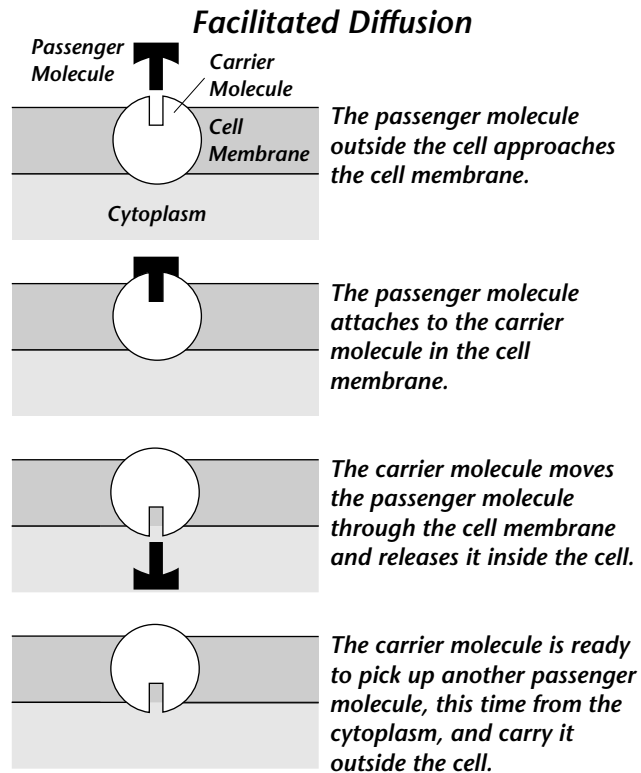


Cell Structure and Function ▪ Enrich

Facilitated Diffusion

The text describes two methods of passive transport: diffusion and osmosis. The diagram below shows another method of passive transport, called facilitated diffusion.

Why is facilitated diffusion needed? Some molecules are unable to pass through the cell membrane even though they are moving from an area of higher to an area of lower concentration. To pass through the cell membrane, these molecules must be facilitated, or helped, by a carrier molecule in the cell membrane. The carrier molecule attaches to a passenger molecule of the substance, carries it through a channel in the cell membrane, and then releases the molecule. The process can carry substances both into and out of cells, as shown in the diagram, and it requires no cellular energy.



Answer the following questions on a separate sheet of paper.

1. Why isn't cellular energy required for the passenger molecule to be carried across the cell membrane by the carrier molecule?
2. Why do the passenger molecules need to be helped by the carrier molecule?
3. If the substance entering the cell was in higher concentration inside the cell than outside the cell, what type of transport would be required? Explain your answer.
4. What is the difference between facilitated diffusion with the help of a carrier molecule and active transport with the help of a transport protein?
5. Assume a person has defective carrier molecules for a given substance. Explain what effect this would have on the person's cells.