

Name: _____

Date: _____

Student Exploration: Building DNA **Answer Key**

Vocabulary: double helix, DNA, enzyme, mutation, nitrogenous base, nucleoside, nucleotide, replication

Prior Knowledge Questions (Do these **BEFORE** using the Gizmo.)

DNA is an incredible molecule that forms the basis of life on Earth. DNA molecules contain instructions for building every living organism on Earth, from the tiniest bacterium to a massive blue whale. DNA also has the ability to **replicate**, or make copies of itself. This allows living things to grow and reproduce.

1. Look at the DNA molecule shown at right. What does it look like?

Twisted ladder or spiral or double helix.

This shape is called a **double helix**.

2. Based on this picture, how do you think a DNA molecule makes a copy of itself? (Hint: Look at the bottom two "rungs" of the ladder.)

Bases at the bottom split apart which eventually divides the DNA molecule into two strands. Each strand is a template for the formation of a new strand.



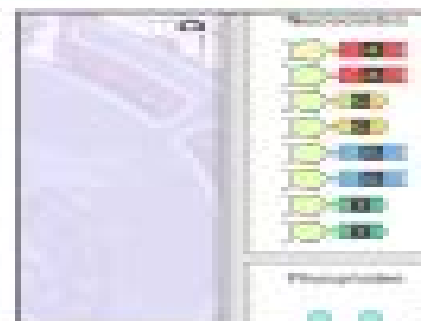
Gizmo Warm-up

The **Building DNA Gizmo™** allows you to construct a DNA molecule and go through the process of DNA replication. Examine the components that make up a DNA molecule.

1. What are the two DNA components shown in the Gizmo?

Nucleosides and phosphates.

2. A **nucleoside** has two parts: a pentagonal sugar (deoxyribose) and a **nitrogenous base** (in color). When a nucleoside is joined to a phosphate, it is called a **nucleotide**.



How many different nitrogenous bases do you see? **Four (A, C, G, and T)**

Note: The names of these nitrogenous bases are adenine (red), cytosine (yellow), guanine (blue), and thymine (green).



Explore Learning Gizmo Answer Key

H Kauffman



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