

Amoeba Sisters Video Recap: Cell Transport

The cell membrane is important for maintaining **homeostasis**, because it controls what enters and leaves a cell.



1. Sketch the **phospholipid bilayer** of a cell membrane below and label the **polar heads** and **nonpolar tails**.

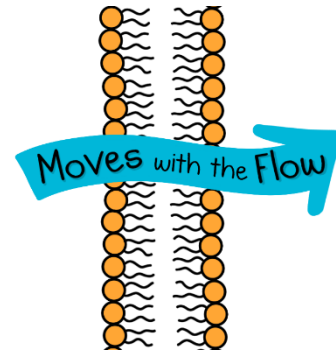
2. What is **simple diffusion**?

3. Circle the statements below that would be TRUE about **simple diffusion**. HINT: There is more than one!

- A) It is a form of passive transport.
- B) Molecules travel with the concentration gradient.
- C) It is how glucose travels across the cell membrane.
- D) It is how oxygen and carbon dioxide travel across the membrane.
- E) This transport is typical for large molecules.

Moving with the Concentration Gradient

4. "Moving with the flow" (i.e. going with the concentration gradient) is the direction of flow in passive transport. Show this in the diagram on right by **drawing in 10 total circles (to represent molecules)**. You must decide a certain amount to place on the left vs. the right side after viewing the arrow indicating the direction of movement. **Label the high concentration side and low concentration side.**



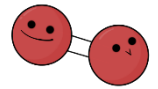
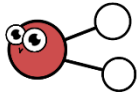
Endocytosis and Exocytosis

5. Are **endocytosis** and **exocytosis** forms of passive or active transport? _____

6. Give a scenario where a cell may need to perform a form of **endocytosis**. _____

7. Give a scenario where a cell may need to perform a form of **exocytosis**. _____





Traveling Molecules

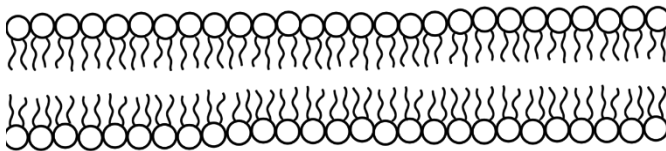
For the following scenarios, determine whether the molecules in the scenario are moving by (S) simple diffusion, (F) facilitated diffusion, or (A) active transport.

8. ____ For water to travel across the cell membrane at a substantial rate, the water molecules travel through protein channels known as **aquaporins**.
9. ____ While water molecules are polar, they are also very small. One fact not mentioned in the video is that some water molecules are able to squeeze directly through the phospholipid bilayer due to their small size.
10. ____ Charged ions are traveling through a cell membrane with the concentration gradient.
11. ____ Cells lining the gut need to take in glucose, but at a certain time, the concentration of extracellular glucose is lower than the concentration already stored in the cells.
12. ____ At a certain time, glucose is in a high concentration outside of a cell and needs to travel through the membrane into the cell.

Facilitated Diffusion via a Protein Channel

For the below image, label the **13. polar area** and **14. non-polar area** on the diagram.

Draw in **15. protein channel** and **16. molecules that would represent a potential concentration gradient in facilitated diffusion** via a protein channel on the diagram.



Active Transport via a Protein Channel

For the below image, label the **17. polar area**, and **18. non-polar area**.

Draw in **19. protein channel** and **20. molecules that would represent a potential concentration gradient in active transport** via a protein channel on the diagram.

