**Biology Textbook:** Chapters 7

**Standard:** BIO.A.1.1 Explain the characteristics common to all organisms

BIO.A.1.2 Describe relationships between structure and function at biological levels of organization

BIO A.4.1 Identify and describe the cell structures involved in transport of materials into, out of, and throughout a cell

BIO.A.4.2 Explain mechanisms that permit organisms to maintain biological balance between their internal and external environments

 **Key Concepts:**

Cell Theory Prokaryotes vs. Eukaryotes Plant cells vs. Animal cells Structure and Function Fluid Mosaic Model Diffusion Osmosis Active Transport Homeostasis

**Essential Questions**

1. What is cell theory and who developed it?
2. How do microscopes work?
3. How did the development of the microscope help cell theory?
4. How are prokaryotic and eukaryotic cells different?
5. How are cell structures adapted to their function?
6. How do plant and animal cells differ?
7. What is the function of the cell membrane?
8. What is the difference between passive and active transport?
9. What variables affect the rate of transport across a membrane?
10. Why is it important that cell membranes are selectively permeable?
11. How does a cell maintain homeostasis both within itself and as part of a multicellular organism?

Can you show what you know?

Fold along the line and glue this side down in your Interactive Science Notebook.

**Vocabulary:** (+)= Can explain it; (-)= Only heard it 0=No Idea

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| --- | --- | --- | --- | --- |
| Page | Term | Pre | Post | Memory Clue |
|  | 1. Cell
 |  |  |  |
|  | 1. Cell theory
 |  |  |  |
|  | 1. Prokaryote
 |  |  |  |
|  | 1. Eukaryote
 |  |  |  |
|  | 1. Unicellular
 |  |  |  |
|  | 1. Multicellular
 |  |  |  |
|  | 1. Organelle
 |  |  |  |
|  | 1. Cytoplasm
 |  |  |  |
|  | 1. Cell (plasma) Membrane
 |  |  |  |
|  | 1. Cell Wall
 |  |  |  |
|  | 1. Nucleus
 |  |  |  |
|  | 1. Nucleolus
 |  |  |  |

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**What I need to know/ Be able to do**

* **Summarize** the principles of the cell theory
* **Relate** organelles to their functions
* **Differentiate** between a prokaryotic and eukaryotic cell
* **Compare** and contrast plant and animals cells
* **Use** a microscope to **identify** cell parts
* **Describe** the structure and function of the plasma membrane
* **Explain** the role of cell membranes as a highly selective barrier
* **Compare** and contrast the general structures and degrees of complexity of prokaryotes and eukaryotes
* **Explain** the three types of diffusion
* **Predict**  the effect of a solution on a cell
* **Compare**  and contrast passive and active transport
* **Describe** several examples of how homeostasis is maintained in the body

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| Page | Term | Pre | Post | Memory Clue |
|  | 13. Nuclear Membrane (envelope) |  |  |  |
|  | 14. Vacuole |  |  |  |
|  | 15. Mitochondria |  |  |  |
|  | 16. Chloroplast |  |  |  |
|  | 17. Smooth Endoplasmic Reticulum |  |  |  |
|  | 18. Rough Endoplasmic Reticulum |  |  |  |
|  | 19. Golgi Body (apparatus) |  |  |  |
|  | 20. Ribosome |  |  |  |
|  | 21. Lysosome |  |  |  |
|  | 22. Cytoskeleton |  |  |  |
|  | 23. Phospholipid Bilayer |  |  |  |
|  | 24. Hydrophobic |  |  |  |
|  | 25. Hydrophilic |  |  |  |
|  | 26. Homeostasis |  |  |  |
|  | 27. Osmosis |  |  |  |
|  | 28. Diffusion |  |  |  |
|  | 29. Facilitated Diffusion |  |  |  |
|  | 30. Hypertonic Solution  |  |  |  |
|  | 31. Hypotonic Solution |  |  |  |
|  | 32. Isotonic Solution |  |  |  |
|  | 33. Permeability  |  |  |  |
|  | 34. Solute |  |  |  |
|  | 35. Solvent |  |  |  |
|  | 36. Solution |  |  |  |
|  | 37. Active Transport |  |  |  |
|  | 38. Passive Transport |  |  |  |
|  | 39. ATP |  |  |  |
|  | 40. Endocytosis |  |  |  |
|  | 41. Exocytosis |  |  |  |
|  | 42. Tissue |  |  |  |