

LIFE SCIENCES 11

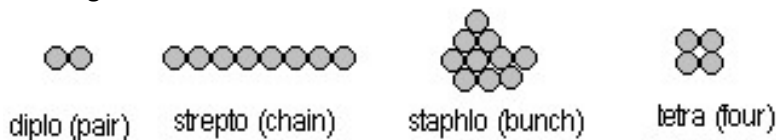
IDENTIFYING BACTERIA

Identifying Bacteria

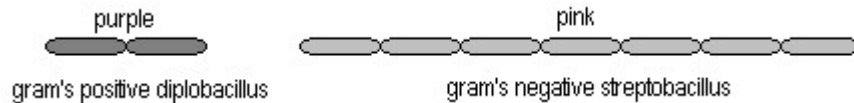
- Smell
- Colony morphology (appearance)
 - colony size, elevation and edge shape
- cell shape



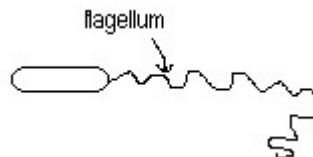
- cell arrangement



- Gram's stain
 - specific staining technique
 - bacteria are stained with a purple stain called crystal violet → lightly washed and counter stained with a red stain called safranine
 - if the bacterium appears purple → Gram's positive (one thick layer in cell wall)
 - if it is pink or red → Gram's negative (two thin layers in cell wall)



- Motility
 - bacteria can be motile (can move) or sessile (cannot move)
 - most bacteria move by the whip-like motion of one or more flagella



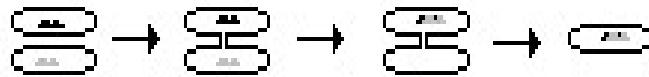
- Type of Nutrition
 - some autotrophs – make their own food
 - phototrophs – use light energy
 - chemotrophs – use energy stored in chemical bonds
 - some heterotrophs – get food from another source
 - herbivores, carnivores and detritivores (saprophytes)

h. Means of Reproduction

- binary fission



- conjugation
 - can be used by some to create new genetic variety



i. Oxygen Tolerance

- Obligate Aerobes
 - require oxygen for cellular respiration to make ATP
- Obligate Anaerobe
 - cannot live in oxygen
 - use fermentation to produce ATP
- Facultative Anaerobe
 - prefer oxygen but can also use fermentation