

# SCIENCE

Student Book

▶ **3rd Grade** | Unit 2

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# SCIENCE 302

## PLANTS

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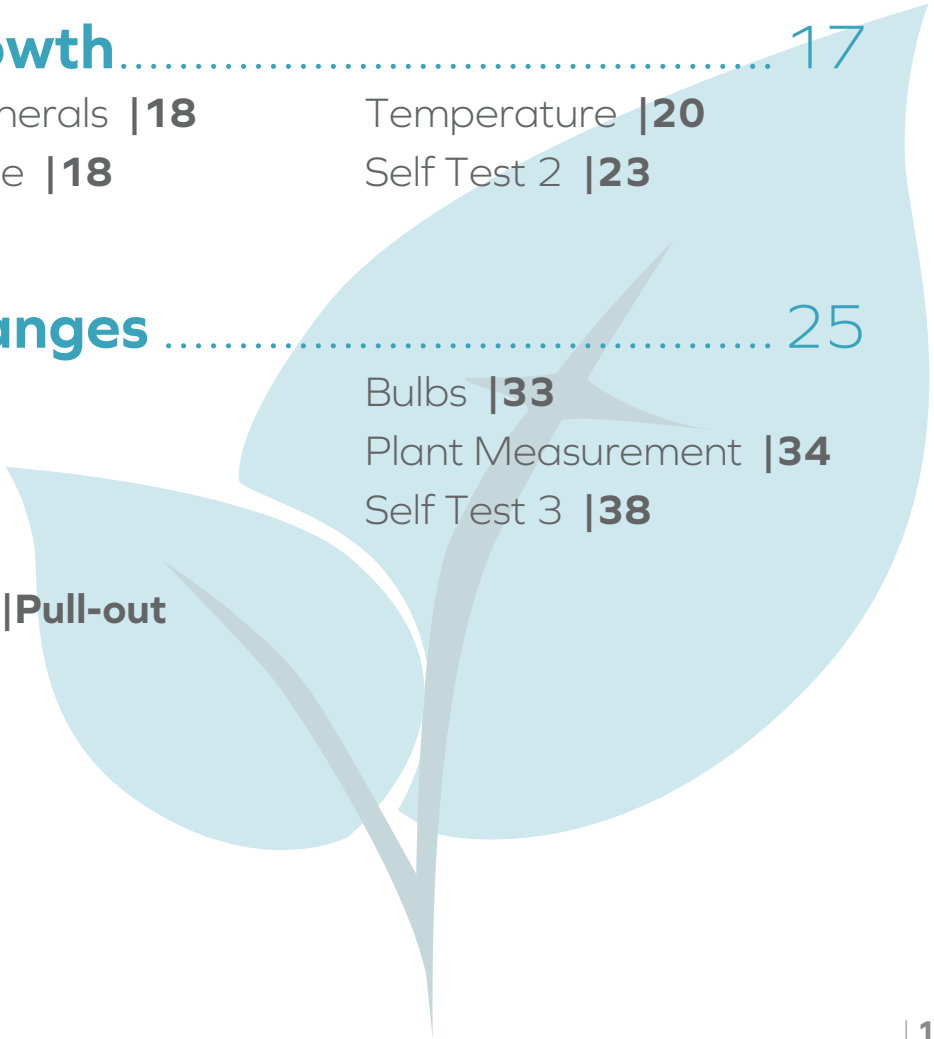
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# PLANTS

Look out your window. You probably see some kind of plants growing. Plants grow in many places. Plants grow on the bottoms of deep oceans and on the tops of high mountains. Plants grow in dry places and wet places. Almost all places on the earth have plants. Plants have many different shapes, sizes, and colors. Plants can have beautiful flowers, or plants can have no flowers at all.

You will learn about some of the parts of plants. You will also learn what plants need to help them grow. You will learn how some plants are like others and how some plants are different from others. Your study of this LIFEPAC® will help you know how important plants are.

## Objectives

**Read these objectives.** The objectives tell you what you will be able to do when you have finished this LIFEPAC.

1. You will be able to name the three main parts of a green plant.
2. You will be able to tell what job each main part of a green plant has.
3. You will be able to tell what green plants need to grow.
4. You will be able to tell why green plants are important.
5. You will be able to name some parts of plants that change to make new plants.
6. You will be able to measure changes in plants.

# 1. PLANT PARTS

Just as God takes care of you, God has given plants the things they need to grow. Each part of the plant is important, just as each part of your body is important. Most of the plants we see every day have roots that move and grow down. These plants also have stems and leaves that grow up. Look at how some of the parts of a plant help it grow.

