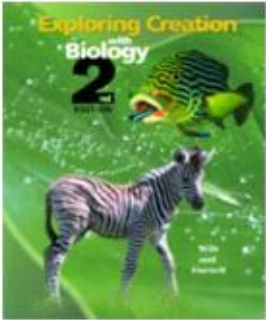

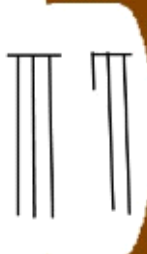


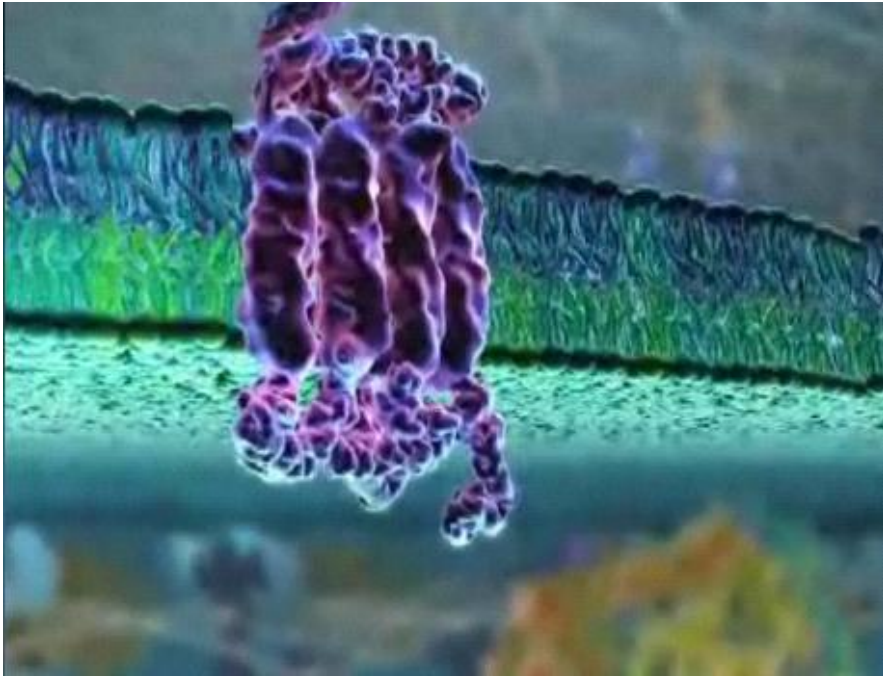
M06 L3 Cellular Transport

Thursday, March 05, 2009
11:31 AM

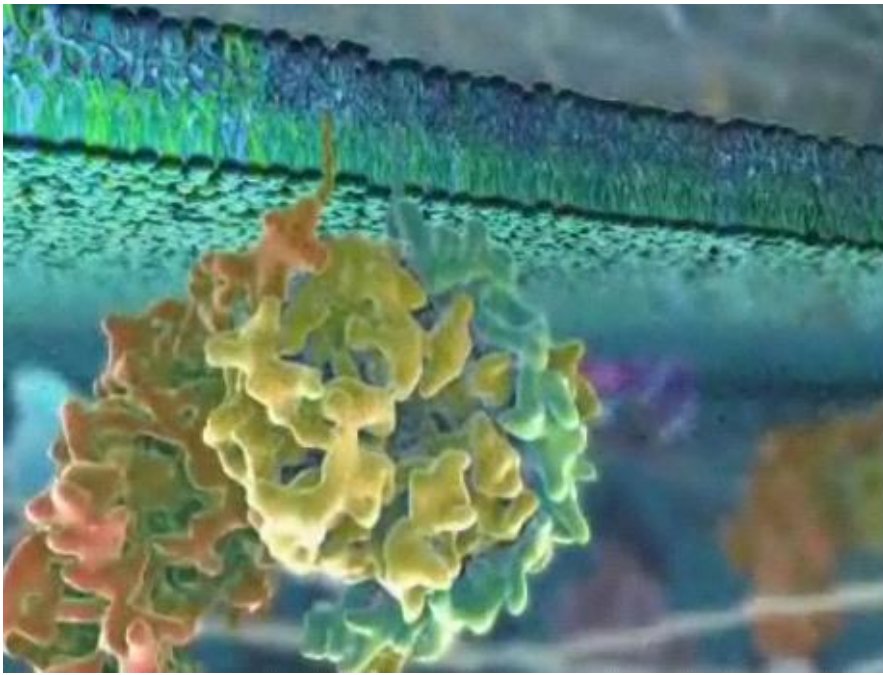
VoiceThread	http://voicethread.com/share/236561/
Cmap	http://cmapspublic2.ihmc.us/rid=1162919819453_1502345546_17343/Cell%20Membrane%20Structure%20and%20Function.cmap

