SCIENCE THROUGH THE LENS OF FOOD AND AGRICULTURE

Feeding Curiosity, Nourishing Minds: Explore the Science of Food and Agriculture with Our New NGSS-Aligned Educational Resources!

Treatment of farm animals (61%) and earth-friendly food production (58%) are among the most important food topics to students.

– GENYOUth's Insights – Youth Survey with 6th-12th grade, Feb 2020

FULL UNIT

High School, Biology

Units are individual blocks of instruction organized in a logical progression to cover specific topics within a subject over the course of an academic year. A course, such as biology, is made up of a series of units building a progression of concepts and skills.

Media Mayhem

What are the impacts of food production on earth's systems?

» In this high school 5E unit, students explore media claims about the impacts of the dairy industry on the environment. Across a series of four modules, students figure out how the components of the dairy system impact the environment and explore a variety of solutions.

Anchor Phenomenon - Students watch a video that shows people protesting the harmful impacts of the dairy industry and analyze a series of seemingly conflicting claims.

Performance Task – Revisiting media claims to construct, critique and revise written arguments about dairy's impact on the environment.

Click or scan here to access

Module 1
Dairy Food Systems

Module 2
Greenhouse Effect and Carbon Cycling

Module 3
Biodiversity and Other Environmental Impacts

Module 4
Engineering Solutions

Including food and agriculture in science curriculum can help:

Increase knowledge in the scientific principles behind production decisions related to nutrition, environmental stewardship, breeding, genetics, and more.

Build understanding on the value of agriculture products, including dairy, as part of a healthy and sustainable lifestyle.

Fuel an interested and qualified future workforce for nutrition research, food production, and processing.

NATIONAL DAIRY COUNCIL

For more classroom-ready resources, visit **FuelUp.org**

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Postgame Analysis

How can milk help athletes recover from physical exercise?

» In this high school 5E unit, students investigate how milk helps athletes recover from intense exercise. Across a series of four modules, students learn about nutrient digestion and absorption, explore feedback mechanisms in exercise recovery, discover how cellular energy is produced for exercise, and understand muscle soreness and recovery.

Anchor Phenomenon - Students watch a series of videos that show various athletes choosing milk products for recovery to generate questions and ideas on how milk products help after exercise.

Performance Task – Students create presentations to describe how milk helps with exercise recovery to an audience of their choosing.

Click or scan here to access

Module 1
Digestion of Milk

Module 2
Feedback Mechanisms During and After Exercise

Module 3
Internal Processes from Exercise

Module 4
Muscle Recovery

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72% of Gen Z students agree that they would care more about sustainable food if they knew more.

– GENYOUth's Insights – Youth Survey with 6th-12th grade, Feb 2020

PHENOMENA BANK

» Phenomena refer to observable events or occurrences in the natural world that are used to spark inquiry and drive the learning process in scientific education.

» The phenomena bank is a curated collection to be used by developers, educators, and curriculum directors to create lessons, transfer tasks, unit starter kits, or entire units of study based on student interests.

Milk and Exercise Recovery: This phenomenon explores why chocolate milk helps athletes recover faster than sports drinks or calorie-free beverages.

Lactic Acid Bacteria: This phenomenon explores why some individuals sensitive to lactose can eat fermented dairy foods without any issues.

Spicy Peppers and Milk: This phenomenon explores why spicy peppers cause a burning sensation in the mouth and how milk provides relief.

Manure and Energy: This phenomenon explores how manure from cattle can be transformed into electrical power with methane gas.

Lactase Persistence: This phenomenon explores the frequencies of lactase persistence worldwide and why prevalence is higher in some geographical regions.

Butter From Cream: This phenomenon explores how butter is made from cream by using kinetic force.

Click or scan here to access

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82% of Gen Z students have a strong interest in sustainable food and how their food is produced.

– Gen Youth Survey Feb 2020, survey with 6th-12th grade.

TRANSFER TASKS

Middle School, Life Science Curriculum

Transfer tasks are interactive lessons that enable students to apply their understanding and knowledge of science concepts and practices from one context to another.

Should Food Have Bacteria?

» Using yogurt as an example, students explore ecosystems in food composed of living bacteria and determine which bacteria are safe and which can be harmful if present in food. Students investigate how the presence of safe bacteria, such as lactobacillus in fermented foods, can prevent harmful bacteria from forming on food.

Scan here to access:

More Cheese, Please

» Using models and data, students explain why people with lactose intolerance may experience gas, bloating and diarrhea when they eat certain dairy products, building on knowledge of how the digestive system works. Students examine new data to recommend types of dairy products lactose intolerant people might eat to cause minimal or no symptoms.

Scan here to access:

E-Learning Module

» In this 20-minute asynchronous training module, teachers learn how to access the transfer task curriculum materials, integrate the lesson into the classroom and interpret student results.

Scan here to access:

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