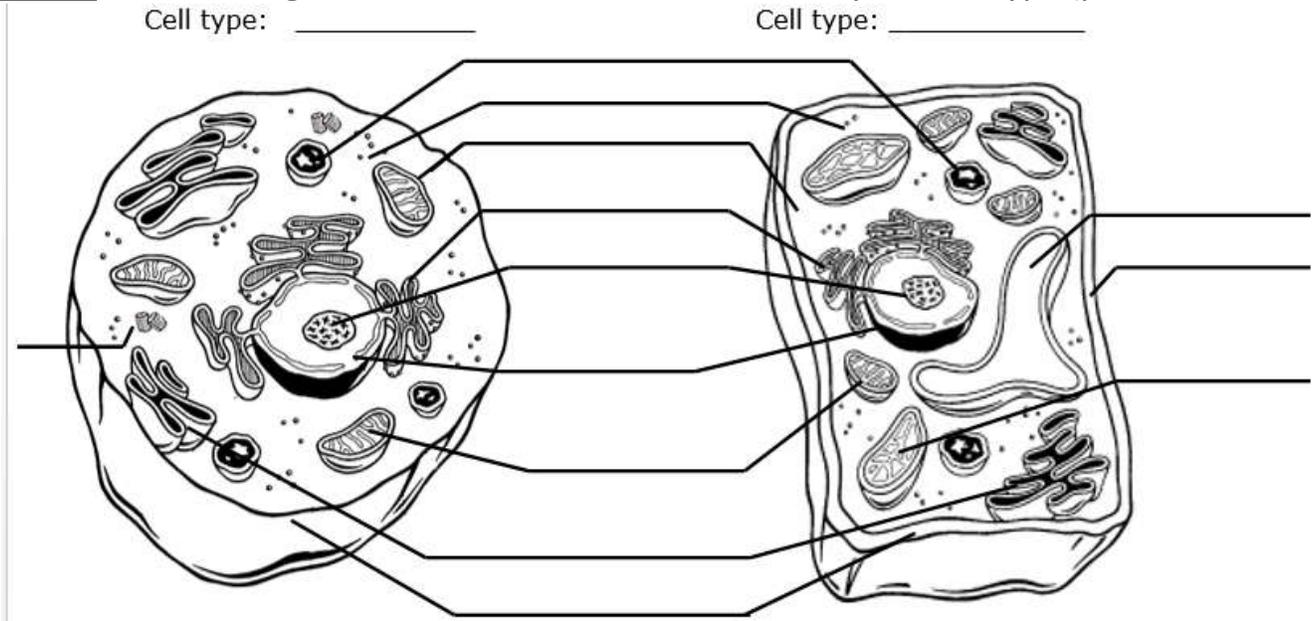


Unit 3 Review: Cells
Biology

Name _____

Date _____ Block _____

Cell Parts: Label the organelles in the cells below and identify the cell type (plant vs. animal)



Identify the organelle (cell part) described by each function below.

Organelle	Function
	Assembles amino acids to make proteins
	Captures energy from the sunlight to produce food in plant cells
	Contains DNA, which controls the function of the cell and production of proteins.
	Controls what comes into and out of the cell. Found in plant and animal cells
	Gel-like fluid inside the cell where all the organelles are found
	Has passageways that carry proteins and other materials from one part of the cell to another (it's a transport ER)
	Produces the energy a cell needs to carry out its function (it's the mighty organelle!)
	Receives protein and materials from the endoplasmic reticulum, packages, them, and distributes them.
	Rigid outer layer of a plant cell
	Stores food, water, wastes, and other materials (think vacuum bags)
	Use chemicals to break down food, waste, and worn out cell parts (think lysol)

Mitosis

- Identify the phase of mitosis shown in the following pictures.
- Number the pictures so that they are in order.
- Describe key features happening at each step.