Slides	Notes
 <p>Module 06: The Cell</p> <ul style="list-style-type: none"> Lecture 1: Cell Function Lecture 2: Cellular Structure  Lecture 3: Cellular Transport System Lecture 4: How Cells Produce Energy Lecture 5: Protein Synthesis Lab Day Interactive Practice 	<p>This lecture only runs about 30 minutes</p>

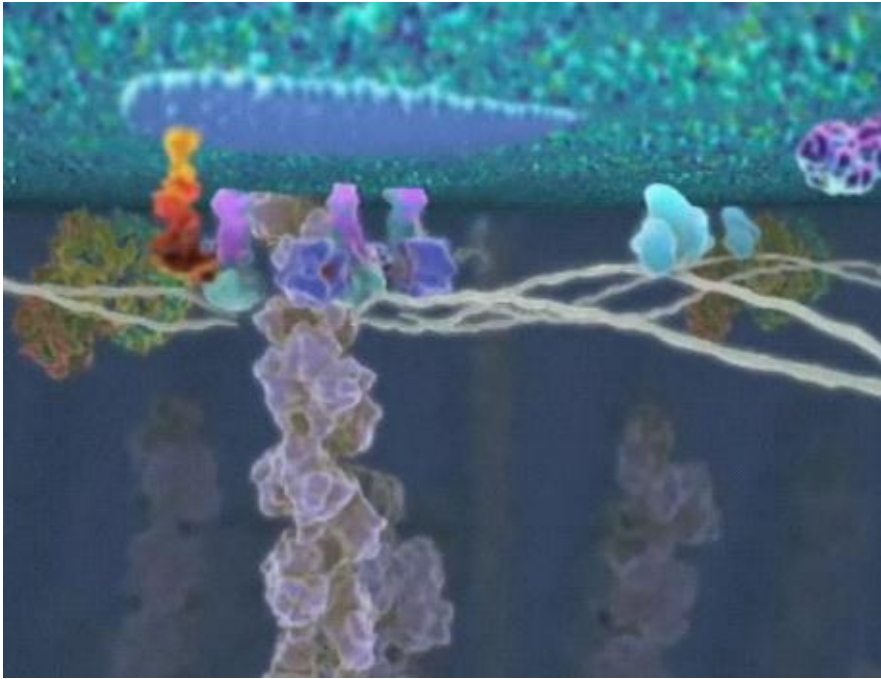
Carbohydrates	Lipids	Proteins	Nucleic Acid	Organic Molecules	Notes
	<p>Lipid vs Phospholipid</p> <p>Glycerol</p> $\begin{array}{c} \text{H} & \text{H} & \text{H} \\ & & \\ \text{H}-\text{C}- & \text{C}- & \text{C}-\text{H} \\ & & \\ \text{OH} & \text{OH} & \text{OH} \end{array}$				<p>They tend to self assemble.</p> 
	<p>hydrophilic</p> <p>hydrophobic</p>	<p>Fatty Acid</p> $\begin{array}{c} \text{O} & \text{H} \\ & \\ \text{H}-\text{C}-\text{H} \\ \\ \text{H}-\text{C}-\text{H} \\ \\ \text{H}-\text{C}-\text{H} \\ \\ \text{H}-\text{C}-\text{H} \\ \\ \text{H}-\text{C}-\text{H} \\ \\ \text{H}-\text{C}-\text{H} \\ \\ \text{H}-\text{C}-\text{H} \\ \\ \text{H}-\text{C}-\text{H} \\ \\ \text{H} \end{array}$ <p>Fatty Acid</p>	<p>Fatty Acid</p> $\begin{array}{c} \text{O} & \text{H} \\ & \\ \text{H}-\text{C}-\text{H} \\ \\ \text{H}-\text{C}-\text{H} \\ \\ \text{H}-\text{C}-\text{H} \\ \\ \text{H}-\text{C}-\text{H} \\ \\ \text{H}-\text{C}-\text{H} \\ \\ \text{H}-\text{C}-\text{H} \\ \\ \text{H}-\text{C}-\text{H} \\ \\ \text{H}-\text{C}-\text{H} \\ \\ \text{H} \end{array}$ <p>Fatty Acid</p>		



