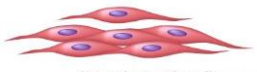
SCIENCE 8
MS. LANGLOIS

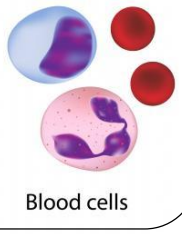
NAME:_____
BLOCK: _____ DATE: _____

CELLS & CELL THEORY [Ch 1.1, 1.3, 1.6]

Recall: last day we learned that living things must be made up of cells. Today we'll learn about what a cell is!

THE CELL THEORY

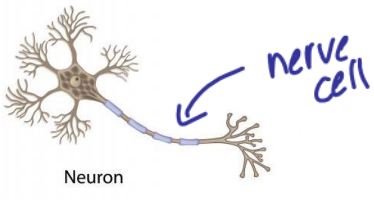

Smooth muscle cells


Blood cells

1. The cell is the basic unit of life
2. All living things are composed of cells
3. All cells come from pre-existing cells

CELLS: THE BASICS

→ **Cells** are the **BASIC BUILDING BLOCKS OF ALL LIVING THINGS**. They are the smallest unit of life that can function on their own.

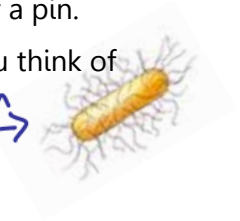


Neuron

→ **How big are cells?**

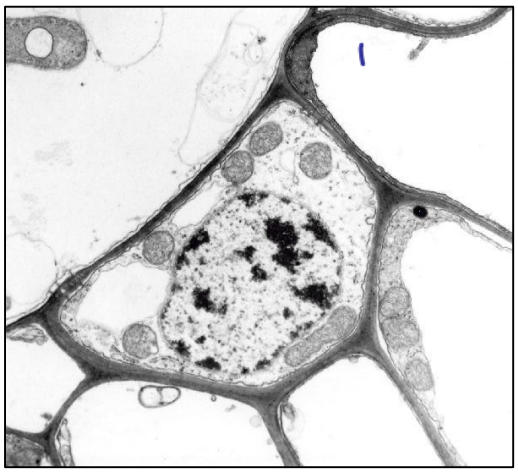

amoeba

- Cells are usually microscopic
- ~10,000 average sized human cells can fit on the head of a pin.
- However, some cells can be very large (they are the exceptions to the rule). Can you think of any examples? Ostrich egg


bacterium

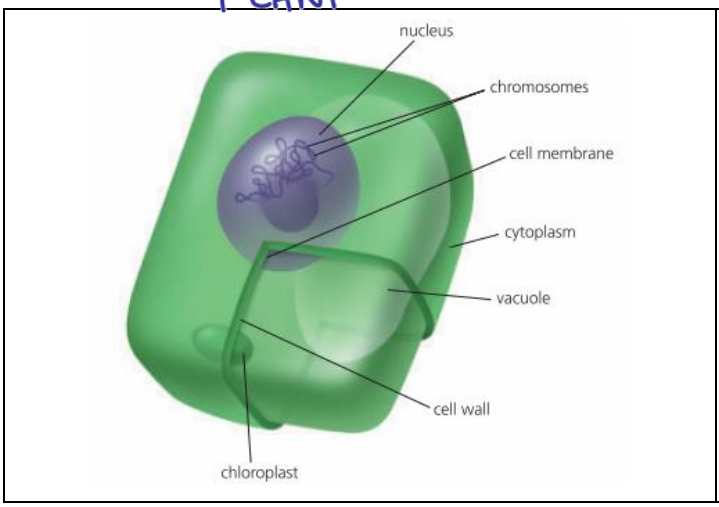
CELL STRUCTURE

- Cells are filled with smaller structures that work together so the cell functions properly.
- The structures inside a cell are called organelle. Different types of cells can have different types of organelles, but some organelles can be found in all cells.
- Some organelles can be seen by looking through a compound light microscope, while others need a higher power microscope to observe

