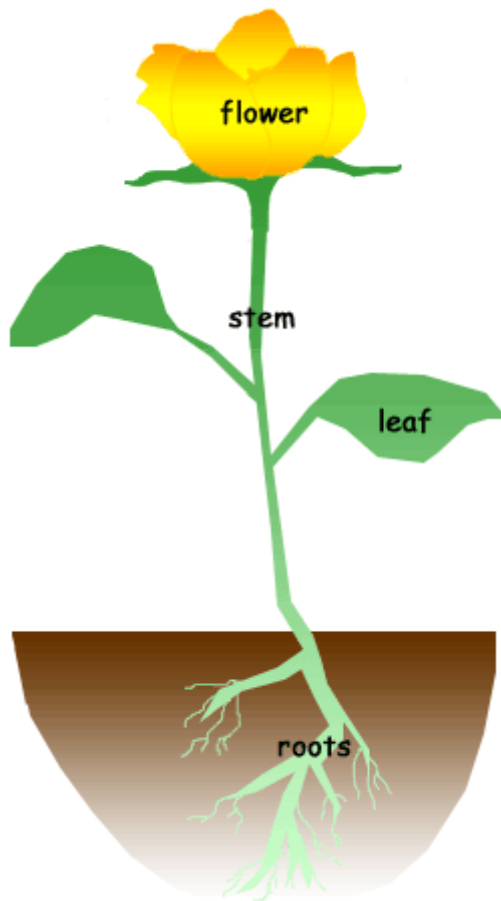


Plant Parts



What Do Different Plant Parts Do?

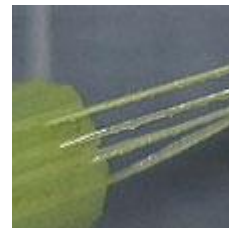
Plant parts do different things for the plant.

Roots

Roots act like straws absorbing water and minerals from the soil. Tiny root hairs stick out of the root, helping in the absorption. Roots help to anchor the plant in the soil so it does not fall over. Roots also store extra food for future use.

Stems

Stems do many things. They support the plant. They act like the plant's plumbing system, conducting water and nutrients from the roots and food in the form of glucose from the leaves to other plant parts. Stems can be herbaceous like the bendable stem of a daisy or woody like the trunk of an oak tree.



A celery stalk, the part of celery that we eat, is a special part of the leaf structure called a *petiole*. A petiole is a small stalk attaching the leaf blade of a plant to the stem.

In celery, the petiole serves many of the same functions as a stem. It's easy to see the "pipes" that conduct water and nutrients in a stalk of celery.

Here the "pipes" are dyed red so you can easily see them.

Leaves

Most plants' food is made in their leaves. Leaves are designed to capture sunlight which the plant uses to make food through a process called photosynthesis.

Flowers

Flowers are the reproductive part of most plants. Flowers contain pollen and tiny eggs called ovules. After pollination of the flower and fertilization of the ovule, the ovule develops into a fruit.

Fruit

Fruit provides a covering for seeds. Fruit can be fleshy like an apple or hard like a nut.

Seeds

Seeds contain new plants. Seeds form in fruit.

Helpful terms**Herbaceous:**

Plants with stems that are usually soft and bendable. Herbaceous stems die back to the ground every year.

Woody:

Plants with stems, such as tree trunks, that are hard and do not bend easily. Woody stems usually don't die back to the ground each year.

Photosynthesis:

A process by which a plant produces its food using energy from sunlight, carbon dioxide from the air, and water and nutrients from the soil.

Pollination:

The movement of pollen from one plant to another. Pollination is necessary for seeds to form in flowering plants.

A fruit

A fruit is what a flower becomes after it is pollinated. The seeds for the plant are inside the fruit.

A vegetable

Vegetables are other plant parts. Carrots are roots. Asparagus stalks are stems. Lettuce is leaves.

Foods we often call vegetables when cooking are really fruits because they contain seeds inside.

BIOLOGY OF PLANTS

Plants are alive, just like people and animals. How do we know this? Living things all do certain things:

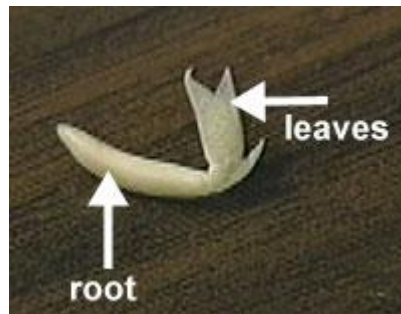
- They grow and die.
- They need energy, nutrients, air, and water.
- They produce young.
- They are made up of cells.
- They react to what's around them.



Starting to Grow

Where Do Plants Come From?

Plants come from seeds. Each seed contains a tiny plant waiting for the right conditions to germinate, or start to grow.



What does the word "germinate" mean? To germinate means to start to grow.

What is a nutrient? Nutrients are substances that living things need to grow. Nutrients include food, air, water, and vitamins and minerals.



What Do Seeds Need to Start to Grow?

Seeds wait to germinate until three needs are met: water, correct temperature (warmth), and a good location (such as in soil). During its early stages of growth, the seedling relies upon the food supplies stored with it in the seed until it is large enough for its own leaves to begin making food through [photosynthesis](#). The seedling's roots push down into the soil to anchor the new plant and to absorb water and minerals from the soil. And its stem with new leaves pushes up toward the light:

The germination stage ends when a shoot emerges from the soil. But the plant is not done growing. It's just started. Plants need water, warmth, nutrients from the soil, and light to continue to grow.

Making Food

Plants are very important to us. All food people eat comes directly or indirectly from plants.

Directly from plants:	Indirectly from plants:
<p>For example, apples come from an apple tree. The flour used to make bread comes from a wheat plant.</p> 	 <p>Steak comes from a cow, and we all know that cows are animals, not plants, right? But what does the cow eat? It eats grass and grains—PLANTS!</p>

What is chlorophyll?
Chlorophyll is the green pigment, or color, found in plants that helps the plant make food.

So all the foods we eat come from plants. But what do plants eat? They make their own food!

What Do Plants Need to Make Food?

Plants need several things to make their own food.
They need:

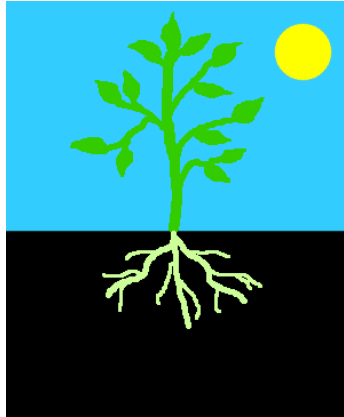
- chlorophyll, a green pigment found in the leaves of plants (see the layer of chlorophyll in the cross-section of a leaf below)



- light (either natural sunlight or artificial light, like from a light bulb)
- carbon dioxide (CO₂)(a gas found in the air; one of the gases people and animals breathe out when they exhale)
- water (which the plant collects through its roots)

- nutrients and minerals (which the plant collects from the soil through its roots)

Plants make food in their leaves. The leaves contain a pigment called chlorophyll, which colors the leaves green. Chlorophyll can make food the plant can use from carbon dioxide, water, nutrients, and energy from sunlight. This process is called photosynthesis.



During the process of photosynthesis, plants release oxygen into the air. People and animals need oxygen to breathe.