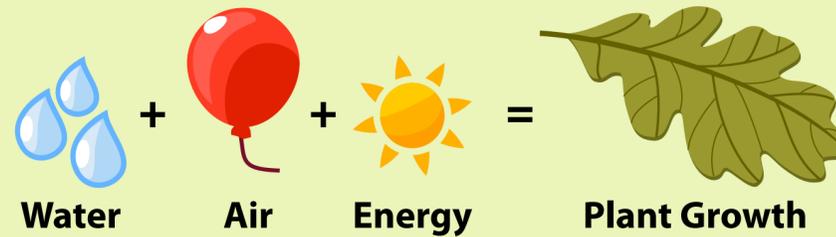


Recipe for a Plant

The air around you seems empty, but it's not. Air is made of tiny bits that we call molecules. If you had enough air molecules, you could even weigh them. Two of the molecules in air are oxygen and carbon dioxide. You may think oxygen is the most important molecule—we need it to live. But carbon is important too. All living things on Earth are made of carbon.



If you removed the water from our bodies, you would find that carbon makes up most of the rest of our weight, or mass. The same is true for plants. We get carbon from our food, but where do you think plants get carbon? They don't get it from the soil, or the sun, or from water. They pull carbon out of the air. For more of the carbon story, follow the pink arrow.

Air

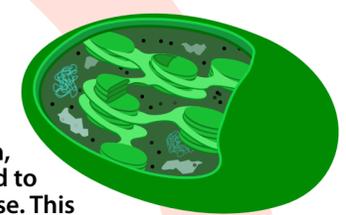
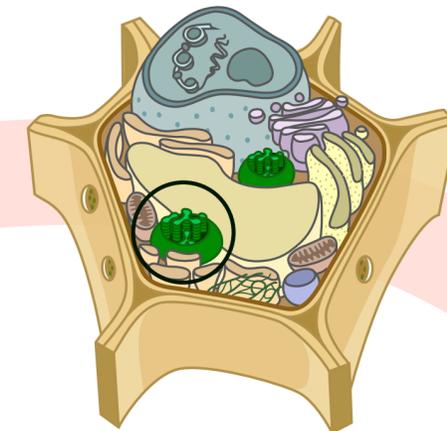
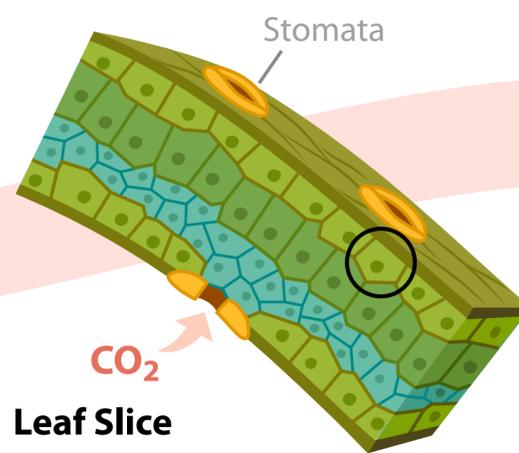
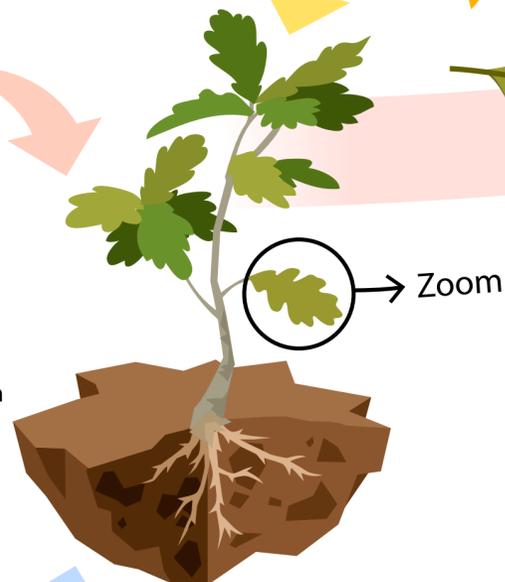
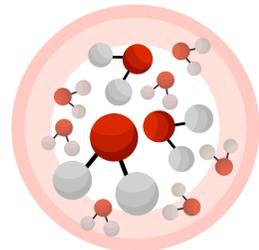
Our balloon is filled with air which is mostly made of nitrogen, oxygen, and carbon dioxide (CO₂). Carbon dioxide molecules are made of carbon and oxygen atoms. Plants absorb CO₂ from the air.

Energy

A lot of energy is needed to grow. Plants get their energy from the sun.

Plant Cell

Inside the plant cell are special parts called chloroplasts, where photosynthesis takes place. Plant cells look green due to green molecules in the chloroplasts. Most of the rest of the cell is almost clear.



Water

Water is made of hydrogen and oxygen atoms. Plants get hydrogen and oxygen by absorbing water through their roots.

Leaf Slice

Plants absorb CO₂ through small openings called stomata.

Chloroplasts

In the chloroplasts, carbon, water, and energy are used to make a sugar called glucose. This whole process is called photosynthesis.

Are plants made from thin air?

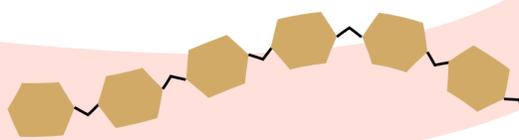
The story of how plants use carbon to grow

Cell Growth

Cells grow and divide, making new cells.

Glucose

Next, glucose molecules combine to form long chains called cellulose.



Cellulose

Cellulose is then used to build plant structures, like cell walls. These structures and the materials they hold are also built with water.

New Growth

New cells make for new plant growth. This lets the plant get bigger.

Did you know some plants are as much as 95% water?

If you dried the water out of any plant, you'd be left with mostly carbon. From tiny flowers to huge redwood trees, most plants get the carbon they use to grow from the air.