

SCIENCE 302

PLANTS

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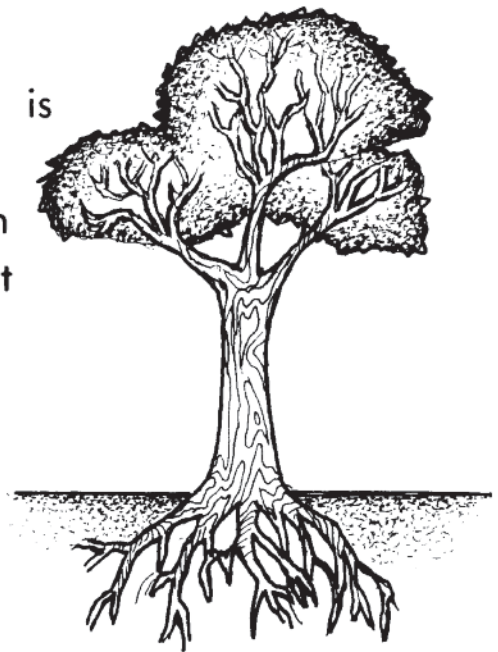
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ROOTS

Roots are the part of the plant that is in the ground. The roots of the plant hold the plant in the ground. On each root are tiny root hairs. These tiny root hairs grow into the **soil**. They take in water and **minerals**. The plant uses water and minerals to make food. Without water and minerals, the plant cannot grow.



Roots are important.



Look for root hairs.



You will need these things:

radish seeds

paper towel

magnifying glass

plastic bag and tie

water



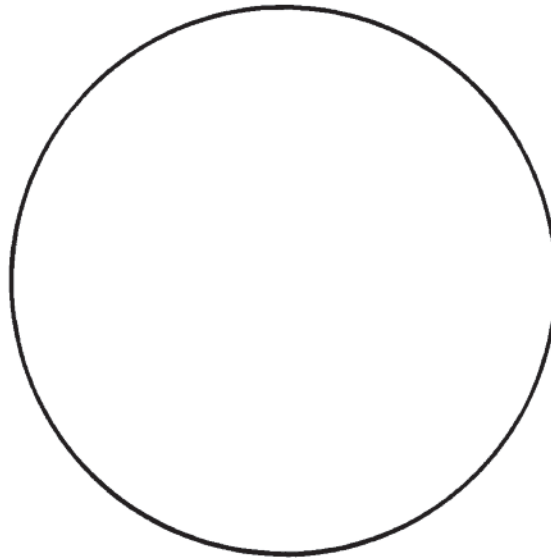
Follow these directions. Put a check in the box when you do each step.

- ☐ 1. Lay seeds on wet paper towel and fold it.
- ☐ 2. Place towel in plastic bag. Open after six or seven days.
- ☐ 3. Look for small hairs on the roots. These are the root hairs.
- ☐ 4. Look at the roots through a hand lens. This is also called a **magnifying** glass.



Draw and label a picture of the root hairs that you observed.

- 1.1 Each time you make a drawing, follow these rules:
1. Draw only what you see.
 2. Draw with simple lines.
 3. Draw a straight line from each part of your drawing to a clean part of your paper.
 4. On the white space of your paper clearly print the **label** for seed, root, and root hairs.



Write the answers in the blanks.

- 1.2 Many green plants have _____ that hold the plant in the ground.
- 1.3 Many green plants have a. _____ and b. _____ that grow up.
- 1.4 Root hairs take a. _____ and b. _____ from the soil.

STEMS

Now look at a plant's stems. These stems are like tiny pipes. Water and minerals can travel through the stem. The stem takes water and minerals to the leaves, where the plant's food is made.

Stems are many different sizes. The big tree trunk is a stem. The stem of a **cabbage** plant is so short that you may not see it. Vines are a kind of stem. The tiny tubes in the stem of a **celery** plant are easy to see.



Study a stem.



You will need these things:

a small jar with water
food coloring
a celery stem
magnifying glass



Follow these directions. Put a check in the box when you do each step.

- ☐ 1. Cut off a piece of celery stem.
- ☐ 2. Look at the end of it with your magnifying glass. The darker dots you see are the tiny tubes.
- ☐ 3. Put some food coloring in a small jar of water.
- ☐ 4. Put the celery stem in the water.

- ☐ 5. Let it set for a few hours.
- ☐ 6. Look at the celery stem again.



Write what you saw.

1.5

△



Write the answers in the blanks.

1.6

The tiny pipes of a plant are found in its _____
_____.

1.7

The stem carries water and minerals to the _____
_____ of the plant.

1.8

The plant's _____ is made in its
leaves.

LEAVES

The leaves of green plants have tiny openings in them. To see these openings, you will need the help of a **microscope**. A microscope makes things look much bigger than they really are.

The tiny openings are important to help the plant grow. **Carbon dioxide**, a gas from the air, enters the leaf by the openings. Carbon dioxide is given off by people and animals when they **breathe**.

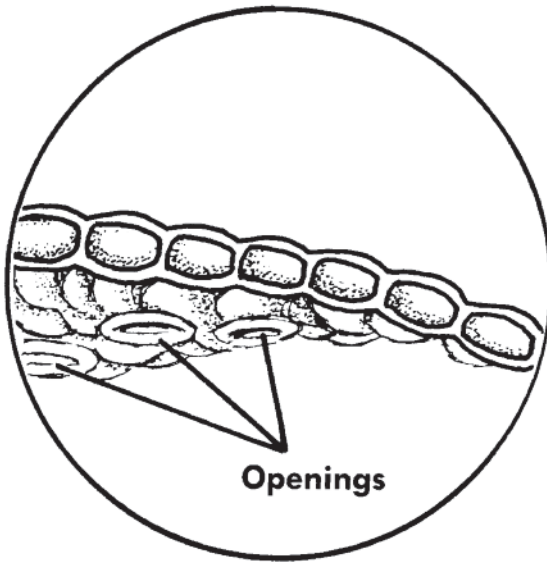
When plants use carbon dioxide, they give off a gas called **oxygen**. People and animals need oxygen to live.

Some of the water in the plant is given off through the leaves.

Carbon dioxide goes into the leaves of the plant through tiny openings like those in this picture.



Ask if your teacher can show you these openings with the microscope.



FOOD STORAGE PARTS

You have learned that all green plants make food. You know that the plants use part of the food they make. This food is used to grow new leaves and roots.

What happens to the rest of the food? God made green plants in a special way. All the extra food is stored somewhere in the plant. Some plants such as **lettuce** store their extra food in the leaves. Many plants such as beets and carrots store food in their roots. The

celery plant stores food in its stem.
Corn, beans, and **peas** store food in
their seeds. Still other plants store food
in their fruit. Could you say, then, that
you had roots, stems, and leaves for
dinner?



Draw four plant parts you have eaten this week.



Write the answers in the blanks.

- 1.9 The tiny openings in the leaves of plants take in _____.
- 1.10 Plants give off a. _____ and a gas called b. _____ into the air.
- 1.11 All green plants were created by _____.