Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Period \_\_\_\_\_

**#\_\_\_\_\_**

**Punnett Squares Notes – Part 1**

Gregor Mendel:

* Gregor Mendel was an Austrian \_\_\_\_\_\_\_\_\_\_\_ who had a major, lasting impact on the field of genetics.
* Mendel taught \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the other monks at the monastery and also worked as a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Studied the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of traits in \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Focused on seven different traits: seed shape, seed \_\_\_\_\_\_\_\_\_\_\_\_\_\_, pod \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ , pod color, flower \_\_\_\_\_\_\_\_\_\_\_\_\_\_, flower \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and stem \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* Because Mendel’s study and experimentation with pea plants laid the foundation for the study of genetic inheritance, he is known as the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Vocabulary:

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_ – the scientific study of heredity
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_ – the passing of genes from parents to offspring
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_ – a unit of heredity that occupies a specific spot on a chromosome and codes for a

 specific product or trait.

* \_\_\_\_\_\_\_\_\_\_\_\_\_\_ – the various forms of the same gene
	+ \_\_\_\_\_\_\_\_\_\_\_\_ **alleles** are more powerful, and can “hide” a recessive trait.
		- represented with a \_\_\_\_\_\_\_\_ letter (“T” for tall stems)
	+ **\_\_\_\_\_\_\_\_\_\_\_\_ alleles** can be “hidden” when a dominant allele is present and are expressed only when two copies are present.
		- Shown with a \_\_\_\_\_\_\_\_\_\_\_\_\_\_letter (“t” for short stems)
* \_\_\_\_\_\_\_\_\_\_\_\_\_\_ describes which genes or alleles are present in an organism for a trait.

 TT = 2 dominant alleles

 Tt = 1 dominant & 1 recessive

 tt = 2 recessive alleles

* \_\_\_\_\_\_\_\_\_\_\_\_\_ describes the physical appearance of a trait.

 Tall stems = TT and Tt ( a dominant trait)

 Short stems = tt (a recessive trait)

* Scientists use 2 terms to describe GENOTYPE:
	+ \_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_ – the organism has 2 of the \_\_\_\_\_\_\_\_\_\_ alleles for a trait.

 TT = 2 dominant alleles

 tt = 2 recessive alleles

* + \_\_\_\_\_\_\_\_\_\_\_\_\_\_ or \_\_\_\_\_\_\_\_\_\_\_\_– the organism has 2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ alleles for a trait.

 Tt = 1 dominant allele & 1 recessive allele

* + An organism can be homozygous or heterozygous \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, but it can only be homozygous \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
* A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Square is…
	+ a chart that shows \_\_\_\_\_\_ the possible combinations of a genetic cross.
	+ shows \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the offspring.
	+ also used to predict the \_\_\_\_\_\_\_\_\_\_\_\_\_\_ (or chance) that an offspring will have a certain trait.