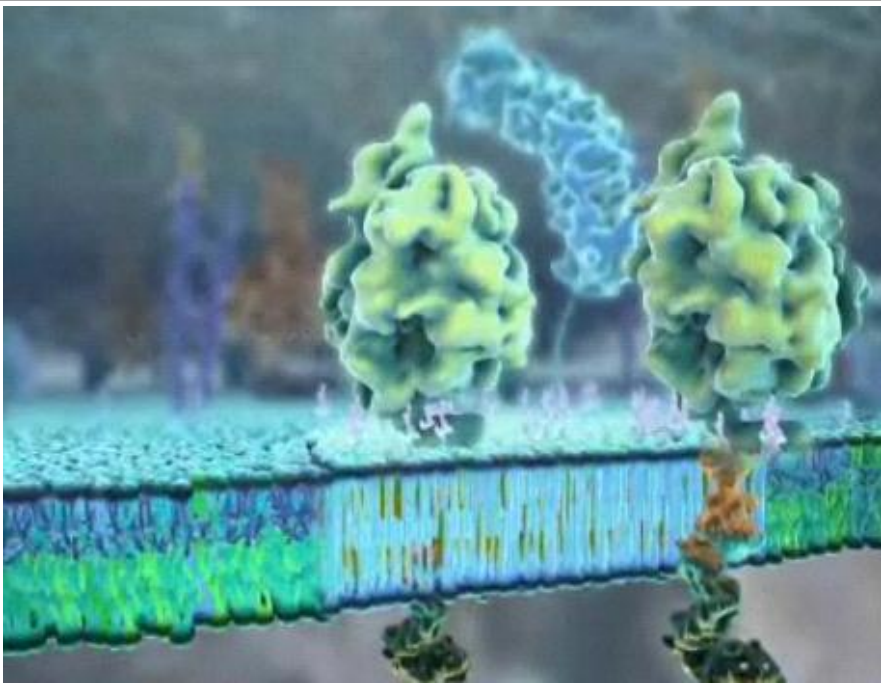
Some proteins go all the way through the membrane.



Some proteins are just anchored.



Another view of the inner leaflet of the cell membrane

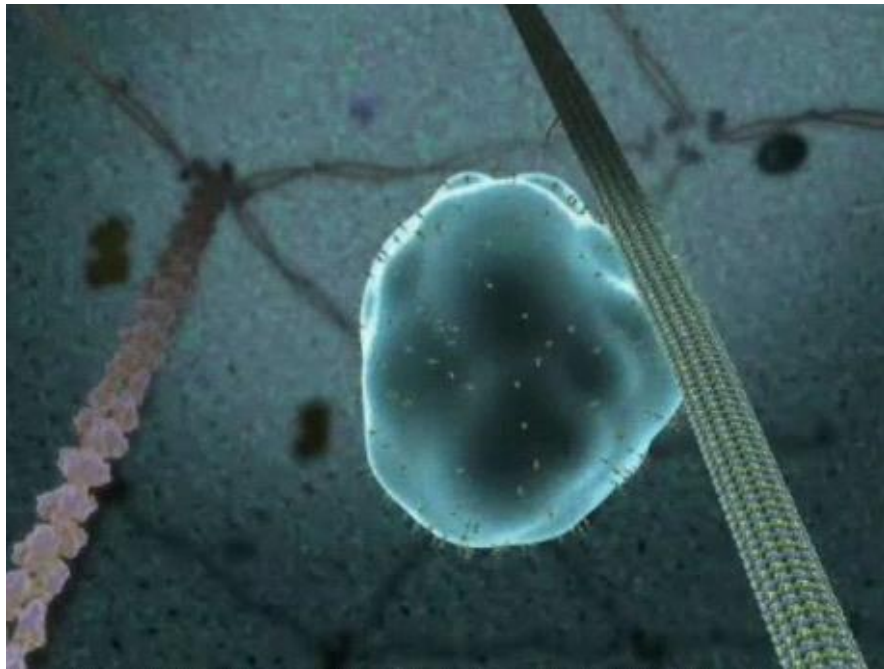


Cholesterol rafts are stiffer so that structures that interact with other cell's structures will not just get pushed through.

