Genetics

General Genetics

- What is a gene?
- What is an allele?
- True or False:
  A diploid individual has two alleles for each gene.
- What is a genotype?
- What is a phenotype?

Be able to define the following:

1. Homozygous
2. Heterozygous
3. True breeding

More Questions

- In this example the trait for flower color is represented by the letter R.
- Plants with the genotype RR and Rr have red flowers.
- Plants with the genotype rr have white flowers.
- Which is the dominant allele? R or r?
- Which is recessive?
- Draw a Punnet square showing the cross of a plant with the RR genotype and a plant with the rr genotype.
- What are the possible genotypes and phenotypes of the offspring?
- Draw a Punnet square showing the cross of a plant with the Rr genotype and the Rr genotype.
- What are the possible genotypes and phenotypes of the offspring?
- What is: Complete Dominance / Incomplete Dominance / Codominance?
- What are examples of each of them?
- What are typical outcomes of homozygous dominant, heterozygous, and homozygous recessive with each type of dominance?

Genetics

In a dihybrid cross two traits are followed.

In this example we will follow the color gene and the height gene.

- Plants with the genotype RR and Rr have red flowers. Plants with the genotype rr have white flowers.
- Plants with the genotype HH and Hh are tall. Plants with the genotype hh are short.

Draw a Punnet square showing the cross of two plants with the RrHh genotype.

Hint: Each gamete will have two alleles and the Punnet square will be 4x4.

- List the genotypes and the ratios of the offspring.
- List the phenotypes and the ratios of the offspring.