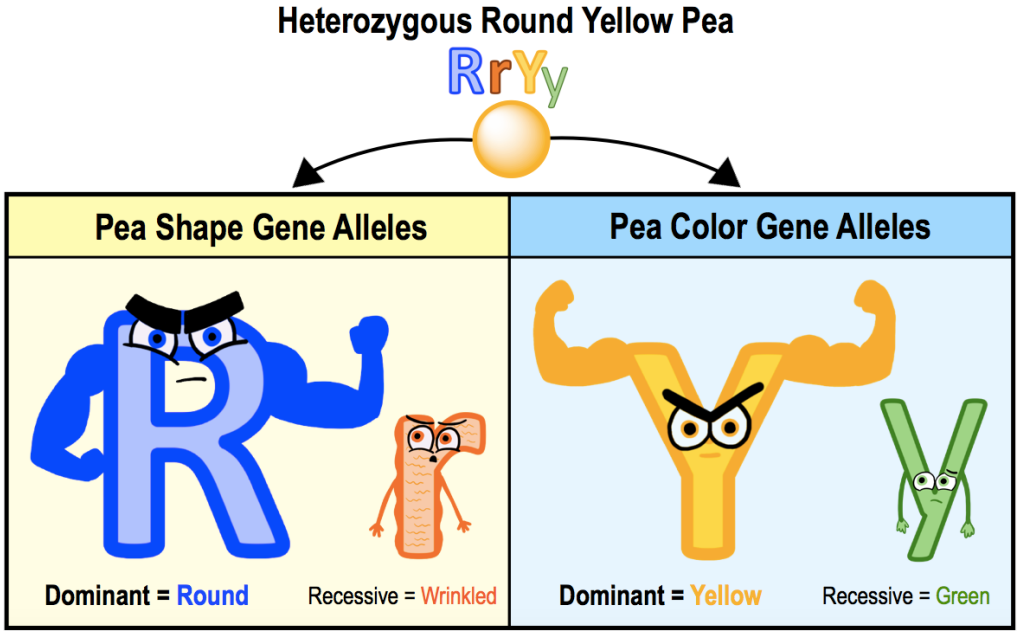
CONCEPT: DIHYBRID CROSSES

●**Dihybrid**: organism that is *heterozygous* for _____ specific genes (ex. RrY*y*).

