

OUT-OF-SCHOOL SETTINGS | GRADES 6-8

Food for Thought: Engineering Ice Cream

Unit Overview

How does ice cream get to be so creamy and delicious? Not every recipe tastes great on the first try. Process engineers carefully create and improve recipes to control the color, texture, flavor, and shelf life of a product. Youth participating in this unit become process engineers by using the Engineering Design Process to create a step-by-step process for engineering their own ice cream.

Engineering Application/Unit Goals

Process engineering is a way of thinking and designing that can be applied to problems in many different fields of engineering. Process engineers work to optimize and improve processes so they result in high-quality products. Any time steps are taken to prepare a food for consumers, food processing is being done. Youth learn about different ways of processing and packaging food in order to achieve variations in color, texture, flavor, and even shelf life. They then create and improve their own step-by-step process in order to engineer their ideal ice cream product.

Engineering Everywhere inspires learners in grades 6-8 to shape the world around them. Our twelve hands-on units were tested in afterschool, summer camp, and out-of-school time settings, and they are proven to engage learners in innovative problem solving. Each unit begins with a Special Report video, which sets the context for the engineering design challenge and explores problems like food scarcity, prosthetics, and disease control. As learners work through our design challenges, they'll sharpen 21st century skills like critical thinking, teamwork, and communication, preparing them for success in school and in life.



Unit Map

Prep Activity 1: What is Engineering?

Youth are introduced to engineering as they work in teams to engineer a tower to support a marshmallow.

Prep Activity 2: What is Technology?

Youth learn about technology and imagine a technology that will help someone eat food while underwater.

Activity 1: Process as Technology

Youth engineer a process for making a tasty treat and learn that processes are engineered as well as objects.

Activity 2: Ice Cream Ingredients

Youth learn about their ice cream engineering challenge and investigate ice cream ingredients and processes.

Activity 3: Ice Cream Appeal

Youth investigate ways to alter the flavor and color of their ice cream.

Activity 4: Ice Cream Package

Youth engineer a package to contain their ice cream and protect it from the heat.

Activity 5: Improve Your ice Cream

Youth improve their ice cream process and/or package.

Activity 6: Engineering Showcase

Youth communicate their work to visitors.

Ready to create a generation of problem solvers? Contact sales@mos.org