## Vocabulary

**Study these new words.** Learning the meanings of these words is a good study habit and will improve your understanding of this LIFE PAC.

**breathe** (brēFH). To force air in and out of the lungs.

**cabbage** (kăb' ij). A vegetable to eat which has a round head and a short stem.

**carbon dioxide** (kär' bən dī ōk' sīd). A gas in the air which is needed by plants.

**celery** (sěl' ə rē). A green plant to eat which has long stems with leaves at the top.

**label** (lā' bəl). To put a name on something.

**lettuce** (lēt' əs). A plant to eat which has large green leaves.

**magnify** (măg' nə fī'). To cause a thing to look larger than the real size.

**microscope** (mī' krə skōp'). A tool made up of mirrors and a glass that makes things look larger.

**mineral** (mīn' ə r ə l). Material that is not animal or plant.

**observe** ( ə b zûrv'). To see and note; notice.

**oxygen** (ôks' i jən). A gas in the air needed by people and animals.

**peas** (pēz). A vegetable to eat which has round seeds in a pod.

**soil** (soil). The ground, earth, dirt.

**stem** (stēm). Part of a plant that holds up the leaves.

**Note:** All vocabulary words in this LIFEPAC appear in **boldface** print the first time they are used. If you are unsure of the meaning when you are reading, study the definitions given.

**Pronunciation Key:** **h**at, **ā**ge, **cā**re, **fā**r; **l**et, **ē**qual, **tē**rm; **i**t, **ī**ce; **h**ot, **ō**pen, **ō**rder; **o**il; **o**ut; **c**up, **pū**t, **rū**le; **ch**ild; **l**ong; **th**in; /ʦH/ for **th**en; /zh/ for **meas**ure; /u/ or /ə/ represents /a/ in **a**bout, /e/ in **tak**en, /i/ in **pencil**, /o/ in **l**emon, and /u/ in **circ**us.

**Ask your teacher to say these words with you.**



**Teacher check:**

Initials \_\_\_\_\_ Date \_\_\_\_\_

### **Note to the Teacher:**

Preview all of the experiments in this LIFEPAC. Many take several days and should be started early to assure timely completion of this unit.

## 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:

a small plant  
magnifying glass

**Follow these directions.** Check the boxes as you do each step.

1. Carefully dig up a small plant.
2. Gently wash away the dirt.
3. Look for small hairs on the roots. These are the root hairs.
4. Look at the roots through a **magnifying** glass.

*(Continued on the next page)*



**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 each part of your drawing.



**Teacher check:**

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**Write the answers in the blanks.**

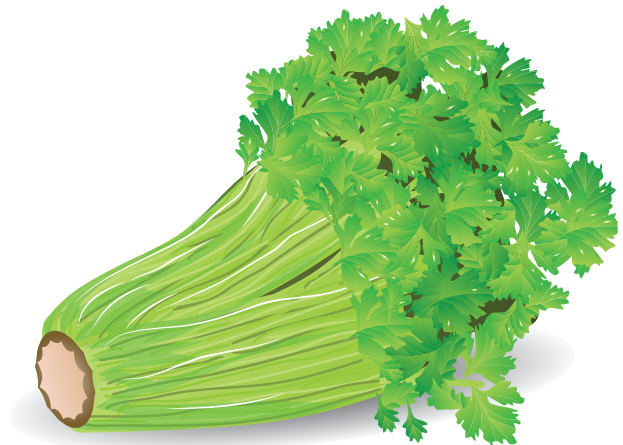
- 1.2** Many green plants have \_\_\_\_\_ that hold the plant in the ground.
- 1.3** Many green plants have a. \_\_\_\_\_ and b. \_\_\_\_\_ that grow up.
- 1.4** Root hairs take a. \_\_\_\_\_ and b. \_\_\_\_\_ from the soil.

## 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.** Check the boxes as 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

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**Write the answers on the blanks.**

