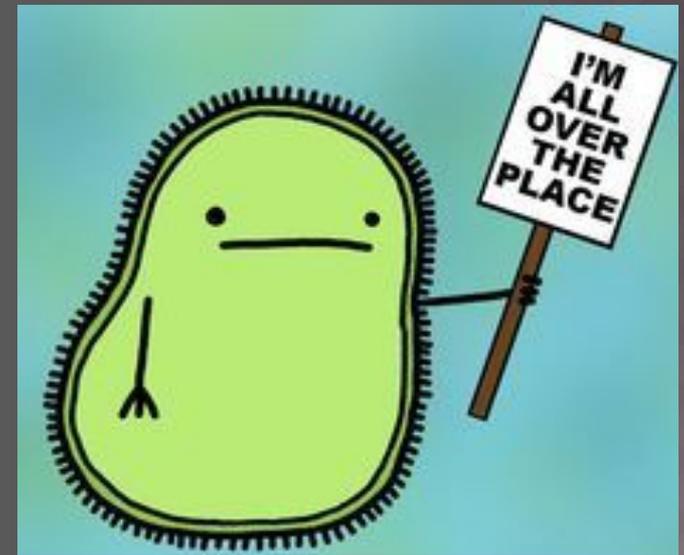
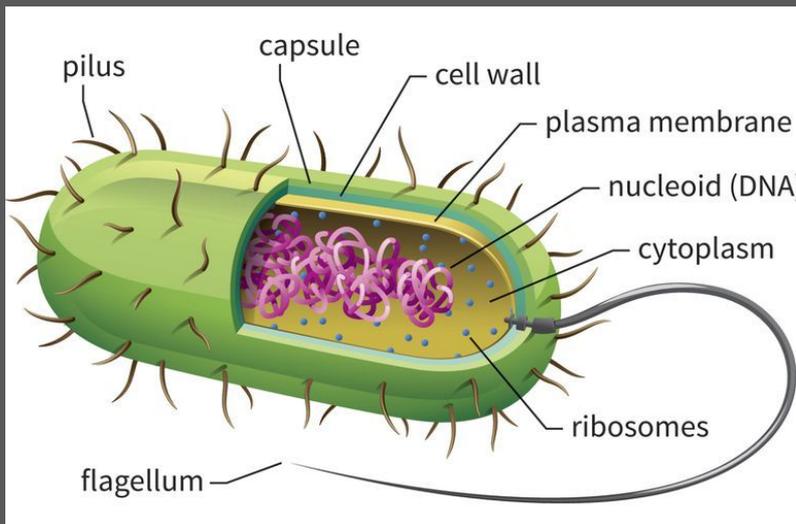


September 26, 2018

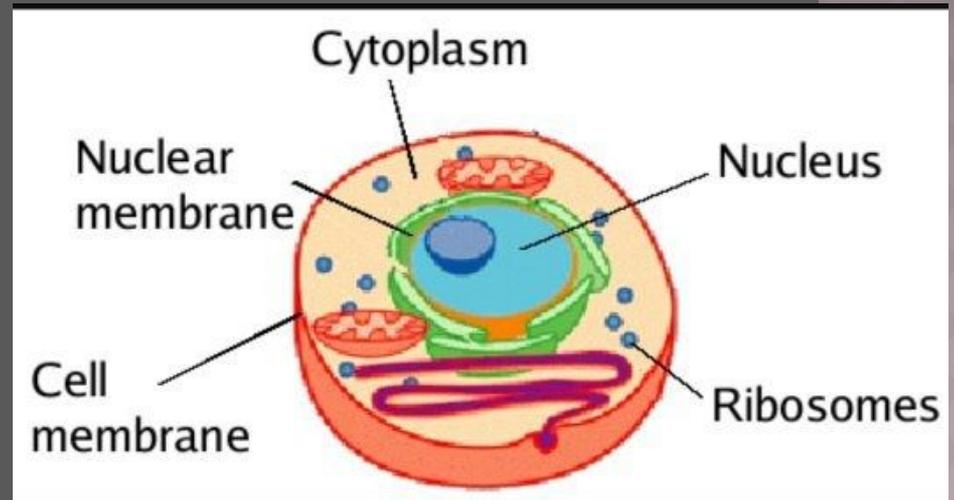
Mastery Objective: The students will explain characteristics of prokaryotic (bacteria) cells by gathering notes from a slideshow.



Drill Warm-Up: Observe the bacteria and animal cell below. Identify similarities and differences.

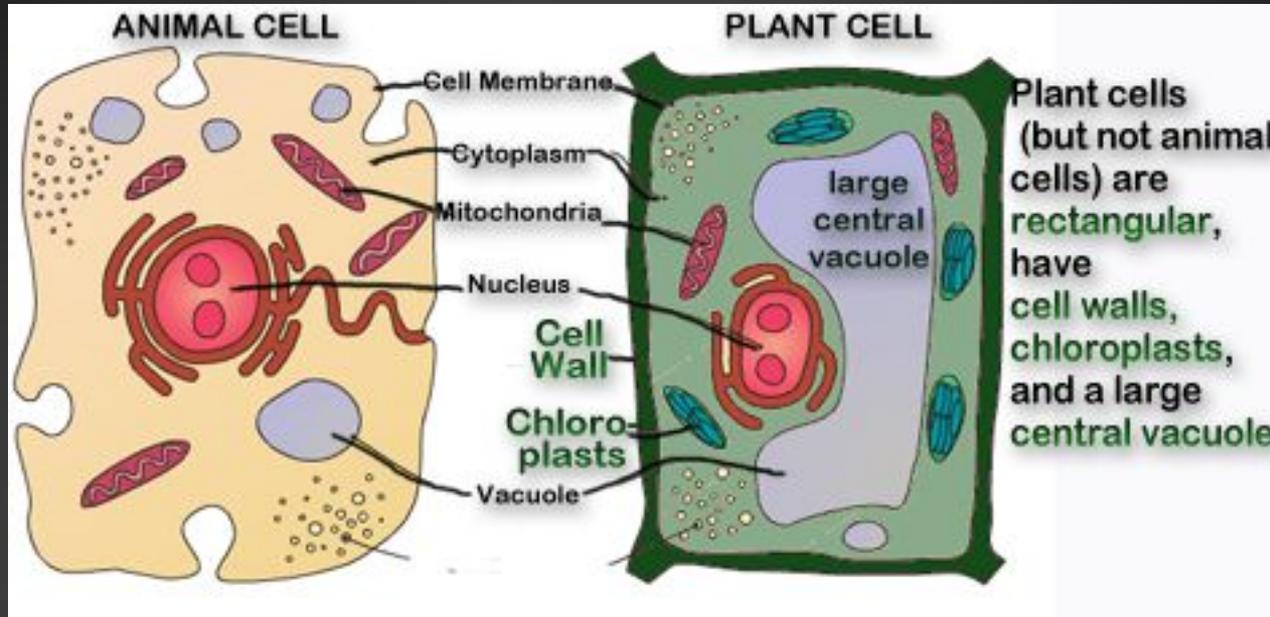
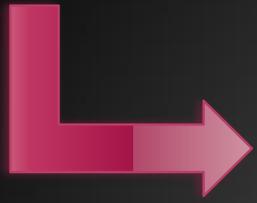


bacteria

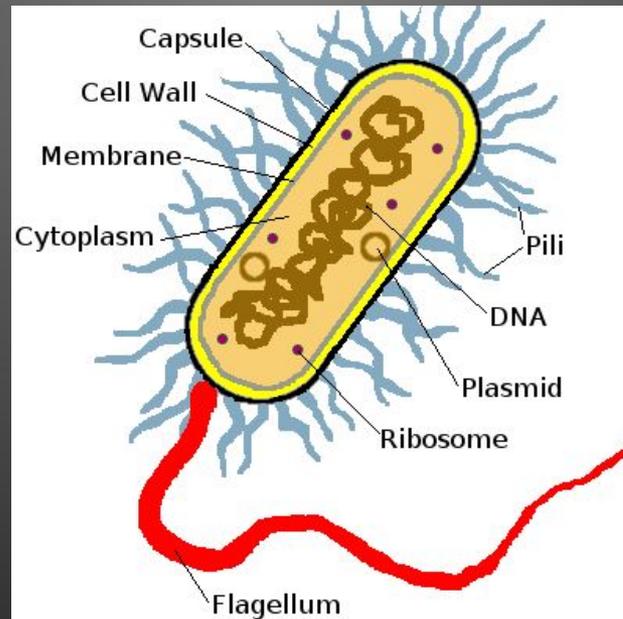
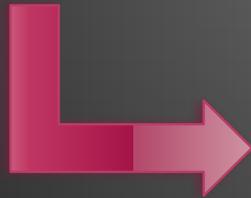


animal cell

Eukaryotes



Prokaryotes

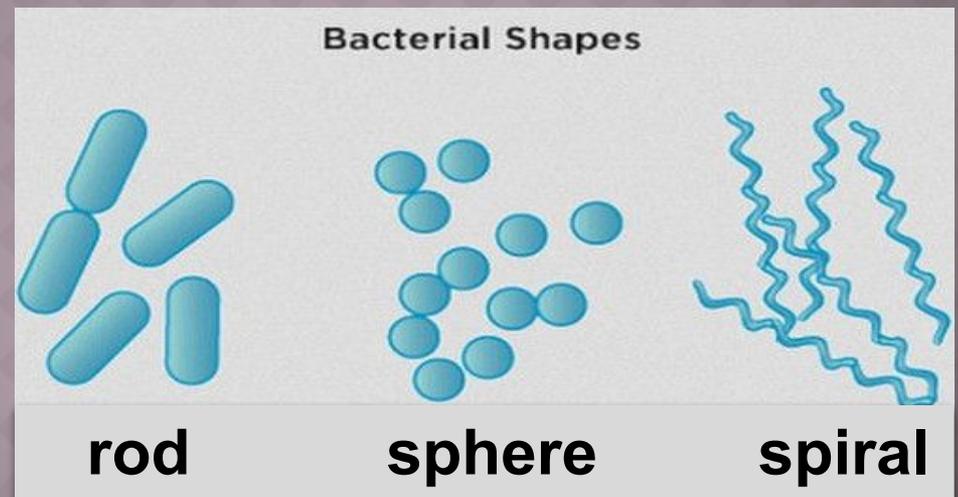


Prokaryotic Cells...

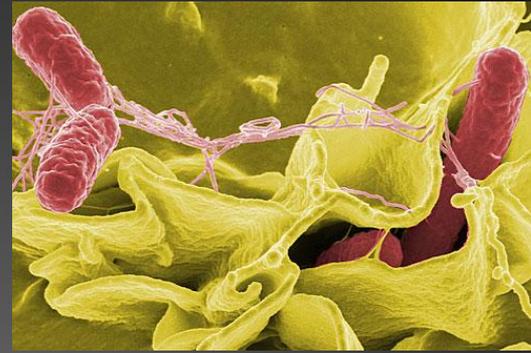


Prokaryotes (bacteria) first appeared on Earth over 4 billion years ago and for about 3 billion years, were the only form of life.

