Our Hungry Planet

Unit Progression

To feed our growing world, we need innovative solutions. In this unit, we'll explore environmental issues related to the food we grow and eat. We'll review topics from food waste to urban farming, and learn how simple choices we make impact our planet.

Food for Thought: Defining a Problem to Find a Solution

In this lesson, students practice putting a design problem into perspective by planning the food menu for a party at school with certain constraints. Students will gain insight into the challenges associated with meeting various design requirements and the importance of collecting information.

Video: What is the Environmental Impact of Feeding the World?

In this video, we'll explore environmental issues related to the food we grow and eat.

Exploring the Impacts of Feeding the World

In this two-day lesson, students will be introduced to several issues related to the social, economic, and environmental impacts of our current food system, including food waste, food deserts, agricultural land use, and the environmental impacts of diet choices.

Rapid Brainstorming: How Can We Improve Our Global Food System?

In this lesson, students will practice rapid ideation—an important step in design thinking—by brainstorming solutions to issues surrounding our current food system.

Sustainable Food Solutions: Weighing the Pros and Cons

In this activity, students will work together to map out the strengths and limitations of potential solutions to some important global food system issues.

Videos:

- Urban Farming: How Our Cities Can Grow Local, Affordable Food
- Vertical Farming: Growing In New Directions
- Reducing Food Waste: Save Food to Save the Planet
- Think Before You Eat: How Your Food Choices Can Save the Environment

Our Hungry Planet: Design Thinking Challenge

Are your students ready to tackle a food system issue at home or in their school? This guide will help you facilitate a structured design challenge in your classroom related to food at home, at school, or in the community.

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Connections to Standards

Each video and lesson in this unit has been designed to support the Next Generation Science Standards; however, the NGSS connections are stronger when these resources are used together as a full unit. Below, we've outlined the NGSS Performance Expectations (PEs) this unit builds towards and the specific Disciplinary Core Ideas, Science and Engineering Practices, and Crosscutting Concepts that most directly support these PEs:

Performance Expectations (Grades 6-8)

- **MS-ESS3-3:** Apply scientific principles to design a method for monitoring and minimizing a human impact on the environment.

- **MS-ESS3-4:** Construct an argument supported by evidence for how increases in human population and per-capita consumption of natural resources impact Earth's systems.

- **MS-ETS1-1:** Define the criteria and constraints of a design problem with sufficient precision to ensure a successful solution, taking into account relevant scientific principles and potential impacts on people and the natural environment that may limit possible solutions.

Disciplinary Core Ideas (Grades 6-8)

- **MS-ESS3.C: Human Impacts on Earth Systems**
  - Typically as human populations and per-capita consumption of natural resources increase, so do the negative impacts on Earth unless the activities and technologies involved are engineered otherwise.

Science and Engineering Practices (Grades 6-8)

- **Analyzing and Interpreting Data**
  - Analyze and interpret data to determine similarities and differences in findings.
  - Use graphical displays of large data sets to identify temporal and spatial relationships.

- **Obtaining, Evaluating, and Communicating Information**
  - Integrate qualitative and/or quantitative scientific and/or technical information in written text with that contained in media and visual displays to clarify claims and findings.
  - Communicate scientific and/or technical information in writing and/or through oral presentations.

- **Designing Solutions**
  - Undertake a design project, engaging in the design cycle, to construct and/or implement a solution that meets specific design criteria and constraints.

Crosscutting Concepts (Grades 6-8)

- **Influence of Science, Engineering, and Technology on Society and the Natural World**
  - All human activity draws on natural resources and has both short and long-term consequences, positive as well as negative, for the health of people and the natural environment.