**Unit 2 – Cells and Cellular Transport**

**Read**: Chapters 6, 7, pgs. 782-785, 972-980, 983-984

**Videos**: Bozeman - #43, 44, 15, 16, 17, Osmoregulation, Endosymbiosis

Bozeman Lab - #1 Diffusion/Osmosis, Diffusion Demo

**Objectives**:

1. How are prokaryotic and eukaryotic cells similar and different?
2. What do they look like?
3. Why are cells small?
4. How can cells increase surface area without increasing volume dramatically?
5. Why are eukaryotic cells compartmentalized?
6. How do the nucleus and ribosomes work together?
7. Describe what the endomembrane system is of a cell.
8. How do the components of the endomembrane system work together?
9. What functions do the organelles provide for the cell?
10. How are plant cells different from animal cells?
11. How are chloroplasts and mitochondria same and different?
12. What are the roles of the cytoskeleton?
13. What structures are components of cytoskeleton and what is their function?
14. In general, how are cell walls different from ECM of animal cells? Consider all forms of life that have cell walls.
15. Describe the structure of the cell membrane.
16. Explain why the membrane is “selectively permeable.”
17. How do membranes show fluidity?
18. Describe the components of a cell membrane.
19. How does each of the components function in the membrane?
20. How is passive transport different from active transport?
21. Explain the differences of environmental tonicity to internal environments of cells.
22. How do the processes of endocytosis and exocytosis move large molecules?
23. How does the electrochemical gradient of a cell effect the movement of ions across a membrane?
24. How is water potential related to osmosis?
25. Describe how the specialization of organs contributes to the functioning organism in terms of cellular transport. (exchange of gases, circulation of fluids, digestion of food, excretion of wastes)
26. Explain how dehydration can disrupt osmoregulation in an organism.