



Topic: DNA Structure Worksheet

Summary: Students answer questions about DNA's structure; genetic code is the nitrogen base sequence, complementary base pairing, and DNA replication.

Goals & Objectives: Students will be able to identify the structure of DNA and how it is replicated.

NGSS Standards: *HS-LS3-1.* Ask questions to clarify relationships about the role of DNA and chromosomes in coding the instructions for characteristic traits passed from parents to offspring.

Time Length: 20 minutes

Materials:

Class notes or textbook or online textbook

- <https://flexbooks.ck12.org/cbook/ck-12-biology-flexbook-2.0/section/4.3/primary/lesson/dna-structure-and-replication-bio/>

Procedures:

1. Tell the students which section they are to use in the textbook. Students are then going to read the section and answer the questions on the worksheet.

Accommodations: Students with an IEP can take the handout home if they need extra time or modify the number of questions to 1, 2, 3, 4, 8, 10, 11, 15, 17, 20, 23, 24.

Editable DOCX File and Answer Key:

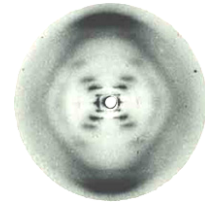
Available at www.ngsslifescience.com

DNA Structure Worksheet

DNA Structure

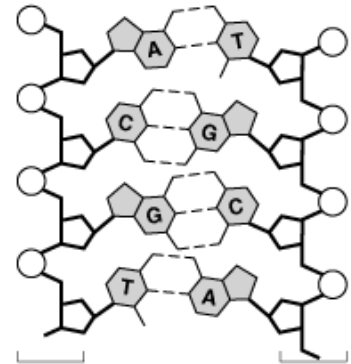
1. What does DNA stand for? _____
2. What are the two main functions of DNA?
 - a. _____
 - b. _____
3. Monomer of nucleic acid? _____ Polymers? _____
4. Roseland Frankland's x-ray diffraction image was used by Watson and Crick to discover? _____
5. What are the three parts of a nucleotide? _____

6. The backbone of the double helix has alternating _____ and _____.



7. Draw lines linking the following terms to their location on the DNA diagram on the right.

Phosphate
 Deoxyribose sugar
 Hydrogen bond
 Nitrogen base



DNA Base Pairing

8. Write in the complimentary base pair names
 - a. G _____ pairs with _____
 - b. T _____ pairs with _____
9. What bond holds complimentary bases of DNA together? _____
10. In a DNA molecule, the number of cytosines equals the number of _____.
11. In a DNA molecule, the number of adenines equals the number of _____.

DNA and Genes

12. What part of a nucleotide contains the genetic code? _____
13. The sequence of nitrogen bases is _____ for almost all organisms.

DNA Replication

14. What is the purpose of DNA replication? _____

15. How many strands does DNA have? _____
16. What is the name of the shape of DNA on the right? _____
17. After the result of DNA replication, one strand is new and one strand is old, this is called _____ replication.