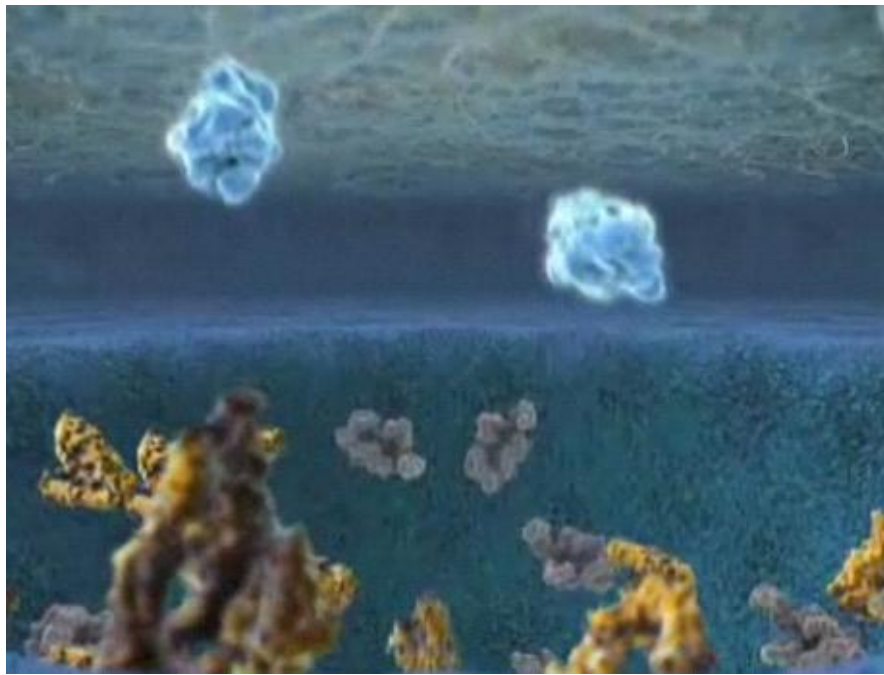


Carbohydrate ID tag





Vesicles and vacules are made of the same thing as the membrane.



Here it is ithe vescicle secreting.

Hypotonic Solution

Cytolysis

What happens to the cell?

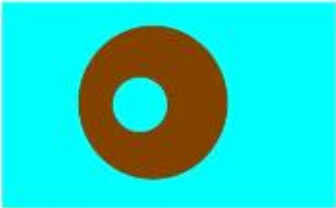
Review -

New term is "Cytolysis" is when the cell bursts.

Many organisms live in fresh water habitats which could easily lead to a hypotonic solution for cells.



That is why many have a central vacuole.



When the vacuole expands with the water that is diffusing in, what happens to the pressure in the rest of the cell? Why would that slow down the diffusion?

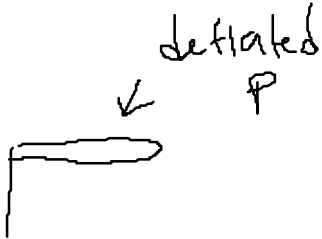
Early biologists thought these were hearts at first because they could see the pumping action.

Hypertonic Solution

The diagram illustrates a hypertonic solution. On the left, a beaker contains a purple liquid labeled "sugar water". Above it, a pipette is shown with a red drop labeled "blood cells". On the right, a microscopic view shows a cell (a circle) surrounded by many small purple dots (sugar molecules). The cell is shrunken, and its membrane is pulled away from the cell wall. This process is labeled "Plasmolysis".

What happens to the cell?

New content is "The collapse of a cell is called plasmolysis."



Don't over fertilize plants



or they may suffer from plasmolysis.

