

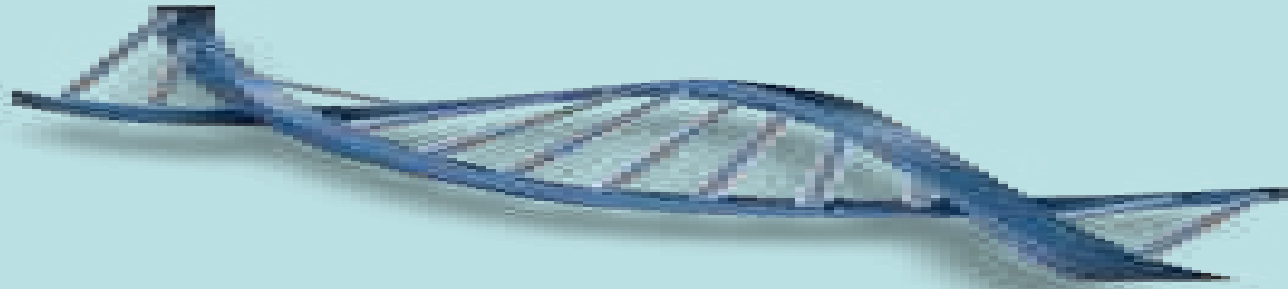
GENETICS UNIT STUDY GUIDE





- The passing of traits from parents to offspring is known as heredity.

- The study of heredity is called genetics.



Sperm cells and
egg cells

are called sex

cells. (gametes)



- Chromosomes are fine thread-like structures in the cell's nucleus that control heredity.

- A gene is part of the chromosome that controls inherited traits.

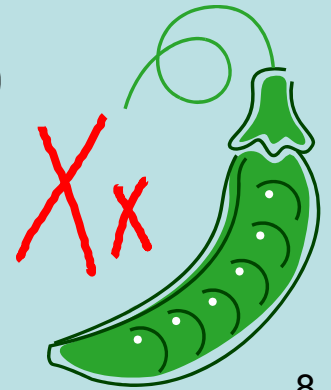
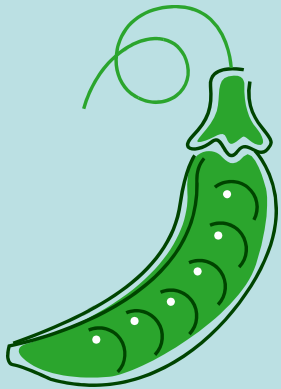


- An organism is said to be homozygous, or a purebred if it has two like genes for the same trait.

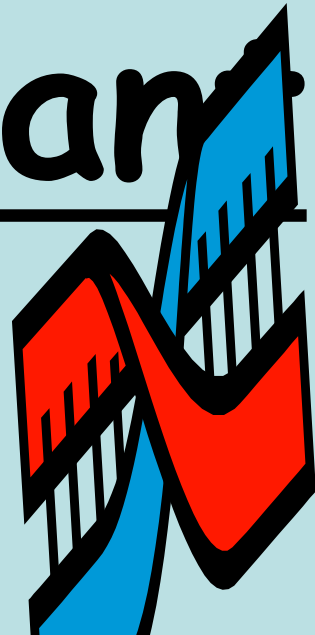
XX

xx

- Organisms that have two unlike traits are heterozygous or hybrids for that trait.



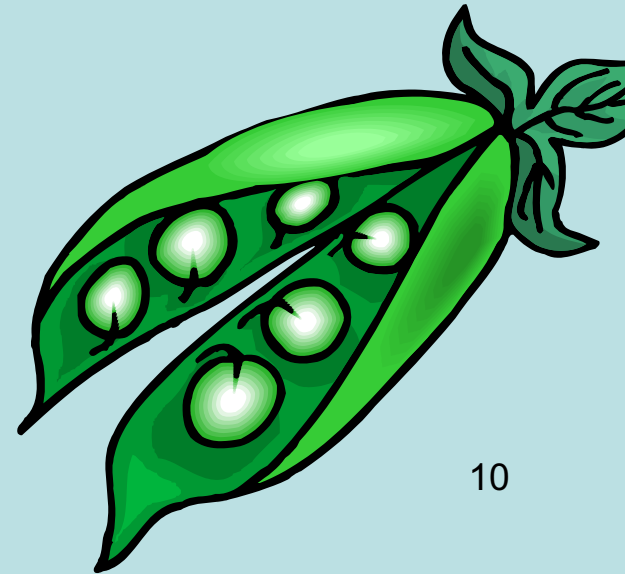
- The gene that always shows itself is the dominant gene.



