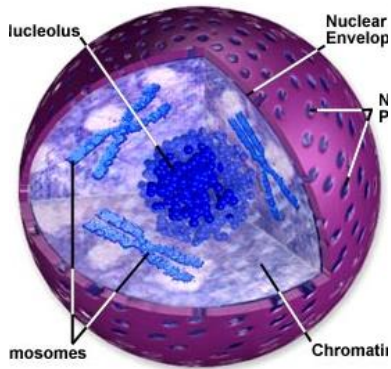
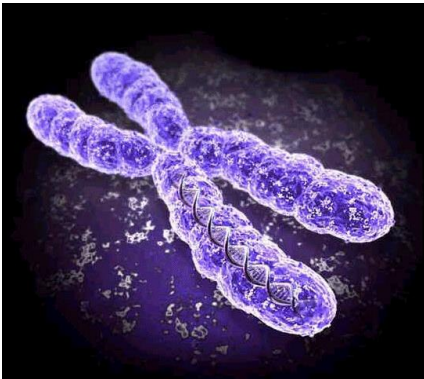


**Cell:**  
the smallest unit of  
any living thing



**The nucleus:** The  
brain of the cell.  
Contains genetic  
material (DNA)



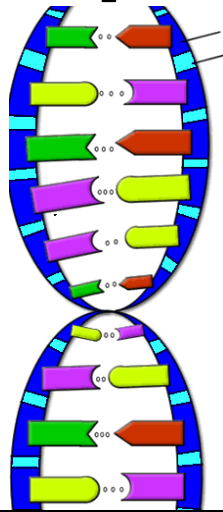
Chromosome = The  
structure that  
contains one strand  
of DNA  
23 pairs (46 total)  
in non-reproductive  
cells



A section of DNA

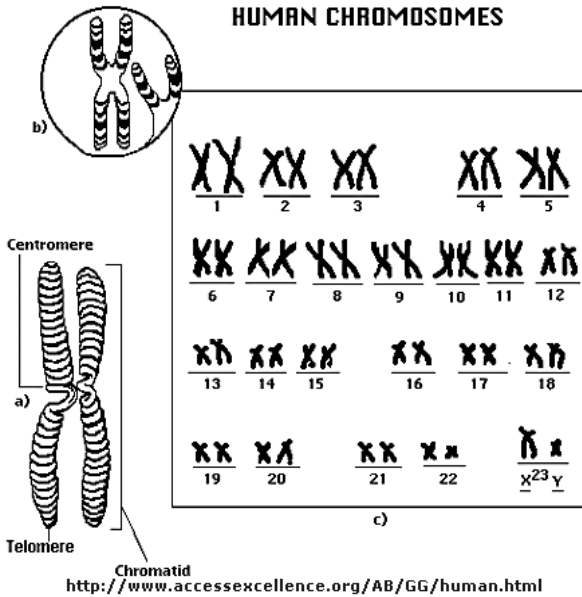
Gene = a section of  
DNA that codes for a  
particular trait.

DNA base pairs are:



Adenine  
Thymine  
Guanine  
Cytosine

HUMAN CHROMOSOMES



Karyotype: a picture of a person's chromosomes arranged with their homologous pair from #1 to #23, largest to smallest



What type of chromosomes?

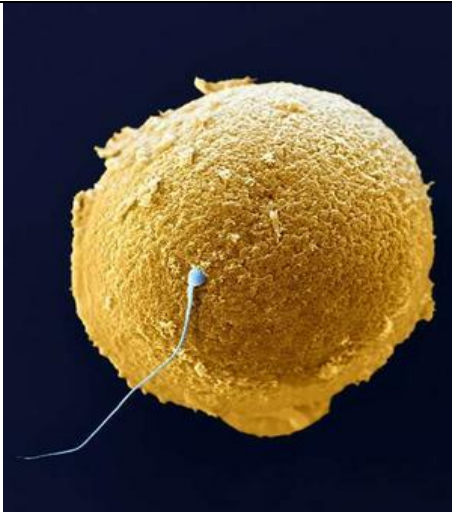
Sex chromosomes  
Male: XY, Female: XX

"n"

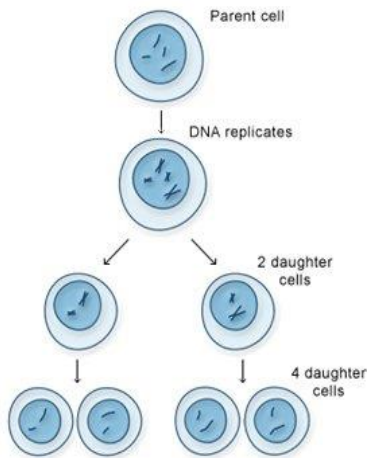
Haploid: the number of chromosomes found in a sex cell.

"2n"

Diploid: the number of chromosomes found in a somatic cell.



Fertilization



Meiosis

Gametes

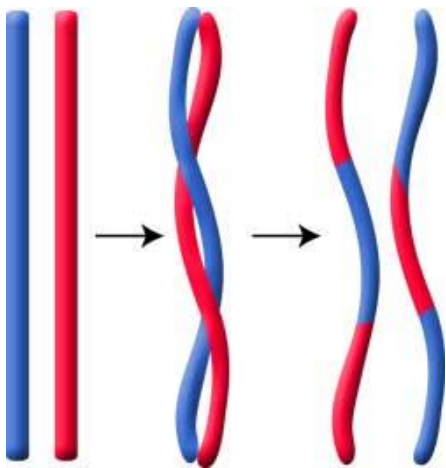
Sex cells: sperm and ovum. They are haploid.

Zygote

The product of fertilization. What you get when a sperm and egg fuse. It is diploid.

Ovum

The female sex cell. It is haploid. In humans it has 22 autosomes and 1 sex chromosome.



Crossing over or  
genetic  
Recombination

<p>Conditions Essential for life</p>	<p>Presence of: Essential chemical elements Energy Source Liquid Water Time</p>
<p>Why do cells divide?</p>	<p>Growth Repair Sexual Reproduction</p>
<p>Cells multiply by</p>	<p>Mitosis</p>
<p>Functions of Mitosis are:</p>	<p>Growth and Repair</p>
<p>List the five steps of Mitosis</p>	<ol style="list-style-type: none"> <li>1. DNA replicates</li> <li>2. Chromosomes are formed</li> <li>3. Dna Lines up</li> <li>4. Chromosomes spilit</li> <li>5. Cells divide creating two daughter cells.</li> </ol>

Mitosis vs. Meiosis	Meiosis is same as mitosis but done twice and only replicating DNA once.
Genetic mutation	Random changes happen in the bases of DNA
Population Mixing	Individuals of different populations breed
Genetic Diversity	Varies genes Prevents extinction Makes us unique More people=more diversity
Levels of Organization	Cell, Tissue, Organ, System, Organisms