

Cell Growth & Reproduction

Overview Sheet

Essential Question

How are new cells formed?

Vocabulary

mitosis	interphase	chromatin	chromatids
centrioles	centrosomes	prophase	centromere
aster	spindle	metaphase	anaphase
cleavage furrow	cell plate	cytokinesis	meiosis
stem cells	cancer	haploid	diploid
	sexual reproduction	asexual reproduction	

Objectives

1. Explain why the size of a cell is limited
2. Describe cell division
3. Describe mitosis and its phases
4. Describe meiosis and its importance in sexual reproduction
5. Compare and contrast mitosis and meiosis
6. Compare and contrast asexual and sexual reproduction
7. Describe what happens when cell division is not controlled - cancer

Helpful Websites

- http://nobelprize.org/educational_games/medicine/2001/cellcycle.html (cell cycle + animation + interactive + game)
- <http://www.sickkids.ca/childphysiology/cwpw/Genetics/geneticscelldivision.htm> (cell cycle + animations + interactive)
- http://www.wisc-online.com/objects/index_tj.asp?objID=AP13604 (cell cycle + interactive)
- http://www.cellsalive.com/cell_cycle.htm (cell cycle + animation + interactive)
- <http://www.bio.unc.edu/faculty/salmon/lab/mitosis/index.html> (mitosis)
- <http://www.accessexcellence.org/RC/VL/GG/mitosis.php> (mitosis)
- <http://www.walkerlaw.com/pham2/pages/process.html> (mitosis)
- <http://www.loci.wisc.edu/outreach/bioclips/CDBio.html> (mitosis + animation)

More on back 

- <http://biology.clc.uc.edu/courses/bio104/mitosis.htm> (mitosis + animation)
- <http://micro.magnet.fsu.edu/micro/gallery/mitosis/mitosis.html> (mitosis)
- <http://www.uoguelph.ca/zoology/devobio/210labs/mitosis1.html> (mitosis)
- <http://www.stolaf.edu/people/giannini/flashanimat/celldivision/crome3.swf> (mitosis + animation)
- <http://www.sci.sdsu.edu/multimedia/mitosis/> (mitosis + interactive + tutorial)
- http://www.exploratorium.edu/traits/cell_explorer.html (mitosis + animation + interactive)
- <http://www.johnkyrk.com/mitosis.html> (mitosis + animation + interactive)
- <http://www.cellsalive.com/mitosis.htm> (mitosis + animation + interactive)
- http://highered.mcgraw-hill.com/sites/0072437316/student_view0/chapter11/animations.html# (mitosis + animation + interactive)
- http://www.biology.arizona.edu/cell_bio/tutorials/cell_cycle/cells3.html (mitosis + animation)
- http://www.biology.arizona.edu/cell_bio/activities/cell_cycle/assignment.html (mitosis + interactive + lab)
- <http://highered.mcgraw-hill.com/sites/dl/free/0078617340/164155/00053413.html> (mitosis + video)
- http://www.biologyinmotion.com/cell_division/ (mitosis & meiosis + animation + interactive)
- http://www.pbs.org/wgbh/nova/baby/divi_flash.html (mitosis & meiosis + animation + interactive)
- http://www.phschool.com/science/biology_place/labbench/lab3/intro.html (mitosis & meiosis + interactive + lab)
- http://www.biology.arizona.edu/cell_bio/tutorials/meiosis/main.html (meiosis)
- <http://www.accessexcellence.org/RC/VL/GG/meiosis.php> (meiosis)
- <http://www.stolaf.edu/people/giannini/flashanimat/celldivision/meiosis.swf> (meiosis + animation)
- <http://www.cellsalive.com/meiosis.htm> (meiosis + animation + interactive)
- <http://www.csuchico.edu/~jbell/Biol207/animations/meiosis.html> (meiosis + animation + interactive + quiz)
- <http://tutor.lscf.ucsb.edu/mcdb/tutorial/meiosis/meiosis.htm> (meiosis + animation + interactive)
- <http://www.johnkyrk.com/meiosis.html> (meiosis + animation + interactive)
- http://highered.mcgraw-hill.com/sites/0072437316/student_view0/chapter12/animations.html# (meiosis + animations + interactive)
- <http://www.sumanasinc.com/webcontent/animations/content/meiosis.html> (meiosis + animation + interactive + quiz)
- http://biog-101-104.bio.cornell.edu/BioG101_104/tutorials/cell_division/CDCK/cdck.html (cell division + simulation + interactive)
- <http://regentsprep.org/Regents/biology/units/reproduction/asexual.cfm> (asexual reproduction)
- <http://stemcells.nih.gov/info/basics/> (stem cells)
- <http://learn.genetics.utah.edu/content/tech/stemcells/> (stem cells)
- http://www.cancer.org/docroot/CRI/CRI_2x.asp?sitearea=LRN (cancer)
- http://biog-101-104.bio.cornell.edu/biog101_104/tutorials/cell_division.html (quiz + interactive)