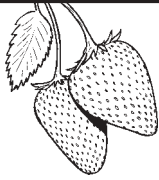


Design Yer Genes

Name _____

Part 3



Problem

How do real geneticists change or “engineer” the DNA of a strawberry?

Introduction

In real recombinant genetics technology, the scientists cannot yet easily remove one unwanted gene and stick in another, as you did in your last activity. However, they are able to add genes to a DNA molecule. Your teacher will provide more information on this. Using the materials provided, find out what kind of strawberry you can produce.

Materials

- Colored pencils or markers
- DNA models (*from Part 2*)
- *Design Yer Genes — Part 3* lab sheets
- Glue or tape
- *Part 3 Gene Cut-out sheets*
- Scissors

Procedure

1. Review the three genes (and the traits they control) on your strawberry DNA model from Part 2.
 2. Observe the four new gene cut-out sheets and choose *one* that you will attempt to insert into your DNA model.
 3. Color (using the same colors as in Parts 1 and 2) and cut out the chosen gene.
 4. Tape or glue your new gene onto:
 - Either end of your model, or
 - Into the middle of your model without destroying one of the other genes.
-

Design Yer Genes

Name _____

(Part 3 continued)

Remember: In real DNA, the genes “fit” themselves onto the chromosome wherever they can. Scientists cannot control where they attach.

5. Find out what trait your new DNA model produces in your strawberry. Your teacher will help you with this.

Questions

Answer the questions on your own paper. Title your answers “Design Yer Genes — Part 3.”

1. What were the four base pairs in the gene you added to your model?
 2. What trait does this new gene control?
 3. Do you believe this new trait will help or hurt the strawberry species? Explain your answer.
 4. In one to three well written paragraphs, explain what you have learned about all of the following:
 - The DNA molecule
 - Mutations
 - Genetic engineering
 - How agriculture and/or consumers are affected by genetic engineering
 - Any other information you found interesting
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