Museum of Science®

EiE®

OUT-OF-SCHOOL SETTINGS | GRADES 6–8

Plants to Plastics: Engineering Bioplastics

Unit Overview

Think twice before you throw away that plastic spoon!
Look around you— how much plastic do you see? The world is filling up with plastics that aren't biodegradable. Youth participating in this unit learn about bioplastics, a possible solution to the plastic problem. They then use each step of the Engineering Design Process as they become chemical engineers and design their own bioplastics.

Engineering Application/Unit Goals

In this unit, youth explore problems created by traditional plastic materials and engineer bioplastics—plastics made from plant-based materials— as a potential solution to current plastic problems. Chemical engineers use their knowledge of math and science, particularly chemistry, to solve challenges related to biotechnology and chemical production. Polymers are a common material found in nature and designed by chemical engineers. Youth will learn about the properties of different polymers, then create and improve bioplastics that can be used in similar applications as traditional plastic materials.

Engineering Everywhere®

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.

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