

DNA and Genes

California State Science Standards: Genetics 4a - 4e

Please write answers to the following questions on a separate sheet of paper!!!

1. Why is it important to learn about DNA? What three parts make up DNA? (280-281)
2. Draw and label figure 11.1. (282)
3. What is a nitrogen base? What are the four types of nitrogen bases? What is the general shape of a DNA molecule called? (283)
4. What is the origin and meaning of the word, helix? How can organisms be so different from one another if their genetic material is made of the same 4 nucleotides? (283-284)
5. How do the nucleotides in DNA pair? Explain why the structure of a DNA molecule is often described as a zipper? How can knowing the nucleotide sequences be useful for scientists? (284-285)
6. Draw and label figure 11.3. (284)
7. What is DNA replication? How can you predict the order of nitrogen bases on a complementary DNA strand? (284)
8. The sequence of nitrogen bases on one strand of DNA molecule is GGCAGTTCATGC. What would be the sequence on the complementary strand? (285)
9. Sequence the steps that occur during DNA replication. (286-287)
10. Answer questions 1 – 4 from "Understanding Main Ideas" (287)
11. Label the diagram. Use these choices: nucleotide, deoxyribose, phosphate group, nitrogen base, hydrogen bonds, and base pair.