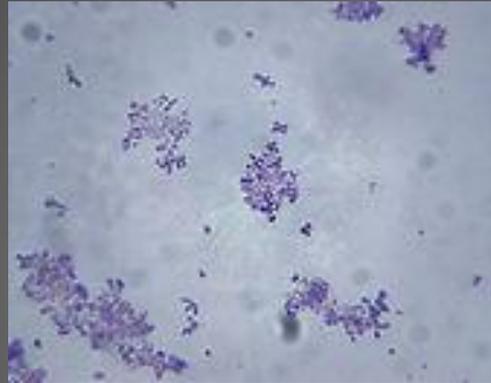
Bacteria cells can be a variety of shapes: spheres, rods, and spirals.



Bacteria can live in a wide range of habitats: soil, water, radioactive waste, and deep in the Earth's crust.



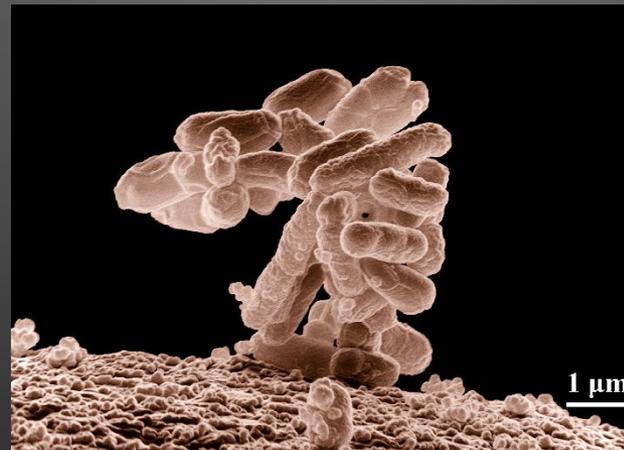
salmonella



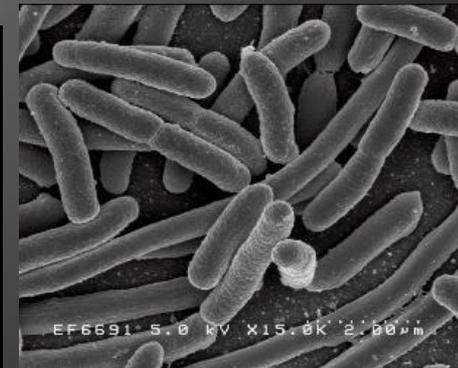
staphylococcus



Bacteria growing in hot spring



coliform bacteria



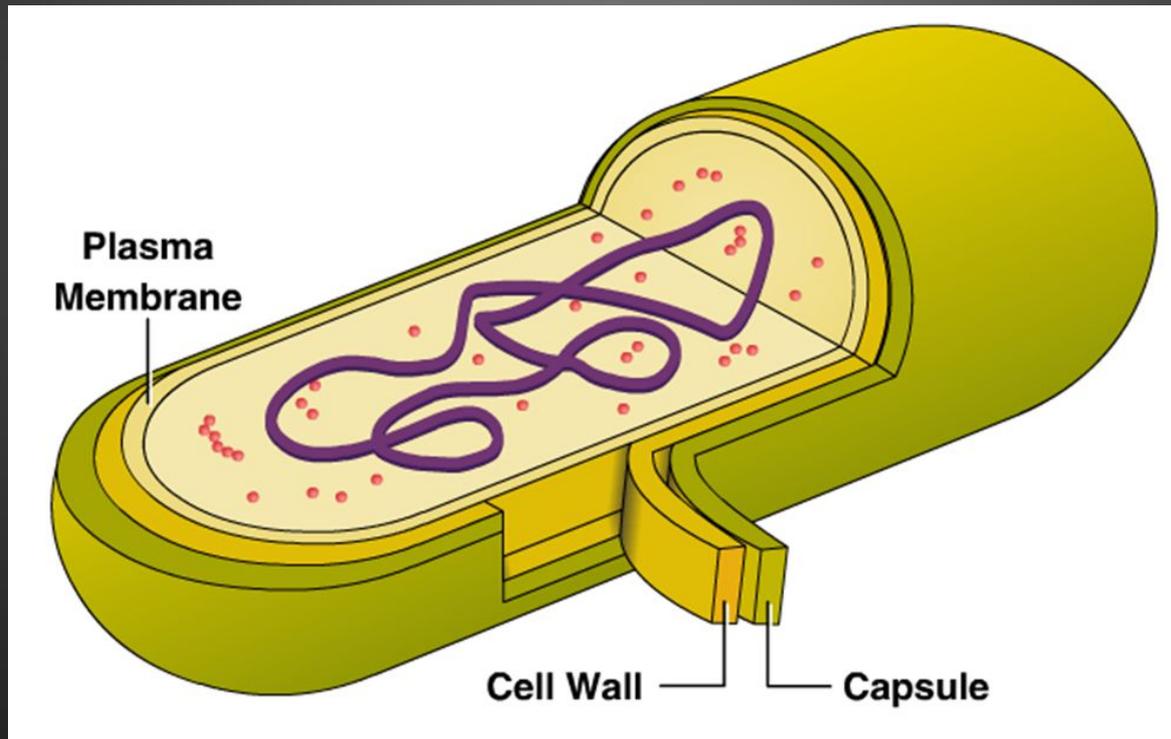
e-coli

A microscopic view of numerous green, spherical microorganisms, likely algae or bacteria, against a dark background. The organisms are of various sizes and some show internal structures. The text is overlaid on the center of the image.

They were the first parents of every living thing
on Earth ...

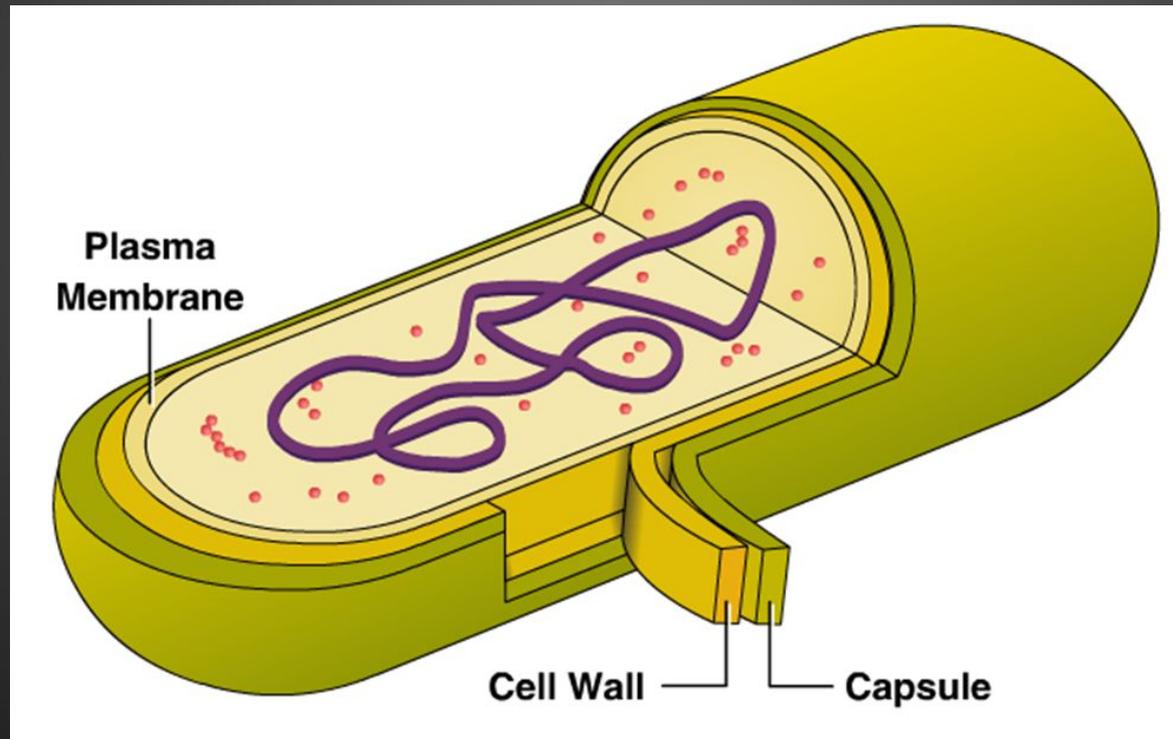
capsule

Allows bacteria to attach to surfaces
and protection from predators



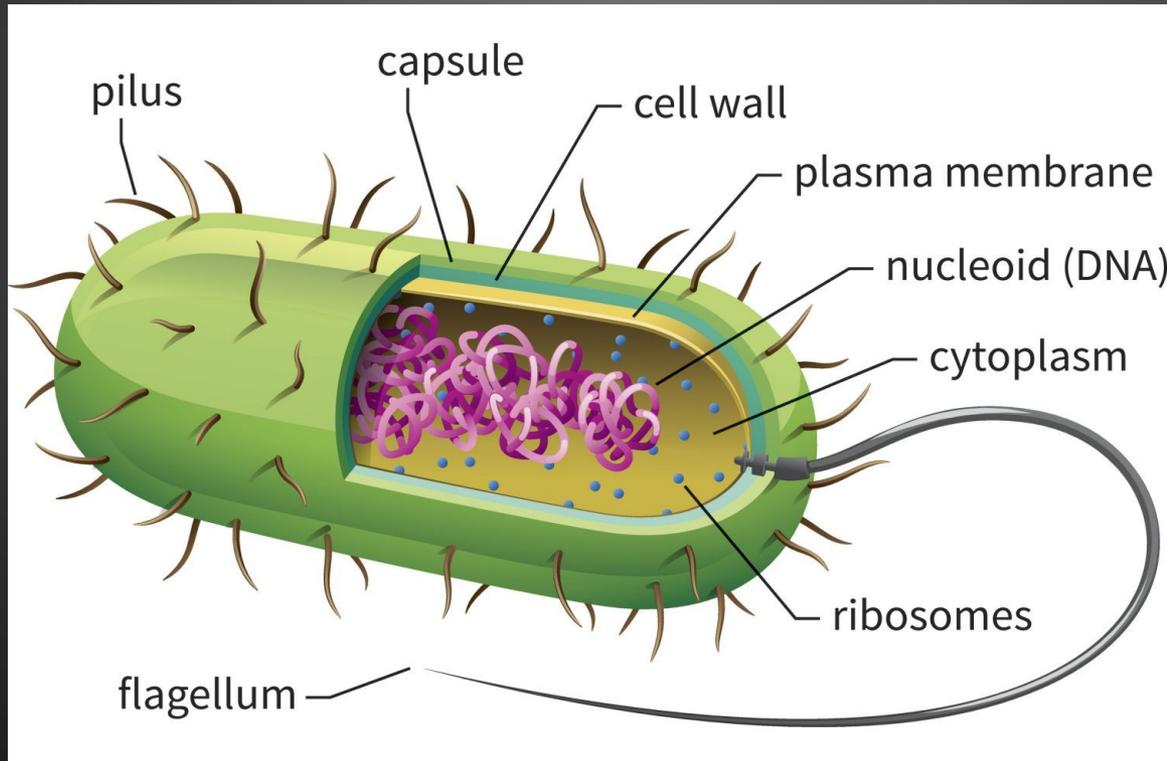
cell wall

Keeps water in the cell and allows cell to keep rigid (keep its shape)



