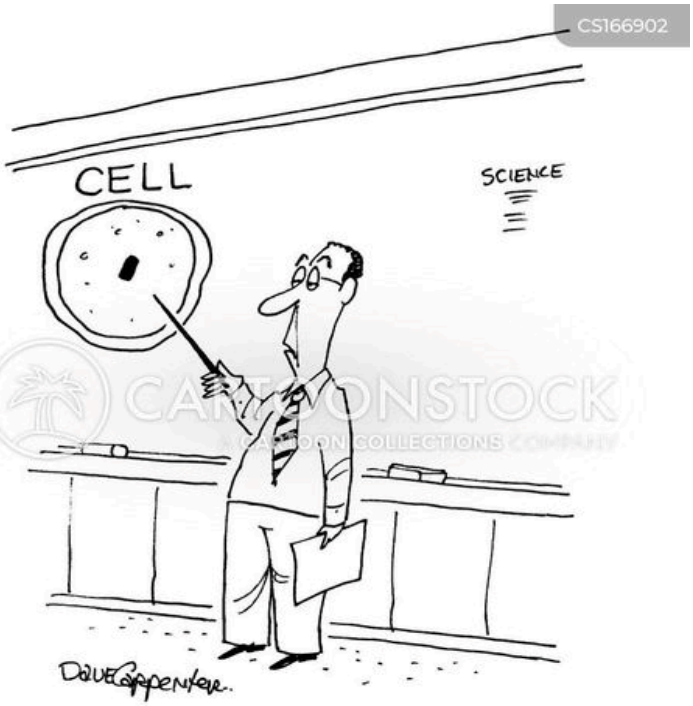
DRAWING CELLS

Below are descriptions of an animal cell and a plant cell. Your assignment is to draw each cell and label the organelles in each type of cell WITHOUT looking at a picture of the cell. You are to use ONLY the descriptions below. Sidewalk chalk will be provided for you and your partner to create the drawings.

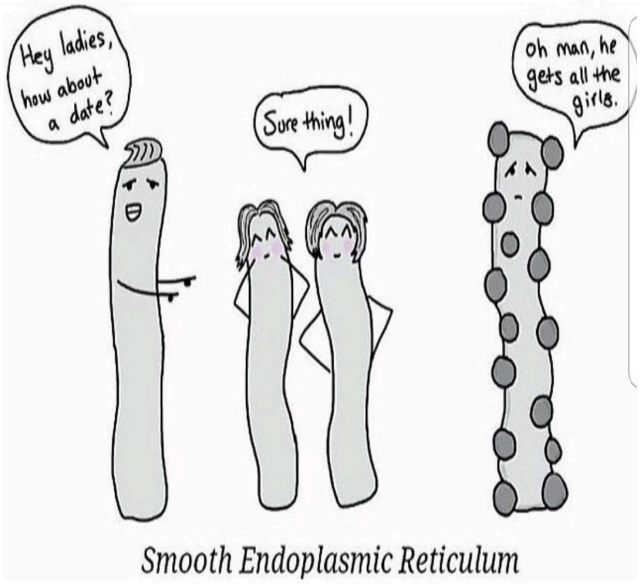
The outside layer of an animal cell is the cell membrane. It is flexible and tends to give the cell a round shape. The cytoplasm is a jelly-like substance that fills the inside of the cell. Other organelles float in the cytoplasm. The brain of the cell, the nucleus, is a round organelle that looks like a wiffle ball and is found somewhere in the cell. Inside the nucleus are found the nucleolus and chromatin. The nucleolus is a solid ball where ribosomes are made. Chromatin looks like thin ribbons. The mitochondria are kidney bean shaped organelles that convert food into energy. Ribosomes are small, grain-shaped organelles. They are found in two places in the cell. One of those places is in the cytoplasm where they float like beach balls. The other is in the walls of one kind of endoplasmic reticulum. The endoplasmic reticulum comes in two kinds, rough and smooth. Both types look like a maze and are connected to one another. The difference is that rough ER has ribosomes stuck in the walls while smooth ER doesn't. Both ER's act like highways that transport materials to other organelles. The Golgi body (or Golgi apparatus) looks like flattened sacks and tubes that have been bent. They take the proteins made by ribosomes in the rough ER, package them, and distribute them to other parts of the cell. The vacuole is the storage in the cell. Animal cells usually have several small vacuoles, one for water, one for wastes, etc. Lysosomes are round organelles that are bigger than ribosomes. Inside a lysosome is a substance that helps break down old cell parts.

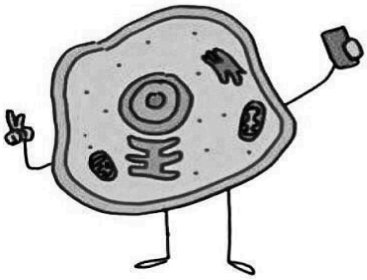
Plant cells have all the organelles that animal cells have plus two they don't. The cell wall is the outer layer of a plant cell and surrounds the cell membrane. It is strong and rigid, giving the plant cell a square shape. Plant cells also have chloroplasts, which animal plants don't. Chloroplasts are green organelles that capture sunlight and change it into a type of energy plants use to make food in a process called photosynthesis. They also give the leaves of a plant its green color because there are so many of them there. The storage area in a plant cell is different than in an animal cell. In plant cells, there is one big vacuole that stores everything.

