

Name: Jennifer Vega Date: 4/13/2020

Student Exploration: Genetic Engineering

Vocabulary: callus, exon, genetic engineering, genetically modified organism, genome, green fluorescent protein (GFP), herbicide, insecticide, intron, promoter, transcription, transformation

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

- What are some things that can damage a farmer's crops? Things that could damage. farmer's crops could be the temperature, chemicals, and weather.
- What can farmers do to protect their crops? <u>Place them in a greenhouse or a controlled</u> space.

Gizmo Warm-up

Many farmers use chemical **herbicides** to kill weeds and **insecticides** to kill insects. Using **genetic engineering**, scientists have developed ways to resist harmful crop pests. In the Genetic Engineering Gizmo, you will use genetic engineering techniques to create **genetically modified** corn.



Check that **Task 1** is selected. The Gizmo shows petri dishes that contain different strains of bacteria (white dots) and caterpillars (Lepidoptera sp. larvae). In the first challenge, your goal is to find bacteria that produce toxins that kill the caterpillars. Click **Play** ().

- What do you observe? In four petri dishes, caterpillars died. In two of them, all four caterpillars died.
- Which strains of bacteria were able to kill Lepidoptera sp. larvae? Genome of Bacterial

strain #4, #5, #8, #10.

Were some more effective than others? Explain. Yes, #4 and #8 were the most effective because they were able to kill all of the caterpillars in the petri dish, while the other two didn't kill all of them.

Some bacteria are able to produce a toxin that kills Lepidoptera sp. larvae. Find out which gene is responsible for this toxin in the next step.



Genetic Engineering Packet Answer Key

Lingsheng Yao

Genetic Engineering Packet Answer Key:

Genetic Engineering Packet Answer Key Book Review: Unveiling the Magic of Language

In an electronic digital era where connections and knowledge reign supreme, the enchanting power of language has be apparent than ever. Its power to stir emotions, provoke thought, and instigate transformation is truly remarkable. This extraordinary book, aptly titled "**Genetic Engineering Packet Answer Key**," published by a very acclaimed author, immerses readers in a captivating exploration of the significance of language and its profound impact on our existence. Throughout this critique, we will delve to the book is central themes, evaluate its unique writing style, and assess its overall influence on its readership.

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