Biology

Name: _____

Date: _____

Period: _____

Organelle	Description	Function	Animal, Plant or Both
CELL WALL	Rigid, tough, made of cellulose	Protects and supports the cell	Plant
CELL MEMBRANE	Thin, covering, protects cells	Protects the cell, performs active transport and passive transport, moves materials in and out of the cell, communication	Both
CYTOPLASM	Jelly like substance that contains organelles	Pads and supports organelles inside the cell. Moves by cyclosis	Both
NUCLEUS	Dense, ball shaped structure, contains DNA	Controls all of the cell's activities	Both
NUCLEAR MEMBRANE	Thin covering over the nucleus	Covers and protects the nucleus	Both
NUCLELOUS	Small dark area in the nucleus	Produces ribosome's	Both
CHROMATIN	In the nucleus, made of DNA and protein, contains genes	Provides instructions for the cells activities, (growth, reproduction)	Both
ENDOPLASMIC RETICULUM	Clear, tubular system of tunnels throughout the cell	Transports materials like proteins around the cell	Both
RIBOSOME	Small specks made of RNA. Found in cytoplasm or on the endoplasmic reticulum	Makes proteins	Both
MITOCHONDRIA	Location in the cytoplasm, bean	Supplies energy or ATP for the cell	Both

	shaped	through cell respiration using glucose and oxygen	
VACUOLE	Large open storage area, smaller in animal cells	Storage tank for food, water, wastes or enzymes	Both
CHLOROPLAST	Green structures that contain chlorophyll	Captures sunlight and uses it to produce food through photosynthesis	Plant
GOLGI BODY	Small bags with tubes connecting them	Packages and secrets proteins for use in and out of the cell	Both
LYOSOME	Small, round structures, containing enzymes	Digests older cell parts, food or other objects	Both
CENTRIOLE	Small cylindrical	Used with the spindle apparatus during mitosis	Animal

Cell Organelles Worksheet

Use the table above to fill in the chart

Complete the following table by writing the name of the cell part or organelle in the right hand column that matches the structure/function in the left hand column. A cell part may be used more than once.

Structure/Function	Cell Part
Stores material within the cell	
Closely stacked, flattened sacs (plants only)	
The sites of protein synthesis	
Transports materials within the cell	
The region inside the cell except for the nucleus	
Organelle that manages or controls all the cell functions in a eukaryotic cell	
Contains chlorophyll, a green pigment that traps energy from sunlight and gives plants their green color	
Digests excess or worn-out cell parts, food particles and invading viruses or bacteria	
Small bumps located on portions of the endoplasmic reticulum	
Provides temporary storage of food, enzymes and waste products	
Firm, protective structure that gives the cell its shape in plants, fungi, most bacteria and some protests	
Produces a usable form of energy for the cell	
Packages proteins for transport out of the cell	
Everything inside the cell including the nucleus	
Site where ribosomes are made	
The membrane surrounding the cell	

Provides support for the cell, has two "subparts"	
Name for the collection of DNA in the nucleus of eukaryotic cells	
Consist of hollow tubes which provide support for the cell	
Small hair-like structures used for movement or sensing things	
Composed of a phospholipid bilayer	
Longer whip-like structures used for movement	

Put a check in the appropriate column(s) to indicate whether the following organelles are found in plant cells, animal cells or both.

Organelle	Plant Cells	Animal Cells
Cell Wall		
Vesicle		
Chloroplast		
Chromatin		
Cytoplasm		
Cytoskeleton		
Endoplasmic reticulum		
Golgi apparatus		
Lysosome		

Organelle	Plant Cells	Animal Cells
Mitochondria		
Nucleolus		
Nucleus		
Plasma membrane		
Central vacuole		
Ribosome		
Vacuole		

Cell City Analogy

In a far away city called Grant City, the main export and production product is the steel widget. Everyone in the town has something to do with steel widget making and the entire town is designed to build and export widgets. The town hall has the instructions for widget making, widgets come in all shapes and sizes and any citizen of Grant can get the instructions and begin making their own widgets. Widgets are generally produced in small shops around the city, these small shops can be built by the carpenter's union (whose headquarters are in town hall).

After the widget is constructed, they are placed on special carts which can deliver the widget anywhere in the city. In order for a widget to be exported, the carts take the widget to the postal office, where the widgets are packaged and labeled for export. Sometimes widgets don't turn out right, and the "rejects" are sent to the scrap yard where they are broken down for parts or destroyed altogether. The town powers the widget shops and carts from a hydraulic dam that is in the city. The entire city is enclosed by a large wooden fence, only the postal trucks (and citizens with proper passports) are allowed outside the city.

Match the parts of the city (underlined) with the parts of the cell.

1. Mitochondria _____
2. Ribosomes _____
3. Nucleus _____
4. Endoplasmic Reticulum _____
5. Golgi Apparatus _____
6. Protein _____
7. Cell Membrane _____
8. Lysosomes _____
9. Nucleolus _____

** Create your own analogy below of the cell using a different model. Some ideas might be: a school, a house, a factory, or anything you can imagine**

ANSWER THE FOLLOWING QUESTIONS FOR HOMEWORK

In what organelle does cellular respiration take place?

Name two storage organelles?

What is the list of organelles that take part in protein synthesis?

How is the nucleus involved in protein synthesis?

What organelle is considered a "factory", because it takes in raw materials and converts them to cell products that can be used by the cell?

How does the membrane of the cell differ from the nuclear membrane? What advantages does this difference have for the nucleus?

What do ribosomes do? Are they found freely floating in the cytoplasm? OR are they found attached to another organelle? OR both. Explain why this occurs.

What does the endoplasmic reticulum do?

What is the difference between rough ER and smooth ER? What is the ER doing that is different in each case?

What are lysosomes? What types of molecules would be found inside a lysosome?

Why might a lysosome fuse with or link up with a food vacuole?

In what organelle do molecules move from the ER to the Golgi bodies?

What is a centriole? In what type of cell (plant or animal) is it found? What does it do for the cell?