I used to use this activity as an introduction to cells. Students usually have a general idea of what cells look like. However, they are mostly unaware of the organelles inside the cells. I wanted the students to draw the cells before they looked at their text. Afterwards, I had the students compare their drawings to ones in the text. This is one way to judge what prior knowledge and misconceptions students may have. It also makes a great way to see how well students can visualize and follow written directions. I feel like the wording is pretty straightforward. Someone else may feel otherwise and want to change parts. You could have students do this individually on paper. I like using the sidewalk chalk because it was something different. It also got the students outside and moving around.



"No, this is its nucleus, not its cell phone."





Cell-fie

Here are a couple of sites you may find useful:

The Amoeba Sisters Home Page

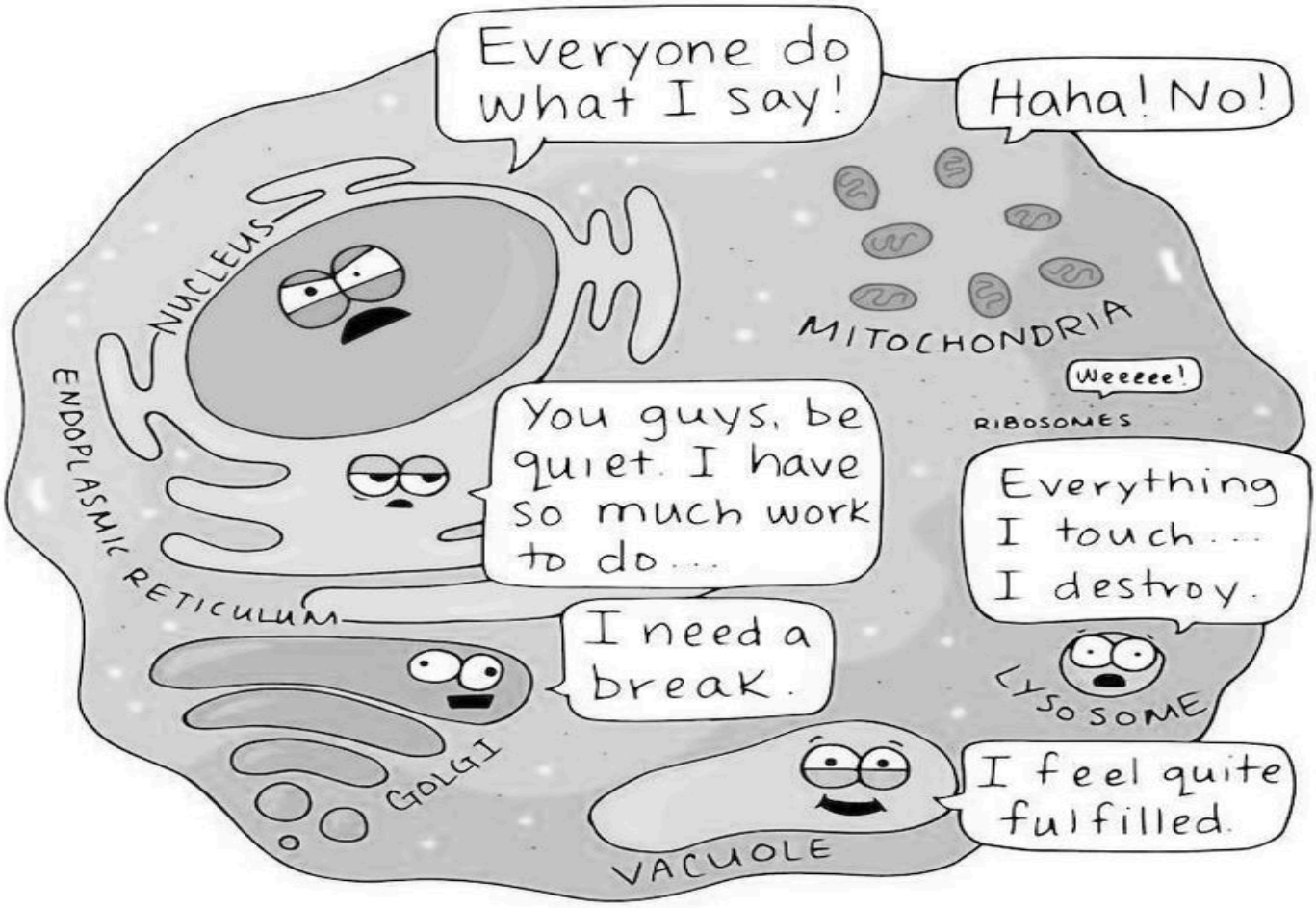
http://www.amoebasisters.com/

Lots of good GIFs on a variety of biology topics

http://www.amoebasisters.com/gifs.html

Cells Alive- Lots of topics but some are pretty involved

https://www.cellsalive.com/



If organelles could talk.

Beatrice the Biologist