

Bill Nye – Genes

Date Solin

1. What does DNA stand for? dioxyribonucleic acid
2. How long is a DNA molecule? ~2-3m
3. Thousands of genes join together to make a DNA.
4. Genes are the set of chemical instructions that are passed on from parent to child.
5. Where are genes stored? chromosomes / nucleus
6. Humans have 23 pairs of chromosomes for a total of 46 chromosomes.
7. Humans have approximately 80000 genes.
8. Human genes can combine in approximately 70 trillion different combinations.
9. What are the four chemicals that make up the DNA sequence of all living things?
adenine, thymine, cytosine, guanine
10. Changes in DNA instructions are called mutations.

Practice Questions:

- A 11. In DNA, the set of instructions that code for a protein is a
 A. gene C. nucleic acid
 B. chromosome D. nucleotide
- T 12. The chemical backbone of a DNA strand is made up of alternating phosphate groups and ribose sugar.
 A. True B. False
- B 13. How are the two strands of the DNA double helix held together?
 A. covalent bonds C. ionic bonds
 B. hydrogen bonds D. DNA bonds
- D 14. Which of the following nucleotide pairings is correct for a DNA strand?
 A. cytosine – thymine C. thymine – guanine
 B. adenine – guanine D. guanine – cytosine
- B 15. If a DNA strand is composed of 40% adenine, it would be expected to also have
 A. 60% cytosine C. 60% thymine
 B. 40% thymine D. 40% guanine
- C 16. What is the complimentary base sequence for AATCGGTA?
 A. CCGTAAGC C. TTAGCCAT
 B. GGCTAACG D. TTACGGAT

A-T
C-G

TTAGCCAT