

Place the middle of two large, square sheets of newspaper on the top of a student's head. Lay the rest of the paper flat against the student's head. Tape around the newspaper starting right over the gardener's ear and continue wrapping until the tape goes all the way around the student's head.

Curl up the edges of the newspaper to form the brim of the hat. Have the gardeners decorate their hats with different art supplies to show what they have learned about the benefits that plants provide us. Have the gardeners be creative—for example, a pair of jeans might be cut out of construction paper and hung to the brim of the hat to show that some plants provide us with clothing.



Oxygen Factory



ACTIVITIES

Leaf-and-Seed-Sort Information Chart

- Objective:** To be able to classify leaves and seeds as monocots or dicots.
Time: 25 minutes.
Materials: Corn seed, peanuts, leaf with parallel veins, leaf with netted veins, construction paper, crayons.

Ask the gardeners if they have a certain place in their room where they keep their socks, shirts or toys. Have them think about a kitchen drawer full of knives, forks, spoons, etc. The drawer is organized so that each utensil has its own place. Tell them that the reason they are organized that way is to make them easier to find and use. Explain that scientists who study plants do the same thing: They organize or classify plants into different categories so they are easier to learn about and use.

Explain that scientists divide plants into two main groups: monocots and dicots. The veins in monocot leaves all go the same direction, or parallel; veins in dicot leaves go different directions, and are called netted. Hold up the two leaves and see if gardeners can tell which is a monocot and which is a dicot. Show them how to lay a sheet of paper over the leaf and rub over it with the edge of a crayon to show the veins of the leaf on the paper.

Another way to differentiate a monocot seed from a dicot seed is that a monocot seed is in one piece, whereas a dicot comes in more than one piece. Show them the corn and peanut seeds and ask which is which.

Have each gardener fold a large (11- by 17-inch) sheet of construction paper in half three times to make a sheet with eight sections or boxes. The gardeners should turn the papers so that they make two long columns up and down. Have them label the first box with the word MONOCOT in large letters. In the box below that, they should make a rubbing of a monocot leaf. They should glue the monocot leaf below the rubbing, and a monocot seed in the box under the leaf.

Monocot	Dicot

Have them complete the second half of the box the same way using the dicot information.

In the Classroom

Folding paper is a good opportunity to reinforce fraction skills. When you fold the construction paper in half, show the students that the paper is folded into two parts. Tell them that each part is called one-half and write $\frac{1}{2}$ on the board. Ask them how many halves are on the page. Since there are two, explain that there are two halves on the page. Write $\frac{2}{2}$ on the board. Do the same thing each time you fold the paper in half again—you can introduce one-fourth ($\frac{1}{4}$), four-fourths ($\frac{4}{4}$), one-eighth ($\frac{1}{8}$) and eight-eighths ($\frac{8}{8}$).