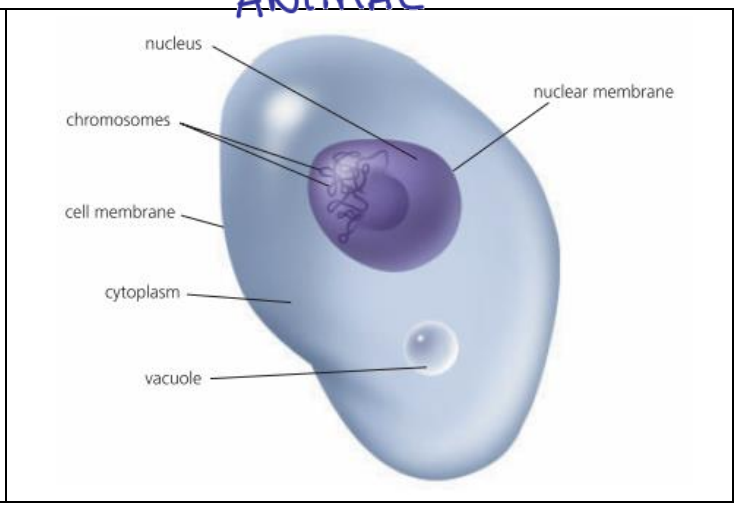


ORGANELLES THAT CAN BE SEEN WITH A LIGHT MICROSCOPE

PLANT



ANIMAL



Which organelles do you only find in plant cells? cell wall, chloroplast

Which organelle is larger in a plant cell than in an animal cell? vacuole

DIFFERENT TYPES OF CELLS

BACTERIA → PLANT + ANIMAL

→ Cells are classified in to two groups: **prokaryotic** and **eukaryotic**

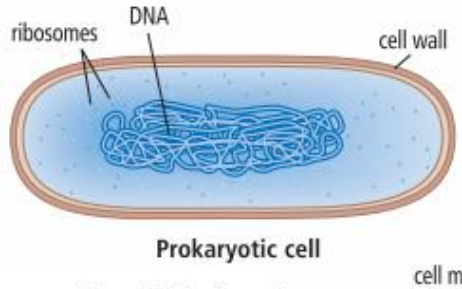
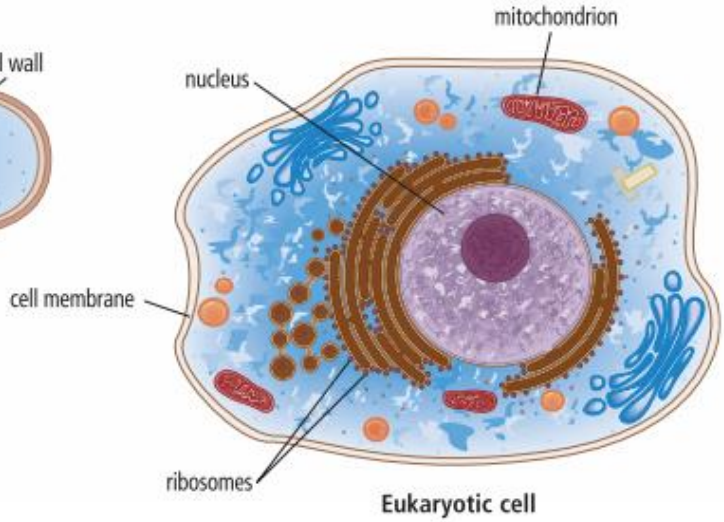


Figure 1.26 Comparison of the structures of a prokaryotic cell (bacterial cell) and a eukaryotic cell (animal cell)



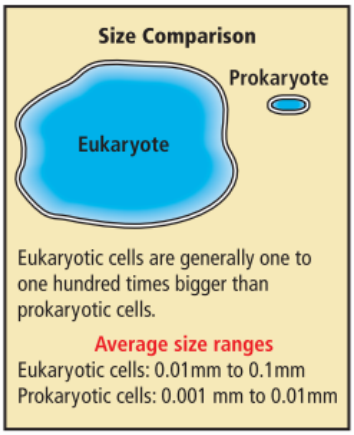


Figure 1.25 Sizes of eukaryotic and prokaryotic cells

What differences do you notice between the prokaryotic & eukaryotic cells?

PROKARYOTIC

* NO NUCLEUS
→ DNA simpler
much smaller
Always have cell wall

EUKARYOTIC

* NUCLEUS!!!
→ DNA more complex
Way bigger
have membranous organelles

* may or may not have cell wall

COMPARING CELL TYPES

Complete the following chart using your textbook and notes. The last two columns of the table can be filled in with a "✓"or an"x"

Cell Structure	**Function (*what does it do*?)**	**Found in Plant Cells?**	**Found in Animal Cells?**
Cell membrane			
Cell wall			
Cytoplasm			
Nucleus			
Chromosomes			
Chloroplast			
Vacuole			
Flagellum/ Flagella			
Cilia			