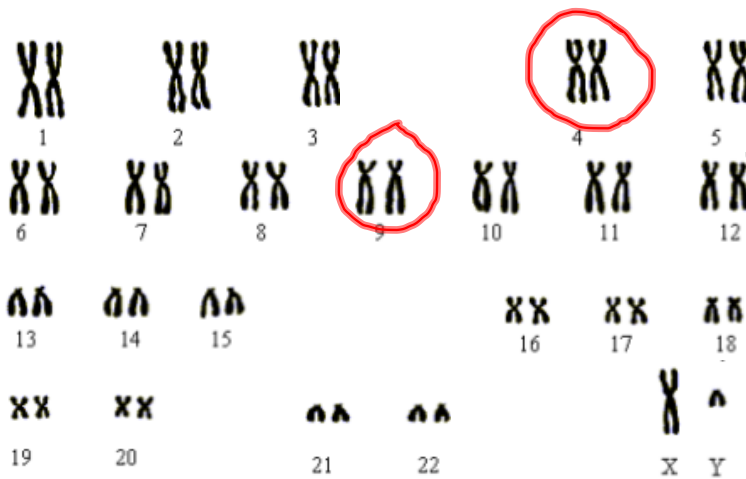


Genetics and Probability

Background:

1. What are homologous chromosomes?

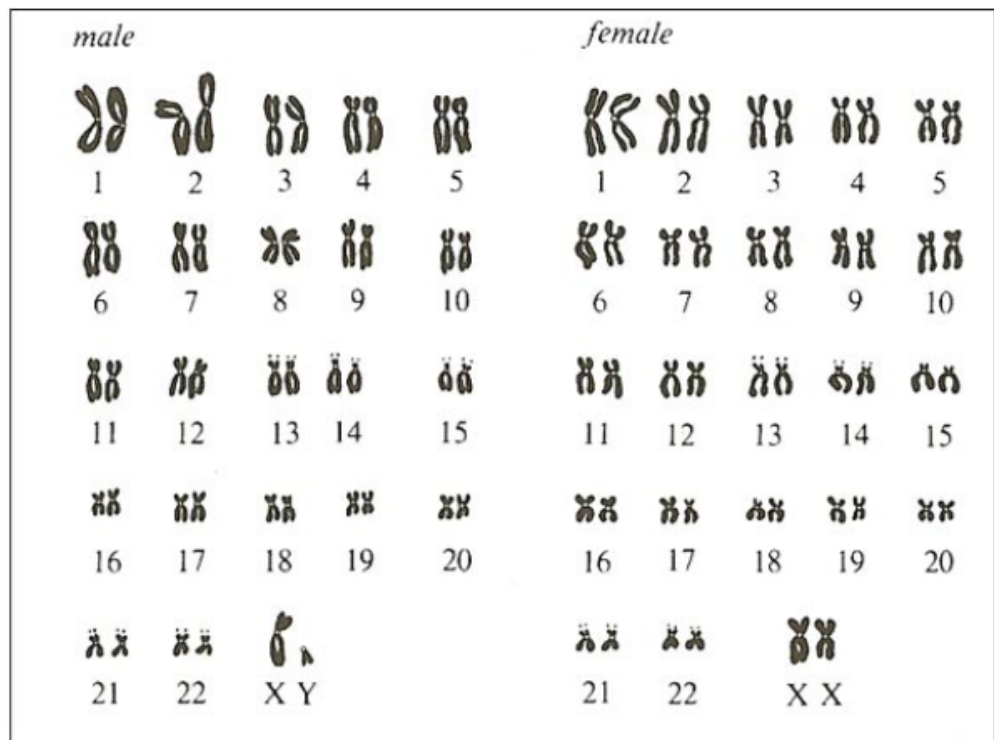
Pairs of chromosomes with the same genes. (The alleles for a gene may be different on each of the pair.)



2. What determines which of the homologous chromosomes gets put in a sperm or egg?

meiosis 2

Which of each pair makes it into the egg or sperm is determined by chance. Whether it is heads or tails when flipping a coin is also determined by chance.



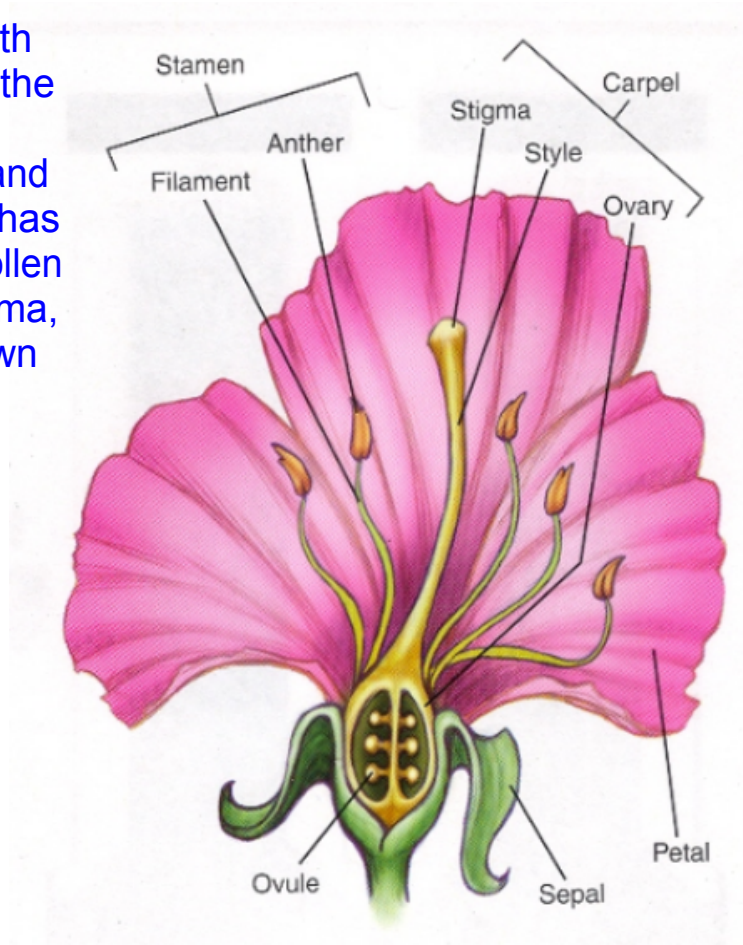
Procedure:

1. The blue bead represents the dominant gene for purple flower color in Mendel's pea plants. The clear glass represents the recessive gene for white flower color. Each parent is a purple flowered plant but with one dominant purple gene and one recessive white gene for their genotypes.
2. Shake the two beads in your hand and with eyes closed, pick one bean. Your partner will do the same. Record the color of the bead you each chose and then determine the genotype and the phenotype of the plant that would result from this pair of genes. Do this until the chart is filled.



The gene for pea flower color is determined by two alleles, a blue allele or a white allele. Blue is dominant and white is recessive.

Flowers have both male structures, the anthers which produce pollen, and the ovary which has the eggs. The pollen lands on the stigma, grows a tube down to the ovary and then fertilizes an egg.



Attachments



meiosis 2