Name:

Date:

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.

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

Its a ladder or spiral

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.)

It splits into 2 strands and then the missing pieces get filled in the with the corresponding Nucleside.



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 Phosphate

 A nucleoside has two parts: a 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

Prospitation G

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

Building Dna Gizmo Exploration Guide Answers

SJ Ball

Building Dna Gizmo Exploration Guide Answers:

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