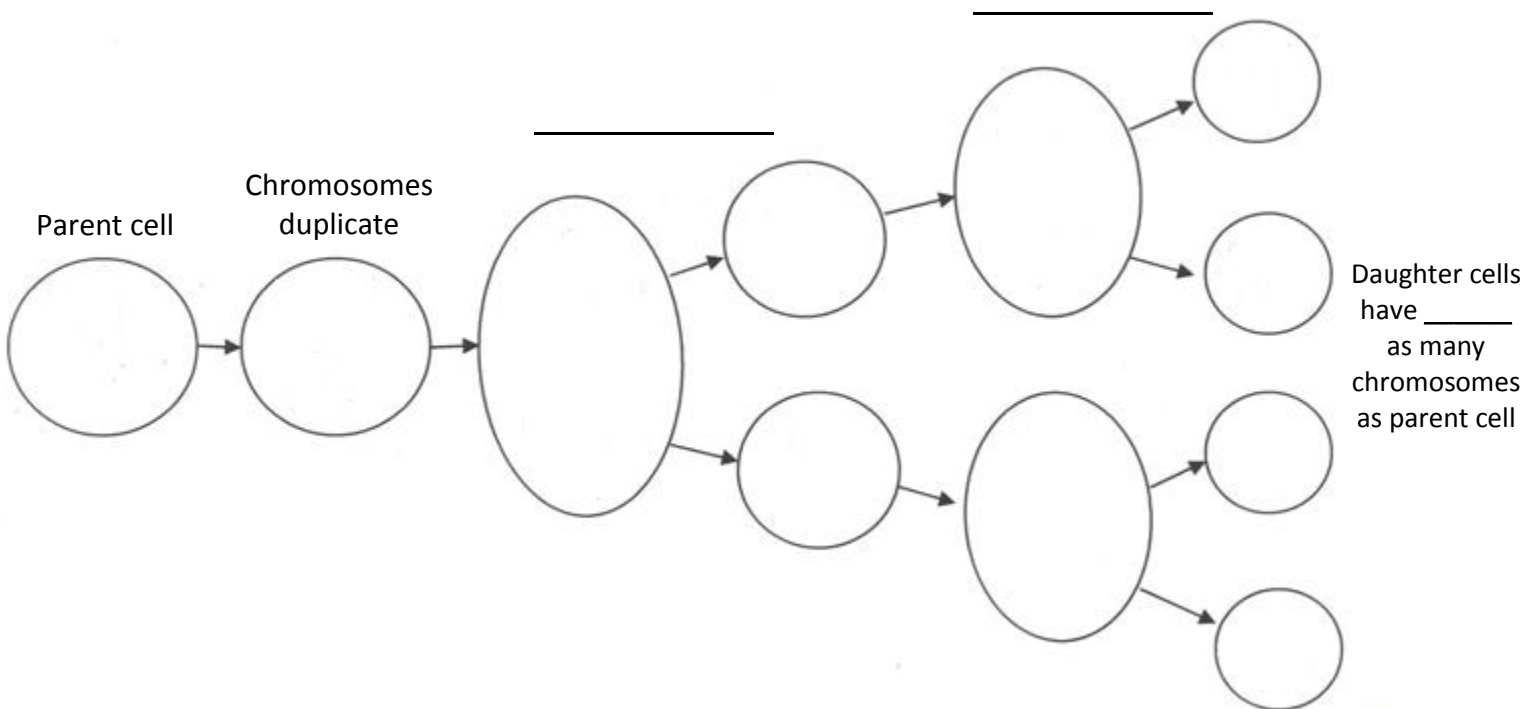


Cell Division (Continued) – Meiosis

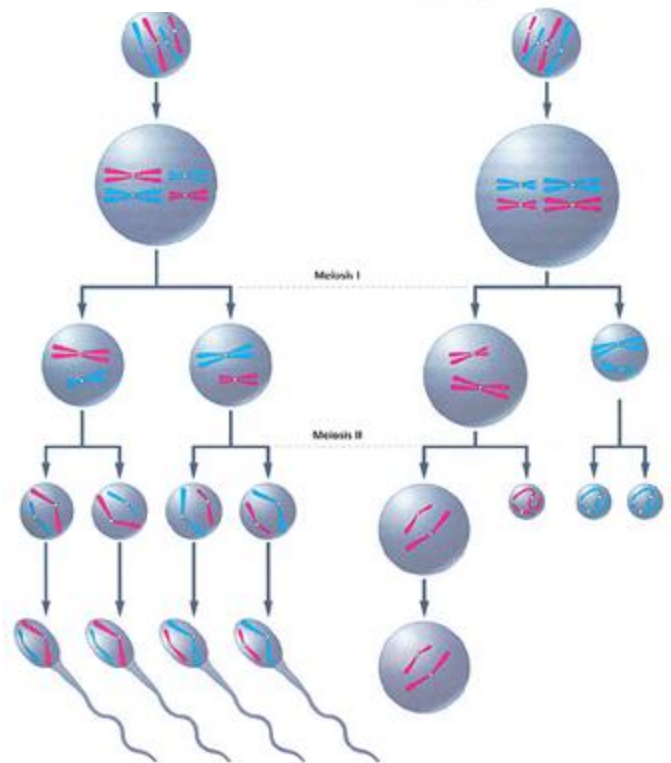
Cell Division – Meiosis

– the process in which the number of chromosomes in the original cell is _____ by _____ through the separation of _____ chromosomes

- Meiosis occurs in _____ organs only
 1. Males (____) – sex organs are the _____ in humans
 2. Females (____) – sex organs are the _____ in humans
 3. Meiosis also occurs in the sex organs of other animals, plants, fungi, etc...



- Meiosis produces _____ cells – cells with $\frac{1}{2}$ the number of _____ as the original cell
 1. Males – meiosis produces _____
 2. Females – meiosis produces ___ (viable) _____. The other 3 cells are called _____. _____ – they give up their _____ to nourish the 1 good egg.
 3. Egg and sperm (sex cells) are also called _____