Collapsed cells - plasmolysis

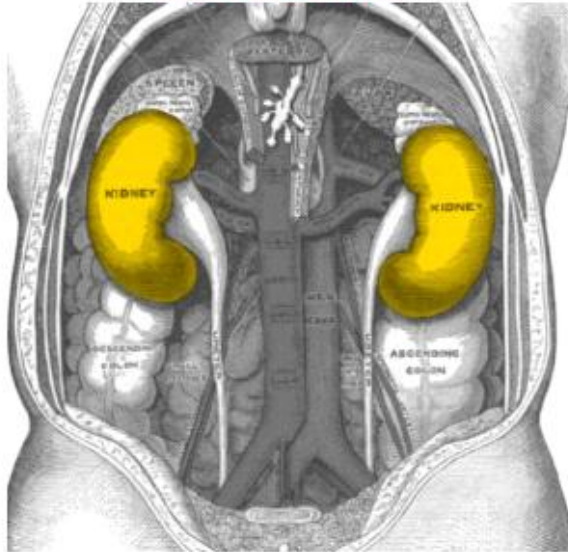
Isotonic Solution

The diagram illustrates an isotonic solution. On the left, a beaker contains a pink liquid labeled "blood plasma". Above it, a pipette is shown with a red drop labeled "blood cells". On the right, a microscopic view shows a cell (a circle) surrounded by a mixture of small colored dots (solute and water molecules). The cell is normal in shape, with its membrane touching the cell wall. This process is labeled "Plasmolysis" (though the label is likely a typo for "normal" or "isotonic").

What happens to the cell?

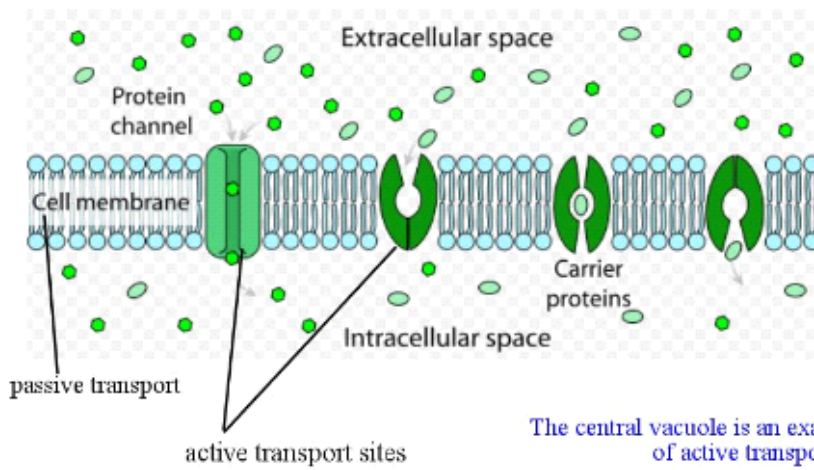
Trying to keep an isotonic solution for your bloodstream is the job of the

