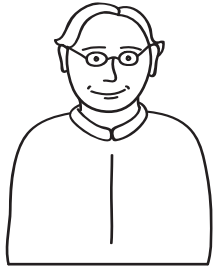


Mendel



Who was Mendel?

Gregor Mendel was born in the year _____ in Austria. He became a _____ and worked in the monastery _____. He became fascinated with the _____ plants that grew there.

What did he do & discover?

Mendel carried out _____ experiments, most successfully with pea plants. He recorded the _____ meticulously and began to notice _____ in the inheritance of certain traits. He realised that some traits were _____ over others, for example purple flowers were dominant and white flowers were _____. He concluded that there are _____ "factors" that are passed on from parents to _____.

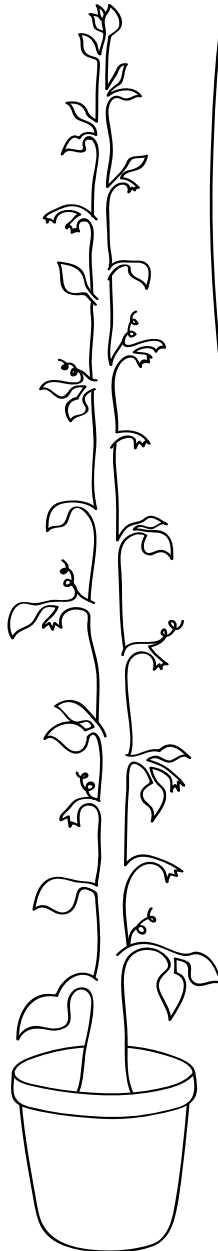
Why was Mendel's work not recognized as important at the time it was published?



Doodle some DNA!

People did not _____ Mendel's work because chromosomes and _____ had not been _____ yet.

Add flowers & pea pods to the plant!



Define each genetics keyword!

Add examples or doodles to help explain!

Allele - this is an _____ form of a _____.

Dominant - this type of allele is _____ expressed if it is _____.

Recessive - this type of allele is only _____ if there are _____ recessive alleles present.

Homozygous - this is when _____ alleles of a gene are the _____.

Heterozygous - this is when the alleles of a gene are _____.

Genotype - this describes the _____ that an _____ contains.

Phenotype - this describes the _____ characteristics displayed by an organism.

Genetics

KEYWORDS

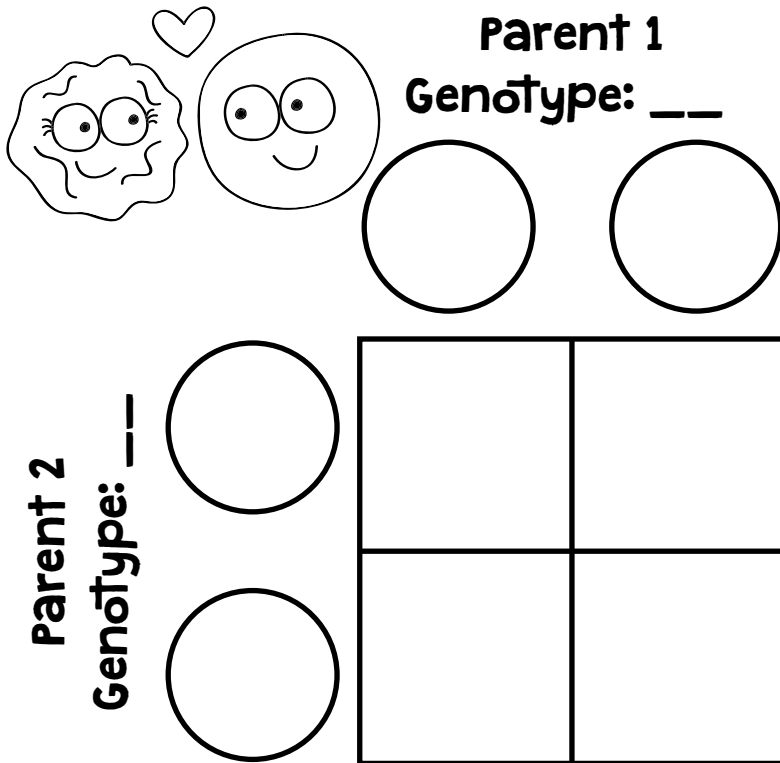
Punnett Squares

What are these?

Punnett squares are a _____ diagram that are used to _____ out the _____ of _____ possible offspring _____.