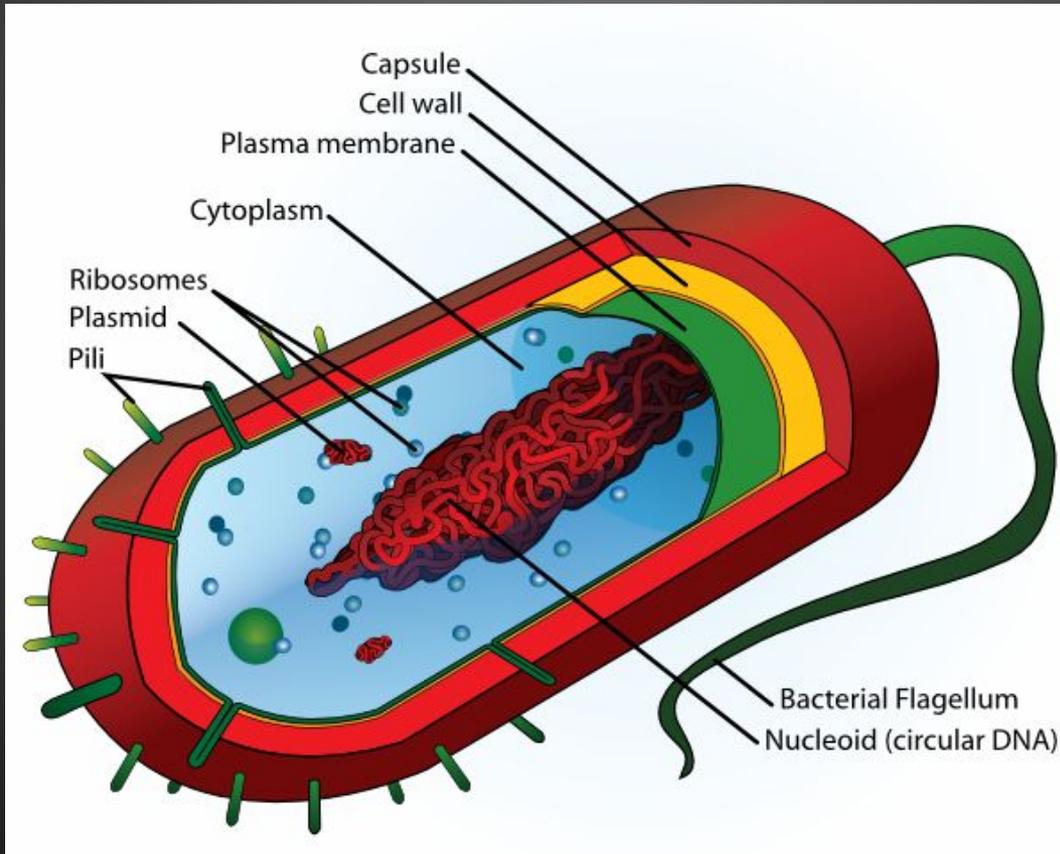
cell membrane

Allows molecules to pass into and out of the cell; made of lipids (fats) and proteins



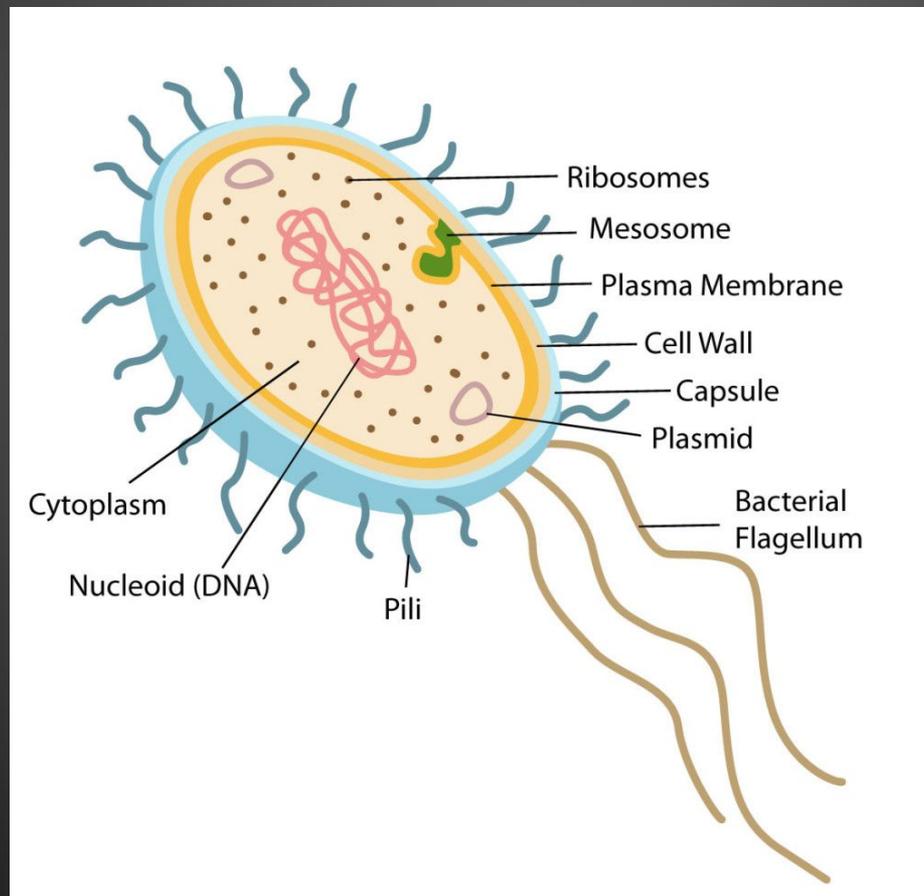
cytoplasm

Watery interior of cell. Allows molecules and organelles to move around the cell.



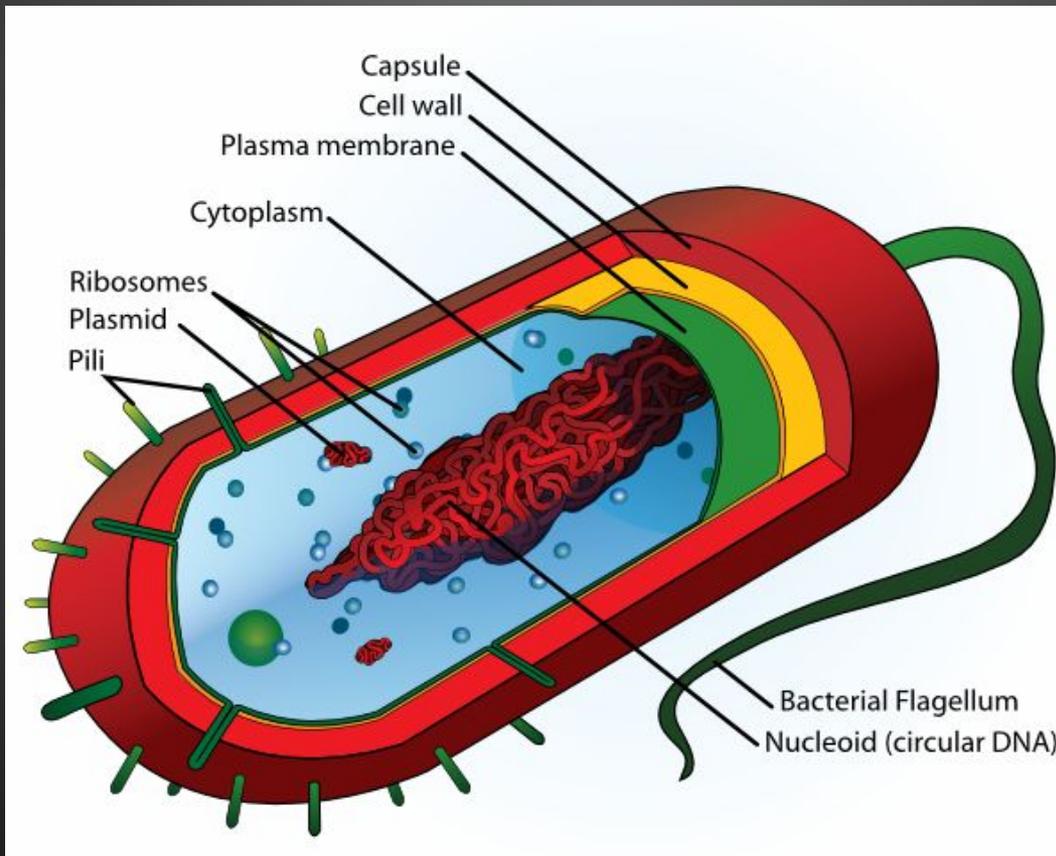
nucleoid Region

Genetic material of the cell. DNA is shaped in a circular loop.



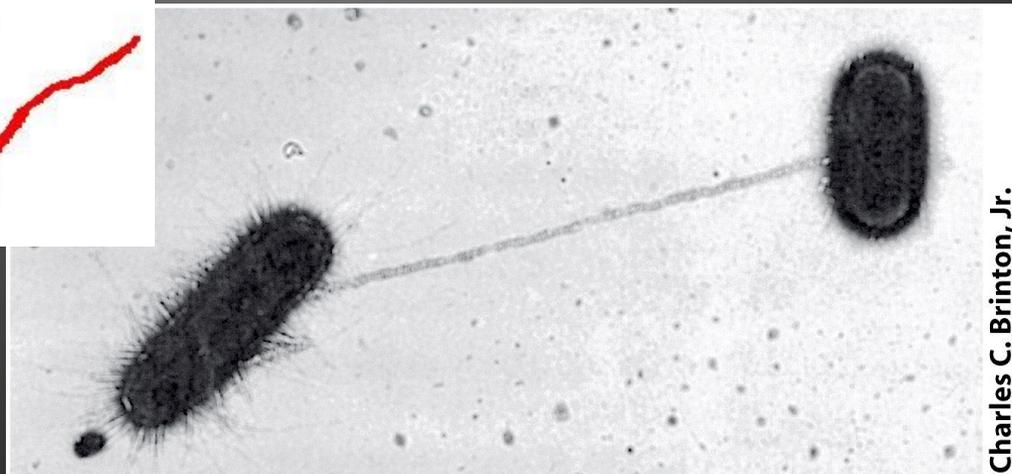
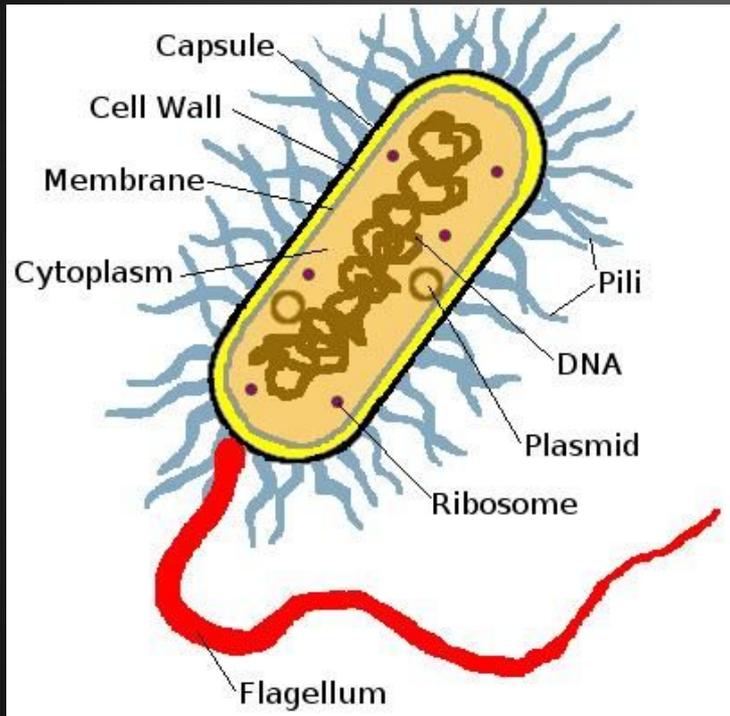
ribosomes

