Homeostasis

Overview Sheet

Essential Question

How do cells survive in changing external environments?

Vocabulary

homeostasis	**solute**	**solvent**	**permeable**
apoptosis	**diffusion**	**equilibrium**	**semi-permeable**
osmosis	**turgid**	**flaccid**	**crenation**
hypotonic	**hypertonic**	**plasmolysis**	**cytolysis**
concentration gradient	**passive transport**	**active transport**	

Objectives

1. Describe homeostasis and how it relates to the cell
2. Distinguish between a permeable and selectively permeable membrane
3. Differentiate between passive and active transport
4. Understand diffusion and osmosis and how they are related
5. Identify a hypertonic environment and how it may account for plasmolysis/crenation
6. Identify a hypotonic environment and how it may account for cytolysis
7. Identify an isotonic environment and how molecules still move, even though the cell may be at equilibrium
8. Relate a plants stature (turgid or placid) to osmosis
9. Understand apoptosis and how it may represent an example of cells maintaining a homeostatic environment

Helpful Websites

- http://www.biology4kids.com/files/systems_regulation.html (overview)
- http://www.occc.edu/biologylabs/Documents/Homeostasis/Homeostasis_Intro.htm (overview)
- http://www3.fhs.usyd.edu.au/bio//homeostasis/Introduction.htm (overview + interactive)

More on back ➡

- http://www.wiley.com/legacy/college/boyer/0470003790/animations/membrane_transport/membrane_transport.htm (overview + interactive)
- http://health.howstuffworks.com/adam-200092.htm (overview + video)
- http://kidshealth.org/kid/htbw/kidneys.html (overview + kidneys)
- http://www.schools.utah.gov/curr/science/sciber00/7th/cells/sciber/transpor.htm (passive & active transport + overview)
- http://programs.northlandcollege.edu/biology/Biology1111/animations/transport1.html (passive & active transport + interactive + tutorial)
- http://www.wisc-online.com/objects/index_tj.asp?objID=AP1903 (diffusion + tutorial + interactive)
- http://www.stolaf.edu/people/giannini/flashanimat/transport/diffusion.swf (diffusion + animation)
- http://www.biosci.ohiou.edu/introbioslab/Bios170/diffusion/Diffusion.html (diffusion + animation)
- http://highered.mcgraw-hill.com/sites/0072495855/student_view0/chapter2/animation__how_diffusion_works.html (diffusion + animation)
- http://www.usd.edu/~bgoodman/Osmos.htm (osmosis)
- http://www.wisc-online.com/objects/index_tj.asp?objID=AP11003 (osmosis + tutorial + interactive)
- http://www.phschool.com/science/biology_place/labbench/lab1/intro.html (diffusion & osmosis + interactive)
- http://highered.mcgraw-hill.com/sites/0072495855/student_view0/chapter2/animation__how_osmosis_works.html (osmosis + animation)
- http://www2.nl.edu/jste/osmosis.htm (osmosis + solutions + interactive)
- http://www.coolschool.ca/lor/BI12/unit4/U04L06/rbc.html (osmosis + solutions + interactive)
- http://www.purchon.com/biology/osmosis.htm#osmoplant (osmosis + overview)
- http://bcs.whfreeman.com/thelifewire/content/chp05/0502001.html (passive transport + interactive)
- http://bcs.whfreeman.com/thelifewire/content/chp05/0502002.html (active transport + interactive)
- http://www.biologycorner.com/bio1/diffusion.html (diffusion + osmosis)
- http://www.tvdsb.on.ca/WESTMIN/science/sbi3a1/cells/Osmosis.htm (osmosis + animations)
- http://science.nhmccd.edu/biol/osotutor.html (diffusion + osmosis + dialysis)
- http://www.cellsalive.com/apop.htm (apoptosis)
- http://www.whfreeman.com/kuby/content/anm/kb04an01.htm (apoptosis + video)
- http://www.brainpop.com/health/bodysystems/homeostasis/preview.weml (video)
- http://virtual.yosemite.cc.ca.us/randerson/Chapter04/IsotonicHypertonicHypotonic1.htm (quiz + interactive)
- http://www.rcs.rome.ga.us/hargett/biology/osmosis/osmotutc.htm (quiz)