

**Presentation 5.1 Mendel's Work**

Date \_\_\_\_\_

Last Name \_\_\_\_\_ First \_\_\_\_\_ Period \_\_\_\_\_

1. Who was the "**Father of Genetics**" ? \_\_\_\_\_
2. Who was **Gregor Mendel**?
  - a. What was his occupation? \_\_\_\_\_
  - b. Where did he live during his priesthood in the 1800s? \_\_\_\_\_
  - c. What was his job at the monastery? \_\_\_\_\_
  - d. What did Mendel study while he lived in the monastery? \_\_\_\_\_
  - e. What scientific study did he found? \_\_\_\_\_
3. What did Mendel notice about the traits of pea plants? \_\_\_\_\_
4. Pollination
  - a. What is **self pollination**? \_\_\_\_\_
  - b. What is **cross pollination**? \_\_\_\_\_
5. What **technique** did Mendel use to **cross pollinate** flowers? \_\_\_\_\_  
\_\_\_\_\_
6. Study the diagram on slide 6 and **make up a title**.  
\_\_\_\_\_
7. **Genetics of Peas**
  - a. What are the two forms of the pea stem length gene? \_\_\_\_\_ and \_\_\_\_\_
  - b. What are two forms of seed color? \_\_\_\_\_ and \_\_\_\_\_
  - c. What are two forms of flower color? \_\_\_\_\_ and \_\_\_\_\_
8. Compare and contrast **purebred** vs. **hybrid**

	PUREBRED	HYBRID
TRAITS OF THE OFFSPRING WHEN SELF POLLINATED COMPARED TO THE PARENTS		

9. Mendel crossed **tall purebreds** with **short purebreds**.
  - a. What was the result of the **F1 generation**? \_\_\_\_\_
  - b. What was the result of the **F2 generation**? \_\_\_\_\_
10. Compare and contrast **genes** vs. **alleles**.
  - a. Genes \_\_\_\_\_
  - b. Alleles \_\_\_\_\_

11. Where do **offspring get alleles**? \_\_\_\_\_
12. Compare and contrast **dominant vs. recessive**?
- In pea plants stem height has 2 alleles. One for tall and one for short..
    - Which is dominant? \_\_\_\_\_
    - Which is recessive? \_\_\_\_\_
  - If a pea plant has one dominant tall allele and one recessive short allele, then what will be its stem height? \_\_\_\_\_
  - If a pea plant has 2 recessive short alleles, then what will be its stem height?  
\_\_\_\_\_
13. How are **symbols** used to represent alleles?
- Which kind of letters denote dominant alleles? \_\_\_\_\_
  - Which kind of letters denote recessive alleles? \_\_\_\_\_
  - What is the symbol for the tall allele in peas? \_\_\_\_\_
  - What is the symbol for the short allele in peas? \_\_\_\_\_
14. Define **genotype and phenotype**.
- Genotype \_\_\_\_\_  
\_\_\_\_\_
  - Phenotype \_\_\_\_\_  
\_\_\_\_\_
15. Complete the table: What is the genotype and what is the phenotype?

GENOTYPE	PHENOTYPE
TT	
	Short Purebred

16. **Heterozygous vs Homozygous**
- If an organism is heterozygous, then that means the organisms alleles are the same or different? \_\_\_\_\_
  - If an organism is homozygous, then that means the organisms alleles are the same or different? \_\_\_\_\_
  - What is the genotype of a heterozygous brown guinea pig? \_\_\_\_\_
  - What is the genotype of a homozygous brown guinea pig? \_\_\_\_\_