Lesson Plan

Future Food

Book: *All About Lab-Grown Meat*
Series: Cutting-Edge Technology
Level: Navigator

Objective

To help students practice recalling and discussing key details from a video about lab-grown meat.

Supplies

- *All About Lab-Grown Meat* book
- Access to the "What Is Lab-Grown Meat?" web page from the GCF Global website: https://edu.gcfglobal.org/en/thenow/what-is-labgrown-meat/1/

Before the Activity

Read the *All About Lab-Grown Meat* book, or assign it to students to read on their own. Pull up the "What Is Lab-Grown Meat?" web page and scroll down to the "Meat of the Future" video.

Activity

Play the "Meat of the Future" video for the class, stopping at the 2:28 mark to avoid ads for other videos. Then ask students the following questions to review the video's key ideas:

- What is currently the most successful way to produce lab-grown meat? (Answer: harvesting stem cells from cows)
- What are stem cells? (Answer: They are "the building blocks of essentially everything, from muscles to organs.")
- When scientists collect tissue from animals, what types of cells does it contain? (Answer: muscle and fat cells)
- What do scientists do with these cells? (Answer: They separate the two types of cells so they can use just the muscle cells, which they dissect and culture.)
- What is cell culturing? (Answer: "where a cell is moved from a plant or animal and then put into a favorable artificial environment . . . that supplies essential nutrients, like amino acids and carbohydrates, to grow")
- How many muscle cells can grow from just one muscle stem cell? (Answer: up to one trillion muscle cells)
- What shapes do the muscle cells take as they grow? (Answer: The cells join together to form tiny tubes, which are put in a ring of gel. There, the cells grow into a small strand of muscle tissue. These strands are layered to form a burger shape.)

- How many muscle tissue strands can grow from just one muscle cell? (Answer: one trillion muscle tissue strands)
- How are lab-grown burgers different from regular burgers? (Answer: They are "paler in color and blander in taste.")

Next, have students turn to a partner and discuss the following question, using specific details from the book and the video to support their opinions:

- Do you think lab-grown meat will become more common than regular meat in the future? Why or why not?

Evaluation

Could students answer the questions about key details from the video? Could they present and support an opinion when talking with their partners?

Standards

This lesson may be used to address the Common Core State Standards' speaking and listening standards, grade 5 (SL 5.1, 5.2), and the National Science Education Standards' Content Standard F, grades 5–8.