

Modeling DNA Structure

Name: _____ **Date:** _____

LEARNING OBJECTIVE

Student will be able to construct a physical model of the DNA double helix and identify its basic components.

MATERIALS NEEDED

- Two long strips of paper or two pipe cleaners (for the backbone)
- colored candy, beads, or paper squares in 4 colors (to represent base pairs A, T, C, G)
- tape or glue
- scissors
- pencil

HANDS-ON ACTIVITY

1. Cut 2 long strips of paper (about 12 inches) to represent the two sugar-phosphate backbones of the DNA molecule.
2. Choose 4 colors/items to represent the 4 bases: Adenine (A), Thymine (T), Cytosine (C), and Guanine (G).
3. Attach at least 10 base pairs between your two backbone strips, making sure A always pairs with T, and C always pairs with G (this is called complementary base pairing).
4. Gently twist your model (or draw twist marks) to represent the double helix shape.
5. Label 3 parts of your model: backbone, base pair, and one full 'rung' of the DNA ladder.

QUESTIONS

1. **What are the 4 bases found in DNA, and which two always pair together?**

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2. **Why is DNA described as having a 'double helix' shape?**

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3. **If one side of a DNA strand reads A-T-C-G-A, what would the complementary (matching) side read?**
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4. Why is it important that base pairing rules (A-T, C-G) are so consistent in every organism's DNA?
