



Chapter 2: Genes come in pairs

As you travel through the “Genes come in pairs” animation, answer the questions that follow.

1. What is a phenotype, and how many did Mendel observe in the pea plants? Describe each one.
2. For each distinct phenotype, how many different versions of that trait were observed in the plants?
3. Why was Mendel sure to use “purebred” strains of pea plants to begin his experiments?
4. Mendel reasoned that each trait is controlled by one “factor” that has two different “versions”. What terms are now given to describe these concepts?
5. For seed color, Mendel started with purebred yellow and purebred green seeded plants. Describe what is meant by purebred.
6. What is a genotype?
7. What was the genotype of the purebred yellow and purebred green seeded plants?



Chapter 3: Genes don't blend

As you travel through the "Genes don't blend" animation, answer the questions that follow.

1. For each trait that Mendel studied, he set up a cross between the two pure-bred plants with opposing traits. What did he expect the resulting offspring would look like for the following crosses:

Puffed x Pinched = _____

Yellow seed x Green seed = _____

Tall x Short = _____

2. What do we call the offspring of two purebred parent plants?

3. Much to his surprise, what were the actual results from the purebred crosses?

Puffed x Pinched = _____

Yellow seed x Green seed = _____

Tall x Short = _____

Side flower x Top flower = _____

Colored coat x White coat = _____

Round x Wrinkled = _____

Green pod x Yellow pod = _____

4. After the experiments falsified his hypothesis, what was Mendel's next task?



Chapter 4: Some genes are dominant

As you travel through the “Some genes are dominant” animation, answer the questions that follow.

1. What did Mendel do to figure out why the hybrids were not a blend of the parent population?
2. What were the results seen in the second generation?
3. After performing many experiments, what did Mendel conclude from the second generation?
4. Fill in the blanks of the following sentence:

Pea color is controlled by one _____, which has a “green” form and a “yellow” form. Each form is called a(n) _____.

5. What is meant by the term homozygous green? Homozygous yellow? What notation was used to represent these plants?
6. What do the offspring of two purebred plants inherit from each parent?
7. What combinations of alleles do plants have that produce yellow seeds? What combinations of alleles do plants have to produce green seeds?



8. The hybrid offspring can also be described as being heterozygous. Explain what this means.

9. What were the 3 possible genotypes in the second generation? Describe their corresponding phenotypes.

10. What was Mendel able to prove about the dominant and recessive versions of genes (factors) that are present within pea plants?