4. Gametes have $\frac{1}{2}$ the number of chromosomes as _____ (body) cells. We call this the _____ number. Haploid means “_____” and is written as “_____”.

If human diploid number is 46, what is its haploid number? _____

Diploid # of a dog – 78 Haploid # of a dog – _____

Diploid # of a fly – 8 Haploid # of a fly – _____

• When does meiosis occur in humans?

1. Males beginning at _____

2. Females before _____ – all eggs are produced _____ birth and at puberty eggs _____

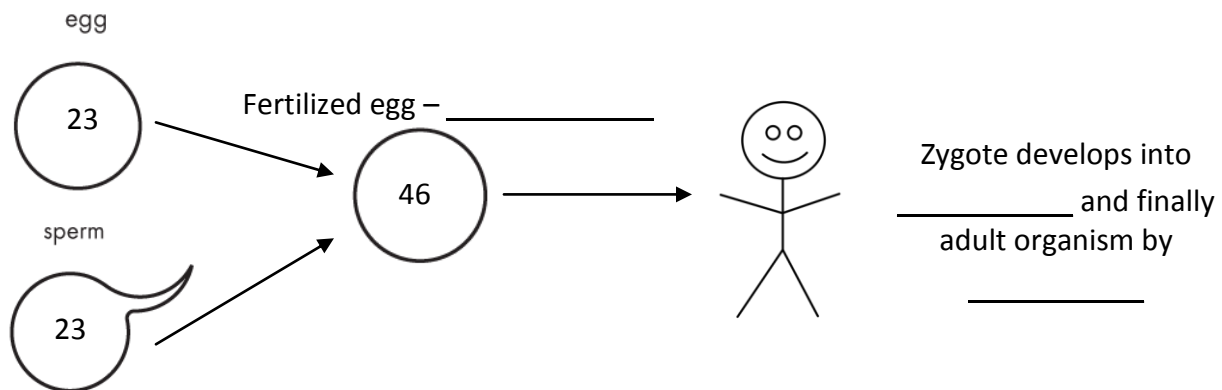
Chromosome Number

• Remember, chromosome number is _____ to each kind of organism and _____ (except sex cells) in an organism have the same kind and number of _____.

Ex: All humans have 46 chromosomes and all cells in the human body (except sperm and egg) have _____ chromosomes.

