

Main Topic: Mendel & the Punnett Square

Learning Objectives/Outcomes: Understand the influence of Mendel's studies on modern heredity & how to use a Punnett Square to predict offspring genotypes

Topic 1: Mendel	Topic 2: the Punnett Square	Topic 3: Probability
<p><u>Ideas</u> What were some traits Mendel noticed differed in his pea plants? How many did he study?</p> <p>How did the phenotype differ between the first and second generation?</p> <p>How did Mendel's conclusions connect to the modern interpretation of heredity?</p>	<p><u>Ideas</u> What are Punnett Squares? What do they predict?</p> <p>Draw a Punnett Square for a monohybrid cross with a homozygous dominant and homozygous recessive genotype pair. Find the possible genotypes of this cross.</p> <p>Does it matter which parent is on top versus the side?</p> <p>Find genotypes & phenotypes for a heterozygous sheep cross using a Punnett Square. W is a dominant white color; w is a recessive black color.</p>	<p><u>Ideas</u> Why must we be concerned with probability when evaluating a Punnett Square?</p> <p>Explain the genotypes of the second generation offspring of Mendel's peas</p> <p>What does the 3:1 ratio of Mendel's second generation tell us? Do you think that Mendel's thousands of pea plants exhibit this exact same output?</p> <p>You cross two heterozygous sheep and the offspring of the first litter are two black and the next is two white. Is this possible?</p>

Key Vocabulary

Gregor Mendel

2 significant Mendel observations

3 modern principles of heredity

Key Vocabulary

Punnett Square

Monohybrid Cross & on Punnett Square

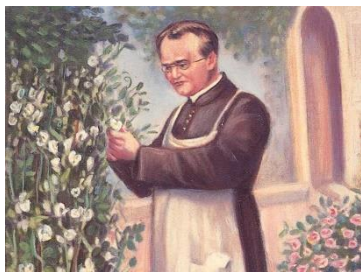
Key Vocabulary

Probability

Dominant Allele

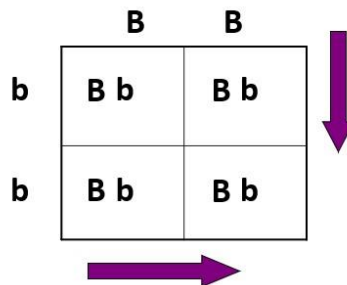
Recessive Allele

Pictures



Pea Plant Traits						
Seed Shape	Seed Color	Pod Shape	Pod Color	Flower Color	Flower Location	Plant Size
Round	Yellow	Inflated	Green	Purple	Axial	Tall
Wrinkled	Green	Constricted	Yellow	White	Terminal	Short (Dwarf)

Pictures



Pictures



