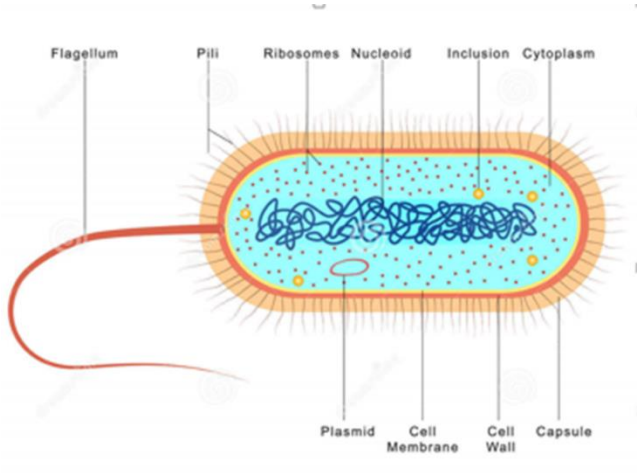
Name: Hemingway

Bacteria

Prokaryotes

- Kingdom _____
- Kingdom _____
- Characteristics:
  - 1. _____
  - 2. _____
  - 4. Most are _____ than eukaryotes
  - 5. Are _____ organisms
  - 6. contain _____
    - Circular independent_____



Classifying Prokaryotes

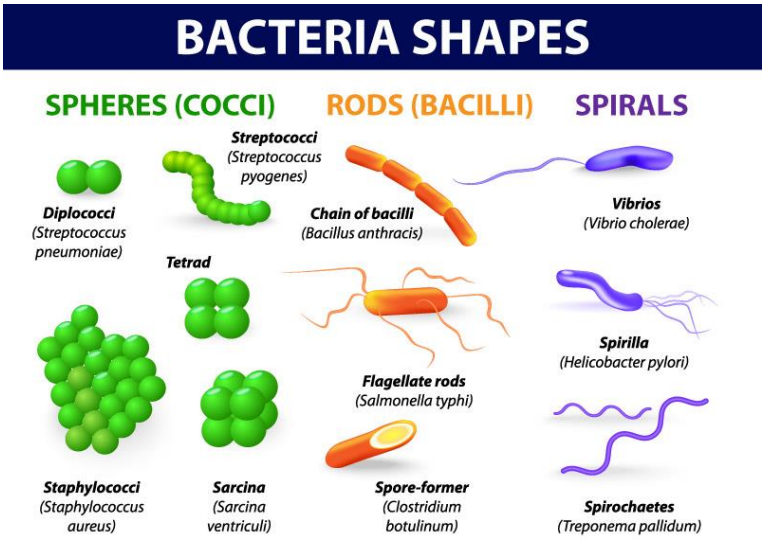
- Recall that ALL PROKARYOTES WERE PLACED IN KINGDOM _____
  - Currently split up into two kingdoms
    - Eubacteria
    - Archaebacteria
  - Size range
    - Typically range between _____
    - Eukaryotic cells range between _____ micrometers

Eubacteria

- _____ of the two kingdoms
- Wide range of organisms
- Live almost _____
  - Fresh water, salt water, land, human body
- Surrounded by a cell wall containing _____ (carbohydrate)
  - Protects the cell from _____and gives _____
- Has a cell membrane
  - Some have a _____for further protection

Archaebacteria

- Looks similar to eubacteria
- Major differences
  - cell wall _____ contain peptidoglycan
  - Also have different membrane lipids(fats)
  - DNA is more similar to _____ than eubacteria
    - Most likely the _____of eukaryotes
- Live in harsh environments
  - Oxygen free - _____
  - extreme salt – _____
  - boiling temps - _____



