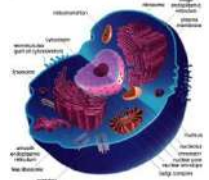


Biology

Learning goal: Understand the structure and function of the cell and cellular processes.

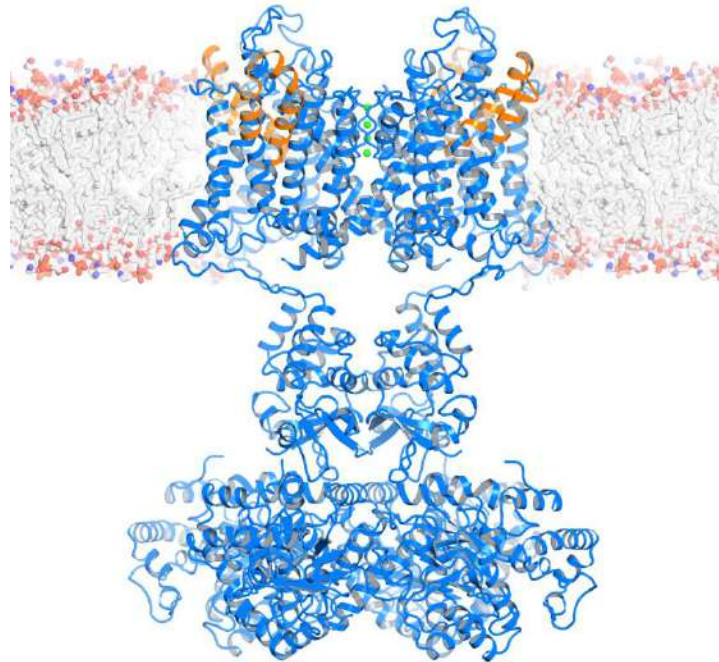
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Diffusion Check: Page 68 (Cheek cell lab images) and 64-65 (Book work)

Warm-up: What are the two structures below and what are they made of?



4

Design transport experiment

3

Know types, transport and reproduction

2

Know types

1

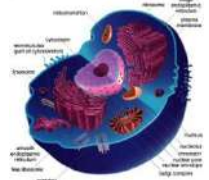
Know some components of cells

Biology

Learning goal: Understand the structure and function of the cell and cellular processes.

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Learning goal: Understand the structure and function of the cell and cellular processes.

Learning scale:

1	2	3	4
List some components of a cell.	ID types of cells by an image or list of components, recognize or recall specific terminology.	Differentiate prokaryotic and eukaryotic cells, describe cell theory, the purposes and processes of cellular reproduction and how transport of materials in and out of cells homeostasis.	Explain why cells are small, compare cell theory to other theories and design an experiment testing cellular transport of materials.

Student's self-evaluation: Complete at home or at the end of class, use the 4-3-2-1 Learning scale (two to three sentences).

Homework: Study for Quiz 07

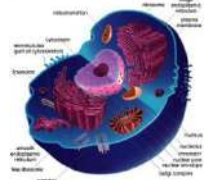
4	Design transport experiment
3	Know types, transport and reproduction
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1	Know some components of cells

Biology

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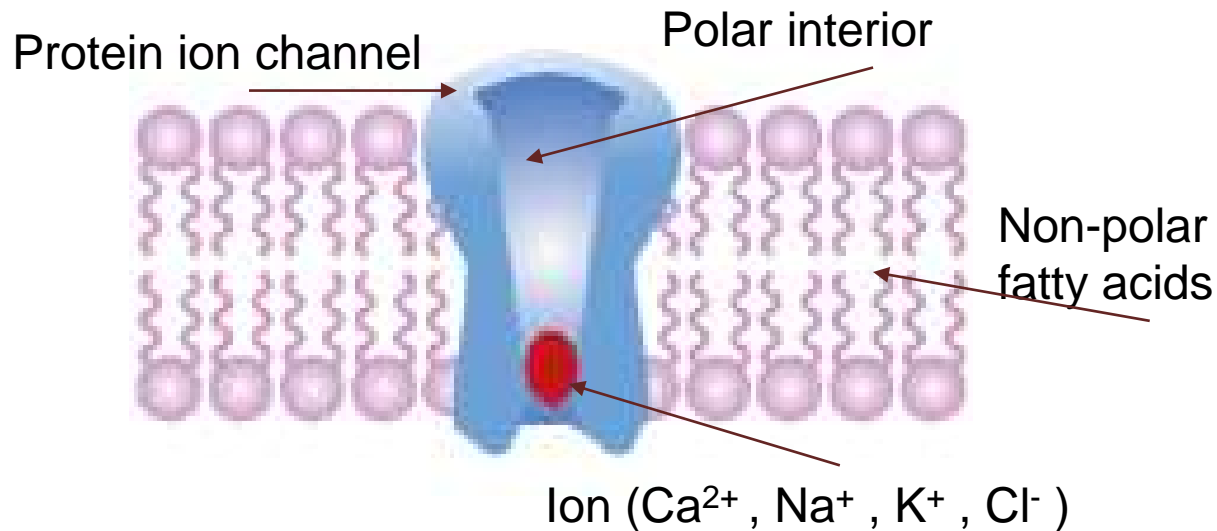
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Ions crossing the cell membrane

