Genetics

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2. Identify How many traits did Mendel study?
Mendel studied 7 traits.Mendel also recorded the inheritance of traits for several generations. Mendel used a mathematical approach. He bred large numbers of plants and counted the number of each kind of offspring. P.47(Paragraph 2)

Commented [1]: What were the traits?

3. Explain Why was it important that Mendel controlled the fertilization of the pea plants?
Mendel controlled the fertilization in the pea plants. He could then observe how traits passed from one generation to the next.A flower contains male reproductive organs called stamens. A female reproductive organ is called a pistil. The flowers of pea plants have both stamens and pistils. Mendel allowed some of the plants to self-fertilize as they do in nature. P.48(paragraph 48)

4. Define What is a dominant factor?
A genetic factor that blocks the presence of another genetic factor is called dominant. If just one dominant factor exists in offspring, the dominant trait, such as purple flower color in pea plants, is observed. P.49(paragraph 2)

5. State Mendel's two laws of heredity.
There are two laws of heredity: the law of segregation and the law of independent assortment. According to the law of segregation, the two factors for each trait segregate, or separate, from each other during meiosis when gametes form. p.49(paragraph 4)

Commented [2]: You explained the law of segregation, but not the law of independent assortment. Please explain the concept.

6. Explain What is the difference between a factor and an allele?
Each form of a gene with different information is called an allele. Mendel called these factors instead ~~of~~ alleles. Scientists now know that the alleles of a gene are at the same locations on a pair of homologous chromosomes.P 50(paragraph 2)

Commented [3]: This answer does not address the question (i.e. difference between a factor and an allele). Elaborate on your response.

7. Apply How would you describe your own phenotype?
I have brown eyes. And I also have brown hair.

8. State How are dominant alleles represented in writing?
The possible genotypes for the smooth pea phenotype are SS and Ss. Uppercase letters represent dominant alleles, and lowercase letters represent recessive alleles. Both of these genotypes result in a smooth phenotype because the S allele is dominant over the s allele. The wrinkled phenotype is possible only if the two recessive alleles—ss—are present. P.51(paragraph 1)

10.Explain Why are Mendel's studies Important?
Mendel's findings were not studied by scientists for many years. In the mid-1800s, no one understood the concept of chromosomes or the process of meiosis. In the 1900s, scientists rediscovered Mendel's work. Now, all research involving modern genetics is based on Mendel's work with pea plants. P.52(paragraph 1)

Commented [4]: Here's some more information on mendel's Genetics:

https://youtu.be/NWqgZUnJdAY

Also, make sure that you have a full understanding on the Punnett Squares. You may have at least one to perform on the test. Let me know if you have any questions. You can also discuss this with the tutor.

https://youtu.be/Y1PCwxUDTl8

lesson ●2 Understanding Inheritance

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3. Explain Why do a large number of offspring have to be counted in order to get accurate results?
When studying genetics, you have to count a large number of offspring in order to get accurate results. Mendel determined this fact during his experiments. The more individuals that are counted, the closer the actual numbers will be to the predictions. P54(paragraph 1)

4. Summarize What results when a dominant allele is present in a pea plant?
The presence of one dominant allele results in a dominant phenotype in a pea plant.
Not all allele pairs, however, have a dominant-recessive Interaction. P 55(paragraph 2)

5. Identify Which blood type is characterized by codominance?
Another type of interaction between two alleles is the human blood type AB. When both alleles can be observed in a phenotype, this type of interaction is called codominance.
If you inherited the B allele from one parent and an A allele from the other parent, you will have type AB blood. P. 55 (paragraph 4)

Commented [5]: Here's more information on blood types. You'll need to have a thorough understanding of this concept for the test. Feel free to reach out to me if you have any questions or discuss the concept more with the tutor.

https://youtu.be/KXTF7WehgM8

6. State What type of chromosomes determine a person's sex or gender?
Sperm and egg cells,
however, have only one chromosome from each chromosome pair. Most homologous chromosome pairs are of equal size. There is one exception—the long X and short Y pair. Chromosomes X and Y are the sex chromosomes because they contain the genes that determine a person's gender or sex.P.56(paragraph1)

7. Explain Why can only females pass on maternal inherited traits?
Humans inherit mitochondrial genes only from their mothers. This means the inheritance of traits related to mitochondria can be traced from a grandmother to her children and her grandchildren.Maternally inherited traits can be passed to male offspring,
but only female offspring can pass the gene on.P56(paragraph3)

8. Explain How does a mutation affect an organism?
An organism with a mutation cannot function as it should.P57(paragraph1)

9. Highlight the genetic disorder that affects the blood.
Hemophilia X-linked recessive;excessive bleeding due to blood clotting problems (the chart) P. 57

10. Predict How will lack of nutritious food affect a person's phenotype?
A lack of nutritious diet can affect a person's bones, hair, and skin.