

# April 2007: 30 Days of Green

SUNDAY

MONDAY

TUESDAY

WEDNESDAY

THURSDAY

FRIDAY

SATURDAY

*April is National Garden Month® — When you garden, you GROW!*

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April 15

What are we **EATING?**



Help students puzzle out what plant parts they munch at lunch!

## background

Plants come in all shapes and sizes, from cacti to trees and orchids to gourds, but they all possess common parts that carry out similar functions. These parts may vary greatly in appearance and number. This variety is the result of adaptations to various niches in the environment, and it makes for a great palette of plants for gardeners to grow and enjoy. The following is an overview of common plant parts.

### Vegetative Plant Parts: Roots, Stems and Leaves

**Roots.** A plant can't thrive above ground without healthy roots below the ground. There are two main types: taproots and fibrous roots. Taproots (think of a carrot) feature a large primary structure with a few smaller secondary roots. Many lawn grasses feature fibrous roots that appear as a clump of many similar — sized structures. Both types are covered with tiny root hairs that absorb water, along with dissolved nutrients, from the soil. Plants move the water from the roots up through the stems to their leaves. Some plants feature specialized roots that, in addition to their normal role, store food for future plant growth. The sweet potato is this type of root.

**Leaves** house a plant's food factories. Plants have the special ability to produce their own food through a process called photosynthesis. Inside the plant cells are chloroplasts, which use carbon dioxide, water, chlorophyll (the green pigment in plants), and sunlight to make sugars/ carbohydrate. This is what fuels plant growth. A plant without leaves does not have the energy to continue living unless it is dormant or has enough food stored in other parts (like that sweet potato root). Leaves also transpire (emit water, kind of like sweating) to maintain a plant's healthy temperature and encourage roots to continue absorbing water.

**Stems** contain a transport system — something like our own veins and arteries — that allows water and nutrients to move throughout the plant. Xylem cells transport water and dissolved nutrients from the roots to the leaves, and phloem cells move the food produced in the leaves during photosynthesis to other parts of the plant. Stems also supports the plant form the backbone of growth.

### Reproductive Plant Parts

The reproductive parts of plants are even more varied than vegetative parts — that's what makes our flower gardens so beautiful. Most plants produce flowers that then develop fruit and seeds (exceptions include ferns and conifers like pine trees).

## activity

Discuss the different parts of the plant using the plant part diagram.

Every day we eat foods representing different plant parts. Brainstorm with students to create a list of common foods representing each part. Here are a few ideas to get you started:

roots — carrots, sweet potatoes

stems — asparagus

leaves — lettuce, spinach

flowers — broccoli, cauliflower

fruits — tomatoes, apples, bananas, cucumbers

seeds — corn, peas, nuts, rice



Next, explore today's school lunch and identify all the plant-derived ingredients used. Determine what part of the plant each ingredient represents. For example, for a lunch including pizza, salad, and an oatmeal cookie:

**Flowers** exist to produce the next generation and help ensure a species' survival. Most flowers contain a female organ, the pistil (usually just one, though there some species feature more than one) and male organs, the stamens (usually more than one). In order to make seeds, pollen produced by stamens must reach the pistil — this is called pollination, which leads to the development of seeds. Most flowers have both male and female parts and are located on the same plant, but there are exceptions — cucumber and squash plants have distinctive male and female flowers.

**Seeds** grow into new plants. Each seed has a coat surrounding an embryo that contains tiny leaves, a stem, and roots. To ensure survival and success of the species, seeds have evolved different mechanisms get around. For example, maple seeds have wings to help them glide through the air, coconuts can float in water, and milkweed seeds float on "parachutes" of silvery, silky fluff.

**Fruits** are nature's special packages for seeds. They begin to develop after the flower is pollinated. The fruit can protect the seed as well as aid in transportation. Animals transport seeds by eating the fruits and then leaving the seeds in their droppings — seed and fertilizer in a single package!

Many items we call vegetables are actually plant fruits (tomatoes, cucumbers, squash). From a botanical standpoint, vegetables are foods that come from plants' vegetative parts: stems, roots, and leaves. But these strict definitions are not used in everyday life; some items are called vegetables if they are commonly eaten with the main course of a meal, like the examples above.

**Pizza:**

- Tomatoes — fruit
- Wheat flour — seeds
- Basil — leaves
- Oregano — leaves

**Salad:**

- Lettuce — leaves
- Carrots — roots
- Cucumbers — fruit

**Oatmeal Cookie:**

- Raisin (grape) — fruit
- Oats — seeds
- Sugar (sugar cane) — stems

As a follow up, ask each student to plan a menu that includes food derived from a variety of plant parts.

REPRODUCIBLES

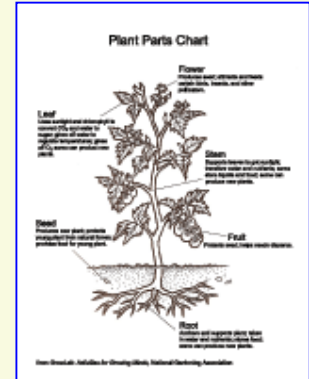
**What part are we eating?**

Let a child or group select a whole one, and fill in the appropriate boxes. Identify which part of the plant is the part we are eating. For example, if you eat a carrot, you are eating the root.

Food	Vegetables	Fruit	Stem	Leaf	Root	Seed	Other

Find yourself: \_\_\_\_\_  
 Find your partner: \_\_\_\_\_

[What part are we eating?](#)



[Plant Parts Chart](#)



# What part are we eating?



List a dish (e.g., pizza, salad, cookie) in column one, and list all the ingredients derived from plants in column 2. Identify which part of the plant each ingredient represents by putting a check mark in the root, stem, leaf, flower, fruit, or seed column.

Food	Plant Ingredients	Root	Stem	Leaf	Flower	Fruit	Seed

Total consumed: roots \_\_\_ stems \_\_\_ leaves \_\_\_ flowers \_\_\_ fruits \_\_\_ seeds \_\_\_

Total plant parts consumed: \_\_\_\_\_

# Plant Parts Chart

## Flower

Produces seed; attracts and feeds certain birds, insects, and other pollinators.

## Leaf

Uses sunlight and chlorophyll to convert  $\text{CO}_2$  and water to sugar; gives off water to regulate temperatures; gives off  $\text{O}_2$ ; some can produce new plants.

## Stem

Supports leaves to get sunlight; transfers water and nutrients; some store liquids and food; some can produce new plants.

## Seed

Produces new plant; protects young plant from natural forces; provides food for young plant.

## Fruit

Protects seed; helps seeds disperse.

## Root

Anchors and supports plant; takes in water and nutrients; stores food; some can produce new plants.

