

KS5 Biology

Dihybrid Inheritance

with Miss Rosalind

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Dihybrid inheritance worksheet

Activity 1 - match up the keyword to the definition

Allele	Location of a gene on the chromosome
Homologous chromosomes	Always expressed in the phenotype, even if only 1 present.
Locus	Physical characteristics, determined by the genotype
Homozygous dominant (true breeding)	Two identical chromosomes which exist in pairs, one inherited from each parent. Contain same genes in the same loci, however may be different alleles.
Heterozygous	Can be masked by a dominant allele. Need to inherit 2 for this to be expressed in the phenotype
Homozygous recessive (true breeding)	The genotype consists of one dominant and one recessive allele of a particular gene
Dominant allele	A different version of a gene
Recessive allele	Allele combinations of a particular gene
Polygenic	When the genotype consists of two dominant alleles for a particular gene
Phenotype	The first filial generation of offspring from the crossing of two parents.
Genotype	Where more than one gene contributes to a characteristic
F1 generation	When the genotype consists of two recessive alleles for a particular gene

Activity 2

1. Use a Punnett square to predict the outcomes of crossing two true breeding pea plants RR (Round) and rr (wrinkled).

2. What is a test cross and when are they used?

Activity 3

An individual's genotype will contain ____ alleles for each gene that is being inherited.

Following meiosis, each ____ will contain ____ allele for each gene that is being inherited

Activity 4

Looking at the inheritance of two genes, A and B, write down all of the different possible gametes that would result from these genotypes:

1. AABb

2. A parent who is homozygous recessive for both genes

Activity 5

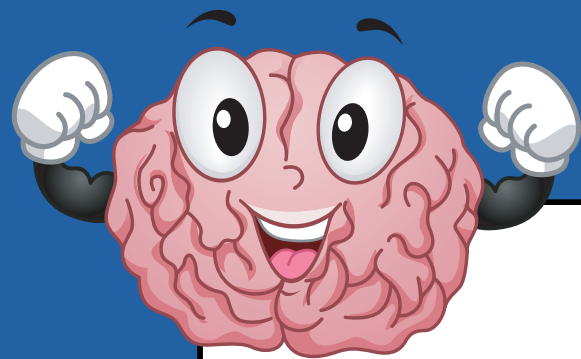
In a plant, white fruit colour (W) is dominant over yellow fruit colour (w) and disc-shaped fruit (D) is dominant over sphere-shaped fruit (d).

A plant that is heterozygous for **both genes** is crossed with a plant with the genotype Ddww. Calculate the phenotypic ratio of the possible offspring.

Activity 6

In a plant, white fruit colour (W) is dominant over yellow fruit colour (w) and disc-shaped fruit (D) is dominant over sphere-shaped fruit (d).

Two plants that are heterozygous for **both genes** are crossed. Calculate the phenotypic ratio of the possible offspring



And we're done for the day!

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