CONCEPT: PLANT TISSUE

● Plant cells use _____ as the primary means of supportive cell matrix

□ **Primary cell wall** is the newly formed cell wall

- These are thin and flexible, but still fairly tough

- Contains **pectins** which are branched polysaccharides that can crosslink with Ca^{2+} to form a semisolid gel

□ **Secondary cell walls** form later, after the cell has matured a bit

- These walls are thicker, and less flexible

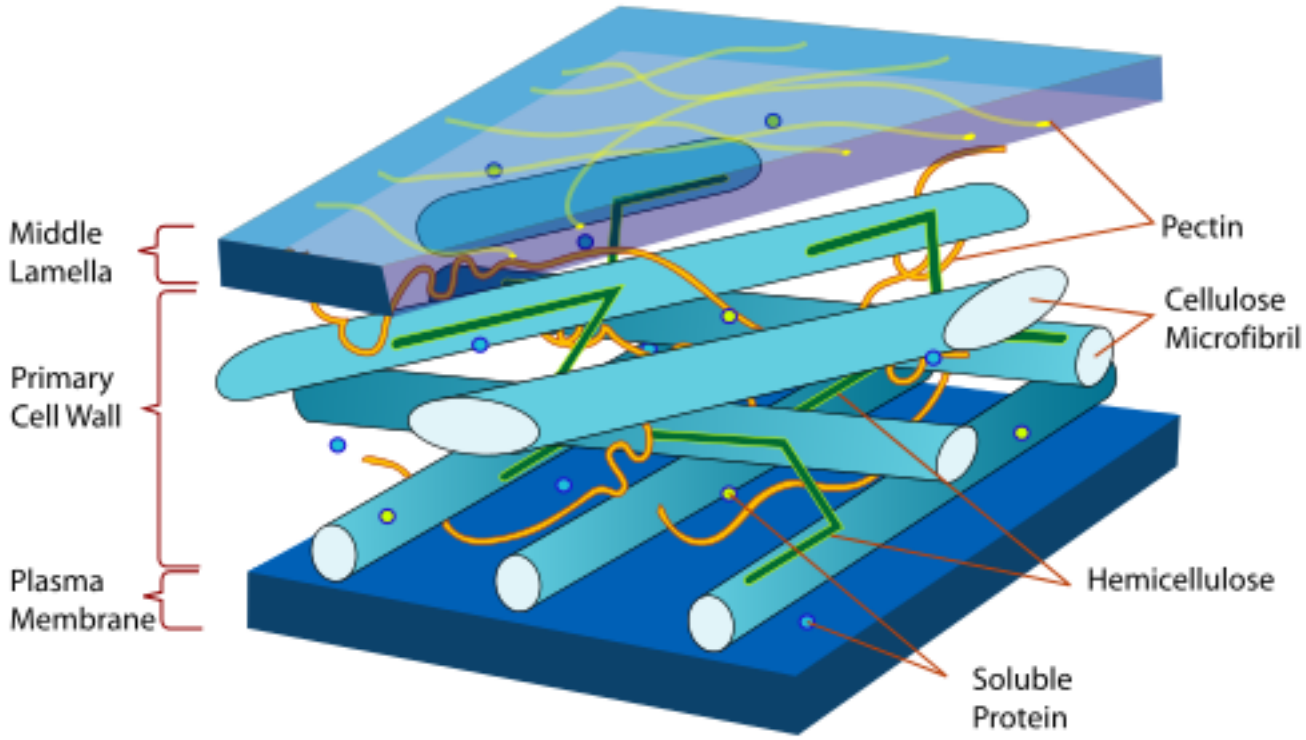
- Contain **ligin** which is a polymer of alcohols that acts as a waterproof filler (Ex: woody tissue)

□ Cell walls contain **cellulose microfibrils** which are long cellulose (with glucose) _____

- Provide the cell wall with great tensile strength (acts as a skeleton)

- *Hemicellulose* refers to polysaccharide chains with different sugar subunits than cellulose

EXAMPLE:



● The cell wall provides certain _____ to plant cells

□ The cell wall prevents cell growth

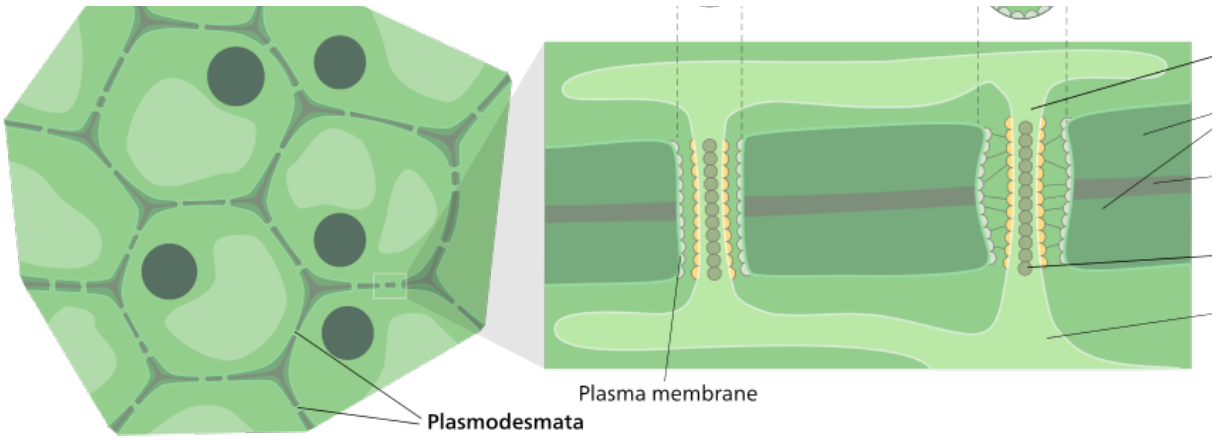
- Cellulose microfibrils limit growth

□ The cell wall provides a supportive matrix to maintain cell shape and osmotic pressure

- *Turgor pressure* is due to differing concentrations of water on either side of the cell

□ *Plasmodesmata* are connections between the cytoplasms of adjacent plant cells (even go through cell walls)

EXAMPLE:



PRACTICE:

1. The secondary cell wall is composed of:
    a. Pectins
    b. Ligin
    c. Integrins
    d. GAGs

2. The primary cell what is composed of what?
    a. Pectins
    b. Ligin
    c. Integrins
    d. GAGs

3. Plasmodesmata are important to plant cells because they do what?
    a. Connect adjacent plant cells together
    b. Provide tensile strength to plant cells
    c. Control turgor pressure of plant cells
    d. Prevent plant cell growth