

Lesson Outline**LESSON 2*****Understanding Inheritance*****A. What controls traits?**

1. Inside each cell is a nucleus that contains threadlike structures called _____.
2. Mendel's factors are parts of chromosomes, and each cell in the offspring contains chromosomes from both _____.
3. A(n) _____ is a section on a chromosome that has genetic information for one trait.
4. The different forms of a gene are called _____.
5. Geneticists refer to how a trait appears, or is expressed, as the trait's _____.
6. The two alleles that control the phenotype of a trait are called the trait's _____.
 - a. In genetics, _____ letters represent dominant alleles, and _____ letters represent recessive alleles.
 - b. When two alleles of a gene are the same, its genotype is _____.
 - c. If two alleles of a gene are different, its genotype is _____.

B. Modeling Inheritance

1. In a situation based on chance, such as flipping a coin, the chance of getting a certain outcome can be represented by a(n) _____ such as 50:50, or 1:1.
2. A(n) _____ is a model that is used to predict possible genotypes and phenotypes of offspring.
 - a. To create a Punnett square, you need to know the _____ of both parents.
 - b. If you count large numbers of _____ from a particular cross, the overall ratio will be close to the ratio predicted by a Punnett square.
3. A(n) _____ is a diagram that shows phenotypes of genetically related family members. It also gives clues about their _____.

Lesson Outline continued

C. Complex Patterns of Inheritance

1. Alleles show _____ when the offspring's phenotype is a blend of the parents' phenotypes.
2. Alleles show _____ when both alleles can be observed in a phenotype.
3. Unlike the genes in Mendel's pea plants, some genes have _____ alleles.
4. ABO _____ type is a trait that is determined by multiple alleles.
5. _____ occurs when multiple genes determine the phenotype of a trait.
6. Human eye _____ is an example of polygenic inheritance.

D. Genes and the Environment

1. _____ are not the only factors that can affect phenotypes. An organism's _____ can also affect its phenotype.
2. The flower color of one type of hydrangea is determined by the _____ in which the hydrangea grows.
3. _____ choices can affect a person's phenotype.