





Take a look at the image on the right. What living things are in the image? How do the plants appear to be different than the animals?



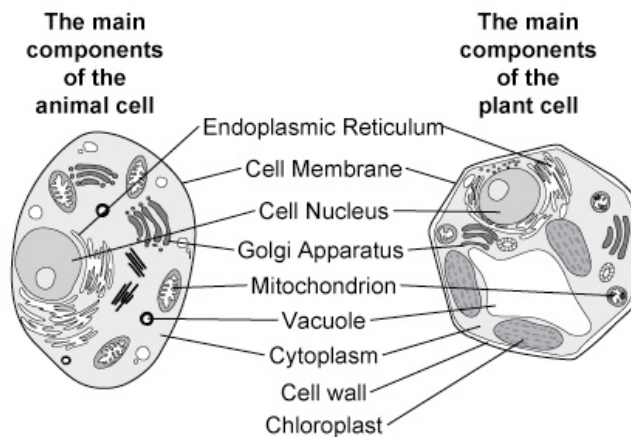
These are baby squirrel monkeys in a tree. Can you think of some difference between the plants and animals in this image?

One of the main differences between plants and animals is usually obvious. Plants are green! But the evidence for this is so tiny you need a microscope to really see it. If you look at a plant **cell** under a microscope you can see that it has tiny green granules in sacs. These granules are green because they contain the pigment chlorophyll. This pigment absorbs energy from sunlight. This energy is used in an organelle called a **chloroplast** to make food for the plant. Animal cells do not have chloroplasts or **cell walls**. Can you think of why this might be? Well, animals cannot make their own food. This is reflected in the fact that they do not have chloroplasts in their cells. Also, animal cells do not have a cell wall because animals do not take on the rigid structures that plants do. Animals have other ways of keeping their shape, some animals have bones. Other animals such as insects have a hard, shell-like covering called an exoskeleton that gives them shape. Looking at the chart below can help you see the similar and different **organelles** that are present in plant and animal cells.

Organelle	Function	Illustration
mitochondria	Converts sugar into energy for the cell.	
cell nucleus	Contains the cell's genetic information, and controls the functions inside the cell.	
endoplasmic reticulum	Helps in assembling proteins.	
Golgi apparatus	Helps package and transport materials within the cells, and helps package materials to be transported out of the cell.	

Organelle	Function	Illustration
cell membrane	The surrounding layer of the cell that controls what materials enter and leave the cell.	
cytoplasm	The liquid inside the cell that surrounds the organelles.	
vacuole	Sac-like structures that help in cell activities. In plant cells large vacuoles contain water.	
chloroplast	The structure that contains chlorophyll and carries out photosynthesis.	
cell wall	The rigid outside material that surrounds plant cells to give them structure.	

Overall, plants and animals have many organelles in common. Both plant and animal cells have organelles to help control, organize, and maintain the cell. These are functions that are mainly done by the **cell nucleus**, endoplasmic reticulum, **cell membrane**, **cytoplasm**, and **mitochondria**. So even though plants and animals are very different organisms, they have some very similar structures within their cells.



Plant and animal cells have many of the same organelles.

## Comprehension Questions

1. What organelles are present in plant cells that are not in animal cells?

2. Differentiate between the structure and function of the different organelles in plant cells.

3. Why do plant and animal cells have many of the same organelles?