Site of protein synthesis (amino acids link up into proteins)



pili

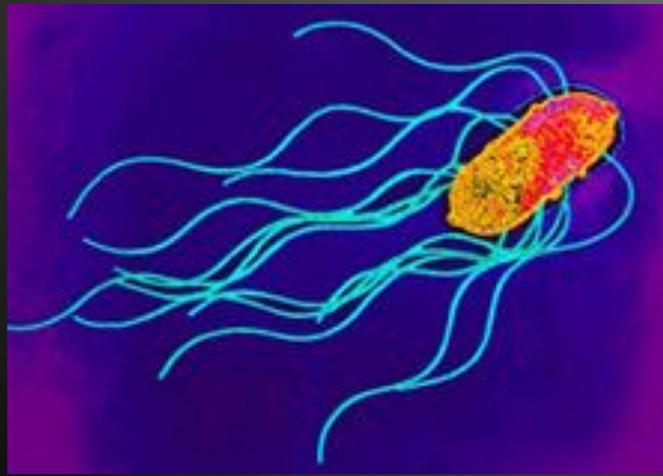
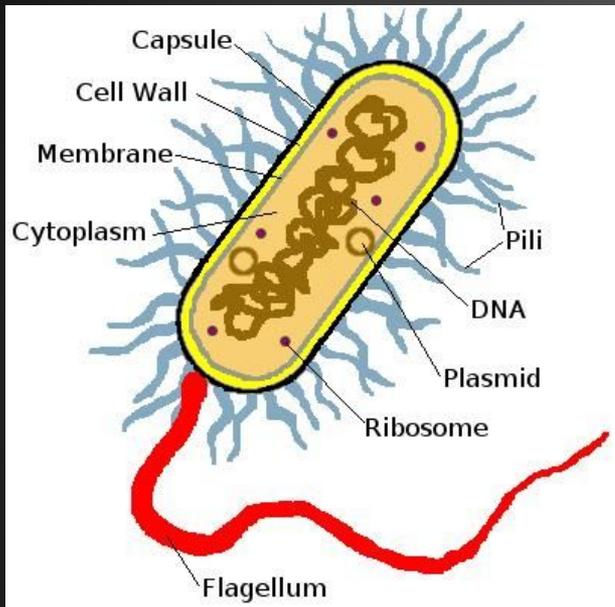
Allows attachment to surfaces and other bacterial cells when bacteria swap DNA.

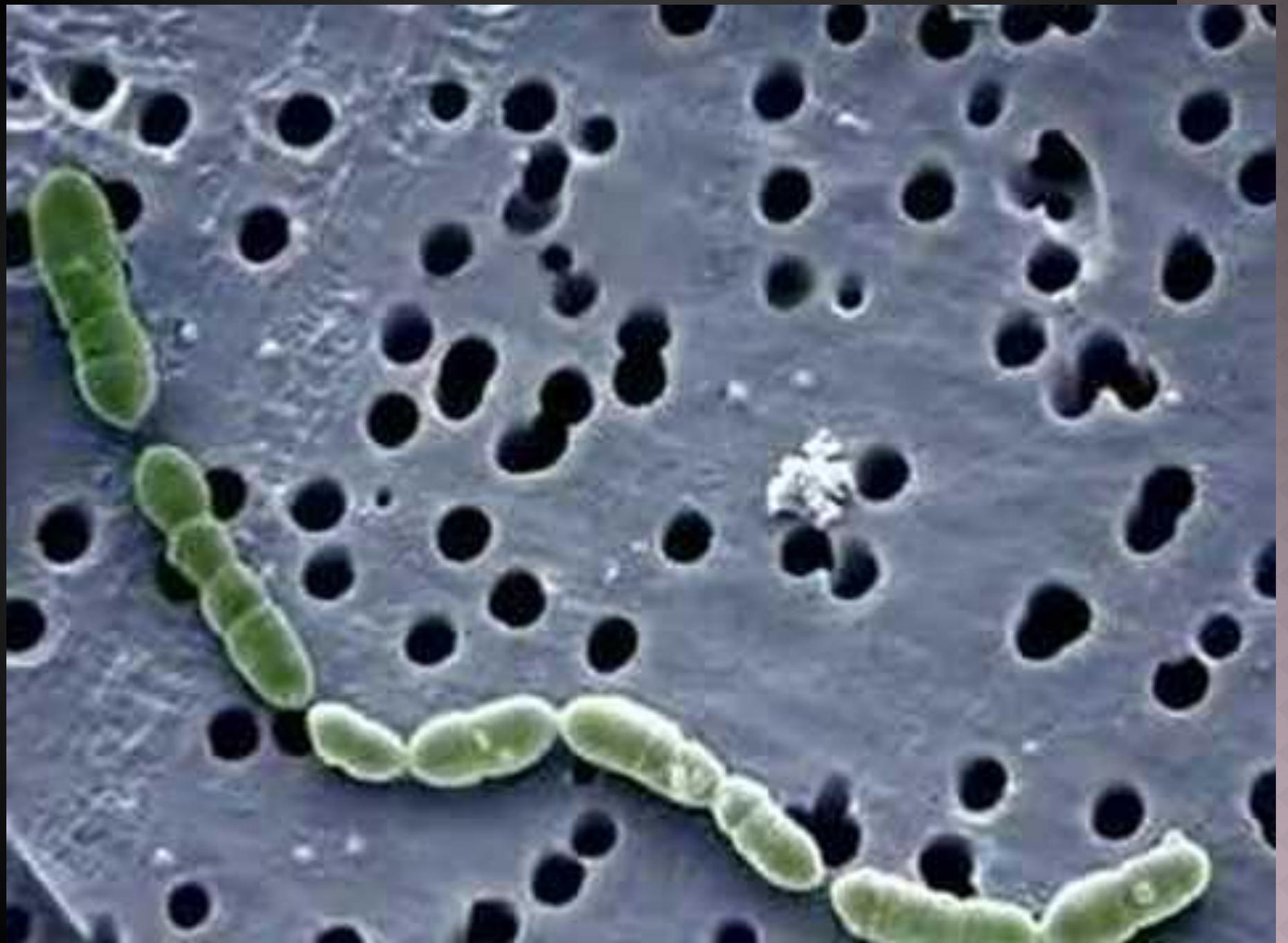


Charles C. Brinton, Jr.

flagella

Allows bacteria to move from place to place. A whip-like tail.



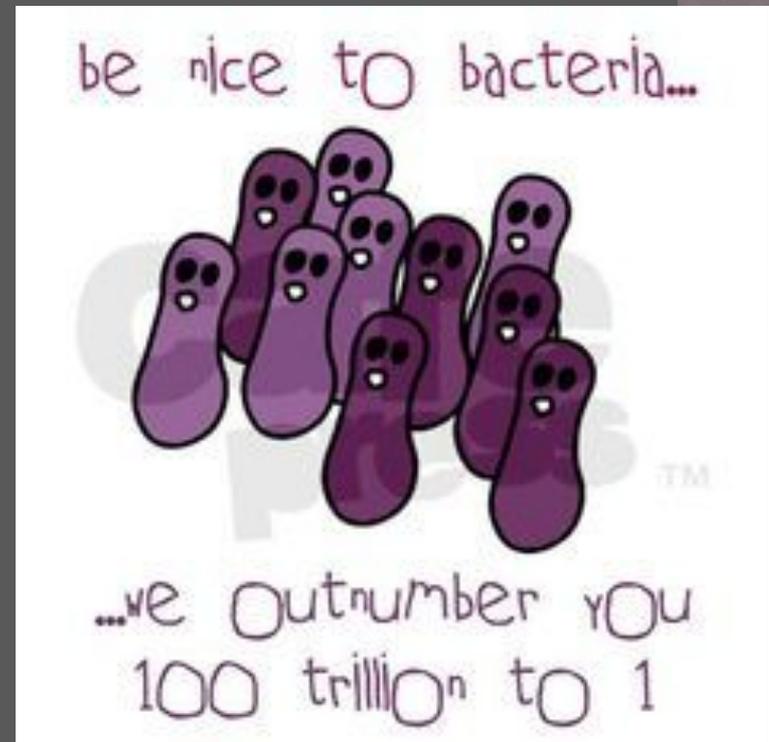


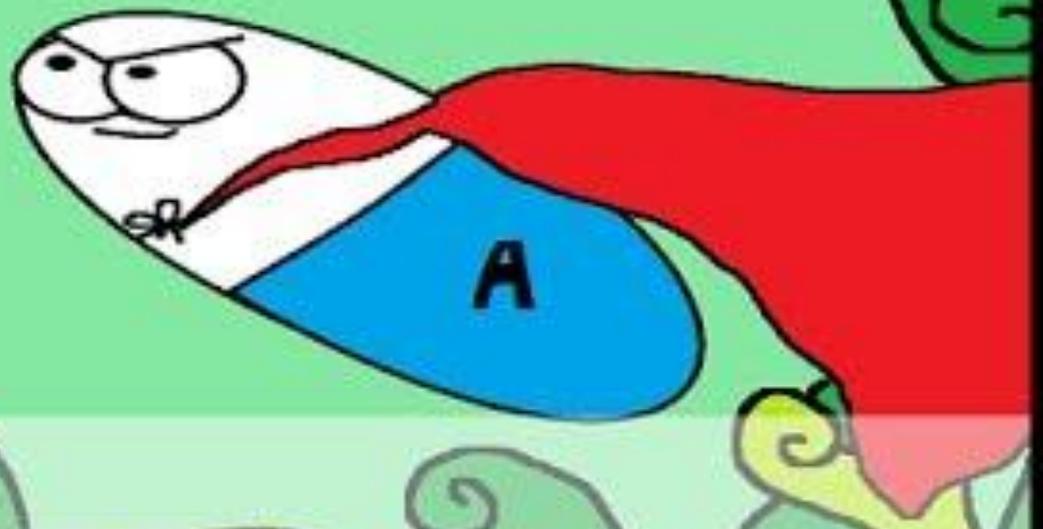
September 27, 2018

Mastery Objective: The students will explain characteristics of prokaryotic (bacteria) cells by sketching and labeling a pizza bacteria cell.

Drill Warm-Up: Identify each characteristic as describing a eukaryotic (E) and/or prokaryotic (P) cell.