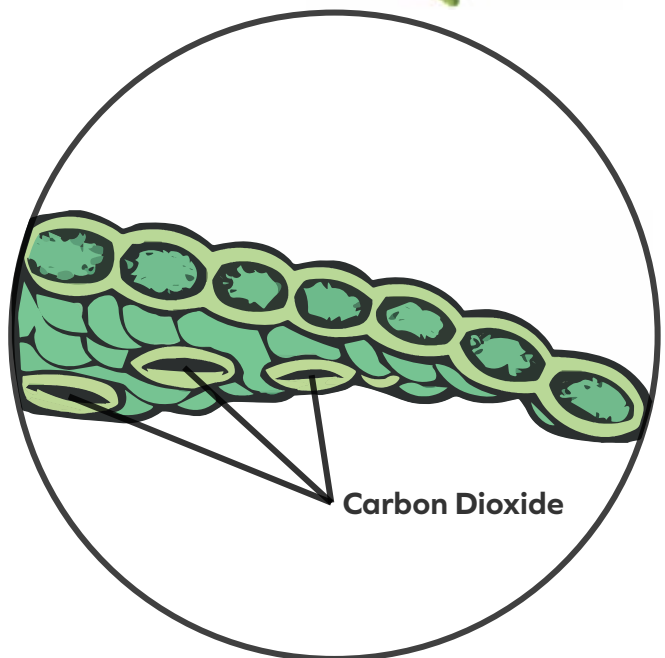
- 1.6** The tiny pipes of a plant are found in its \_\_\_\_\_ .
- 1.7** The stem carries water and minerals to the \_\_\_\_\_ of the plant.
- 1.8** The plant's \_\_\_\_\_ is made in its leaves.

## 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.



## 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?



| Can you see the roots, stems, fruits, and seeds in this salad?



Draw four plant parts you have eaten this week.




**Teacher check:**

Initials \_\_\_\_\_ Date \_\_\_\_\_



### Write the answers on 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 \_\_\_\_\_.



### Complete this activity.

- 1.12** One important reading rule says that if two vowels are side by side the first vowel has a long sound and the second vowel is silent. The word leaf follows this rule. You hear the long /e/ sound but the letter a is silent. Mark the vowels in the following words. Put the long vowel mark (-) over the vowel you hear. Draw a line through the vowel you do not hear.

leaf

soak

bean

pea

oak

grain

hoe

read

paint

bead

float

toast

green

beet

rain

plain



**Choose the main idea.**

**1.13** Think about the things you have read about plant parts. You have read about plant roots. The main job of the root is to take in water and minerals for the plant to use. The main idea of the job of the root is to take in water and minerals.

You also have read about a plant's stem and leaves. Write the main idea for the job of these plant parts.

The first one is done for you.

The root's job is taking in water and minerals.

a. The stem's job is \_\_\_\_\_  
\_\_\_\_\_

b. The leaf's job is \_\_\_\_\_  
\_\_\_\_\_



**Teacher check:**

Initials \_\_\_\_\_ Date \_\_\_\_\_



**For this Self Test, study what you have read and done.** The Self Test will check what you remember.

# SELF TEST 1

Each answer = 1 point

Match the words with the right meanings.

- |  |   |
|--|---|
| a. take in carbon dioxide                      | f. make and store food                  |
| b. thing used to make things look larger       | g. to cause to look larger              |
| c. take in water and minerals                  | h. plant's tiny pipes                   |
| d. ground; earth; dirt                         | i. material that is not plant or animal |
| e. gas needed by animals and people to breathe | j. gas taken from the air by plants     |

- 1.01 \_\_\_\_\_ roots
- 1.02 \_\_\_\_\_ green plants
- 1.03 \_\_\_\_\_ mineral
- 1.04 \_\_\_\_\_ stem
- 1.05 \_\_\_\_\_ microscope
- 1.06 \_\_\_\_\_ leaves
- 1.07 \_\_\_\_\_ carbon dioxide
- 1.08 \_\_\_\_\_ oxygen
- 1.09 \_\_\_\_\_ magnify
- 1.010 \_\_\_\_\_ soil



Write the answers in the blanks. Use the words from the list.

- |          |                  |                |
|----------|------------------|----------------|
| air      | magnifying glass | root hairs     |
| beets    | microscope       | carbon dioxide |
| minerals | carrots          | oxygen         |
| water    | leaves           | roots          |
| stems    |                  |                |

**1.011** Name three parts of a plant.      a. \_\_\_\_\_  
b. \_\_\_\_\_      c. \_\_\_\_\_

**1.012** List three things a plant needs to grow.  
a. \_\_\_\_\_      b. \_\_\_\_\_  
c. \_\_\_\_\_

**1.013** Name two things used to make small things look larger.  
a. \_\_\_\_\_      b. \_\_\_\_\_

**1.014** Carbon dioxide is a gas plants take from the \_\_\_\_\_.

**1.015** Name two plants that store food in their roots.  
a. \_\_\_\_\_      b. \_\_\_\_\_

**1.016** Plants give off \_\_\_\_\_ in the air.

**1.017** On the roots of plants grow \_\_\_\_\_.

**Answer these questions.**

**1.018** Who made all green plants? \_\_\_\_\_

**1.019** How are green plants important to you?  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

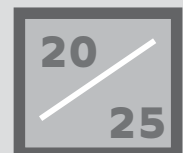


**Teacher check:**

Score \_\_\_\_\_

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