

VOCABULARY

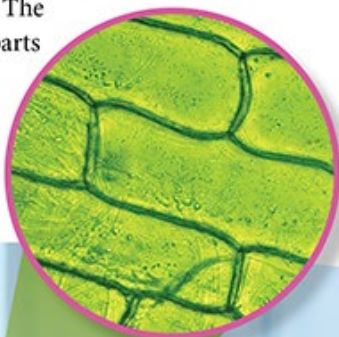
- science
- model
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- organism
- nutrient
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- internal structure
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- function
- flower
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- botanist

ESSENTIAL QUESTION:

What are some external structures of a plant?

Science and Models

Science is the study of the world. It is based on observations and the use of models. A **model** is a simple way to represent a more complex object or idea. A plant cell model is one example. The plant cell is too small to see without a microscope. The plant cell model is larger than a living plant cell. The model can show you what the parts inside a plant cell look like. It can help you understand how the parts inside the plant cell work together.

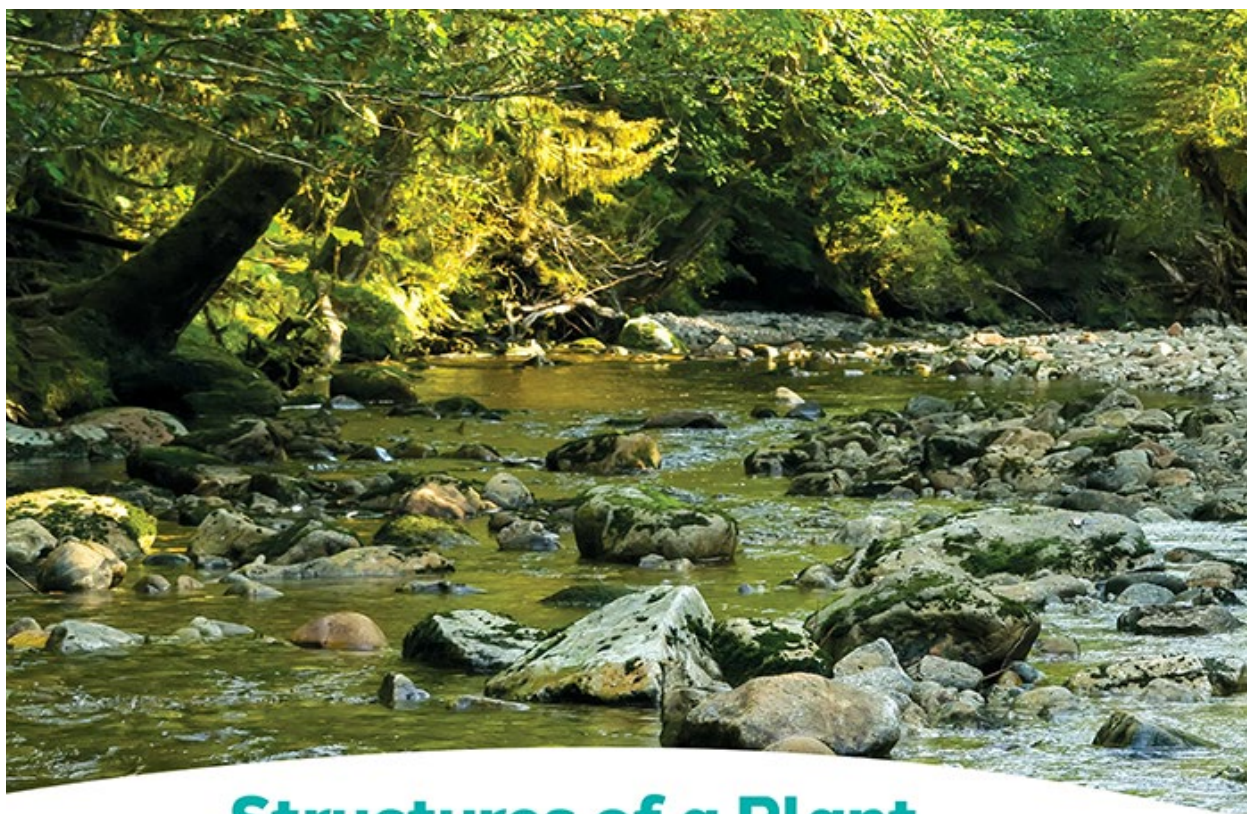


Models are helpful, but they are not perfect. The plant cell model cannot show the parts of the cell working. The model cannot show how one plant cell works together with other plant cells. It does not show how tiny a plant cell really is.



All scientists look at models from their own worldview. Remember that a *worldview* is the way a person thinks about and understands the world. A person's worldview comes from the story that person believes. It guides how that person lives. We should study science with a biblical worldview. Only the Bible can tell us what is true. Science cannot tell us what is true. Science can tell us only what works as we solve problems using science.





Structures of a Plant

When God created the earth, He made many different kinds of living things. Living things are called *organisms*. An organism must have food, water, air, and space to survive and grow. Food and water provide organisms with nutrients. A **nutrient** is something in nature that helps plants, animals, and people live and grow.

Animals and people are organisms. Plants are organisms, too. Plants are a marvelous part of God's design for the earth. Learning about plants will help you know how to take care of and use the plants around you.

All organisms are different. They are made up of different parts. The parts that an organism is made of are called **structures**. The structures of a living thing work together to help it survive and grow. Your eyes and your brain are structures. They work together to help you see things around you. Leaves and flowers are also structures. They help the plant live and grow.





What structures do you see?

Some structures are internal. **Internal structures** are on the inside of an organism. Your brain is an internal structure. It is protected inside your head. Some structures are external. **External structures** are on the outside of an organism. Your skin is an external structure. It is on the outside of your body.

God created the structures of a living thing to work together. To **function** is to work together for a purpose or design. Each structure of an organism functions as God created it to. Each structure helps the living thing to survive, grow, behave, and reproduce as God planned.

Plants are good examples to study to learn about the structures that God has created. There are many, many different kinds of plants. Most plants have the same basic structures. These structures are roots, stems, and leaves. Many kinds of plants also have flowers. Some kinds of plants have fruit.



1. What is a model?
2. What do the structures of an organism help it do?

External Plant Structures

Flower

The *flower* is the part of the plant that makes the seeds.



Fruit

The *fruit* contains the seeds of the plant. The fruit also stores food for the plant.

Leaves

The *leaves* are the part of the plant where photosynthesis takes place. They make food for the plant.

Stem

The *stem* transports water and nutrients to different parts of the plant. The stem also supports the leaves, fruit, and flowers.

Roots

The *roots* anchor the plant in place. The roots also take in water and nutrients from the soil.

STEM CAREER

Botanist

Did you know that there are many thousands of plants in the world? Do you think that one person counted all those kinds of plants? Of course not! Many scientists all over the world have discovered different kinds of plants. They recorded their observations about these plants over many years. A scientist who studies plants is called a **botanist**.

Botanists study many different kinds of plants. Some botanists study trees. Other botanists study flowering plants. Some botanists study plants that are used for food. Still others study how to treat plants that have become sick. Botanists find ways to keep plants from being harmed by insects.

Some botanists might try to make plants produce more flowers. Others might work to find a way to help plants produce more fruit.

Botanists study the life cycle of plants and how to classify them. They learn all they can about plants. Careful research helps botanists do a good job.