1. Cytoplasm
2. Cell membrane
3. Small and simple
4. Large and complex
5. Ribosomes
6. Single-celled
7. Multi-cellular
8. nucleus





Bacteria

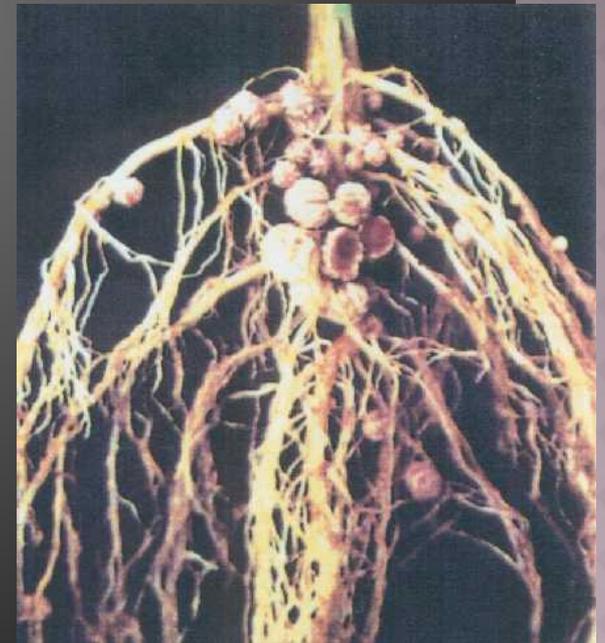
With the Amoeba Sisters

Cool things about bacteria!



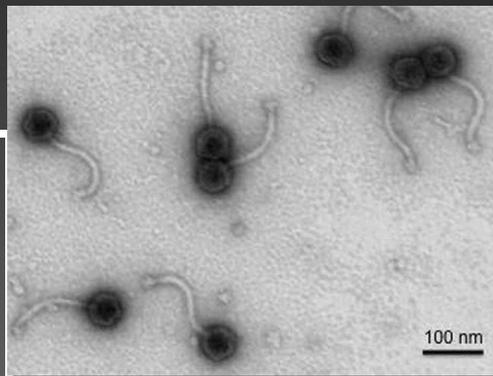
Bob-Tail Squid and Bioluminescent Bacteria: bacteria send out signals to find each other. When large numbers are together, they 'glow'.

Nitrogen Fixation: bacteria in nodules on legumes' roots 'fix' nitrogen in the soil. Plant absorbs nitrogen and we eat plants to get the nitrogen.



Did you know...

Bacteria that causes acne can be found on a cell phone?



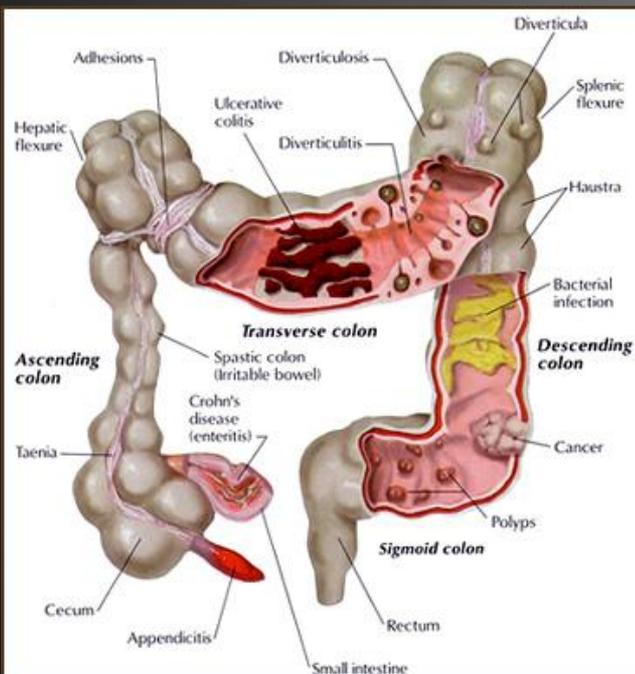
5 different kinds are found on a movie theater seat and school lunch table.

7 different kinds of bacteria are found on a locker room shower floor.



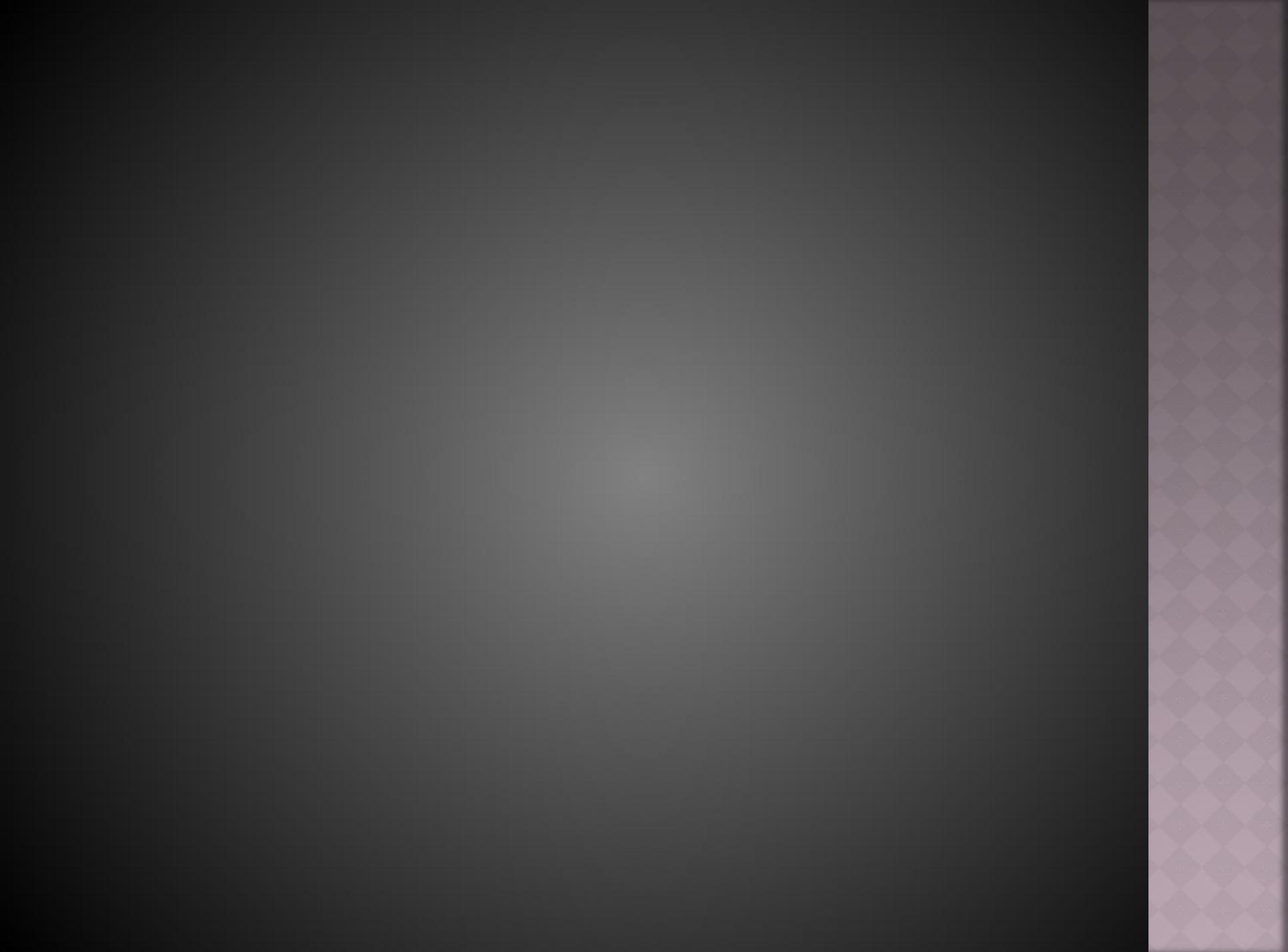
The 'good' bacteria:

1. probiotics: found in fermented food: yogurt, soft cheeses, sauerkraut, kim che



2. 'intestinal flora': found in intestines and aids in digestion and absorption of food

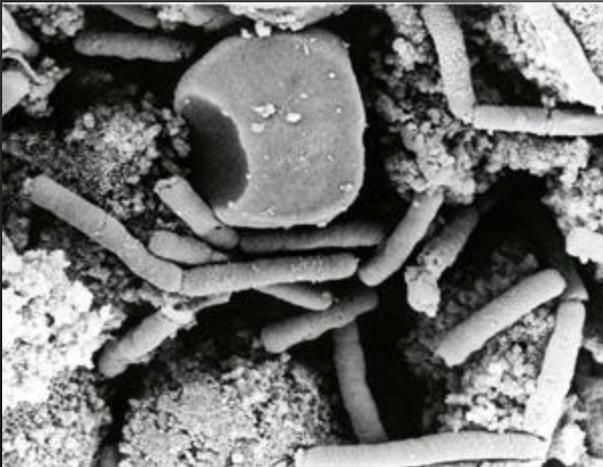
[Good Bacteria Video](#)



The 'bad' bacteria:

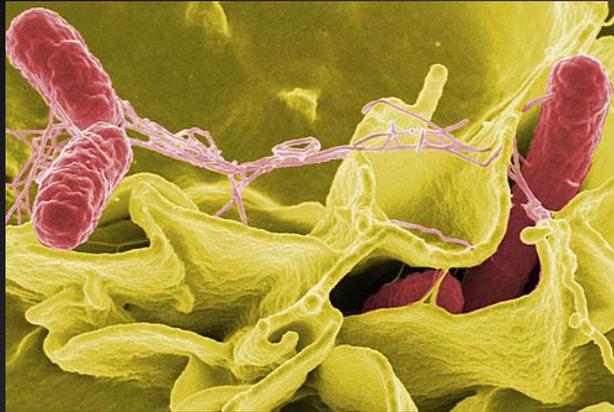
Bacteria can sicken or kill plants and animals.

- anthrax-bacteria usually found in cows and sheep



- fire blight-disease that affects apple and pear trees

and the 'ugly' bacteria:



salmonella and
e-coli: bacteria
found in food

'black death' or
bubonic plague-
caused by *Yersinia*
pestis. Victims' skin
turns black.





Ooh, Fleas on rats

November 17, 2017

Mastery Objective: The students will practice scientific analysis by designing an experiment for growth of bacteria.



Drill Warm-Up:

1. What is a controlled experiment (pg. 14)?
2. In Table 1 (pgs. 14) which group is the control group? Why?
3. "What is the effect of music on the size of web that spiders make." Identify the control group.

