

Mixing-Bowl Model to Illustrate Photosynthesis

Scientists have learned that water, carbon dioxide, and sunlight are **not**, by themselves, food for plants. But plants can do something amazing with these two kinds of matter and one form of energy. Here's one way of imagining what is happening inside a plant:

This green bowl represents a plant leaf.

The leaf gets water from the soil that travels up from the roots of the plant. Can someone pour some water into this leaf?

Carbon dioxide from the air also enters the leaf through tiny holes, or pores. This baggie filled with air contains carbon dioxide. Can someone "pour" the carbon dioxide into the leaf?

Now we need someone to be the Sun and shine this flashlight on the leaf.

When water, carbon dioxide, and sunlight come together in the leaf, some amazing chemical reactions take place. This hand mixer can represent these chemical reactions.

The plant rearranges the bits of carbon dioxide and water and changes them into sugar, which contains both matter and a new form of stored energy called **food energy**. [*Display some sugar or sugar cubes*].

So carbon dioxide by itself isn't food for plants, water by itself isn't food for plants, and sunshine by itself isn't food for plants. But the plant can take these three things and **make** or **produce** food. That's why plants are called **producers**.

Optional: Tell students that the name of this process is **photosynthesis**.

