

Chapter Review

Genetics

Part A. Vocabulary Review

Directions: Circle the choice in the parentheses that correctly completes each sentence below.

1. Mendel's law of (segregation/independent assortment) states that the two factors for each trait separate from each other during meiosis when gametes are formed.
2. Each unique form of a (chromatid/gene) that carries different information is called an allele.
3. A section of DNA that has information about a specific trait of an organism is called a(n) (allele/gene).
4. All observable traits of an organism make up the organism's (genotype/phenotype).
5. (Polygenic/Multiple) inheritance is when multiple genes determine the phenotype of a trait.
6. If a eukaryotic organism has two alleles of a gene with the same information, its genotype is called (homozygous/heterozygous).
7. A genetic factor that blocks the expression of another genetic factor is a (dominant/recessive) factor.
8. The combination of specific alleles that makes up an organism is that organism's (genotype/phenotype).
9. A (pedigree/Punnett square) shows the genetic traits that were inherited by members of a family tree.
10. Genes that have more than two possible alleles are said to have (multiple/codominant) alleles.
11. (Genetics/Heredity) is the study of how traits of organisms are passed from parents to offspring.
12. Alleles show (blended/incomplete) dominance when they produce a phenotype that is a blended form of the parents' phenotypes.

Part B. Concept Review

Directions: Respond to each statement using complete sentences.

1. State Mendel's two laws of inheritance.

Chapter Review CONTINUED

2. Give an example of a trait inherited by multiple alleles.

3. Give an example of polygenic inheritance.

4. Describe a genetic disorder.

5. Deduce how two parents with blood types A and B could have a child with blood type O.

6. Determine the genotypes of the parents in question 5 above.

7. Complete the Punnett square below using the information provided about the parental genotypes for hair. Write the parental genotypes in the correct places and determine the possible genotypes of the offspring

Dominant gene: curly hair (H)
 Recessive gene: straight hair (h)
 Parents' genotypes: Hh x hh

8. Predict the genotypes and phenotypes of the offspring.
