Name: _____ Group: _____ Date: _____

STUDENT BOOK:	**Chapter 8, pp. 236–251**
CONCEPTS:	GENETIC TRANSFORMATION CELL CULTURES
METHOD:	EXPERIMENTAL

ENHANCED FOODS

Scientists use many processes to modify plant genes in order to obtain plants possessing beneficial new traits for agriculture or food. Imagine an enhanced fruit or vegetable. What would it look like? What colour would it be? What texture? What growth characteristics? In this activity, picture yourself as a scientist using biotechnology to invent a new way to enhance a fruit or vegetable.

IDENTIFYING THE PROBLEM

Read pp. 236–251 in your student book for help in answering the following questions.

1. What is biotechnology?

2. In your opinion, how can biotechnologies improve a plant, fruit or vegetable?

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3. Are traditional biotechnologies or modern biotechnologies used for rapid transformation of a fruit or vegetable?

_____

4. What process is used for rapid transformation of a fruit or vegetable?

_____

5. What names are used for organisms modified by genetic transformation?

_____

_____

6. Let's suppose that you are given the opportunity and funding to develop a GMO. What food would you like to transform and how would you want to do this?

_____

_____

_____

_____

_____

FORMULATING A HYPOTHESIS

7. Complete the following sentence to formulate an acceptable hypothesis for the experiment you would conduct to enhance the food you chose.

I believe that _____

_____

because _____

_____

_____

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ESTABLISHING AN EXPERIMENTAL PROTOCOL

8. Name six steps in a genetic transformation and explain what you would do in each step to modify the food you chose.

Step 1: _____

What you would do: _____

Step 2: _____

What you would do: _____

Step 3: _____

What you would do: _____

Step 4: _____

What you would do: _____

Step 5: _____

What you would do: _____

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Step 6: _____

_____

What you would do: _____

_____

_____

ANALYZING THE DATA

9. Name two advantages of genetically transforming the food you chose.

_____

_____

_____

_____

_____

10. Name a possible concern about genetic transformation of the food you chose.

_____

_____

_____

_____

_____

11. How do you plan using the food you chose once it has been genetically modified?

_____

_____

_____

_____

_____

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12. Do you think your project stands a chance of succeeding? Why?

13. Do you think you could do the same kind of experiment with an animal? Why?

REFLECTING ON YOUR APPROACH

14. How could you improve your experimental protocol?