Name: Hemingway

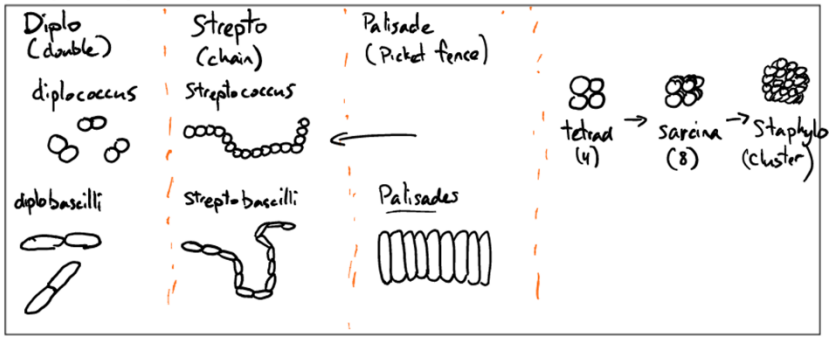
Identifying prokaryotes

- _____
- _____
- _____
- _____

Shape

- _____ different shapes
  - _____- bacilli (buh-SIL-eye)
  - _____– Cocci (Kahk-Sy)
  - _____ – spirilla (spy-ril-uh)

Prokaryote Arrangements:

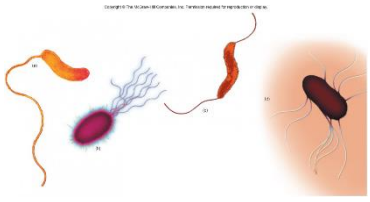


Cell wall

- Two types of cell walls in eubacteria
- 1. _____
  - Cell wall made of protein and sugar
  - Turn _____ after gram staining
    - Thick wall retains stain
- 2. _____
  - Extra layer of lipid outside of cell wall
  - Turn _____ after gram staining
    - thin wall does not retain stain
  - Require different types of antibiotics to treat infections

Movement

- Some do not move
- Those that move
  - Via_____
    - Whip like structures
  - Via _____
  - Via lashing, snaking or spiralling forward
  - Via gliding over secreted slime layer



Obtaining energy

- Most are _____
- Most Heterotrophs are _____
  - Must take in organic molecules for energy and carbon supply
- _____
  - Use sunlight for energy but need to take in organic molecules for carbon supply

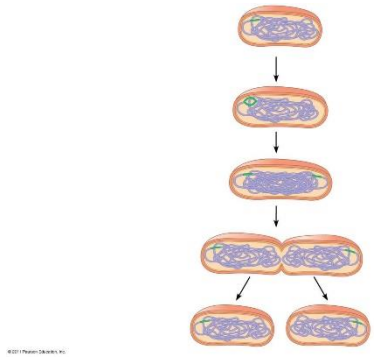
Name: Hemingway

Autotrophs

- _____
  - Use light energy to convert co2 and h20 into organic molecules and oxygen
    - Similar to photosynthesis in plants
- _____
  - Make organic molecules like photoautotrophs
  - However do not require light as their source of energy
  - Use energy from chemical reactions involving ammonia, hydrogen sulfide, nitrites, sulfur or iron

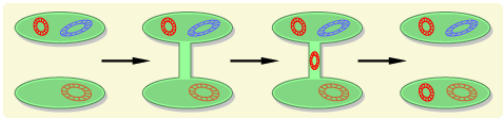
Using/Releasing energy

- Process by which nutrients are broken down to provide energy
  - Cellular Respiration, fermentation or both
    - A. _____
      - Need oxygen to live (eg. Tuberculosis)
    - B. _____
      - Killed by oxygen (eg. Clostridium tetani in deep wounds)
    - C. _____
      - Can use oxygen if it is available but it does not kill them (eg. E. coli in human intestines)

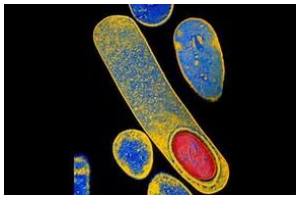


Growth and reproduction

- In ideal conditions
  - Reproduce very quickly
  - Divide approx. every 20 minutes
- Growth is kept in check by
  - _____
  - _____
- _____
  - Asexual reproduction
  - Method of reproduction for _____
    - Occurs under normal conditions
    - Process:
      - 1. DNA replicates (ie. doubles)
      - 2. Cell divides
      - 3. Result: 2 identical daughter cells



- _____
  - Sexual reproduction
  - DNA is _____ between bacteria cells
  - Cell to cell contact using pili
  - Increases _____



- _____
  - Some bacteria can transform into a dormant state called an _____
  - It allows bacteria to survive _____
  - Bacteria form a _____ around itself
  - Able to resist heat, drought, radiation
  - When conditions improve
    - Endospore will germinate and bacterium will begin to _____