Name:

Megh

Date:

3/17-3/18

Student Exploration: 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, 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?

A double helix strand, and a spiral staircase. This shape is called a double helix.

This shape is called a double helix

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.)

The DNA strands separated the enzyme called DNA polymerase which copies each strand using the base-pairing rule.



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

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

Nativ

How many different nitrogenous bases do you see?

Four different nitrogenous bases

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