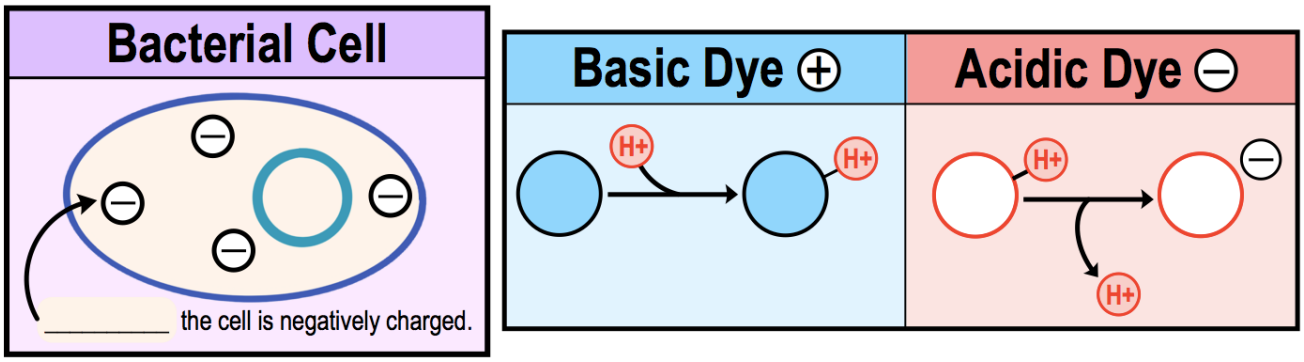
CONCEPT: SIMPLE STAINING

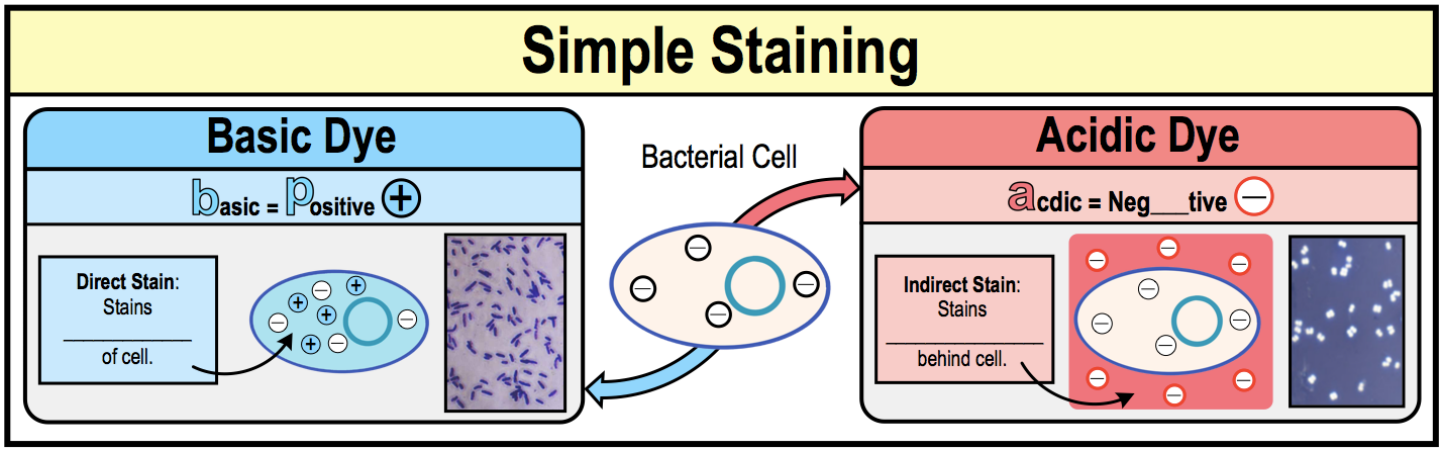
- _____ **Staining**: a *simple* staining procedure using only _____ *single* dye to stain a specimen.
- There are 2 important things to remember regarding simple stains:
  1) The *inside* of a bacterial cell is _____ charged with respect to the outside.
  2) The dye (*basic* or *acidic*) is only effective _____ it reacts.



Simple Staining Basic & Acidic Dyes

- There are _____ main types of dyes used in *simple* staining:
  1) _____ **Dye**: act as *base* to become _____ charged dye particles that stain inside *cells*.
     - □ Positively charged, basic dye is _____ to negatively charged cell components.
  2) _____ **Dye**: act as *acid* to become _____ charged dye particles that stain *backgrounds*.
     - □ Negatively charged, acidic dye _____ negatively charged cell components & color background.
     - □ **Negative Staining**: staining procedure using an *acidic* dye to stain _____.

EXAMPLE: Basic & acidic simple staining.



- Simple staining can increase the _____ of a *brightfield* microscope.

CONCEPT: SIMPLE STAINING

PRACTICE: There are two major types of simple stains used to better visualize microorganisms. What are these two types of simple stains and how do they differ?

a) Basic stain is a positively charged dye; Acidic stain is a neutral dye.
b) Basic stain is a positively charged dye; Acidic stain is a negatively charged dye.
c) Basic stain is an indirect stain; Acidic stain is a direct stain.

PRACTICE: Simple staining is a procedure often used to increase the contrast of _____ microscopes.

a) Dark-field microscopes.
b) Fluorescence microscopes.
c) Compound light (brightfield) microscopes.
d) Transmission electron microscopes.

PRACTICE: Which of the following statements is true?

a) A basic dye is negatively charged & stains the outside of a cell while an acidic dye is positively charged & stains the inside of a cell.
b) A basic dye is positively charged & stains the inside of a cell while an acidic dye is negatively charged & stains the outside of a cell.
c) A basic dye is positively charged & stains the outside of a cell while an acidic dye is negatively charged & stains the inside of a cell.
d) A basic dye is negatively charged & stains the inside of a cell while an acidic dye is negatively charged & stains the outside of a cell.