• This is why the chromosome number in _____ cells must be reduced in _____ by meiosis

Ex: Humans have 46 chromosomes in their _____ cells, but 23 chromosomes in their _____ cells (_____ and _____)

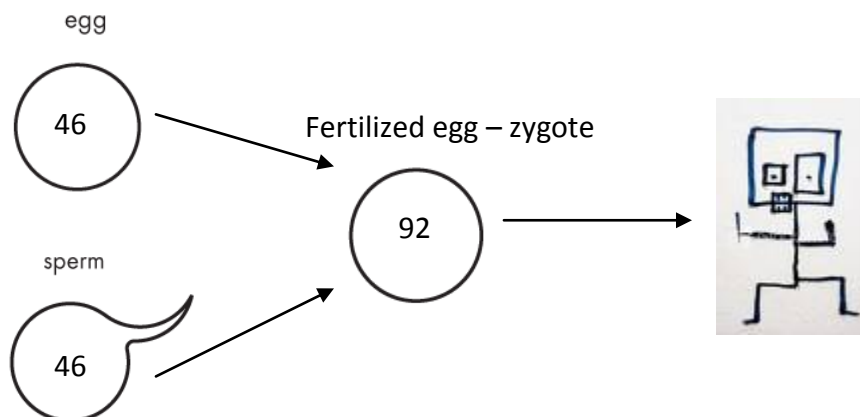


_____ – process by which an egg and sperm unite

_____ – fertilized egg

_____ – organism in early stage of development

• Without meiosis



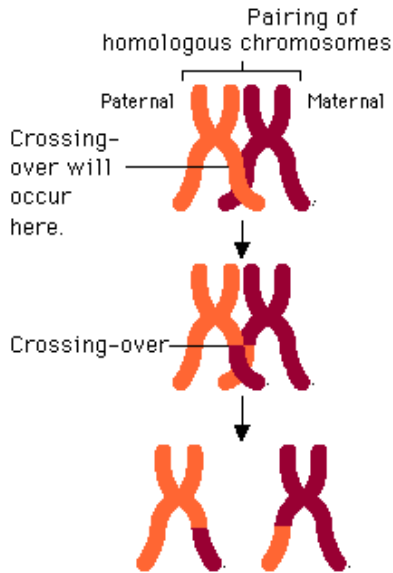
Unique events in Meiosis

- Homologous () chromosomes pair up _____ 1st cell division

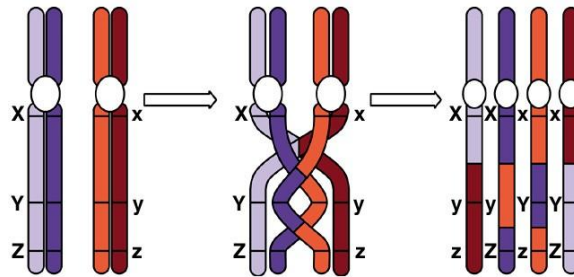
Homologous chromosomes:

- look alike
- code for same _____
- receive _____ from each parent

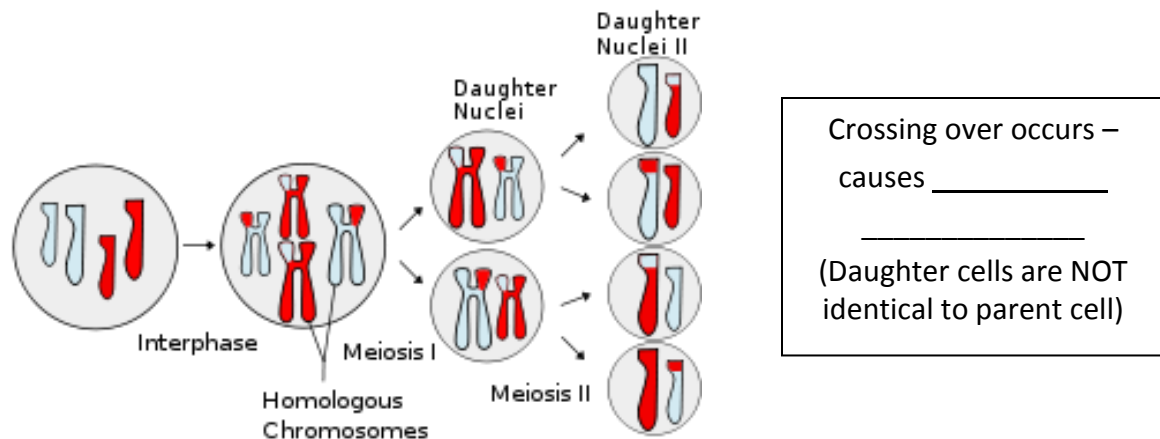
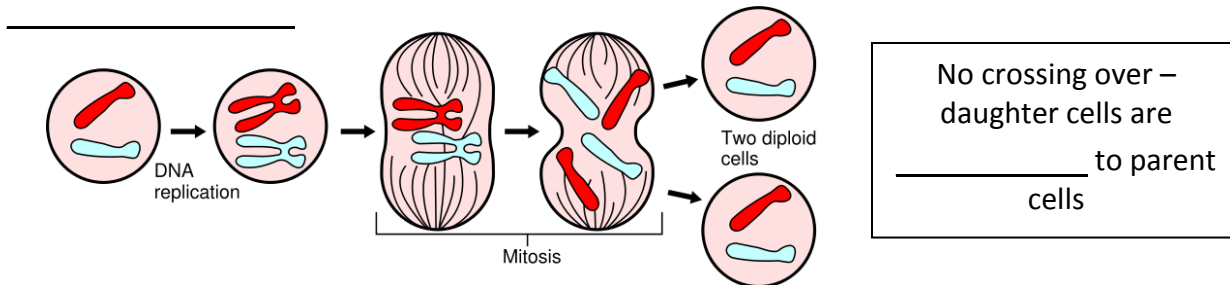
- During 1st division, homologous chromosomes _____ during process called " _____ "