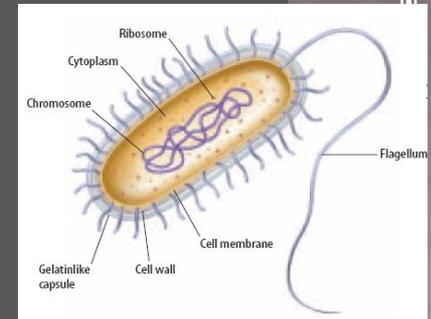
Commercial

November 21, 2017

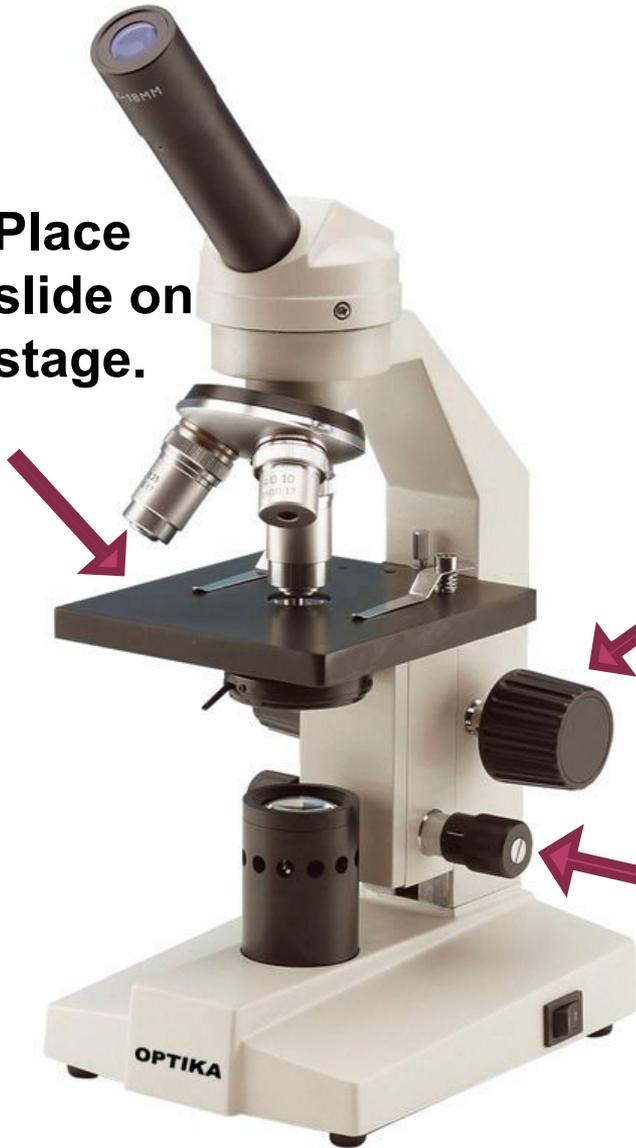
Mastery Objective: The students will practice using the microscope by properly preparing and focusing on various wet-mount slides.

Drill Warm-Up: Construct and complete the following data table:

	Plant/Animal Cell	Bacteria Cell
Contains nucleus?		
Size (large or small)		
Complex or Simple?		



**1. Place
slide on
stage.**



**2. Use coarse
focusing knob
first.**

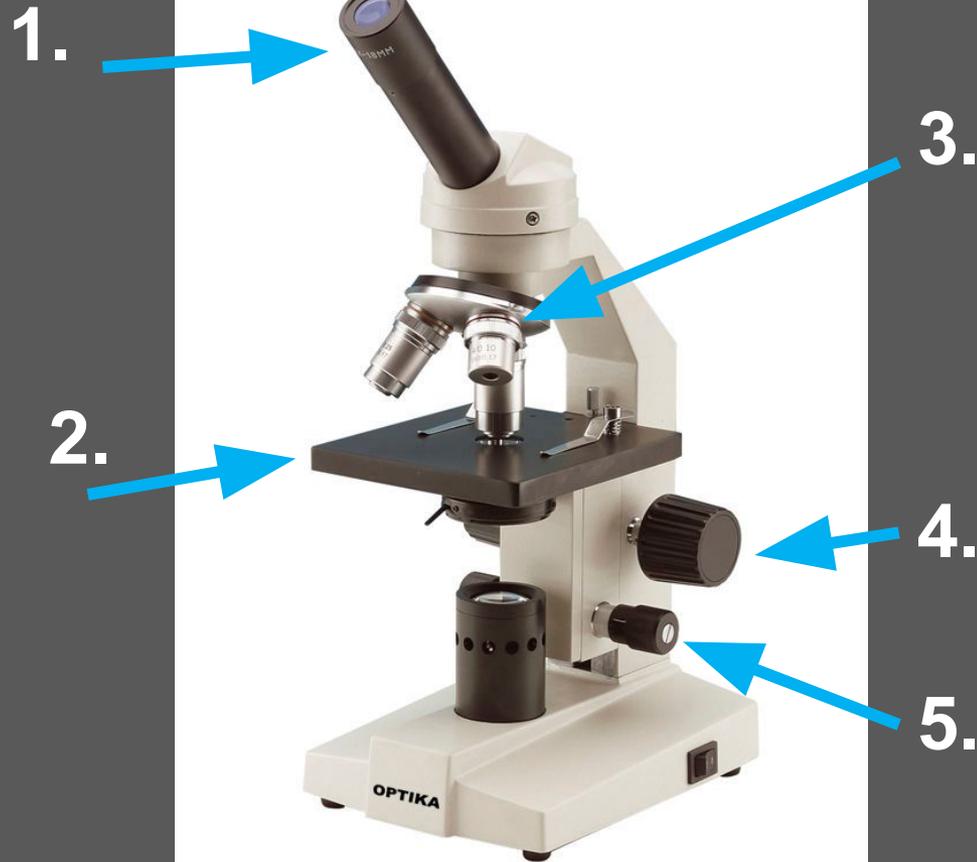
**3. Use fine
focusing knobs
second to focus.**

November 22, 2017

Mastery Objective: The students will practice using the microscope by sketching wet mount slides of bacteria.

Drill

Warm-Up:
Identify the following parts of a microscope:



November 27, 2017

Mastery Objective: The students will practice using the microscope by estimating size of cells in micrometers.



How to prepare a wet mount slide...

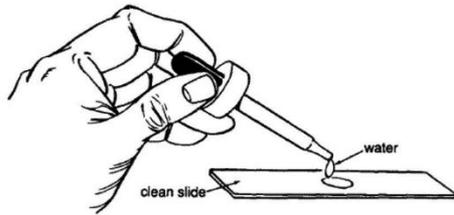


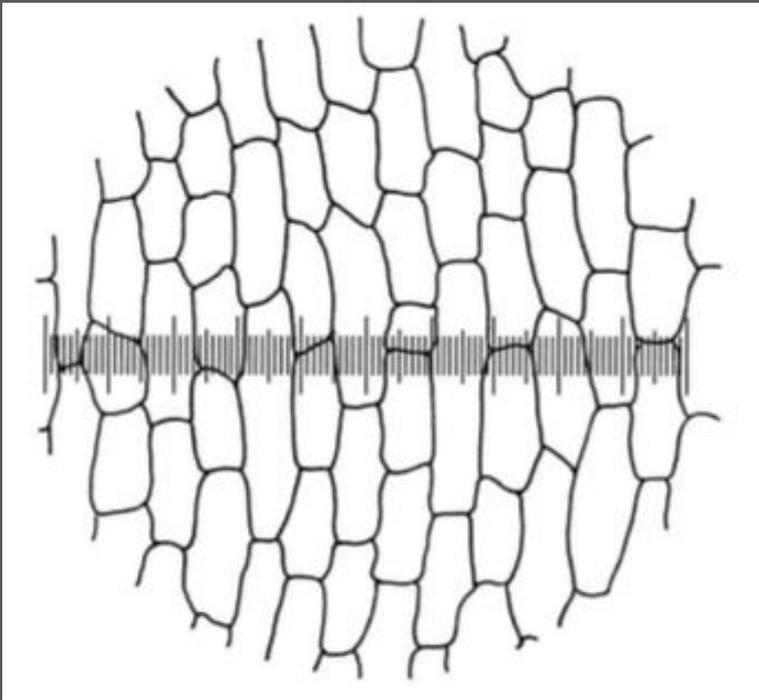
Figure A1.1

Drill Warm-Up:

1. Summarize how you would make a wet-mount slide of a letter 'e' that you cut from a newspaper.

November 28, 2017

Mastery Objective: The students will practice using the microscope by estimating size of cells in micrometers.

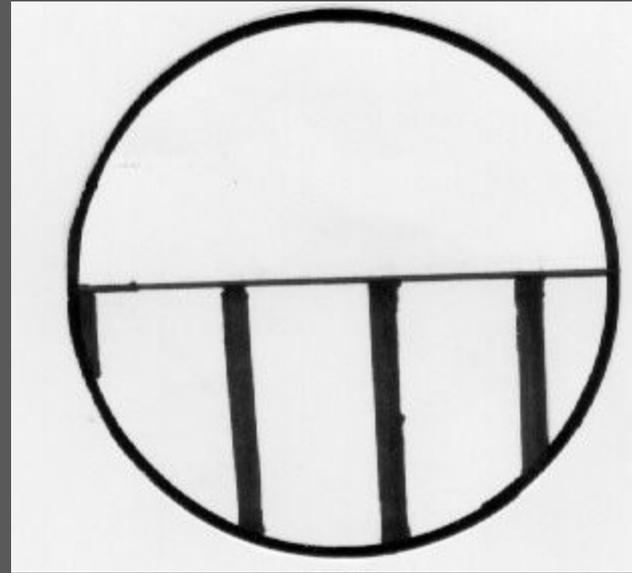


Drill Warm-Up:

1. Observe the cells in the viewing field to the left. The diameter of the viewing field is $1060\ \mu\text{m}$. What is the approximate width of one cell?

November 29, 2017

Mastery Objective: The students will practice using the microscope by estimating size of cells in micrometers.



Drill Warm-Up:

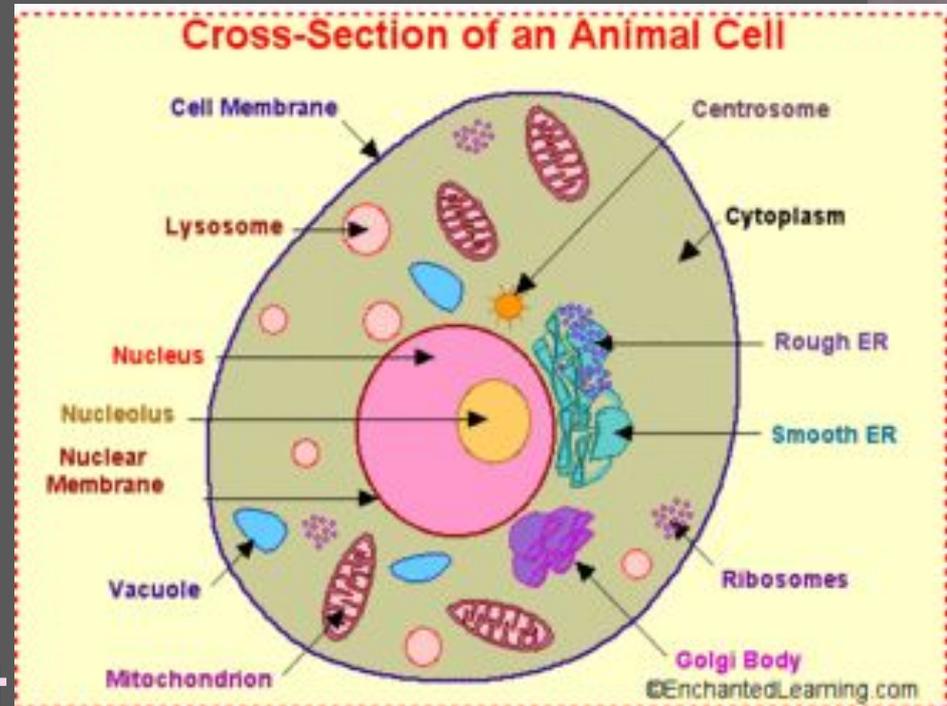
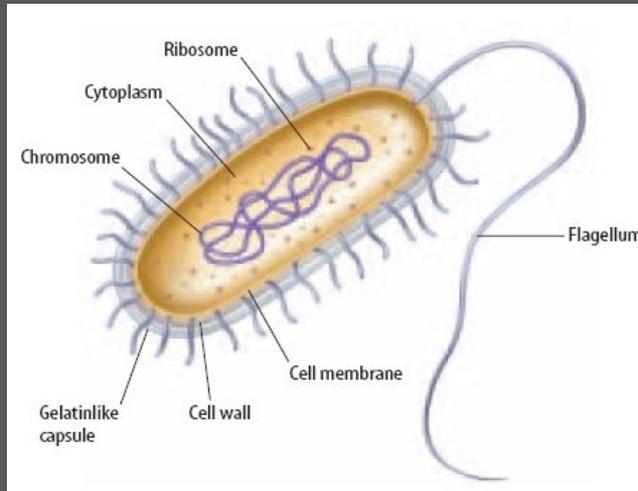
- 1. A ruler is placed under a microscope at the lowest magnification. What would be the diameter of the viewing field in the diagram above in micrometers?**
- 2. If 25 blood cells fit in the widest part of the viewing field, what is the approximate size of one cell?**

December 1, 2017

Mastery Objective: The students will compare and contrast characteristics of cells by color-coding bacteria, plant, and animal cells.

