Chapter 9 Study Guide

# Important Ideas

* The characteristics of an organism indicate various methods of inheritance. (Chapter 9)
* New technologies can provide insight into an offspring’s genetic makeup (Modules 9.10)

Learning Objectives

Upon successful completion of **Chapter 9** you will be able to

1. Describe five hypotheses Mendel developed as a result of his breeding experiments. (See Modules 9.3 and 9.5.)
2. Define and recognize examples of the following terms: character, trait, true-breeding, hybrid, P generation, F1 generation, F2 generation, alleles, heterozygote (-ous), homozygote (-ous), dominant allele, recessive allele, law of segregation, Punnett Square, phenotype, phenotypic ratio, genotype, genotypic ratio, gene locus, monohybrid cross, dihybrid cross, law of independent assortment, testcross, linked genes.
3. Describe the purpose of a testcross and suggest an appropriate genotype and phenotype for performing a testcross given appropriate information.
4. Solve genetics problems (*i.e.,* determine offspring phenotypic and/or genotypic ratios, mode of inheritance, parental genotypes and/or phenotypes) involving genes exhibiting complete dominance, incomplete dominance, multiple alleles, sex-linkage, and co-dominance. Recognize examples indicating pleiotropy or polygenic inheritance.