kidneys

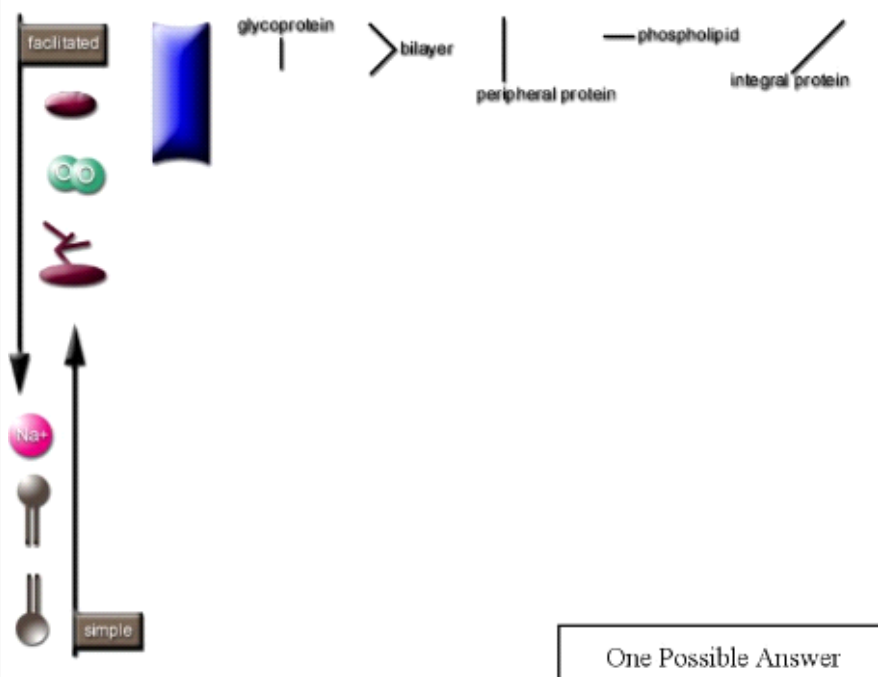
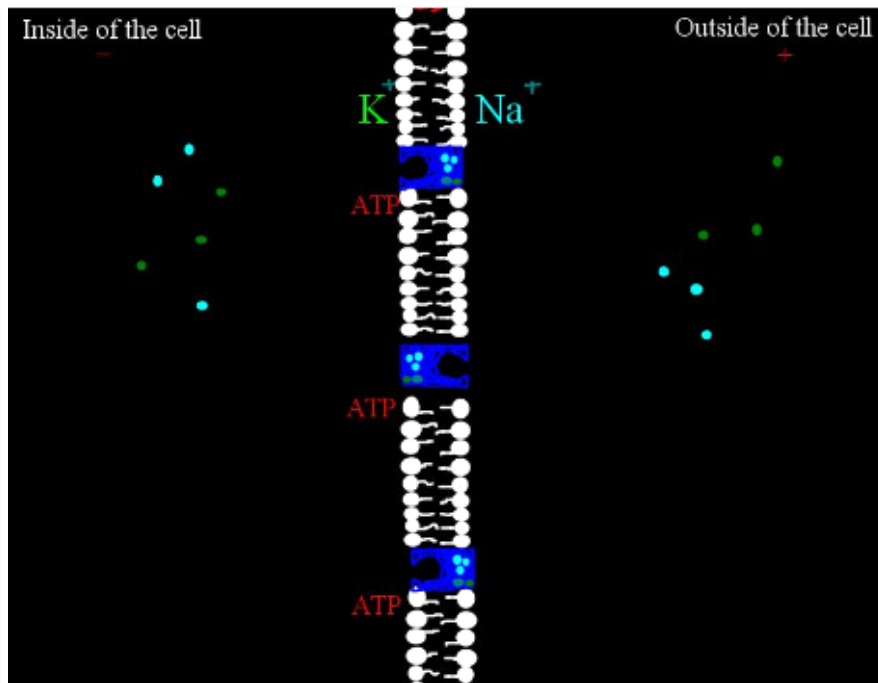


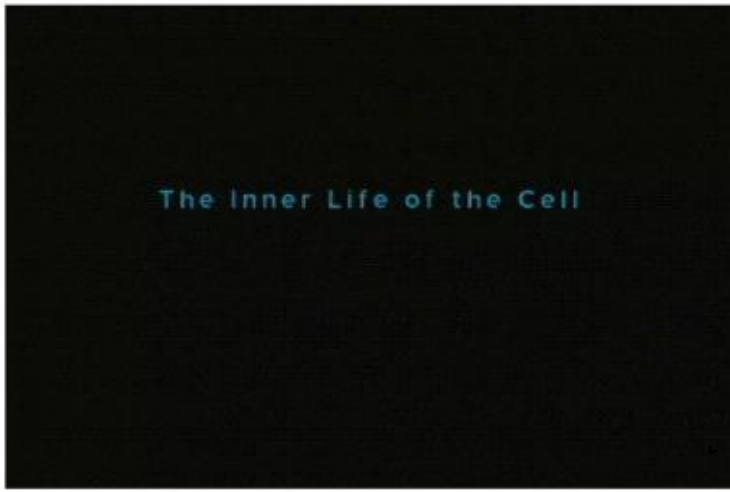
Sometimes cells must work against a concentration gradient or needs to get substances through the membrane that do not readily pass through the phospholipid bilayer.

Protein Bridge



The central vacuole is an example of active transport.





http://multimedia.mcb.harvard.edu/anim_innerlife_hi.html

<http://justabitmoore.weebly.com/the-cell.html> the video is in the L2 section.

- 8am - <http://www.virtualhomeschoolgroup.com/course/view.php?id=20>
- 9am - <http://www.virtualhomeschoolgroup.com/course/view.php?id=150>
- 2:30 - <http://www.virtualhomeschoolgroup.com/mod/quiz/view.php?id=13908>
- 2010/11: <http://www.virtualhomeschoolgroup.com/mod/quiz/view.php?id=18287>