Drill Warm-Up:

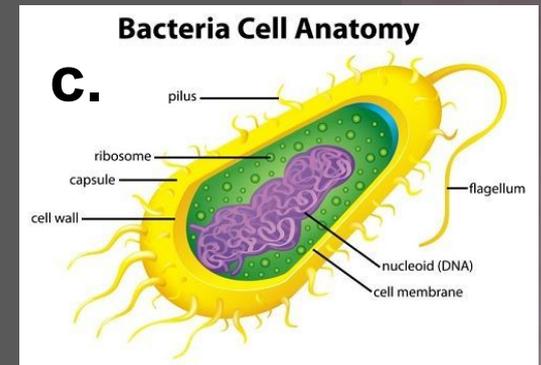
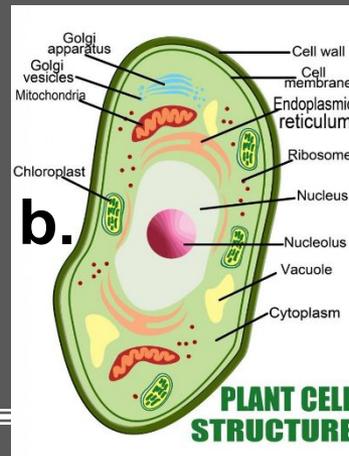
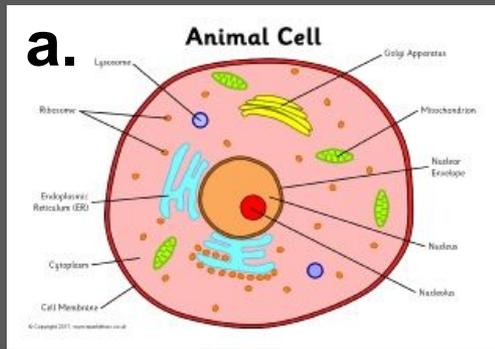
Observe the bacteria and animal cell below.



Compare and contrast animal and plant cells.

December 4, 2017

Mastery Objective: The students will compare and contrast characteristics of cells by constructing a Venn diagram for prokaryotic and eukaryotic cells.

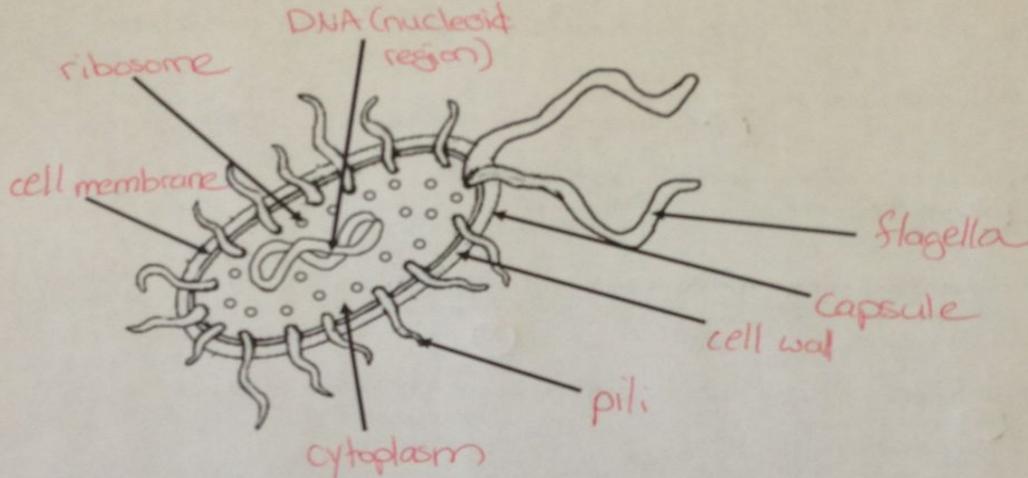


Drill Warm-Up:

1. Which cell(s) is eukaryotic?
2. Which cell(s) is prokaryotic?
3. Which cell(s) does not contain a nucleus?
4. Which cell(s) contains cytoplasm and a cell membrane?
5. Which cell(s) can be spiral shaped?

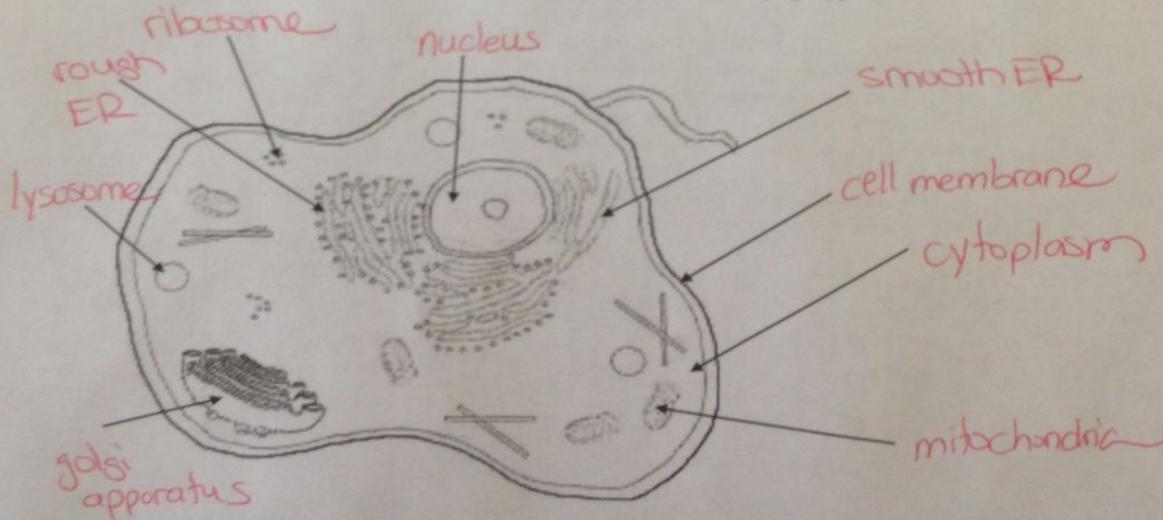
Directions: Label the following organelles in the bacteria cell. 1 point each.

cytoplasm	flagella	pili	ribosome
DNA (nucleoid region)	cell membrane	cell wall	capsule



Directions: Label the following organelles in this animal cell:

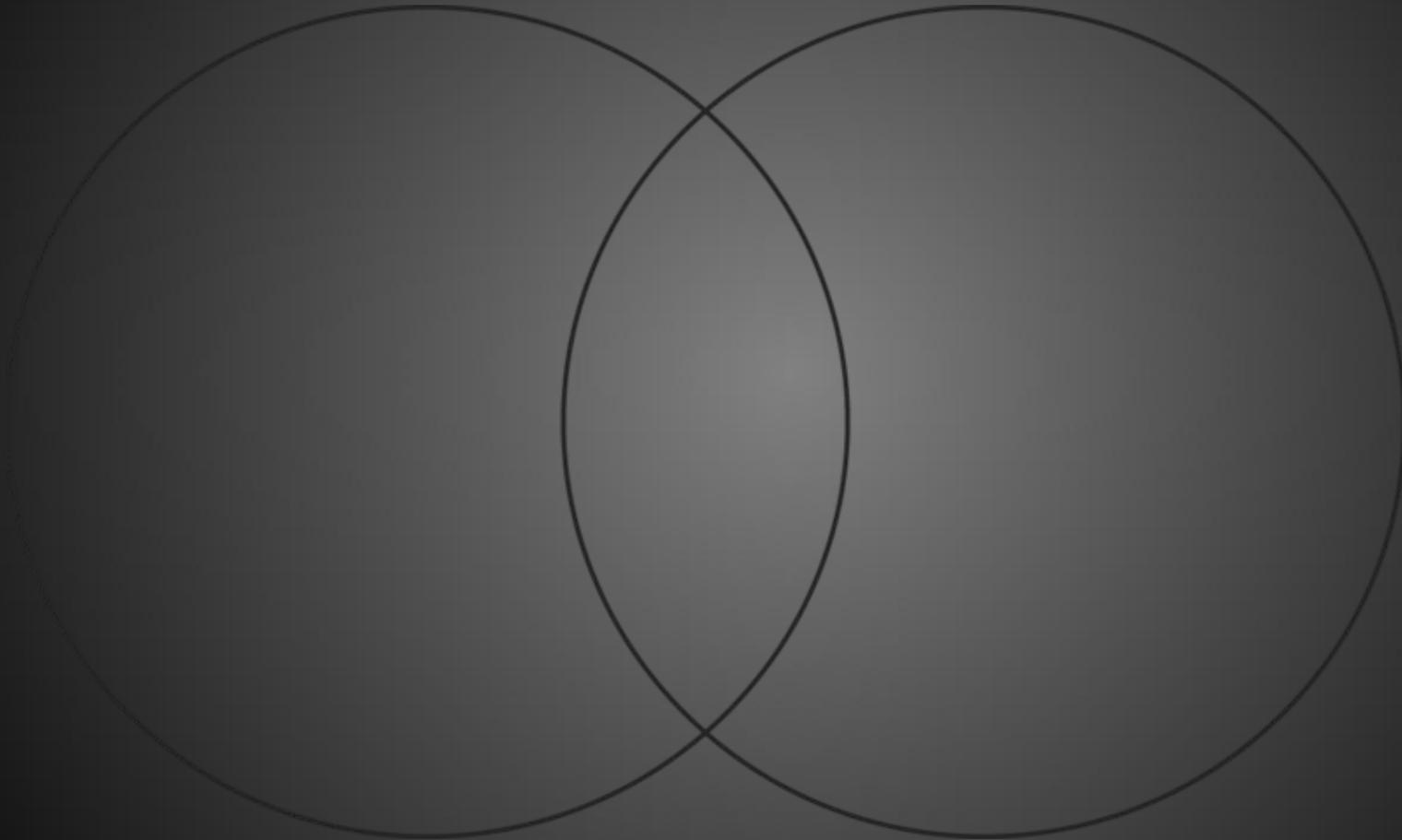
nucleus	cytoplasm	cell membrane	smooth ER	lysosome
rough ER	ribosome	mitochondria	golgi apparatus	





Eukaryotic

Prokaryotic



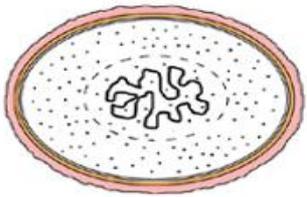
November 29, 2016

Mastery Objective: The students will identify functions of cells by completing a cell webquest activity.



