Integrated Learning Assessment (ILA)

HIGH SCHOOL BIOLOGY

ASSESSMENT PART 3A

GENETICS

Student ID	
Teacher ID	

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ASSESSMENT OVERVIEW

THIS IS AN ASSESSMENT OF YOUR WRITING IN BIOLOGY AS WELL AS THE BIOLOGY CONTENT YOU HAVE LEARNED. FOR THIS WRITING TASK YOU WILL WRITE AN ESSAY USING INFORMATION FROM THE SECTIONS YOU READ IN ASSESSMENT PART 2 AND FROM YOUR STUDIES IN BIOLOGY. YOU WILL NEED THE TEXTS FROM ASSESSMENT PART 2 FROM YOUR TEACHER SO THAT YOU CAN REFER TO THE TEXT SECTIONS WHILE WORKING ON YOUR ESSAY.

WRITING TASK DIRECTIONS

Imagine that you are a biologist. A potato farmer has come to you for advice on how to protect her crop from being destroyed by the Colorado potato beetle. The farmer has just read a part of the text on biotechnology (from Assessment Part 2) and wants to modify her potatoes to include a gene that will make them resistant to the beetle using genetic engineering (recombinant DNA biotechnology). The gene for *crown gall disease* is found in an organism called *agrobacterium*. When expressed in potato plants, the gene is harmless to the plants, but deadly to beetles that eat the potatoes. The farmer wants to know:

- *How do the potatoes become resistant to the beetle as a result of the recombinant DNA process?*
- *What are some of the concerns about the safety of the process?*
- *Based on what you have read, would you recommend traditional cross-breeding (using a beetle resistant species of potato) or genetic engineering (using agrobacterium) to solve the problem and why?*

Your task is to write a **science-based essay** to answer these questions that:

1. incorporates information from **at least two of the document sections**;
2. includes **relevant knowledge that you have learned from biology class**; and
3. uses your own words, whenever possible

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