Proper muscle functions requires a specific concentration of ions inside and outside of a cell. Ion cannot pass through the non-polar fatty acid tails the make up the interior portion of the cell membrane. Ion channels are protein structures with polar interiors that transverse the membrane, allowing ions to enter and exit the cell.



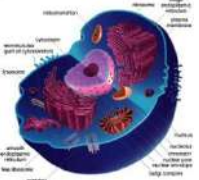
4	Design transport experiment
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Biology

Learning goal: Understand the structure and function of the cell and cellular processes.

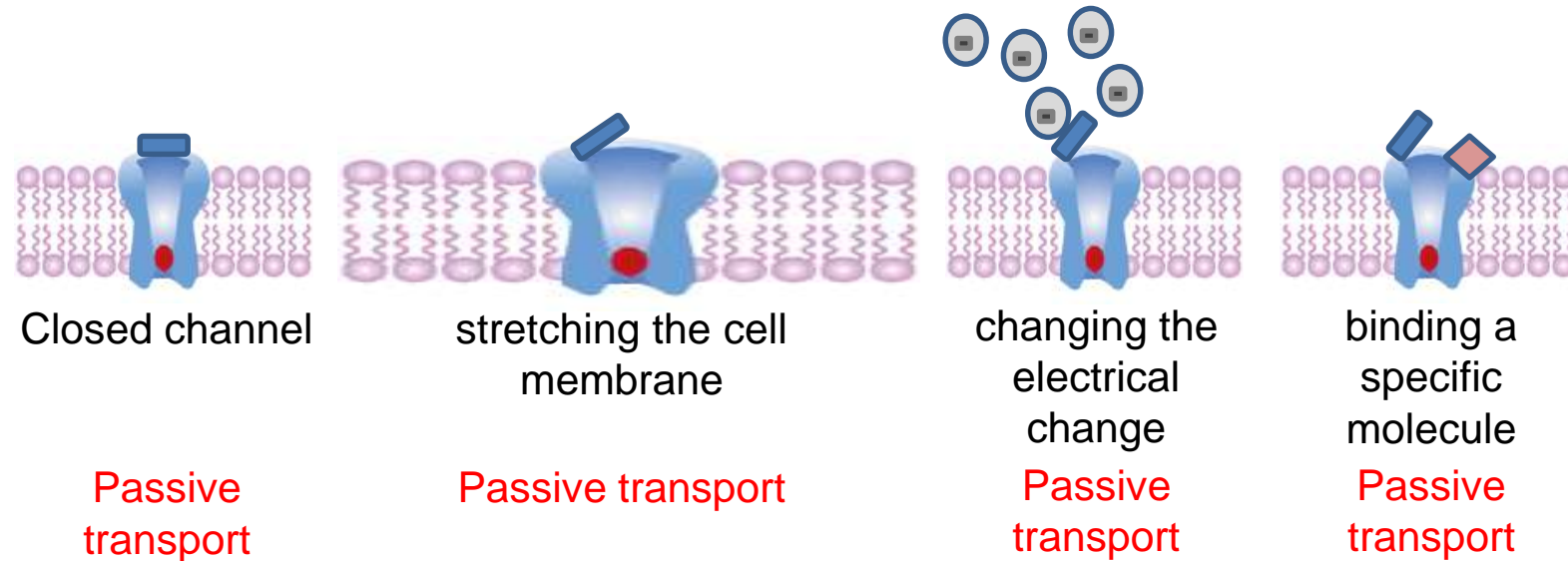
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Ions crossing the cell membrane

Some ion channels remain open, allow free passage of ions in and out of the cell. Other channels requires a signal or stimuli. Various thing might open or close an ion channel, including stretching the cell membrane, changing the electrical change or binding a specific molecule to the channel.



