

Name: _____

Cell Types

The cell is the smallest unit with the properties of life: a capacity for metabolism, controlled responses to the environment, growth, and reproduction. Cells differ in size, shape, and activities, yet are all alike in three respects. They start out life with a plasma membrane, a region of DNA, and cytoplasm. Two kinds of structurally different cells have evolved over time. Bacteria and archae consist of *prokaryotic* cells, whereas all other forms of life (protists, fungi, plants, and animals) are composed of *eukaryotic* cells. The easiest way to distinguish the two types is by how they are internally organized.

The word *prokaryote* is taken to mean “*before the nucleus*.” These cells do not have a nucleus. Most have a cell wall around their cell membrane. Most prokaryotic cells are not much wider than one micrometer (about the width of your fingernail.)

The word *eukaryote* means “*true nucleus*.” All eukaryotic cells start out life with a nucleus, ribosomes, and a cytoskeleton. Specialized cells typically incorporate many more kinds of organelles as well as cell structures. Organelles are used to compartmentalize the operations and chemical reactions of the cell. Eukaryotic cells range anywhere from 10-100 micrometers in size.

Introduction Questions:

1. What are the two types of cells?
2. What would you look for to determine if a cell was one type or the other?

Procedure:

Using the 13 pictures provided, label each as one of the two types of cells. Provide a reason for why you think each picture belongs in that category.

<u>Picture #</u>	<u>Cell type</u>	<u>Reasoning?</u>
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		
13		

Using what you now know about the difference in cell types, fill out the chart below:

Characteristic	Prokaryotic Cells	Eukaryotic Cells	
Size			
		Animal	Plant
Cell membrane			
Cell wall			
DNA			
Nucleus			
Ribosomes			
Endoplasmic Reticulum			
Golgi Body			
Lysosomes			
Vacuoles			
Mitochondria			
Chloroplasts			
Cytoskeleton			
Centrioles			