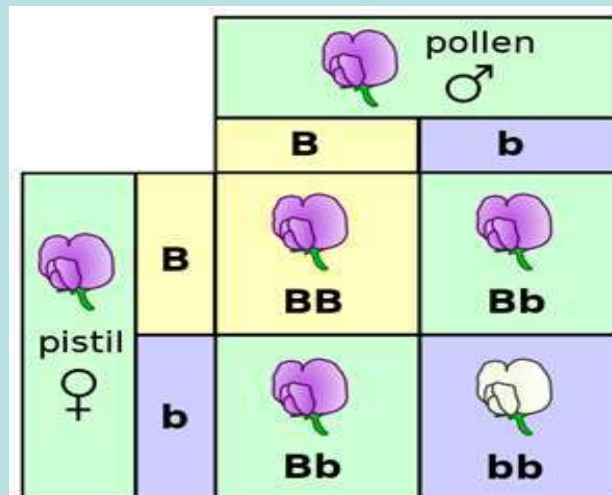
A B C





uppercase
letters

- The hidden gene is called the recessive gene.

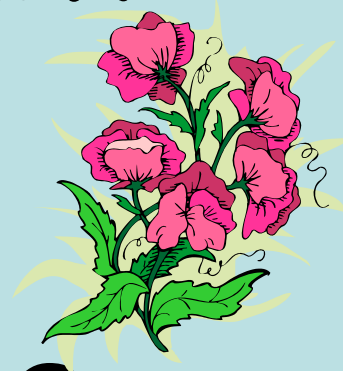


- A Punnett square is a chart used to show possible gene combinations.



		pollen ♂	
		B	b
pistil ♀	B	 BB	 Bb
	b	 Bb	 bb

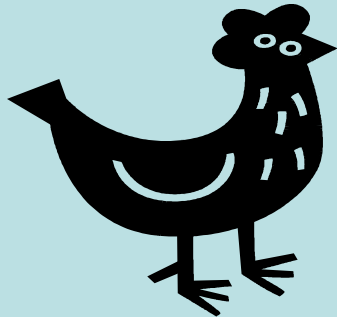
- Incomplete dominance is when no allele is completely dominant over the other.



- *Ex.: red and white flowers that produce pink offspring.*

- When *both* alleles of a gene are expressed it's called codominance.

- *Ex.:* when a black chicken and a white chicken produce black and white



offspring





- X and Y



chromosomes

determine gender.

For example, XX is female. XY is male.

- Human traits are determined by 23 pairs of chromosomes.

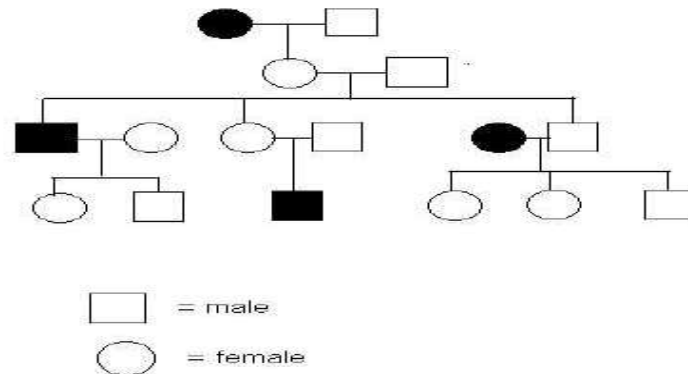


- Sex-link disorders are hereditary disorders like hemophilia and color blindness that are passed down from parents to offspring.



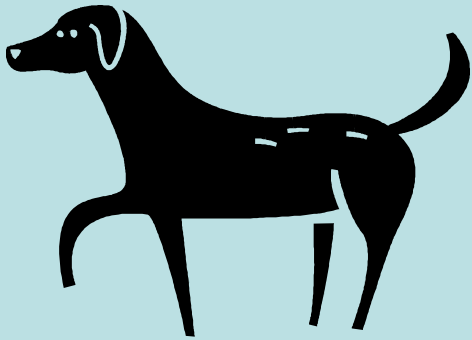
- Women who have one normal gene and one gene for a sex-linked disorder are said to be carriers of the disorder.

- Scientists study the traits of past generations to predict the traits of future offspring. One way they do this is by making a pedigree which is a chart similar to a family tree.



- A disease that is caused by an abnormal gene passed down from a parent is called an inherited disease.

- Mating organisms to produce offspring with certain traits is called controlled breeding.



- Today, new organisms can be made in a laboratory and an organism's DNA may be changed. The methods used to produce new forms of DNA are called genetic engineering.

