**Bill Nye – Genes** Date

1. What does DNA stand for? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
2. How long is a DNA molecule? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Thousands of genes join together to make a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
4. Genes are the set of chemical \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that are passed on from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
5. Where are genes stored? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
6. Humans have \_\_\_\_\_\_\_ pairs of chromosomes for a total of \_\_\_\_\_\_\_\_ chromosomes.
7. Humans have approximately \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ genes.
8. Human genes can combine in approximately \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ different combinations.
9. What are the four chemicals that make up the DNA sequence of all living things?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

1. Changes in DNA instructions are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Practice Questions:

\_\_\_\_\_ 11. In DNA, the set of instructions that code for a protein is a

 A. gene C. nucleic acid

B. chromosome D. nucleotide

\_\_\_\_\_ 12. The chemical backbone of a DNA strand is made up of alternating phosphate groups and ribose sugar.

 A. True

 B. False

\_\_\_\_\_ 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

\_\_\_\_\_ 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

\_\_\_\_\_ 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

\_\_\_\_\_ 16. What is the complimentary base sequence for AATCGGTA?

 A. CCGTAAGC C. TTAGCCAT

 B. GGCTAACG D. TTACGGAT