Let's look at an example!

Smooth peas are dominant over wrinkled peas. A heterozygous pea plant is crossed with a homozygous recessive pea plant. Work out the probability of each offspring genotype and phenotype for this trait using a Punnett Square. Use the letter "R" to represent the alleles.



Step 1

Use the information given to _____ out the parent _____ and fill this in.

Step 2

Each parent can only pass on one _____ to their _____. Split up each parent's alleles.

Step 3

Read across and _____ to work out the _____ offspring _____ in each quarter of the square.

Step 4

Now work out the _____ for each genotype that are in the _____.

Step 5

Finally, work out the _____ of each phenotype. This can be given as a _____, fraction, number, or as a ratio!

Offspring genotypes & phenotypes

— — "

— — "

Probability of smooth pea plants:

Probability of wrinkled pea plants:

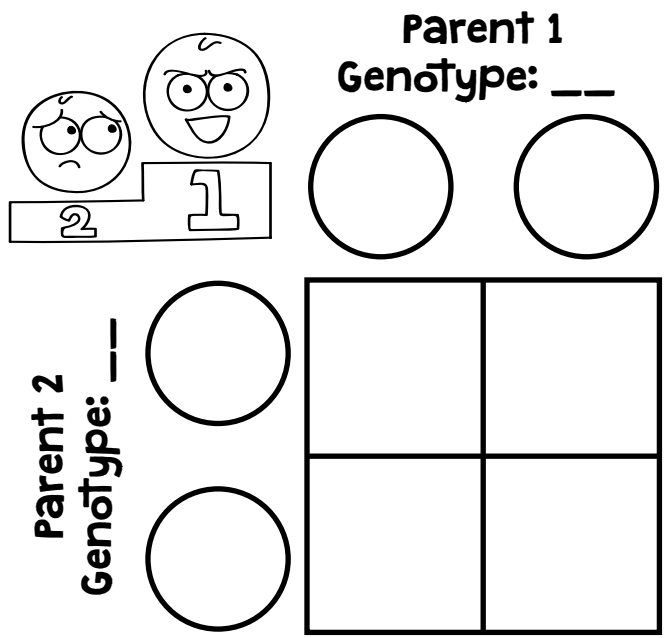
Ratio of smooth to wrinkled pea plants:

The ratio must be written in the same order as described!



Practice Problems

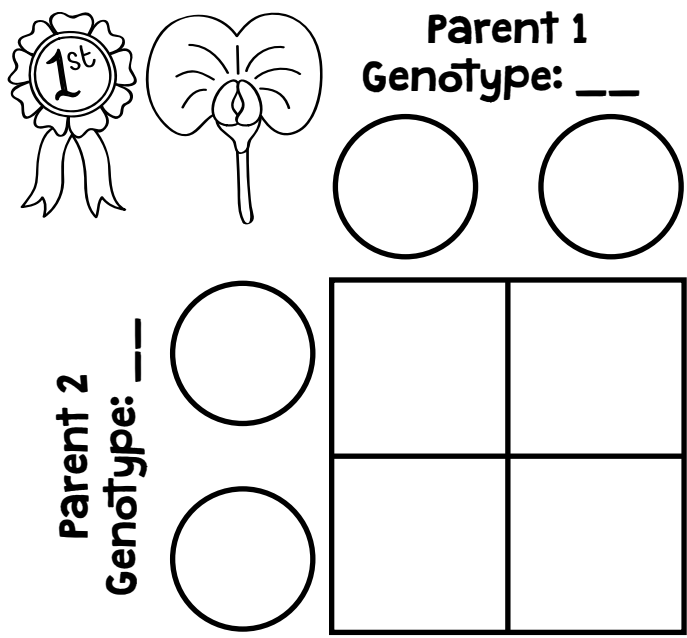
Problem #1 Yellow peas are dominant over green peas. Two heterozygous pea plants are crossed. Work out the probability of each possible offspring phenotypes. Use the letter "Y" to represent the alleles.



Offspring genotypes & phenotypes:

Probability of green peas:
 Probability of yellow peas:
 Ratio of green to yellow peas:

Problem #2 In pea plants, purple flowers are dominant over white flowers. A homozygous dominant plant is crossed with a white flower plant. Work out the probability of each possible offspring phenotypes. Use the letter "P" for the alleles.



Offspring genotypes & phenotypes:

Probability of purple flowers:
 Probability of white flowers:
 Ratio of purple to white flowers: