

LAB: Building DNA

Directions: Follow the instructions to go through the simulation. Respond to the questions and prompts in the orange boxes.

Vocabulary: double helix, DNA, DNA helicase, DNA polymerase, enzyme, mutation, nitrogenous base, 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 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?

it looks like a spiral and or a twisted later

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.)

it splits into 2 stranded and then the missing pieces get filled in with the corresponding nucleoside



Gizmo Warm-up

The *Building DNA* Gizmo allows you to construct a DNA molecule and go through the process of DNA replication.

1. Look on the right side of the Gizmo. What components make up a DNA molecule?

nucleoside and phosphate



2. A **nucleotide** consists of three parts: a phosphate group (blue circle), a sugar called deoxyribose (tan pentagon), and a **nitrogenous base** (shown in color).

How many different nitrogenous bases do you see?

four

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

Manipulating Dna Answer Key

RM Cervero



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