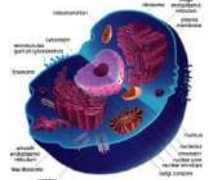
4	Design transport experiment
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Biology

Learning goal: Understand the structure and function of the cell and cellular processes.

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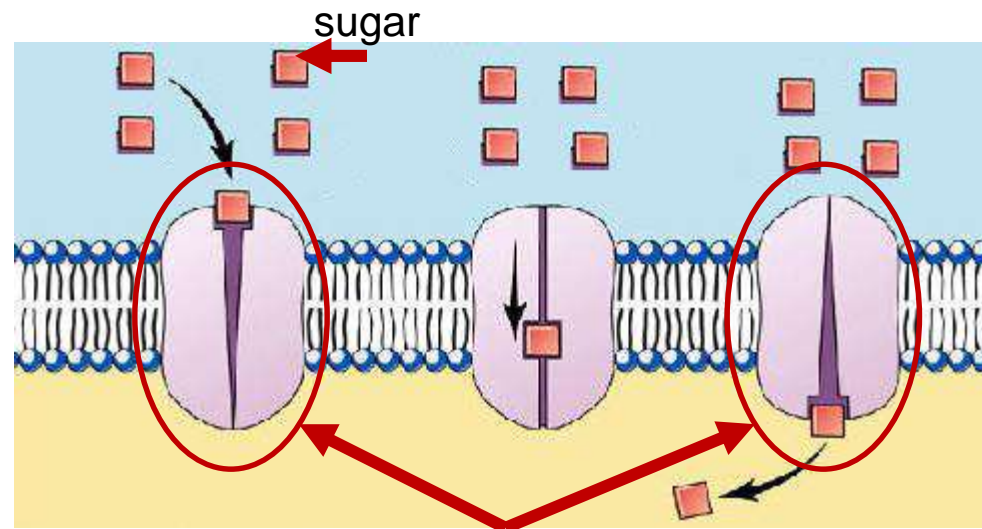
Carrier proteins

Carrier proteins bind with specific molecules on one side of a cell membrane and carry them across the opposite site. This passage can be with or against the concentration gradient. In each case the carrier protein will change its shape in order to facilitate the passage of the molecule.

Facilitated diffusion

occurs when a substance is moving down a concentration gradient. This **passive transport**, it requires no energy as molecules move down the gradient.

Cells bring sugar across a membrane using this process.



Note the change in shape of the protein

4

Design transport experiment

3

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2

Know types

1

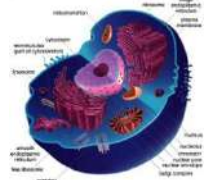
Know some components of cells

Biology

Learning goal: Understand the structure and function of the cell and cellular processes.

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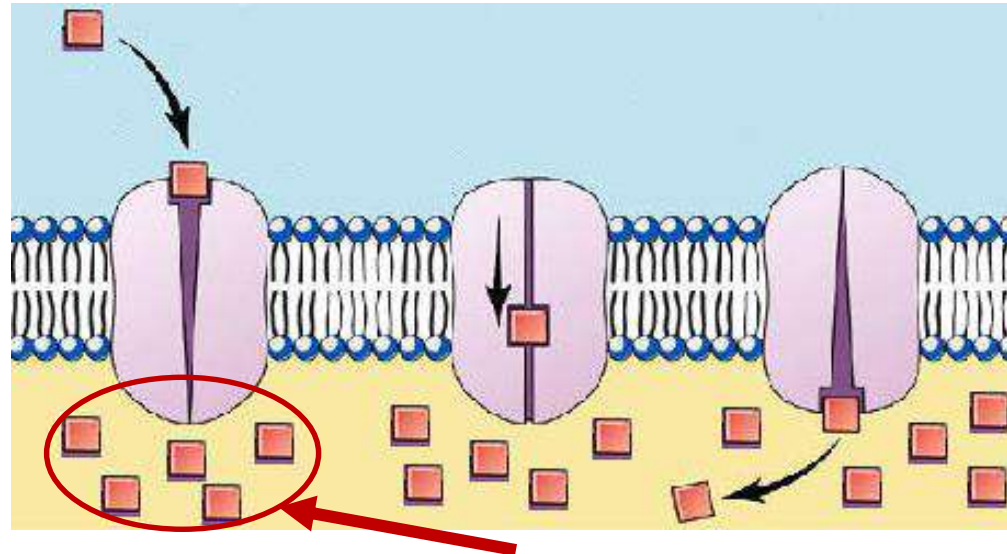


