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about what you are
reading in this space.

Science Shorts -7

Photosynthesis

Did you know that green plants make their own food? Of all the living things in our natural world, green plants are the only things that can make their own food. This process is called photosynthesis. Synthesis means, “putting together to make something.” The prefix “photo” means light. Therefore, the word photosynthesis means, “to make something with light.”

In order for photosynthesis to happen four elements must be present. They are chlorophyll, carbon dioxide, water and solar energy. All plants contain chlorophyll in their chloroplasts. These chloroplasts are found mainly in the leaf cells and in the stems. **Chlorophyll** is what gives a plant its color green. **Carbon dioxide** is a gas in the air. It enters the leaves through very tiny openings called stomata. Plants absorb **water** through their roots. Special tubes take the water to the leaves. The **solar energy** comes from the sun.

There are many steps that take place during photosynthesis. The first is for the chlorophyll in the chloroplasts to trap the sun’s energy. Then, the carbon dioxide that enters the leaves is combined with the water. This makes a simple sugar and oxygen. This extra oxygen is released from the plant. The simple sugar travels to all parts of the plant by special tubes.

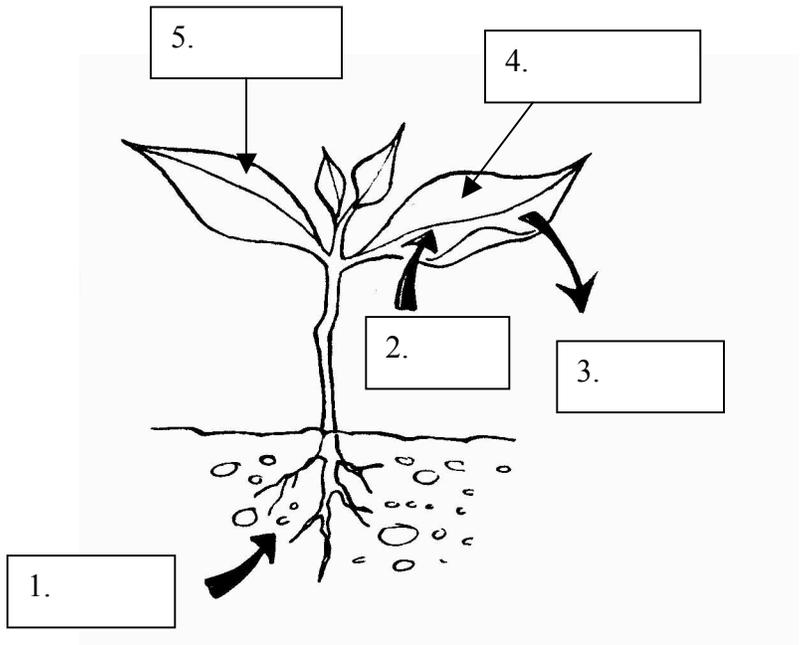
The simple sugar actually helps to create some not-so-simple things. Some of the simple sugar that is made in the leaves provides energy for the plant to grow. Some of it is stored as a starch. When an animal or a person eats plants they are consuming the starch.

The oxygen gas that plants give off is essential for us to have clean air to breathe. The stomata release oxygen the plant does not need as well as excess water. Plants usually take in more water than they need. This water evaporates into the air.

We could not live without plants because they are the only natural organisms that can undergo this complex energy change known as photosynthesis. The solar energy from the Sun is converted to chemical energy (the sugar) that is used by plants and animals for energy. Through the process of photosynthesis, plants give us food and oxygen. Researchers have found that by simply adding a few plants to classrooms, offices and homes people get sick less often.

Fill in the boxes from the clues given below.

1. What plants absorb through their roots.
2. The gas that enters the plant through the stomata.
3. The gas that leaves the plant through the stomata.
4. What is made in the leaves.
5. What gives plants their green color.



Place the following events in order from first to last.

- _____ A simple sugar and oxygen are made.
- _____ Extra oxygen is released from the plant.
- _____ Carbon dioxide combines with water.
- _____ Chlorophyll in the chloroplasts must trap the sun's energy.
- _____ The simple sugar is used for growth.
- _____ The simple sugar travels to all parts of the plant.
- _____ Carbon dioxide enters the leaves.

| Compound | Name | Solid/Liquid or Gas |
|----------|------|---------------------|
| H_2O | | |
| CO_2 | | |
| O_2 | | |