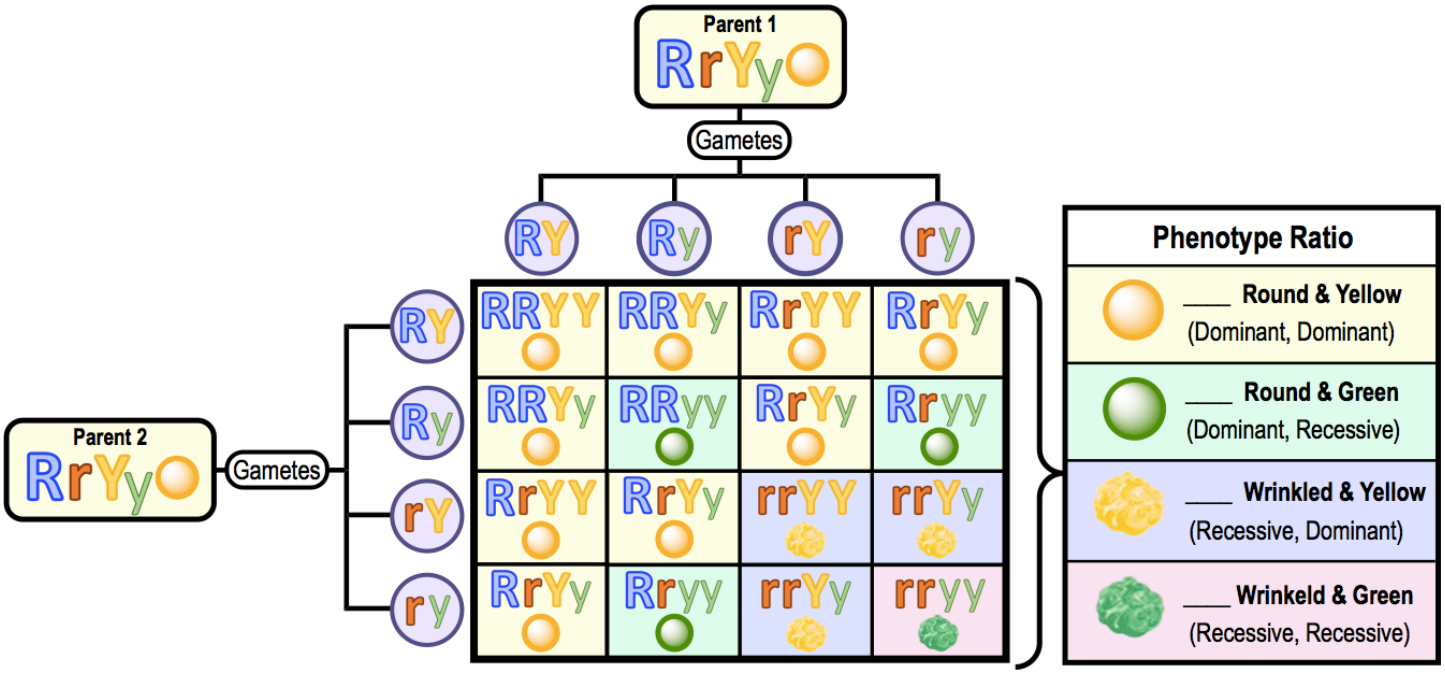


Dihybrid Crosses & Punnett Squares

●**Dihybrid Cross**: *cross*-fertilization between two _____ *organisms*.

□ The characteristic *phenotypic ratio* from a *dihybrid* cross is _____:_____:_____:_____.

Example: Dihybrid Crossing of Pea Plants.



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PRACTICE: Which of the following statements is correct in describing the terms monohybrid cross and dihybrid cross?

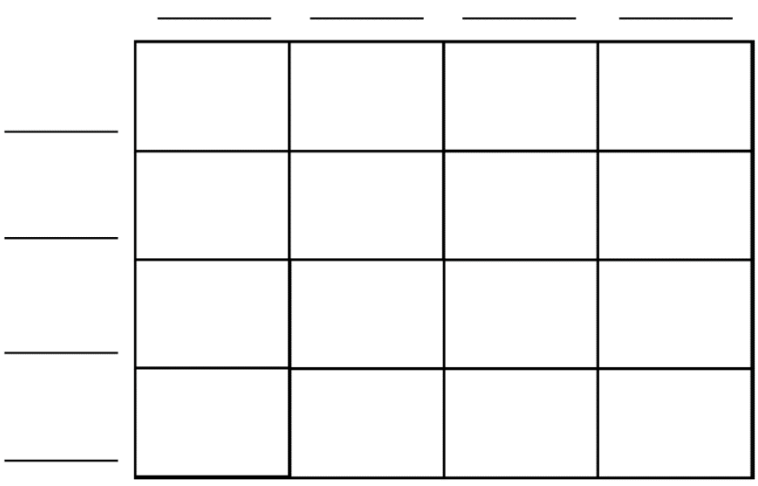
a) A monohybrid cross involves a single parent, whereas a dihybrid cross involves two parents.
b) A dihybrid cross involves organisms that are heterozygous for two characters that are being studied, and a monohybrid cross involves organisms that are heterozygous for only one character being studied.
c) A monohybrid cross is performed for one generation, whereas a dihybrid cross is performed for two generations.
d) A monohybrid cross results in a 9:3:3:1 phenotypic ratio, whereas a dihybrid cross gives a phenotypic 3:1 ratio.

PRACTICE: Which of the following phenomena is a consequence of independent assortment?

a) For any gene displaying complete dominance, heterozygous individuals exhibit the dominant phenotype.
b) Pure breeding plants, when mated with each other, produce completely homozygous offspring.
c) The phenotypic ratio produced from a F1 × F1 dihybrid cross is 9:3:3:1.
d) Smooth seed trait is dominant to wrinkled seed trait in peas.

PRACTICE: Black fur in mice (B) is dominant to brown fur (b). Short tails (T) are dominant to long tails (t). What fraction of the progeny created by crossing BbTt × BBtt will be expected to have black fur and long tails?

a) 1/16.
b) 3/8.
c) 1/2.
d) 9/1.



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PRACTICE: In the dihybrid cross of AaBb x AaBb, what fraction of the offspring will be homozygous recessive for BOTH traits?

a) 1/16.
b) 1/8.
c) 3/16.
d) 1/4.
e) 3/4.