

What Are Chromosomes and Genes?

Worksheet

A chromosome is a package of DNA wrapped around proteins; a gene is a segment of DNA on a chromosome that codes for a specific trait. Together, they form the basis of heredity.

Questions

1. A gene codes for
 - A) a protein
 - B) a chromosome
 - C) a cell
 - D) the entire organism
2. Chromosomes are made of
 - A) protein only
 - B) DNA and histone proteins
 - C) RNA and lipids
 - D) glucose
3. How many chromosomes come from your mother?
 - A) 23
 - B) 46
 - C) 0
 - D) varies
4. Which is smaller - chromosome or gene?
 - A) chromosome
 - B) gene
 - C) same size
 - D) cannot compare
5. A human has 46 chromosomes. How many are inherited from each parent?
6. What does the gene for eye color code?
7. How many genes are on a human chromosome?
8. Define: What is a chromosome?
9. Define: What is a gene?
10. Define: How many chromosomes do humans have?

Answer Key

1. A) a protein - A gene is a DNA segment coding for one specific protein.
2. B) DNA and histone proteins - DNA wraps around histone proteins to form chromosomes.
3. A) 23 - Egg carries 23; sperm carries 23. Total: 46.
4. B) gene - A gene is a segment of a chromosome - much smaller.
5. Humans inherit 23 from mother (egg) and 23 from father (sperm). Total: 46 chromosomes (23 pairs).
6. It codes for a protein that produces eye pigment. Different alleles produce brown, blue, or green eyes.
7. Chromosome 1 has ~2,000 genes. Smaller chromosomes have fewer (e.g., chromosome 21 has ~300 genes). Total: ~20,000-25,000 genes in the human genome.
8. A structure of coiled DNA and proteins that carries genetic information.
9. A segment of DNA on a chromosome that codes for a specific protein or trait.
10. 46 (23 pairs): 22 pairs of autosomes + 1 pair of sex chromosomes).

Bounlu

All cards, step-by-step solutions and an AI tutor are in the Notek app.
Promy turns exam dates into automatic reminders.