

Probability & Heredity: Punnett Squares

Name: _____
Date: _____
Core: _____

Review: Vocabulary

- Dominant Alleles are more _____ and can "_____ " a recessive trait.
 - o Shown with an _____ letter. "T" for tall stems.
- Recessive Alleles can be " _____ " when a _____ allele is present.
 - o Shown with a _____ letter. "t" for tall stems.
- GENOTYPE describes which _____ are present.
- PHENOTYPE describes what the _____ looks like.
- HOMOZYGOUS – the organism has _____. Example - TT or tt
- HETEROZYGOUS – the organism has _____. Example = Tt

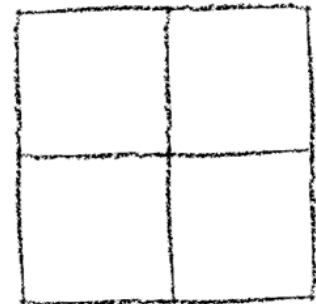
What is a PUNNETT SQUARE?

A punnett square:

- o is a chart that shows _____ of a genetic cross.
- o shows _____ and _____ of the offspring.
- o is also used to _____ that an offspring will have a certain trait.

How do we draw a Punnett Square?

- 1) Start by drawing a box and dividing it into 4 squares.
- 2) Write 1 parents alleles along the top, and the other parent's alleles down the side.
- 3) Copy 1 parent's alleles into the boxes to the right.
- 4) Copy the other parent's alleles into the boxes below.
- 5) The completed punnett square shows all the possible allele combinations in the offspring.



From the punnett square it is possible to determine the " _____ " (chance) that an offspring will have: - a _____ (_____ or _____ %) OR - a _____ (_____ or _____ %).

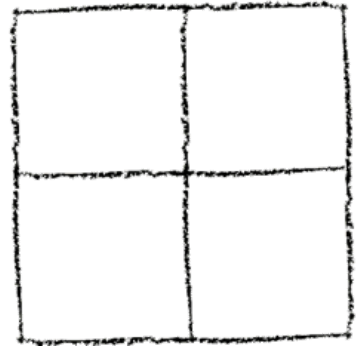
Try one on your own...

- Cross a homozygous (purebred) guinea pig with black fur (BB) with a homozygous (purebred) guinea pig with white fur (bb).
- *Black fur is dominant over white fur.*

What are the possible offspring from this cross?

Genotype? _____

Phenotype? _____



More crosses for practice...

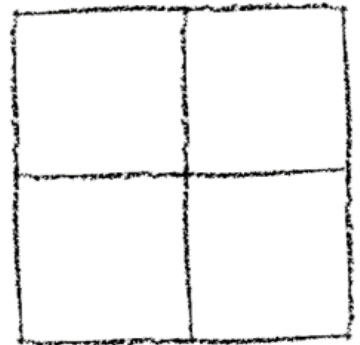
- 1) Cross a heterozygous tall pea plant (Tt) with a homozygous short pea plant (tt).

What are the possible offspring from this cross?

Genotype? _____

Phenotype? _____

- a) What is the % chance the offspring plants are tall? _____
- b) What is the % chance the offspring plants are short? _____



- 2) Cross a rabbit who is heterozygous for short ears (Ee) with another rabbit who is heterozygous for short ears (Ee). *Short ears (E) are dominant over long, floppy ears (e).*

What are the possible offspring from this cross?

Genotype? _____

Phenotype? _____

- a) What is the % chance the bunnies have short ears? _____
- b) What is the % chance the bunnies have long floppy ears? _____

