



Sensational Stems

Plant Parts Week 2 Reading Page

What do sugar, paper, cinnamon, rubber, and maple syrup all have in common? They all come from plant stems!

Stems are the part of the plant between the root and the leaves. Stems give plants their structure. Their support allows plants to grow off the ground and reach towards the sunlight. Holding plants up can also help prevent them from being stepped on by large animals (like people).

The stems do another important job. They contain the plant's transport system. Inside the stems, water and dissolved nutrients that are absorbed from the soil by plant roots are moved up to the leaves. They are carried up the plant in special parts called **xylem** (ZIE-lem) cells. Once in the leaves the water and nutrients are used by the plant to make food. After the food it made, it is then moved from the leaves by the stems to the rest of the plant. The food is moved around through the stems in special parts called **phloem** (FLOW-em) cells.

Stems come in all different shapes and sizes. Some plants have short stems like the dandelions in your yard. Other plants have really big stems like the trunks of big oak or pine trees. Some stems are green and flexible and you can break them easily. Other stems are hard and covered in bark and you need a chainsaw to cut through them. Some stems have special features, like thorns, to protect the plant. Most stems are found above ground, but there are even some special stems that grow below ground and they help store food for the plant. Irish potatoes and "true bulbs" like tulips and onions are all classified by scientists as stems.

In addition to being important to the plant, stems are also important to people. A lot of useful products in our world come from plant stems. Here are some examples:

Sugar. Approximately 40 to 45% of our sugar is made from the stems of sugarcane plants. (Some sugar comes from beet roots.) Can you think of all of the treats that could not be made without sugar?

Maple Syrup. Maple syrup is made by boiling the sap of maple trees. Can you imagine pancakes and waffles without maple syrup?

Paper. We make paper from the stems of lots of different kinds of trees. What would be missing without paper? No books or newspapers (or homework!).

Lumber. Do you live in a home or go to school in a building that is made from lumber? Are you sitting on furniture made from wood right now?

Rubber. Rubber is harvested from the sap of the rubber tree and is one of the materials needed to make car tires. How much walking would you do without cars?

Medicine. Some medicines are made from stems. Aspirin was originally made from the bark of willow trees and is important for helping us feel better when we are sick or in pain.

Food. Stems provide us with food, too. Asparagus, broccoli, bamboo shoots, kohlrabi, and Irish potatoes are a few examples. (Fun Plant Fact: Irish potatoes are stems, but sweet potatoes are roots). Cinnamon is from the bark of trees and is a tasty spice added to many recipes. Who loves cinnamon rolls?

Whether short or tall, flexible or rigid, green or covered in wood, stems are sensational.

Reading Comprehension Questions

1. What do stems do for a plant?
 - A. They move water from the roots to the leaves.
 - B. They move food from the leaves to the roots.
 - C. They help the plant reach sunlight.
 - D. They help protect the plant.
 - E. All of the above.
2. What is the name of the special cells that help move water from the roots to the leaves:
3. What is the name of the special cells that help move food from the leaves to the rest of the plant:
4. Name an example of a plant that has bark on its stem:
5. List one product made from stems that you would not want to live without and say why: