

Biology 2

Learning target:

- Review the structure of the cell.

Success criteria:

- Create a banner-size poster of a cell.
- Describe each type of organelle and explain its function.

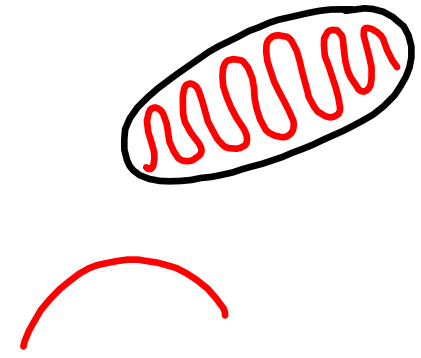
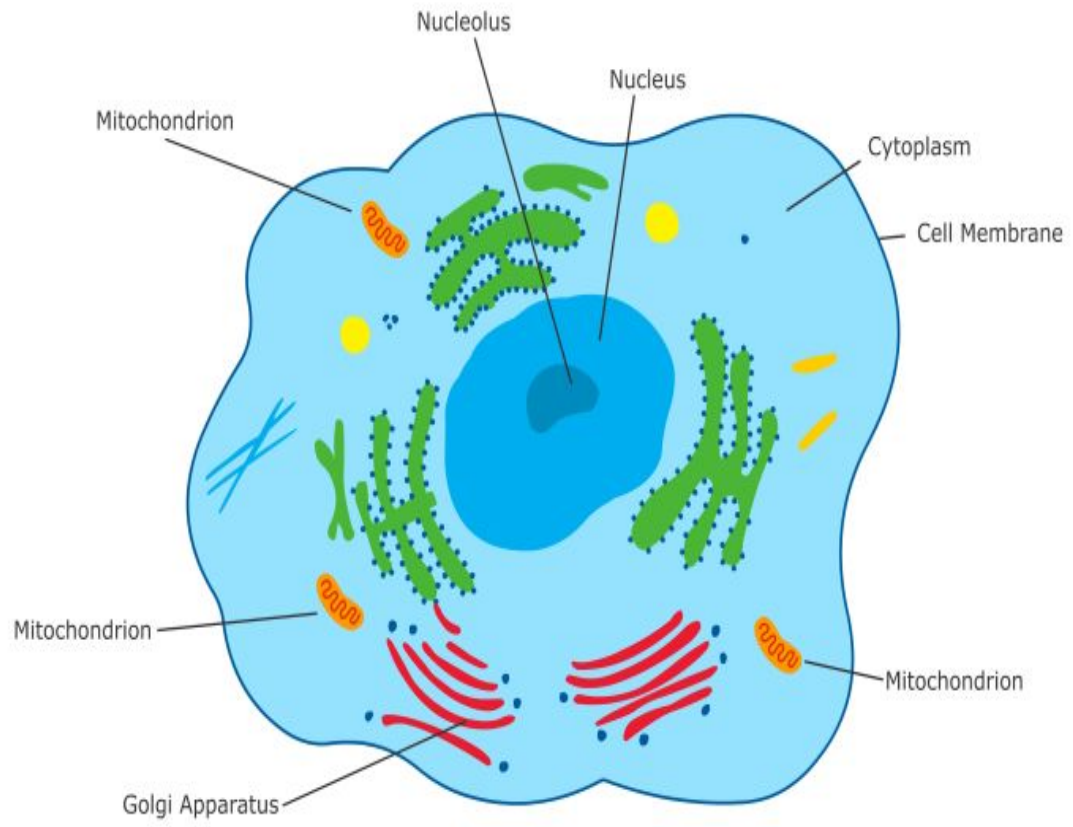
1. Work in groups of 3 or 4 to create a banner-sized picture of a cell.

Use only construction paper and banner paper to make organelles, cell membrane, and all other cell structures.

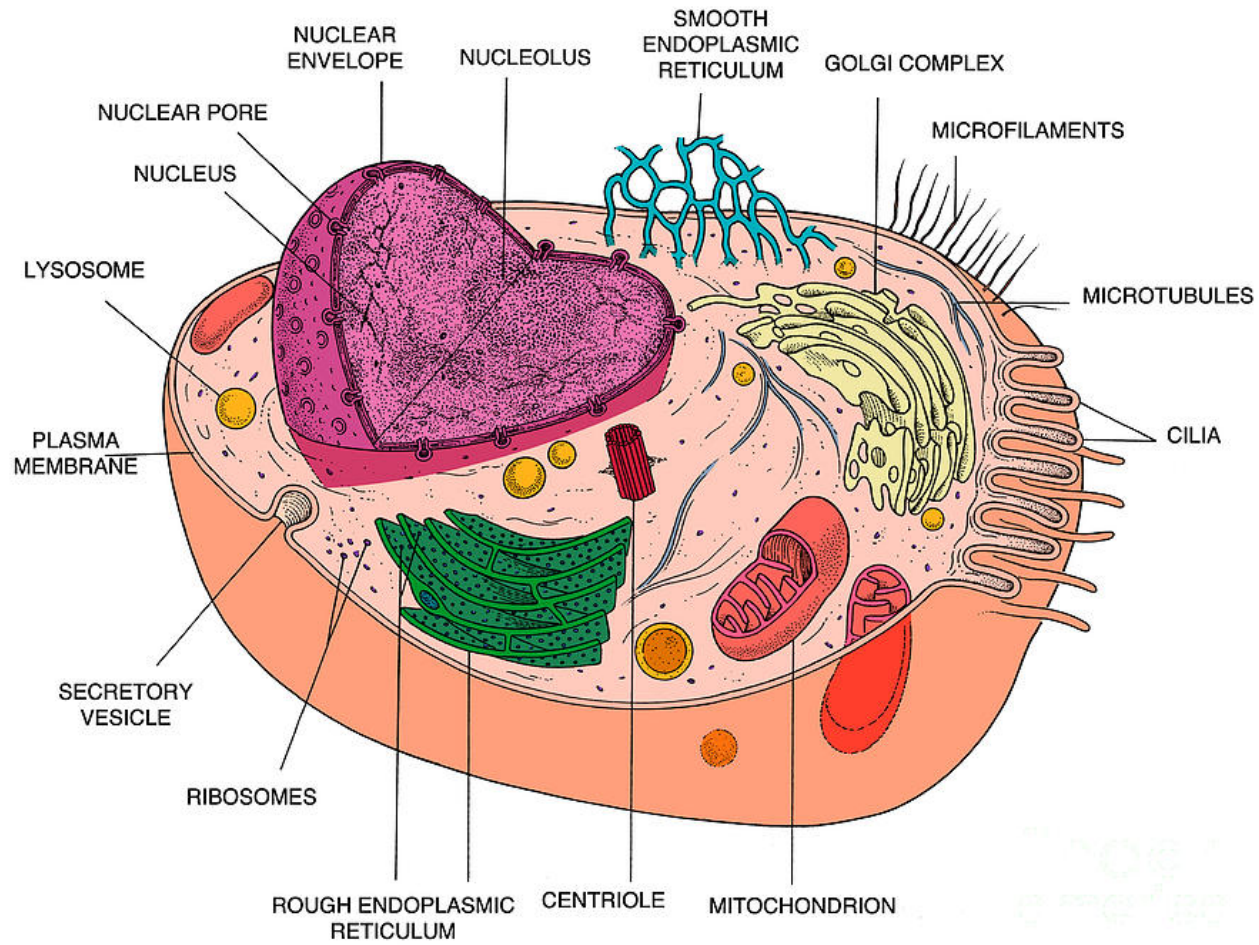
You may NOT use crayons or colored pencils to draw any cell organelles. These items MAY be used to draw label lines or details within organelles.

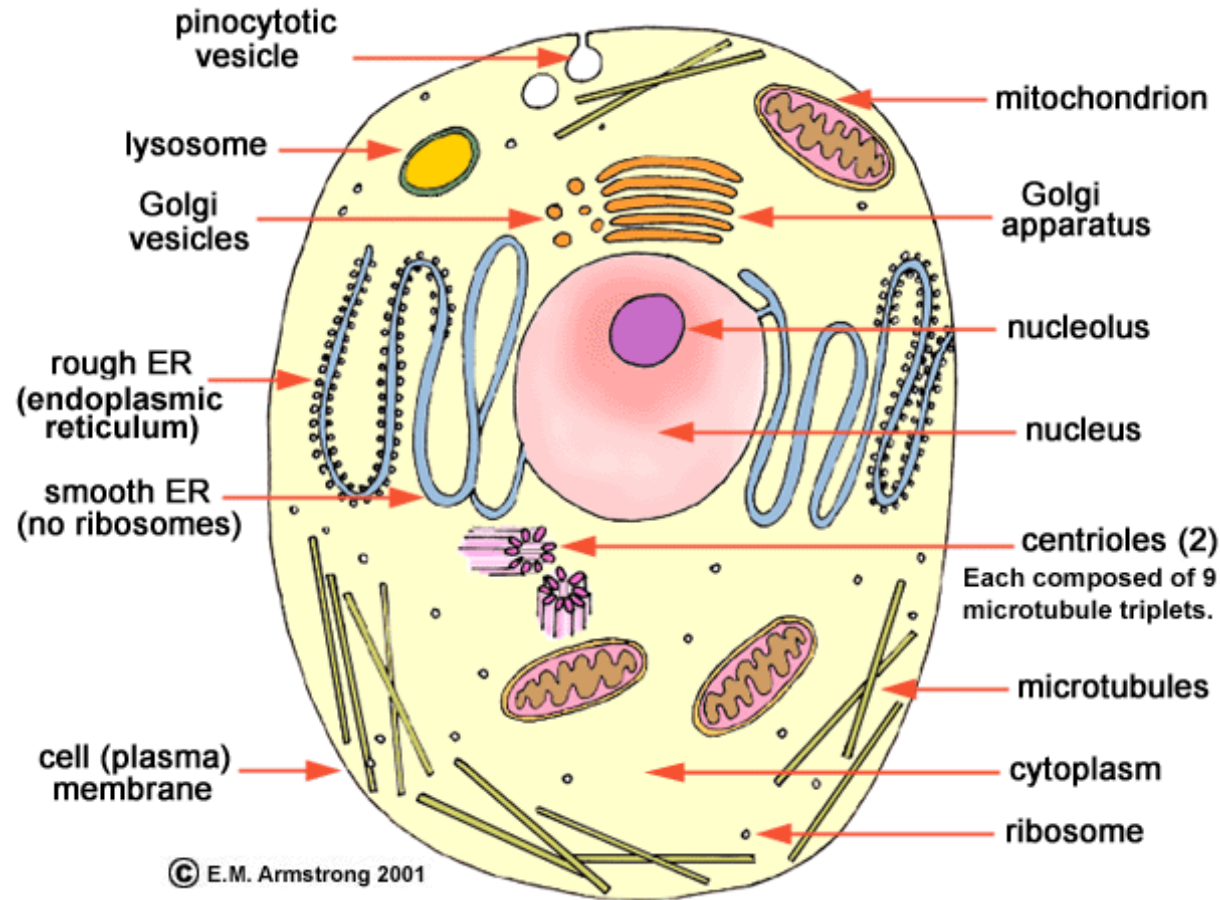
Banners must include: cell membrane, mitochondria, ribosomes, nucleus, chromatin/chromosomes, rough endoplasmic reticulum, smooth endoplasmic reticulum, golgi apparatus, lysosomes, peroxisomes, nucleolus, centrioles, and vesicles.

2. Each person should also turn in their own "cell analogy" activity on a separate sheet of paper.



Begin research for your project by looking up the functions of the organelles in a cell. Functions are found in chapter 3 of your A & P book.





Cell analogy project

- Cells, the basic units of life, contain many parts that perform specific functions. To understand these functions it often helps to make a comparison to something you are more familiar with. This is called making an analogy. For example, cells can be compared to a city. How does a cell function like a city? Think about the sites and sounds of a city. You see people and cars moving about, buildings going up and coming down, restaurants, and lights everywhere. Cells build and break down material. Cells release energy from foods, and then use that energy to make needed cell parts. Cells function to make your body operate like a well-run city.

Create your own cell analogy Using Prezi or google slides.

You must share your presentation with me by typing in my email after clicking "share". My email is

douglas.mcknight@clawson.k12.mi.us

Procedure

1. Come up with your own cell analogy. You may use one of the following suggestions or come up with one of your own.

a school

a hospital

a factory

a computer

an athletic team

an organization or company

a country or government

A Cell is Like a 5-Star Restaurant

By: Samantha Clement

<p>The locked doors and windows, the doormen, and the reservations list. plasma membrane</p>	<p>Just as the locked doors and windows keep unwanted intruders from entering the 5-star restaurant, and the reservations list makes sure only certain people are allowed in, so the plasma membrane regulates what enters and leaves a cell.</p>
<p>The classy hardwood flooring cytoplasm</p>	<p>Just as the hardwood flooring occupies the interior of the restaurant and allows a place for everything and room for movement, so the cytoplasm is where all the organelles and activity are found in the cell.</p>
<p>The kitchen rough endoplasmic reticulum</p>	<p>Just as the kitchen is the place where the food staff assembles their 5-star dishes, so the rough ER is the place where the ribosomes do their job of assembling proteins.</p>
<p>The power outlets mitochondria</p>	<p>Just as the power outlets provide energy for all the equipment and activities in the 5-star restaurant, so the mitochondria are the source of energy in the form of ATP that is used in cell processes.</p>
<p>The executive chef nucleus</p>	<p>Just as the executive chef is in charge of all functions in the restaurant, so the nucleus and DNA controls what proteins to be made and directs all cell activity.</p>
<p>The stone walls and ceilings and marble pillars cytoskeleton</p>	<p>Just as the stone walls, ceilings, and marble pillars provide support for the entire restaurant, so the cytoskeleton supports and maintains the shape of the cell.</p>
<p>The maintenance crew lysosomes</p>	<p>Just as the people of the maintenance crew keep the restaurant clean and separate trash from reusable materials like silverware and trays, so the lysosomes break down the cell waste for various reasons like being able to reuse the materials.</p>
<p>The stove peroxisomes</p>	<p>Just as the stove cooks food in a 5-star restaurant to kill bacteria and diseases, so the peroxisomes break down hazardous materials and detoxify certain chemicals in a cell.</p>
<p>The expediter Golgi apparatus</p>	<p>Just as the expediter puts the finishing touches on dishes before they are sent out into the dining room, so the Golgi apparatus prepares the proteins for export out of the cell.</p>
<p>The host/hostess centrioles</p>	<p>Just as the host or hostess of a restaurant helps to divide groups of people into specific tables, so the centrioles of a cell help to assemble the spindle apparatus during cell division in animal's cells.</p>
<p>The restaurant manager nucleolus</p>	<p>Just as the restaurant manager works very closely to the executive chef and decides who to hire as cooks, so the nucleolus works within the nucleus and establishes ribosomes.</p>
<p>The air vents smooth endoplasmic reticulum</p>	<p>Just as the air vents in a 5-star restaurant filter out dirt but keep the air traveling throughout, so the smooth ER moves things around the cell but also play a role in lipid metabolism and detoxification.</p>
<p>The line cooks ribosomes</p>	<p>Just as the line cooks carry out all the different jobs to create dishes of food in the kitchen, so the ribosomes create proteins within the rough ER.</p>
<p>The patrons chloroplasts</p>	<p>Just as the patrons of the 5-star restaurant sit at their tables and talk to their waiters so that they can make their orders to get food, so the chloroplasts of a plant cell take in energy from sunlight in order to create food for the plant.</p>
<p>The golden gate outside cell wall</p>	<p>Just as the golden gate outside of the 5-star restaurant acts as another more dense protective wall around the restaurant, so the cell wall protects a plant cell in a more dense layer than just the cell membrane.</p>
<p>The wait staff vesicles</p>	<p>Just as the wait staff works for many different purposes such as taking orders, delivering food, and transporting things like cash, so the vesicles are small membrane-enclosed sacks that also adhere to many purposes like storing cellular products and transporting cell proteins.</p>
<p>The freezer and food storage room vacuoles</p>	<p>Just as the 5-star restaurant's freezer and food storage room store all of the ingredients that the kitchen reuses until it needs to be thrown away, so the vacuoles in a cell store all of the food and water and dispose of waste material.</p>

