



# ALTERNATIVE PROTEINS

## For a More Sustainable Diet

Lesson Plan  
Grade 11-12



## About This Lesson Plan

Curriculum connections designed in March 2021.

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# LESSON PLAN: ALTERNATIVE PROTEINS

## ABOUT THIS LESSON

Food systems are complex, involving actors from all levels of government and industry, and it can feel overwhelming to try to make a difference as an individual. Both the Food and Agriculture Organization of the United Nations and Food Secure Canada recommend education around healthy and sustainable diets as an effective method to improve our food system. A better understanding of where our food comes from and how it is produced can help us make dietary decisions that are better for our health, and for the health of our environment.

In this lesson, students will:

- learn about the environmental impact of producing different types of protein;
- investigate negative perceptions of alternative proteins in Western society; and
- develop science communication skills to combat these negative perceptions.

## CURRICULUM EXPECTATIONS

### **World Geography: Urban Patterns and Population Issues, Grade 12 (CGU4M)**

*Students will:*

- C1. analyse impacts of human activity and human settlements on the environment, and assess the effectiveness of solutions to these impacts
- C2. assess ways in which stewardship practices can contribute to the sustainability of human settlements

### **World Issues: A Geographic Analysis, Grade 12 (CGU4C)**

- C1. analyse the role of individuals, the local community, and governments in achieving sustainability, and assess opportunities for personal stewardship and involvement in sustainability initiatives



## The Environment and Resource Management, Grade 12 (CGR4M)

*Students will:*

- D1. analyse challenges involved in reducing pollution from human activities, and assess the effectiveness of various methods of pollution reduction
- E1. assess a variety of strategies for resolving environmental and natural resource management issues, locally, nationally, and/or globally
- E2. assess impacts of community land use and infrastructure on humans and the natural environment, and assess ways of reducing these impacts
- E3. analyse impacts of various human behaviours on the natural environment, and assess the role of behaviour, ethics, and technology in reducing these impacts



# Alternative Proteins for a Sustainable Diet

## Guiding Questions

How can we improve the sustainability of our food system by changing our individual habits?

## Materials Needed

- [‘Alternative Proteins for a Sustainable Diet’ PowerPoint presentation](#)
- Homework Handouts (p.8) – print one per student in your class
- [Food Secure Future Podcast: Novel Foods episode](#)

## Minds On

1. Pose the question “What habits from your day-to-day life could you change to reduce your ecological footprint?”
  - a. Ask students to think independently about the question, and record their ideas using point form notes. (1-2 minutes)
  - b. Allow students to discuss and expand upon their ideas in groups of 3 to 4. It may be helpful to organize ideas using a mind map. (3-5 minutes)
  - c. Discuss as a class, with each group sharing at least one idea.

## Action

1. Begin the [‘Alternative Proteins for a Sustainable Diet’ PowerPoint](#). The presentation contains slides to break for class discussions and polls (designated by a pause symbol).
  - a. For the first class poll, take a tally of how many students respond with each number on the scale (1-5). Record the results on the board.

*Example:*

|  | 1                   | 2 | 3 | 4 | 5             |
|--|---------------------|---|---|---|---------------|
| Willingness to try alternative proteins like insects/algae | (not at all likely) |   |   |   | (very likely) |
| # of students who responded in each category               |                     |   |   |   |               |

- b. For the second class poll, extend your tally to include another row, and record the new answers. Discuss any changes you see.

## Conclusion and Consolidation

In groups of 3-4, give students 3 minutes to brainstorm as many polarizing food items as they can that are considered gross by some and delicious by others. Escargot, sushi, and pineapple on pizza could be some examples.

When time is up, all groups count the number of items on their list. The group with the highest number reads their list to the class, and the class has the chance to veto any answers that they think should not count. If that group still has the most answers afterwards, they win! If not, then the group with the next highest number of items gets a chance.

## *Homework*

1. Provide each student with a homework handout.
2. Students will listen independently to the [Novel Foods episode of the Food Secure Future podcast](#), which includes interviews with Natalia Martinez, a Toronto chef who uses crickets on her menu, and Jarrod Goldin, a commercial cricket farmer.
3. Following the handout, students will think about why some people are resistant to trying alternative proteins and how communication and education can be used to advocate for change.
4. *(Optional)* In the next class session, have students fold their handouts into quarters before handing them in. Randomly redistribute these handouts. Students can then read ideas written by others, and have a class discussion about different communication methods and how to gear them toward different target audiences.

**BONUS:** Make a meal with cricket or spirulina powder and share your review with the class! Entomo Farms is the first human-grade cricket supplier in North America, and their products can be purchased from select Loblaws stores or on Amazon.

## *Opportunities for Assessment*

- **Observation:** Group discussions and brainstorming
- **Conversation:** Class discussions
- **Product:** Polarizing food lists and homework handouts



# References

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# Additional Resources

[F9B: The Illustrated Series](#) – A series of bite-sized illustrated YouTube videos that break down evidence-based strategies to avoid a Global Food Crisis.

[F9B: The Card Game](#) – Save your country from food insecurity by producing food, earning money, and strategically weathering global crises, in this International Serious Play Awards Gold Medal winning card game. Available to purchase, or in a free online print-and-play version.

[#foodcrisis Graphic Novel](#) – Explore the human side of food insecurity in this graphic novel about hunger, inequality, and the politics of food. #foodcrisis is based on historical events, and includes 13 detailed background essays on topics from the story. Preview the first three chapters free!

[The Haven Project](#) - How can we create a future without hunger? Following along with The Haven Project audio drama, students will explore the role of individuals and governments in creating change, research real life food security issues, and communicate their findings by designing a website and participating in a class debate.



## Alternative Proteins for a Sustainable Diet Homework Assignment

Name:

Listen to the [Novel Foods episode of the Food Secure Future podcast](#), found at [feeding9billion.com](http://feeding9billion.com).

Consider what you learned in class and in the podcast episode. What are three facts that you could share with someone to encourage them to try alternative proteins? Who would be most encouraged by each fact? What would be an effective medium to share each fact?

| Fact   | Target Audience     | Dissemination Method  |
|--|---------------------|---|
| <i>Example: By weight, cricket powder is higher in protein than beef</i> | <i>Bodybuilders</i> | <i>Design a poster for display in a gym or healthy smoothie bar</i> |
|  |                     |   |
|  |                     |   |
|  |                     |   |

