**Notes for Section 2: Traits and Inheritance**

* Mendel discovered that the ratio of dominant traits to recessive traits were \_\_\_\_\_\_.
* **genes**-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Each parent gives \_\_\_\_\_\_\_ set of genes to the offspring. So, the offspring has \_\_\_\_\_\_\_ forms of the same gene for each characteristic (one from each parent).
* **alleles**-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* dominant alleles are shown with a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ letter, and recessive are shown with a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ letter
* **phenotype**-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

An example is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

* **albinism**-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* **genotype**-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* A plant with two dominant or two recessive alleles (PP or pp) is said to be **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.
* A plant that has a dominant and a recessive allele (Pp) is **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**
* **Punnett square**-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* What happens if you cross a true breeding purple-flowered plant (PP) with a true breeding white-flowered plant (pp)?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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**Mendel’s 2nd Experiment**

* He allowed the 1st generation plants to \_\_\_\_\_\_\_\_\_\_\_-pollinate.
* Why do PP, Pp, & pP have the same phenotype as the purple flowers?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* The only combination that produces white flowers is the \_\_\_\_\_ genotype.
* He found that the ratio of recessive to dominant traits is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**What are the Chances?**

* Each parent has \_\_\_\_\_\_\_\_ alleles for each gene.
* An offspring having \_\_\_\_\_\_\_\_\_allele is equally likely to receive either allele. It is like a coin toss.

\_\_\_\_\_\_\_\_\_\_\_%

**Probability**-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**How to calculate probability ?**

* Multiply the probability of tossing the 1st head by the probability of tossing the 2nd head.
* ½ x ½ = ¼

**Solve this problem:**

1. If you roll a pair of dice, what is the probability that you will roll 2 threes?

**Step 1:** Count the number of faces on a single die. Put this number in the denominator place:\_\_\_\_\_\_

**Step 2:** Count how many ways you can roll a three with one die. Put this number in the numerator

 place: \_\_\_\_\_\_\_\_

**Step 3:** To find the probability that you will throw 2 threes, multiply the probability of throwing the first

 three by the probability of throwing the second three: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Your turn:**

* If you roll a single die, what is the probability that you will roll an even number?\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Genotype Probability**

* In order for a pea plant to have white flowers, it must receive a \_\_\_\_\_ allele from each parent.
* Offspring from a Pp x Pp cross has a \_\_\_\_\_\_% chance of receiving either allele from either parent.
* The probability of inheriting 2 p alleles is:

 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Incomplete Dominance-\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

 **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

* Look at figure 5 on page 66
* Cross-breeding 2 true breeding snapdragons resulted in \_\_\_\_\_\_\_\_\_\_\_\_\_.

**One Gene, Many Traits**

* One gene can influence more than \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ trait.
* Look at Figure 6 on page 66

 The white fur is caused by a single gene, but it also controls more than fur color. It controls eye color

 as well.

* Traits like the color of your eyes, skin, and hair are from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ acting together, so it is difficult to tell if traits are the result of a dominant or recessive gene.
* Different combinations of alleles cause different \_\_\_\_\_\_\_\_\_\_\_\_\_ color shades.

**Importance of Environment**

* Your genes make it possible that you will grow to be a certain height, however, a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is essential to reach your full potential height.