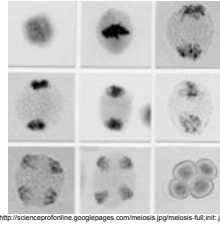


Meiosis and genetic variation

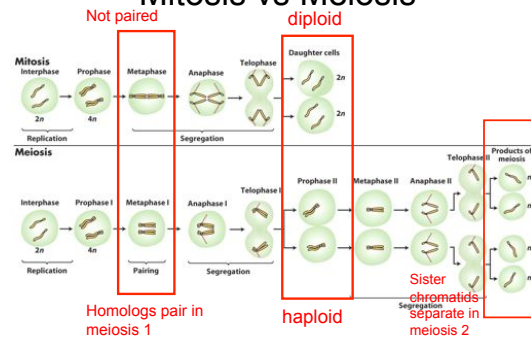
- Stages of Meiosis
- Sexual and asexual life cycles
- Meiosis produces haploid cells that are genetically unique
 - Independent assortment
 - Crossing over



<http://sciencephotoonline.googlepages.com/meiosis.jpg>

10/19/2011

Mitosis vs Meiosis



The human life cycle

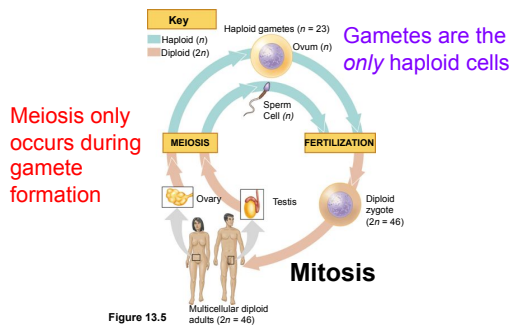
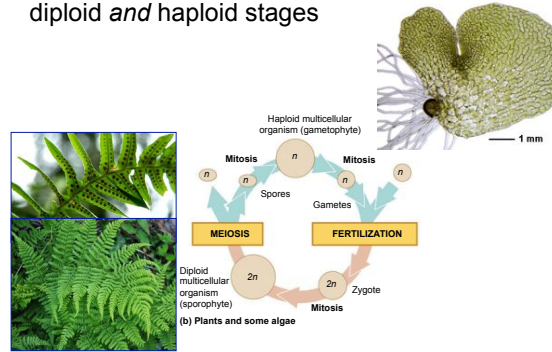


Figure 13.5

- Some species have multicellular diploid *and* haploid stages



- Mosses, fungi, and some protists have a dominant haploid generation.

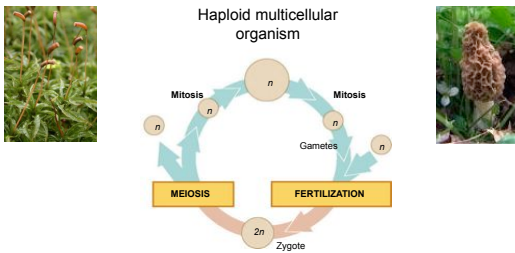
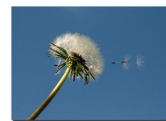


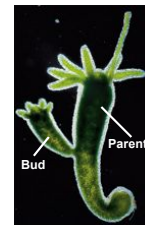
Figure 13.6 C

Some species reproduce asexually

- Produce **genetically identical** offspring by mitosis.
- (basically just branching)



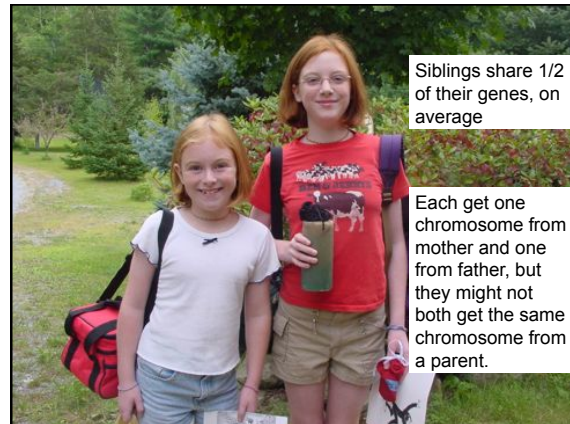
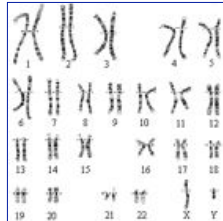
Dandelion



Hydra

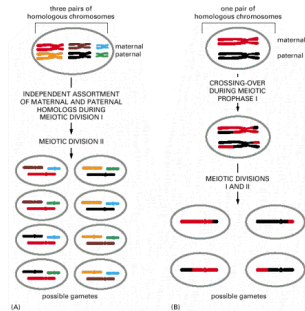
Diploid cells have two copies of each chromosome

- Homologous chromosomes contain copies of the same genes
- One maternal, one paternal



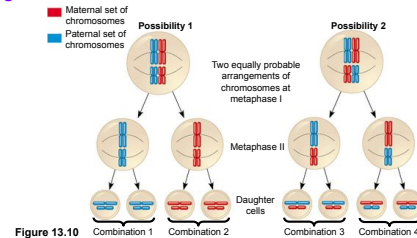
Meiosis produces genetic variation through

Independent Assortment Crossing over



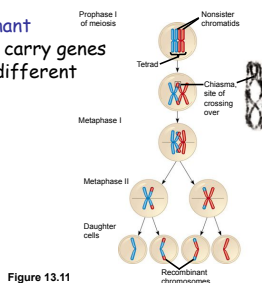
Independent Assortment

- Each pair of chromosomes sorts its maternal and paternal homologues into daughter cells **independently** of the other pairs



Crossing Over

- Produces **Recombinant Chromosomes** that carry genes derived from two different parents



Spindle fibers from one pole attach to BOTH sister chromatids

Spindle fibers from the other pole attach to the other homolog

Crossovers are essential for correct alignment at metaphase 1

Chiasmata hold the pair together while "Tug of war" Aligns tetrads