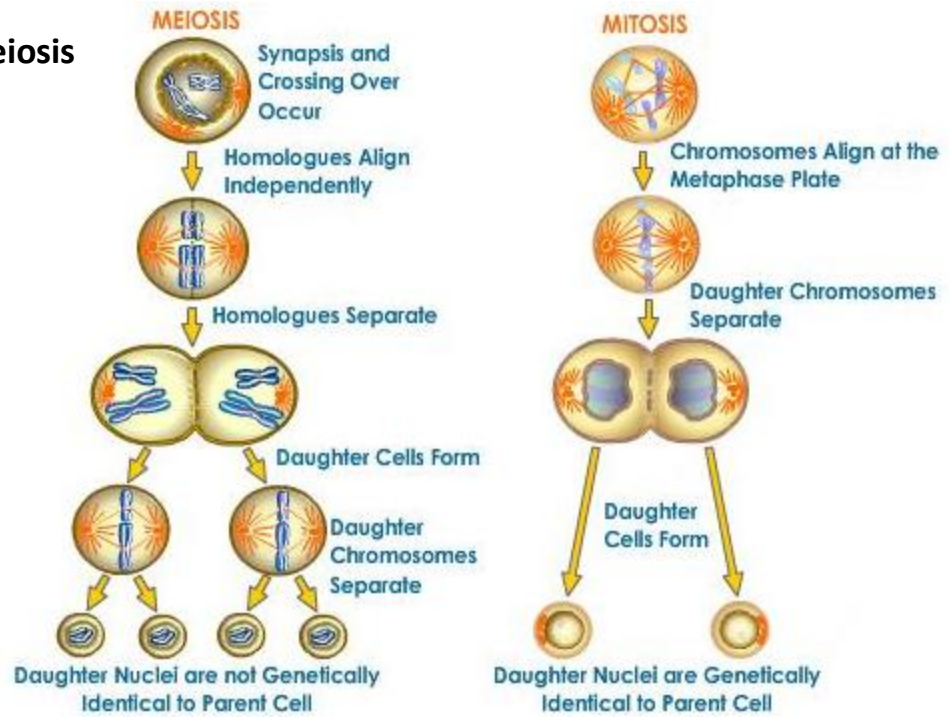
Crossing over during meiosis



- These homologous chromosomes _____ during _____ of meiosis – so chromosomes in _____ are _____ from each other due to crossing over
- Crossing over increases _____ and is the reason why _____ look _____



Comparing Mitosis and Meiosis



<u>Characteristic</u>	<u>Mitosis</u>	<u>Meiosis</u>
What kind of cells?		Male () = Female () =
When does this occur?		Male () = Female () =
# of Divisions (Draw picture)		
# of Daughter cells		Male () = Female () =
# of Chromosomes	_____ as parent cell ____ ploid or ____ In humans _____	_____ as many as parent cell ____ ploid or ____ In humans _____
Type of Reproduction		
Genetic Composition	Daughter cells identical / not identical to parent cell	Daughter cells identical / not identical to parent cell → _____
Pairing of Homologous Chromosomes	YES / NO	YES / NO _____ of genes
Function/Importance		