Drill Warm-Up: Construct a data table for the experiment below:

Students wanted to test the effect of sugar concentration on the size of bacteria colonies. First, the students made a batch of gelatin (clear jello). Next, they separated the batch into three smaller batches. They added 1 tablespoon of sugar to the first batch and 2 tablespoons to the second batch. No sugar was added to the third batch. The students poured the batches into plastic containers with lids and placed a sample of bacteria into each one. The bacteria was allowed to grow.



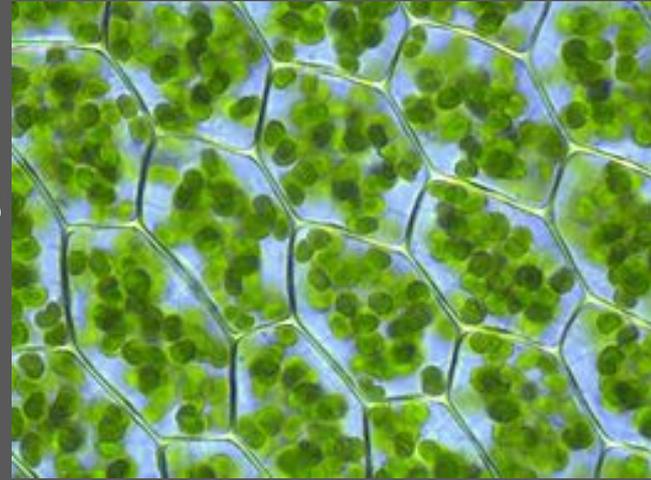
Prokaryotic Cell



Animal (Eukaryotic) Cell

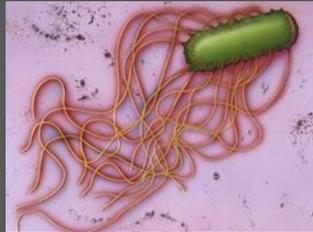
October 1, 2015

Mastery Objective: The students will examine functions of chloroplasts by observing and analyzing plant cells under the microscope.

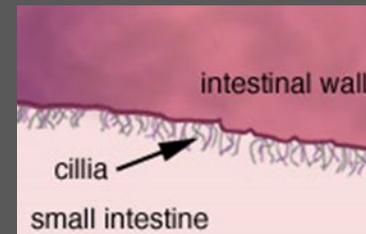


Drill Warm-Up: Identify the method of movement for each description:

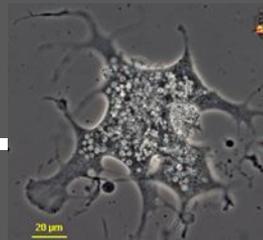
1. Whip-like tail (s)



2. Tiny hairs that surround the cell

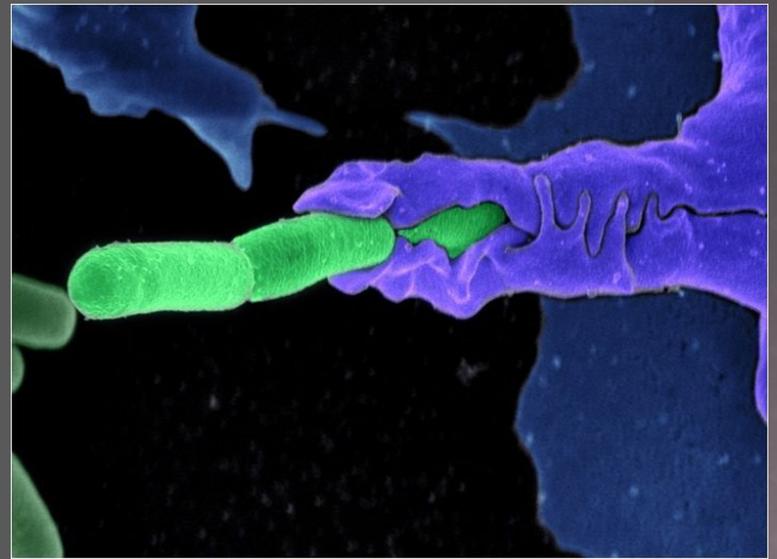


3. Projections of cytoplasm



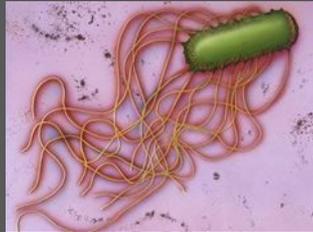
October 12, 2015

Mastery Objective: The students will identify functions of cells by completing a webquest review guide.

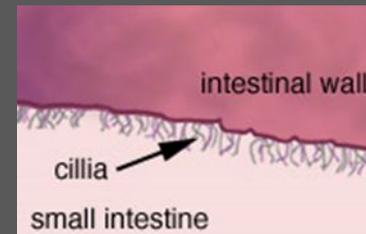


Drill Warm-Up: Identify the method of movement for each description:

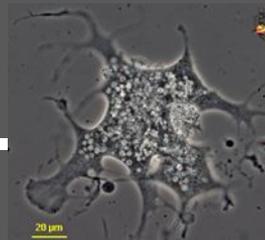
1. Whip-like tail (s)



2. Tiny hairs that surround the cell



3. Projections of cytoplasm



October 14, 2015

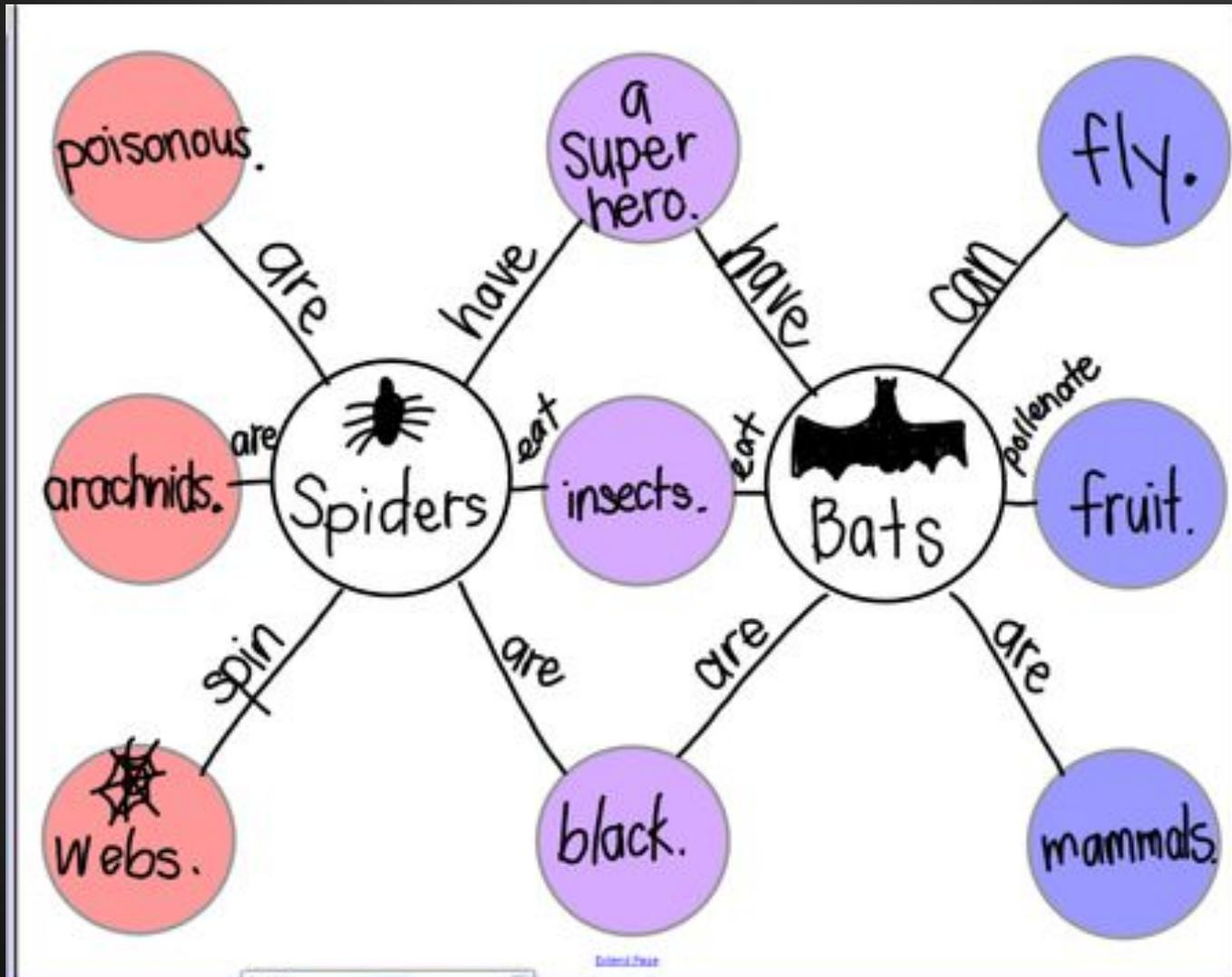
Mastery Objective: The students will identify functions of cells by earning a proficient score on a quiz.

Drill Warm-Up:

1. What are three main differences between prokaryotic and eukaryotic cells?



Thinking Map: Prokaryotes vs. Eukaryotes

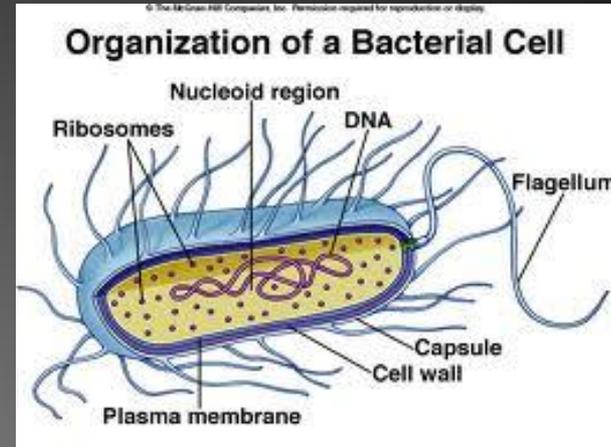


Thinking Map: Plant and Animal Cells



Organelles of Prokaryotes (bacteria):

- ✓ cytoplasm
- ✓ ribosomes
- ✓ cell membrane
- ✓ cell wall
- ✓ capsule
- ✓ nucleoid region (contains DNA)
- ✓ pili
- ✓ flagella



'bacteria'

'plant or animal cell'



vs.