Picture	Phase of Mitosis	Order (1 happens first, 5 last)	Key features
			
			
			
			
			

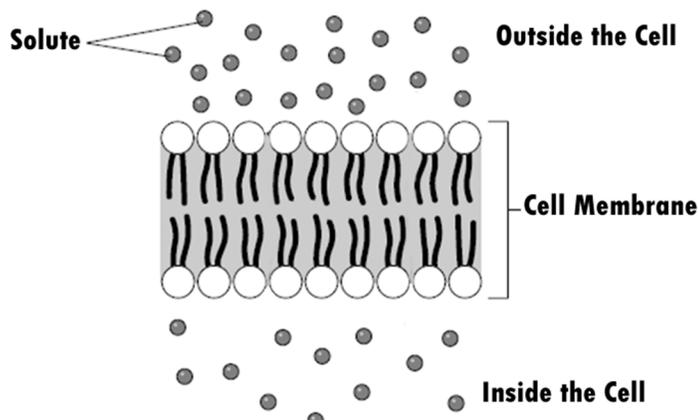
- At the end of mitosis, the 2 daughter cells have the _____ number of chromosomes (DNA) as the parent cell.

Cell Size

- How does the surface area to volume ratio affect a cell's ability to absorb nutrients and get rid of waste?
- Does a cell want a large or small surface area to volume ratio to be most efficient?

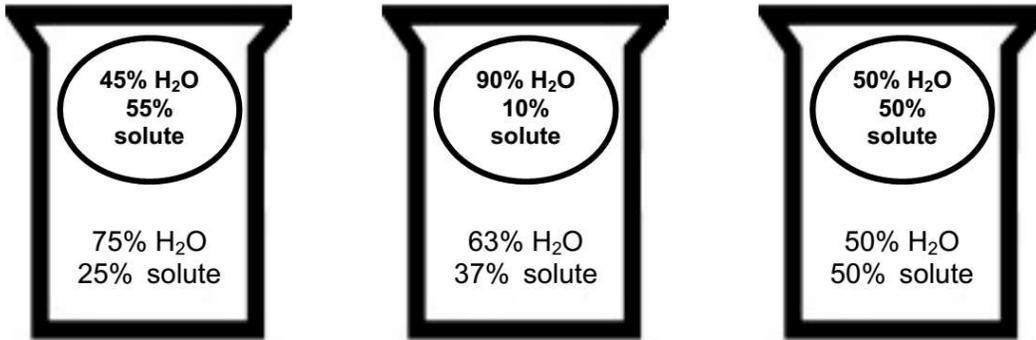
1. What is the structure of the cell membrane? Draw a few molecules and label the hydrophilic and hydrophobic portions. What do hydrophilic and hydrophobic mean?
2. What determines whether a transport process is active or passive? What are some examples of passive transport?

Examine the diagram below and answer the questions that follow.



3. What are two things that will determine if the solute molecules will move across the membrane?
4. If the solute could diffuse across the membrane, which way would it diffuse? Why?
5. What structure on the cell membrane is needed to move the solute from inside the cell to outside of the cell? Why?
6. If the solute COULD NOT diffuse across the membrane, which way would water diffuse? Why? How can you remember this?

7. Below are animal cells placed in beakers of various concentrations.
- Draw an arrow to show which way the water would move by osmosis
 - Identify the type of solution (isotonic, hypertonic, or hypotonic)

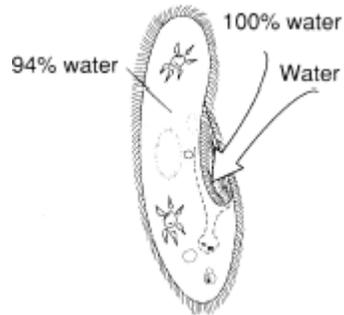
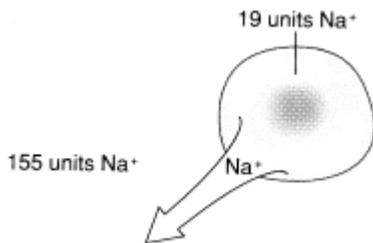
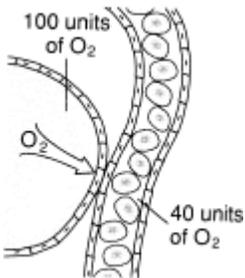


8. Decide whether each of the following is an example of Passive transport or Active transport based on the description and the concentration gradient illustrated.

Oxygen (O_2) moves from the lungs to the blood stream.

Sodium ions (Na^+) are pumped out of a red blood cell.

Fresh water moves into a single cell organism.



a. _____

b. _____

c. _____