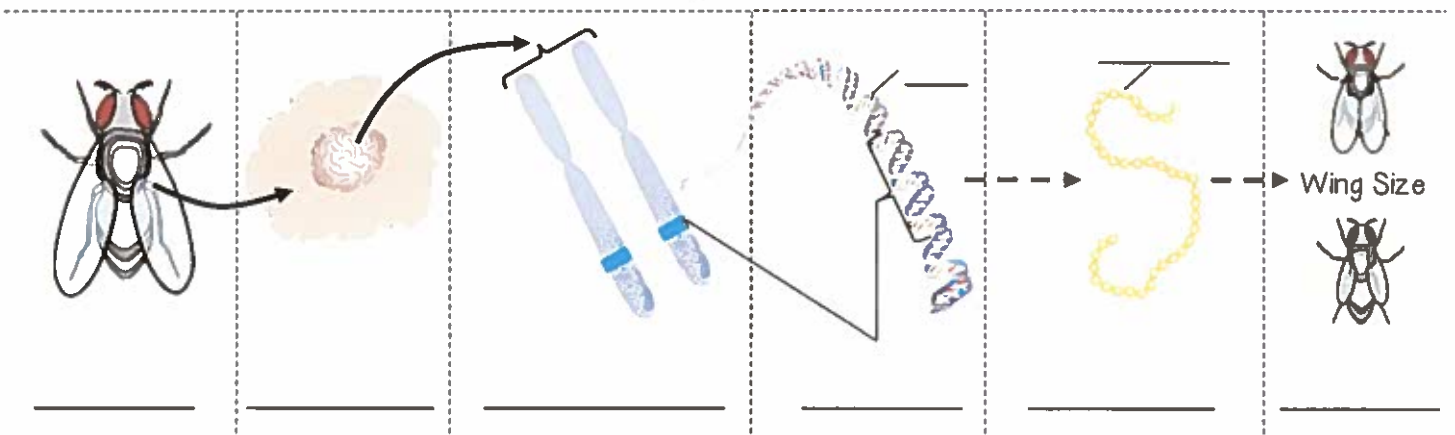


BIG LEARNING



Chromosomes, Genes & Basic Genetics

Chromosomes come in sets called _____ pairs. One chromosome in the homologues pair is _____ from the mom the other from the dad. These two chromosomes have the same _____ located in the same positions along their length. This means that we have _____ copies of each gene (the _____ chromosomes X and Y are exceptions).

Since cells carry two copies of each chromosome they have two versions of each _____. These different versions of a gene are called _____. We often use capital/lower case _____ or superscripts to represent these different versions. The _____ allele always shows its effect over the _____ allele. This means individuals who have only one dominant copy in the gene _____ will show the effects of the dominant gene. Individuals with different alleles for a gene (one dominant and one recessive) are said to have a _____ genotype.

Individuals that have two dominant alleles in the gene pair are said to have a _____ genotype. This genotype will always show the dominant _____.

Individuals that have two _____ alleles in the gene pair are said to have a homozygous recessive genotype. This genotype will always show the recessive _____.

Short antenna	rr
Long antenna	RR or Rr
Antenna Size	
Small wings	hh
Large wings	Hh or HH
Wing Size	
Dark body	aa
Light body	Aa or AA
Body Color	

Organisms are made of millions of _____. There are different _____ of cells that make-up an organism, each with its own specific function. However, all cells (no matter the type) have common features such as: all have the same exact set of _____, all take in nutrients and convert it into _____, all make _____ such as proteins, and all maintain _____.

Almost all cells in an organism have a _____ containing an organism's _____. A genome is the complete set of _____ that the organism inherited from its biological _____. Half of the genome (DNA) comes from the mother and the other half from the father.

In the nucleus of each cell, DNA is packaged into thread-like structures called _____. Each chromosome is made up of a tightly coiled _____ strand. There are two copies of each chromosome (one from _____, one from _____). Each chromosome has a constriction somewhere along its length called the '_____', which divides the chromosome into two arms. The _____ arm ('p' arm) the _____ arm ('q' arm).

Genes are small sections of _____ within the genome that contain a sequence of genetic instructions for how to build _____ (or in some cases small pieces of functional RNA). Just like chromosomes, every person has two copies of each _____ one gene in the pair is inherited from each parent.

A gene codes for a particular protein that is involved in the expression of a _____. Traits determined by single gene are called Mendelian (_____) traits. These traits are often studied because they have predictable inheritance patterns. HOWEVER, most traits have complex, unpredictable inheritance patterns in which _____ genes along with _____ factors are involved in the expression of the _____.

Genes code for proteins which control an organism's _____. Traits are also known as an organism's _____ or physical appearance. Phenotype is determined by the organism's gene makeup or _____.