

What Are Plant Cells Like?

Name: _____

Date: _____

Building Blocks of Life

- ♦ _____ are the building blocks that make up all living things.
- ♦ God made some living things, such as bacteria, that are just _____ cell.
- ♦ Others, such as humans, trees, and mushrooms, are made of a _____ cells or more!
- ♦ Most cells are so _____ that you need a microscope to see them.
- ♦ Each cell is a tiny _____.
- ♦ Inside the cell, chemicals from the _____ you eat are combined in different ways to produce the new substances and structures you need to live.
- ♦ Cells are able to do this because God created each cell with a variety of tiny cell parts called _____.
- ♦ Each organelle is designed to carry out an important _____.
- ♦ Plant and animal cells have several parts in _____.
- ♦ For example, the barrier between all cells and the world outside them is the _____.
- ♦ This outer layer _____ a cell and _____ what moves in and out of a cell.
- ♦ Another feature of both plant and animal cells is the _____.
- ♦ A _____ contains a library of information, like a computer program.
- ♦ The nucleus _____ a cell's activities.
- ♦ It acts as a _____ center.
- ♦ _____, which is found in the nucleus, acts like a kind of chemical instruction book on which information the cells needs to operate is written.
- ♦ Within the cell membrane is a jellylike substance that fills the cell called the _____.
- ♦ The cytoplasm gives the cells _____ and helps hold the cell's organelles (small cell parts) in place.
- ♦ An organelle found in _____ plants and animals is mitochondrion.
- ♦ _____ break down food to obtain energy.

- ♦ Some cells have parts called _____ that store food and water.
- ♦ Vacuoles can be found in some animal cells, but they are more common in _____ cells.
- ♦ Many plant cells contain one _____ vacuole that takes up more than half of the cell’s space.
- ♦ When a plant loses water, its vacuoles _____.
- ♦ Once the plant receives water, its vacuoles _____.
- ♦ Plant cells are surrounded by _____.
- ♦ Animal cells do _____ have these walls.
- ♦ Cell walls form a strong layer that surrounds and _____ the plant cell.
- ♦ It helps plants to _____ their shape.
- ♦ The green matter in plant cells and in some simpler organisms is found in a structure called a _____.
- ♦ It allows these organisms to make their own _____.
- ♦ Chloroplasts are found in plant _____ and in green plant stems but not in most animal cells.

Plant, Animal, or Both

Complete the table. Identify if the organelle belongs to a plant (P) cell, animal (A) cell, or both (B). Then briefly describe the function of each organelle.

Organelle	Plant, Animal, Both	Function
Nucleus		
Cell Membrane		
Cytoplasm		
Mitochondrion		
Cell Wall		

Central Vacuole		
Cell Wall		
Chloroplast		

Sunlight into Energy

- ♦ At first glance, many plants appear to be very _____.
- ♦ Yet they all have the _____ basic needs.
- ♦ All plants need air, water, _____, and most need light.
- ♦ Plants can capture light energy from the _____. They use this energy to manufacture food.
- ♦ This process is called _____.
- ♦ It is similar to a _____ using electricity to make products.
- ♦ Photosynthesis occurs in the small structure inside plant cells called a _____.
- ♦ Chloroplasts contain a green pigment called _____.
- ♦ Pigments are chemicals that absorb some light energy while _____ other light energy.
- ♦ The chlorophyll in plants absorb light from the Sun and uses water and carbon dioxide to build sugars and release oxygen that animals need to _____.
- ♦ The plant uses the _____ as food.
- ♦ Animal cells do not have chloroplasts and _____ make their own food.
- ♦ Animals use the food made by plants by eating either the _____ or by eating other _____ that eat the plants.
- ♦ In a different part of the plant cell, sugars are broken down in the _____ to provide energy that the plant can use.
- ♦ Plant and animal cells _____ have mitochondria.
- ♦ Breaking down food into the energy it contains is called cellular _____.
- ♦ The process uses _____ and gives off carbon dioxide.

Specialized Cells

- ♦ Plants contain many interesting _____ of cells.
- ♦ Remember that each cell has a specific _____.
- ♦ All of these plant cells work _____.
- ♦ Some cells _____ water and food for the plant.
- ♦ Special organelles called _____, or starch grains, are found in fruits and in specialized underground food storage cells.
- ♦ They can turn simple sugars into _____.
- ♦ These starch grains act like a _____, storing the starch for the future.
- ♦ Whenever the plant needs energy, these food storage cells convert the starch back into _____.
- ♦ _____ have a lot of these amyloplast organelles.
- ♦ We can digest the starch in their food storage cells, so potatoes are a great _____ food.
- ♦ _____ cells are located on the underside of leaves.
- ♦ These bean-shaped cells occur in pairs and surround a _____.
- ♦ Pores let _____ and air (containing water vapor) in and release _____ out of leaves.
- ♦ Guard cells change _____ to open and close the pore.
- ♦ Guard cells _____ on hot, dry days.
- ♦ These helps _____ water loss from the inside of the leaf.