Overview of the Engineering Everywhere Series

Engineering empowers youth to become more effective problem solvers. The Engineering Everywhere series provides student-centered engineering activities that will teach students to think critically as they solve problems in the world around them. Working through challenges students follow an 8-step engineering design process that gets them thinking like engineers. Engineering Everywhere builds 21st century skills as students learn to collaborate, communicate, think critically and present their findings in an Engineering Showcase.

Topic Overview

Engineering Bioinspired Gear

> What can we learn from plants and animals to help inspire new technologies? In this unit, students look at examples of camouflage, protection, and bioluminescence in nature to engineer bio-inspired bags or packs for a client. They become materials engineers as they explore the properties of materials and use the Engineering Design Process to create and improve their designs, making sure they meet their client's unique criteria and constraints.

Engineering Prosthetic Tails

> Sometimes animals need our help! Just like humans, other animals can regain the function of a missing limb with the aid of a prosthetic device. Students participating in this unit will become biomechanical engineers as they use the Engineering Design Process to design prosthetic devices for a variety of animals.

Engineering Safety Helmets

> When people bike, board, or play ball, they wear a helmet to keep them safe. But how do helmets work? Students participating in this unit learn how different types of helmets are constructed and how they protect the brain. They then use each step of the Engineering Design Process as they become biomechanical engineers and design their own helmet to crash test.

Engineering Bioplastics

> The world is filling up with plastics that aren't biodegradable. Students 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.

Cost

Materials needed	**Cost**
Engineering Bioinspired Gear Materials Kit	$499.00
Engineering Bioinspired Gear Educator Guide	$69.00
Engineering Prosthetic Tails Materials Kit	$409.00
Engineering Prosthetic Tails Educator Guide	$69.00
Engineering Safety Helmets Materials Kit	$599.00
Engineering Safety Helmets Educator Guide	$69.00
Engineering Bioplastics Materials Kit	$599.00
Engineering Bioplastics Educator Guide	$69.00
Total	**$2382 + Shipping**

Materials kit includes materials to support 24 learners

This will be enough materials for 96 students. While this is currently more than the number of students we have remaining at Gibbs, I wanted to have a variety of engineering problems to solve that would interest a wide variety of students.