Chapter 4 - Genetics
Lesson 1 - Foundations of Genetics

Commented [1]: Outstanding work!

2. How many traits did Mendel study?

Mendel studied seven different traits of pea plant.
(What were Mendel's experimental methods, 4, p.48)

3.Why was it important that Mendel controlled the fertilization of the pea plants?

Mendel controlled the fertilization so he could then observe how traits passed from one generation to the next.
(What were Mendel's experimental methods, para. 2, 2) (p.48)

4. What is a dominant factor?

A dominant factor is a genetic factor that blocks the presence of another genetic factor.
What are dominant factors, p.49)

5. State Mendel's two laws of heredity.

1. The law of segregation: two factors for each trait segregate, or separate, from each other during meiosis when gametes form.

2. The law of independent assortment: factors for one trait separate independently of how factors for other traits separate, and gametes have all possible combinations of traits.
(Mendel's Laws of Heredity, p.49)

6. What is the difference between a factor and an allele?

A factor or gene is a section of DNA that has information about a specific trait of an organism.

An allele is a form of a gene with different information.
(What are genes and alleles, p.50)

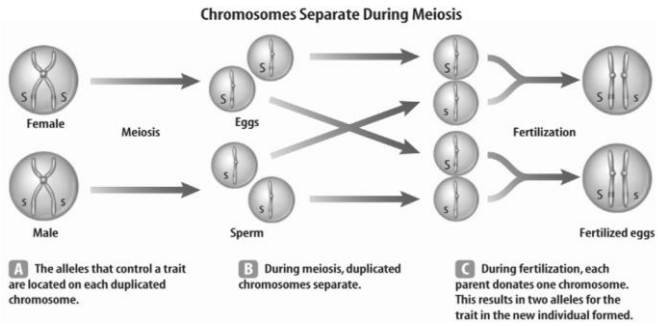
7. How would you describe your own phenotype?

I would describe my own phenotype as 5.6’ tall, brown eyes, brown hair, tan.

8. How are dominant alleles represented in writing?

Dominant alleles are represented by capital letters.
(What are possible genotypes, 2, p.51)

9. How does the genotype of the offspring differ from the parents’ genotypes in this figure?



The offspring's genotype is based on the parents' genotypes because the chromosomes separate. Each parent donates one chromosome.
Female- 2 dominant alleles
Male - 2 recessive alleles
Offsprings - 1 dominant 1 recessive allele

10. Why are Mendel’s studies important?

Mendel’s studies are important because they are able to help current scientists understand the concept of chromosomes or the process of meiosis in our current times and moving forward. (Importance of Mendel’s Genetic Studies, 52)