

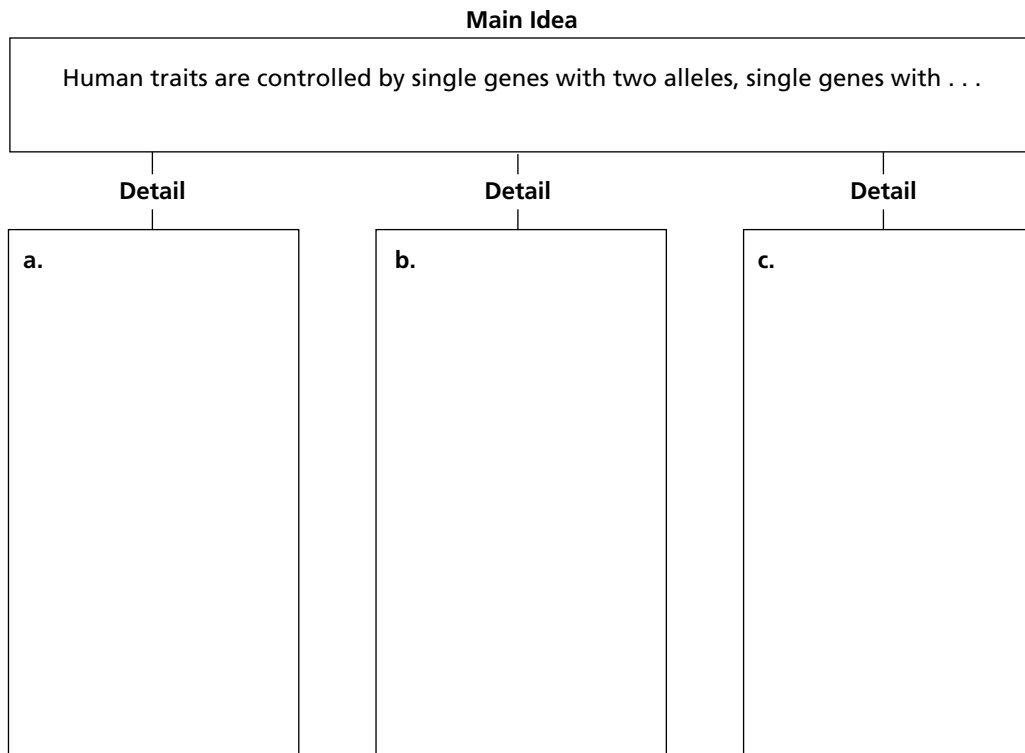
Modern Genetics ▪ *Guided Reading and Study*

Human Inheritance

This section explains some patterns of inheritance in humans. It also describes the functions of the sex chromosomes and the relationship between genes and the environment.

Use Target Reading Skills

As you read, write the main idea—the biggest or most important idea—in the graphic organizer below. Then write three supporting details that further explain the main idea.



Patterns of Human Inheritance

1. The probability that two heterozygous parents for widow's peak will have a child with a straight hairline is _____ percent.

Modern Genetics ▪ *Guided Reading and Study*

Human Inheritance *(continued)*

2. A gene with three or more alleles for a single trait has _____.
3. Is the following sentence true or false? Even though a gene has multiple alleles, a person can carry only two of those alleles. _____
4. Complete the table by writing all possible combinations of alleles for each blood type.

Blood Types	
Blood Type	Combination of Alleles
A	
B	
AB	
O	

5. Why do some human traits, such as height and skin color, show a large number of phenotypes?

6. Is the following sentence true or false? Skin color is controlled by more than one gene. _____

Modern Genetics ▪ *Guided Reading and Study*

The Sex Chromosomes

7. Is the following sentence true or false? Genes on chromosomes determine whether a baby is a boy or a girl. _____
8. Females have two _____ chromosomes. Males have one _____ chromosome and one _____ chromosome.
9. Circle the letter of each sentence that is true about the sex chromosomes.
 - a. All eggs have one X chromosome.
 - b. Half of a male's sperm cells have an X chromosome.
 - c. None of a male's sperm cells have a Y chromosome.
 - d. The egg determines the sex of the child.
10. Genes on the X and Y chromosomes are called _____.
11. Why are males more likely than females to have a sex-linked trait that is recessive?

12. Is the following question true or false? A carrier for colorblindness is colorblind. _____
13. Why is a son who receives the allele for colorblindness from his mother always colorblind?

The Effect of Environment

14. The effects of genes are often altered by the _____.
15. List one environmental factor that can affect a person's height.
