

# STUDY GUIDE: Unit 2 - Homeostasis

[Notebook pages \_\_\_\_\_ - \_\_\_\_\_]

*DIRECTIONS: Study for the exam. This will not be collected and is not for points but should help guide your studying. It is recommended that you use the study strategies you learned in Earth Science but they are not required.*

## ★ Study Strategies ★

- **Write 3 times:** Write the answer 3 times. This is helpful with memorizing information.
- **Draw and label:** draw a diagram of the process (labeling the parts) and explain how it all works. This is helpful with learning patterns in the cycles or repeating processes. Combining this with “write 3 times” can help you memorize the pattern.
- **Explain like I’m 5:** Write the answer to the question like you are explaining it to a 5 year old. Include all the important information but in simple language a kid would understand.
- **Venn Diagram:** Create a venn diagram to compare and contrast the 2 things. Have 5 points for each of the sides (differences) and 3 points for the middle (similarities).
- **Flashcards:** Create flashcards with the word/question on one side and the definition/answer on the other side. Use your flashcards. If you get the flashcard right, put a check in the corner of the card and put an “x” in the corner if you get it wrong. Repeat the cards until you get all of them right 3 times.
- **Test questions:** Write questions that might be similar to a question you will see on the test. Level 1 questions can be multiple choice and level 2 questions should be short answers. Be sure to include the correct answer!

### Topics & Main Ideas:

- ★ Cell Theory
- ★ Eukaryotic Cells
- ★ Organelles
- ★ Cell Membrane
- ★ Microscope Measuring
- ★ Membrane Transport
- ★ Levels of Organization
- ★ Homeostasis

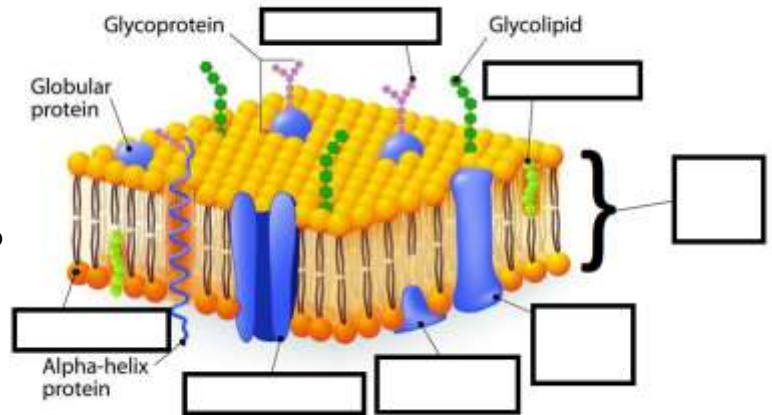
### Vocab:

1. Active Transport
2. Aquaporin
3. Carbohydrates
4. Cell Membrane
5. Cell Wall
6. Channel Proteins
7. Cholesterol
8. Cytoplasm
9. DNA
10. Prokaryotic Cell
11. Eukaryotic Cells
12. Endocytosis
13. Exocytosis
14. Facilitated diffusion
15. High Power
16. Homeostasis
17. Low Power
18. Negative Feedback
19. Nucleus
20. Osmosis
21. Passive Transport
22. Phospholipid
23. Positive Feedback
24. Scanning Power
25. Simple diffusion

### Questions:

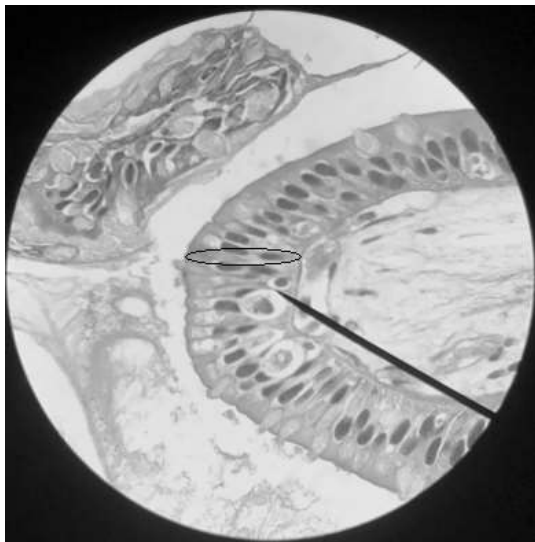
1. What is The Cell Theory? What does it say? Why is it important?
2. What is the difference between plant cells and animal cells? Be specific.
3. What is the difference between prokaryotic and eukaryotic cells?
4. What is homeostasis and why is it so important to living things?
5. What is the function of each of the following organelles in the cell?
  - a. Nucleus
  - b. Ribosome
  - c. Endoplasmic Reticulum
  - d. Golgi Apparatus
  - e. Lysosome
  - f. Cytoskeleton
  - g. Chloroplast
  - h. Mitochondria
  - i. Cell Wall
  - j. Cell Membrane
6. Draw and describe the structure of a phospholipid. How does its structure help its function?

7. What is the primary function of each of the following:
  - a. Channel Protein
  - b. Peripheral Protein
  - c. Carbohydrates
  - d. Cholesterol
  - e. Phospholipids
8. Label the different parts of the Cell Membrane.
9. How do small, nonpolar molecules move across the membrane? Large, polar molecules? Molecules that need to go from low concentration to high concentration?
10. Why would the cell want to move something from an area of low concentration to high concentration?



Use the table below to help you determine the cell size on the following images.

Magnification	Distance across field of view
Scanning Power (40X)	4000 microns
Low Power (100X)	1600 microns
High Power (400X)	400 microns



11. Left is an image of Simple Columnar Epithelium which is found in the small intestine of the digestive tract. It is being viewed on **high power** under a microscope. Estimate the size of the cell that is circled on the image.

12. Right is an image of Paramecia which is a single celled protist that typically lives in rivers and ponds. It is being viewed on **low power** under a microscope. Estimate the size of the cell that is



circled on the image.

13. Below is an image of a flea. It is being viewed on **scanning power** under a microscope.
  - a. Estimate the size of the leg that is circled on the image.
  - b. Estimate the size of the body of the flea (head to butt).



14. How are organisms structured? What are the levels of organization and why are they important?
15. How is homeostasis maintained in a whole organism? What are feedback mechanisms?
16. Why is negative feedback important? How does it work?