

### AP Biology Chapter 6 Reading Guide

1. Label the following structures in the prokaryotic cell below – list the functions of each structure:

Nucleoid region  
(bacterial chromosome)

Ribosomes

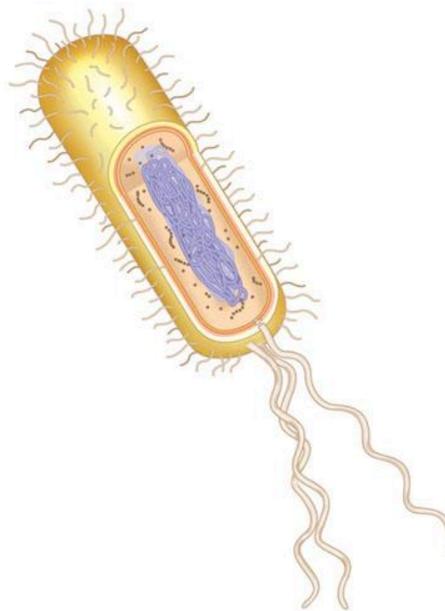
Plasma membrane

Cell wall

Flagella

Capsule

Pilli



(a)



(b)

2. Why is the surface area to volume ratio such an important concept as it applies to the size of a cell? Why isn't the surface area of a cell or the volume of a cell important enough? Why is it this ratio that is so important? (Refer to figure 6.8)

3. For each of the structures below – note the specific structure and the function of the organelle or part of the organelle. The important concept is to note how the specific structure allows for the specific function to be accomplished.

a. Nucleus

i. Nuclear envelope

- ii. Chromosomes
- iii. Chromatin
- iv. Nucleolus
  
- b. Ribosomes
  
- c. Endoplasmic reticulum
  - i. Smooth ER
  
  - ii. Rough ER
  
- d. Golgi Apparatus
  
- e. Lysosomes
  
- f. Vacuoles
  - i. Food
  
  - ii. Contractile
  
  - iii. Central w/tonoplast
  
- g. Endomembrane system – overall
  
- h. Mitochondria
  - i. Mitochondrial matrix
  
  - ii. Cristae

i. Plastids

i. Chloroplast

1. thylakoids

2. stroma

j. Peroxisomes – *What enzyme do you find here?*

k. Cytoskeleton

i. microtubules

1. centrosomes and centrioles

2. cilia and flagella –

ii. microfilaments

1. actin

2. myosin

3. pseudopodia

4. cytoplasmic streaming

l. Cell walls

m. Extracellular matrix

i. Collagen

n. What are intercellular junctions and why are they important?

o. Contrast plasmodesmata, tight junctions, desmosomes, and gap junctions.

4. What structures are unique to plant cells?

5. What structures are unique to animal cells?