

Concepts/Topics

- DNA in mitochondria and plastids
- DNA: structure, replication (semi-conservative, leading/lagging strands, Okazaki fragments) **fig. 9-11**
- DNA: replication (helicase, primase, DNA polymerase, DNA polymerase II, ligase) **fig. 9-12**
- prokaryotic cells - binary fission **fig. 7-4**
- prokaryotic cells - conjugation, recombination (similar to crossing over), plasmids **figs. 8-19, 8-21**
- eukaryotic cells - cell cycle (G_1 , S, G_2 , M phases); G_0 phase - nerve, muscle **fig. 7-8**
- control of cell cycle CDKs (cyclin dependent kinases)
- mitosis - stages (recognize and describe what's happening), compare mother & daughter cells **fig. 7-6**
- mitosis - purpose(s): growth, repair, reproduction (maintains chromosome # & sameness)
- haploid (n), diploid (2n), tetraploid (4n)
- meiosis - stages (recognize/describe what's happening); 2 events to increase diversity **fig.7-11**
- meiosis - sole purpose: sex cell production (halves chromosomes, promotes diversity)
- meiosis - know n count at every point, compare gametes to precursor cell
- mutations/chromosomal abnormalities - meiotic errors, chromosomal mutations **fig. 9-17**
- apoptosis (programmed cell death) - damaged cells, during normal growth and development **fig. 7-15**

Readings

Principles of Life (2013), Chpt. 7, Chpt. 8.4 (pp.167-169), Chpt. 9

"Wrong Number: Plastic Ingredient Spurs Chromosomal Defects" (*Science News* - 5 Apr 2003)

Homework/Activities

- Article Questions: **Science News** chromosome defect article

Due: _____

Helpful Web Links

No web links at this time

Videos/Tutorials

DNA Replication (Brightstorm)	www.youtube.com/watch?v=KJ-wUAPCvek
DNA Structure/Replication (Crash Course)	www.youtube.com/watch?v=8kK2zWjRV0M
Cell Division (Brightstorm)	www.youtube.com/watch?v=11STwx1Fv_g
Asexual Reproduction (Brightstorm)	www.youtube.com/watch?v=gQqap0tqBYY
Binary Fission (Brightstorm)	www.youtube.com/watch?v=hOyUcjqcGpQ
Mitosis (Brightstorm)	www.youtube.com/watch?v=zVDnrTTP1jw
Mitosis (Crash Course)	www.youtube.com/watch?v=L0k-enzoeOM
Meiosis (Brightstorm)	www.youtube.com/watch?v=jyd9DFanTZk
Phases of Meiosis (Bozeman)	www.youtube.com/watch?v=16enC385R0w
Cell Cycle, Mitosis, and Meiosis (Bozeman)	www.youtube.com/watch?v=2aVnN4RePyl
Meiosis Simulation (Bozeman)	www.youtube.com/watch?v=zGVBAHAsjJM
Meiosis (Crash Course)	www.youtube.com/watch?v=qCLmR9-YY7o