

Example Genetic Cross:

A heterozygous tall pea plant is crossed to another heterozygous tall plant. Tall is dominant over short. Calculate the phenotype and genotype ratios of their offspring.

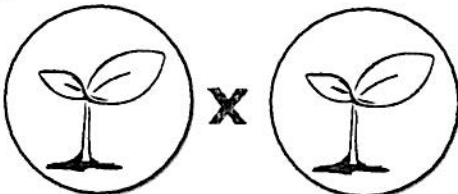
Name: _____

Intro to Punnett Squares

1 Which trait/allele is dominant?

Which trait/allele is recessive?

2 Write each parent's phenotype, genotype, and individual alleles.



Parent #1:

Parent #2:

Phenotype:

Genotype:

Alleles:

5 Write the genotype ratio in the offspring by counting how many of each genotype are in the Punnett Square's offspring boxes.

Genotype Ratio or percent:

: :

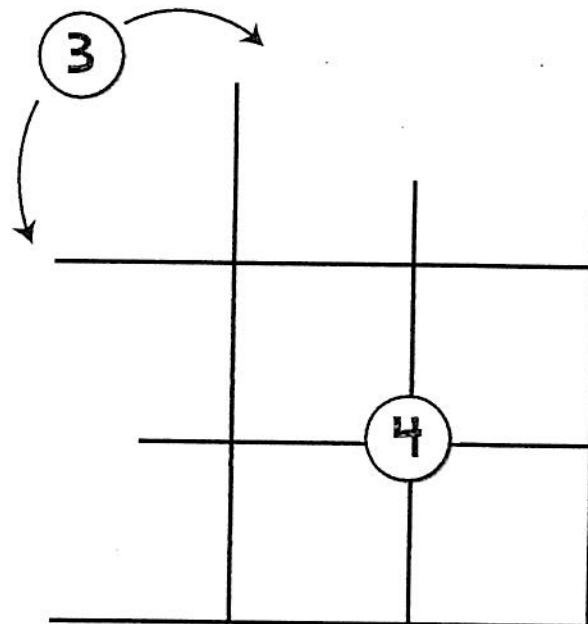
6 Write the phenotype ratio using the genotype ratio.

Phenotype Ratio or percent:

:

3 Fill in the parent alleles on the top and left side of the Punnett square.

4 Fill each box with the allele from one top parent and the allele from the left parent



Punnett squares are named after the man who invented them. They are a _____ that can help scientists figure out:

- all the possible _____ of the alleles an offspring have

- the _____ of each allele combination in the offspring

Clues from Relatives

A young striped zebrafish had a striped father and a spotted mother. Stripes is dominant over spots.

What is the genotype of the young striped zebrafish?

Because the young fish has stripes and its mother was homozygous for the recessive trait (spots), you can tell that the young fish is a _____. It must have inherited _____ allele from its mother.



"Hybrid" means _____. In this example, because the heterozygote shows the _____ trait, brown hair is the _____ trait.

"Hybrid"

An albino male mouse is mated with a hybrid brown-haired female mouse.

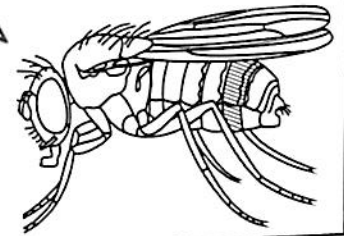
What is the genotype of the female parent?

"True-breeding"

A true breeding brown bodied male fly mates with a white-bodied female fly. The brown body allele is dominant over the white body allele. (Use B for brown and b for white)

What is the genotype of the male parent fly?

"True-breeding" means _____

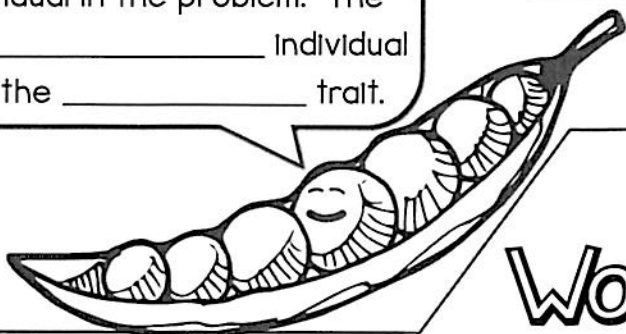


To figure out which allele is dominant, look at the phenotype of a _____ individual in the problem. The _____ individual has the _____ trait.

Dominant or Recessive?

A heterozygous round-seed pea plant is crossed with a wrinkled-seeded pea plant.

Which allele is dominant?



Simple Mendelian Word Problem Clues

Practice Question #1:

In a certain species of animal, black fur (B) is dominant over brown fur (b). Predict the genotypes and phenotypes of the offspring whose parents are both heterozygous for black fur.

What do you need to know?

Dominant trait/allele:

Recessive trait/allele:

Phenotype of P Generation:

Genotype of P Generation:

Genotype & Phenotypes of F₁:

Practice Question #2:

What are the genotypes and phenotypes of offspring when one parent is homozygous black and the other is homozygous brown?

What do you need to know?

Dominant trait/allele:

Recessive trait/allele:

Phenotype of P Generation:

Genotype of P Generation:

Genotype & Phenotype of F₁: