1. Summarize the three reasons why Gregor Mendel chose pea plants to study heredity:
	1.
	2.
	3.
2. Mendel only chose to track traits that were **true-breeding**. What does this mean?
3. Define **hybridization –**
4. Using the diagram below, label the **P, F1**, and **F2** generations.



1. When Mendel crossed white and purple flowers, what ratios were produced in the
	1. **F1 generation**?
	2. **F2**  **generation**?
2. The purple flower color is a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ trait, while the white flower color is a

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ trait.

1. These traits are controlled by \_\_\_\_\_\_\_\_\_\_\_\_, made of \_\_\_\_\_\_\_\_\_\_\_\_\_, found within

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. Summarize each of the four concepts that make up Mendel’s theory of inheritance:
	1. Concept 1 –

**Allele –**

**Locus –**

* 1. Concept 2 –
	2. Concept 3 –
	3. Concept 4 –
1. Write a Punnett square showing the predicted results of a cross between two F1 generation purple-flowered parents.

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1. Define **homozygous –**
2. Define **heterozygous –**
3. Define **phenotype –**
4. Define **genotype –**
5. Give the possible genotypes that produce a purple flower phenotype.
6. Give the possible genotype that produces a white flower phenotype.
7. What question does a **testcross** answer?
8. What two parents are bred in a test cross?
9. Write a Punnett square for a dihybrid cross between a homozygous yellow, rounded seed pea plant seed (YYRR) and a homozygous green, wrinkled pea plant seed (yyrr).

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1. Define the **Law of Independent Assortment** –
2. What kinds of genes does this law apply to?
3. Explain the **multiplication rule** of probability.
4. Explain the **addition rule** of probability.
5. Define **complete dominance –**
6. Define **codominance –**
7. Define **multiple alleles –**
8. Why are blood types an example of both codominance and multiple alleles?
9. Define **incomplete dominance –**
10. Are dominant traits always the most common ones in a population? Give an example?
11. Define **pleiotropy –**
12. Define **epistasis –**
13. Give an example of a qualitative characteristic that cannot be defined numerically.
14. Define **polygenetic inheritance –**
15. How are hydrangea flowers an example of a phenotype dependent on environment?



1. A human pedigree chart for the *Widow’s peak* characteristic is shown to the right. Define what each of the following means:

Capital “W” –

Lower case “w” –

Shaded in shapes –

Non-shaded shapes –

Circles –

Squares -

1. Describe each of the examples of recessively–inherited disorders.
	1. Cystic Fibrosis –
	2. Sickle-cell Anemia –
2. Why does inbreeding increase the likeliness of recessively-inherited disorders?