

**Assignment 6 - Mendelian Genetics**

**Essential Question: How do we predict the traits and genes we inherit?**

**Instructions:** Define the following terms.

1. Gene

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2. Trait

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3. Allele

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4. Homozygous dominant

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5. Homozygous recessive

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6. Heterozygous

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7. Contrast **phenotype** and **genotype** by explaining how they are different.

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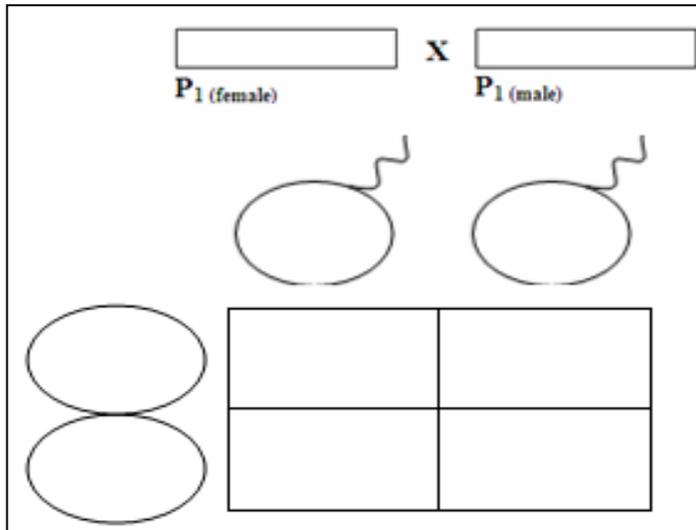
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8. Compare and contrast inheritance principles by explaining how the **Law of Segregation** is different from the **Law of Independent Assortment**.

Define the Law of Segregation.	Define the Law of Independent Assortment
List similarities between the two laws.	
1.	
2.	
List differences between the two laws.	
1.	
2.	

9. Complete the following monohybrid cross using the Punnett square below. A male pea plant with purple flowers (FF) was mated with a female pea plant with white flowers (ff). What is the probability that the offspring will have white flowers?

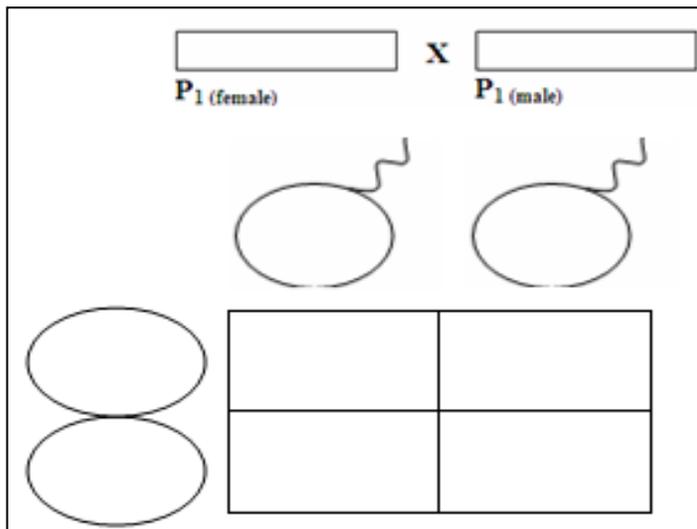
<b>Gene:</b>	Flower color		
<b>Alleles:</b>	Purple flowers, F		
	White flowers, f		
<b>Genotype</b>	<b>Phenotype</b>	<b>Homozygous Dominant, Heterozygous, or Homozygous Recessive</b>	<b>Ratio of Offspring</b>
FF	Purple	Homozygous dominant	_____ %
Ff	Purple		_____ %
ff	white		_____ %



There is a \_\_\_\_\_ percent chance the offspring will have white flowers.

10. Complete the following monohybrid cross using the Punnett square below. A male fish with green scales (Gg) was mated with a female fish with yellow scales (gg). What is the probability that the offspring will have green scales?

<b>Gene:</b>	Scale color
<b>Alleles:</b>	Green scales, G
	Yellow scales, g



There is a \_\_\_\_\_ percent chance the offspring will have green scales.