Carrier proteins

Carrier proteins bind with specific molecules on one side of a cell membrane and carry them across the opposite site. This passage can be with or against the concentration gradient. In each case the carrier protein will change its shape in order to facilitate the passage of the molecule.

Active transport

occurs when a substance is moving up a concentration gradient. It requires energy as molecules move up the gradient.



Note the substances are moving from low to high concentration, this is up (or against) the concentration gradient

4

Design transport experiment

3

Know types, transport and reproduction

2

Know types

1

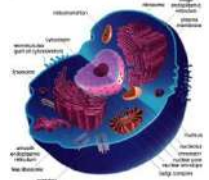
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Biology

Learning goal: Understand the structure and function of the cell and cellular processes.

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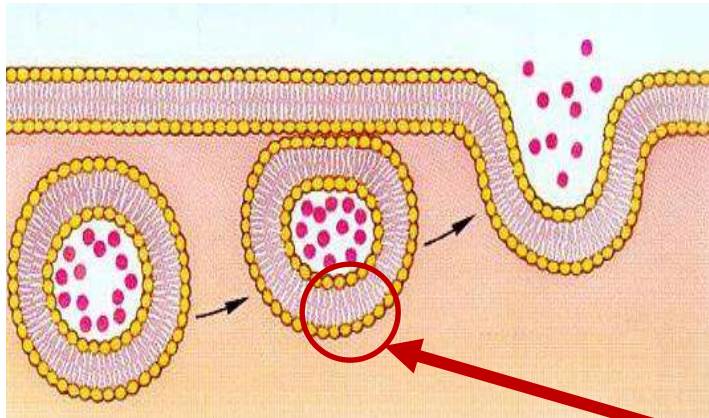
Tuesday September 1, 2015



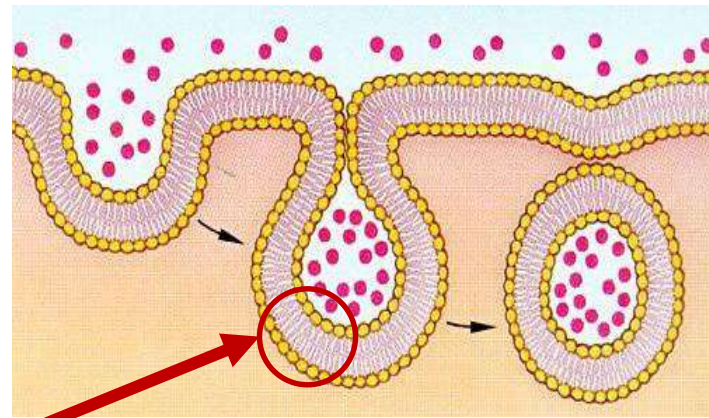
Endocytosis and Exocytosis

Large molecules, including proteins and polysaccharides, enter and exit a cell through the endocytosis (enter) and exocytosis (exit). These processes involve the creation of vesicles that surround the molecules. Vesicles are phospholipid bilayers that surround and carry the substances. Vesicles can merge with the cell's phospholipid membrane.

Exocytosis: substances leaving the cell



Endocytosis: substances entering the cell



Phospholipid bilayer membrane of vesicle has same composition as the cellular membrane

4	Design transport experiment
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Biology

Learning goal: Understand the structure and function of the cell and cellular processes.

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Transport review: Copy and complete the data table

Type of transport	Requires a membrane	Uses channel proteins	Moves substances in/out of a cell	Up /down the concentration gradient	Requires energy
Diffusion	No	No	In and out	Down	No
Osmosis	Yes				
Passive transport			In and out		
Active transport				Up	
Facilitated diffusion		Yes			
Endocytosis					Yes
Exocytosis	Yes				

- 4**
Design transport experiment
- 3**
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Know types
- 1**
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