



## A World in Motion: The Design Experience

**Target Audience: Youth in grades 4-6**

**Description:** A World in Motion: The Design Experience focuses on the engineering design process. The curriculum is a set of three challenges that ask students to work in design team to meet a common goal of designing a toy vehicle. Problem-solving, science, and math skills as the students work and rework their design to meet the design specifications.

**Format:** A World in Motion: The Design Experience is divided into three challenges based on grade.

Skimmer Challenge (Grade 4)- Students make paper sailboats propelled by fans. The goal is design a set of skimmers that meet specific specifications. Friction, force, and surface area are some of the science terms students will learn in order to complete their design project.

JetToys Challenge (Grade 5)- This challenge centers around designing a toy that travels far, carries weight, and/or goes fast. Students experiment with different chassis designs and nozzle sizes to change the JetToy's performance. Jet propulsion (from a balloon), friction, and air resistance are the scientific concepts explored in this challenge.

Steel Can Rover Challenge (Grade 6)- Rolling toys made from coffee cans powered by rubber bands and weights is the challenge here. Students explore speed, travel, distance and manners of stopping as they design a fleet of toy vehicles.

**Cost:** A World in Motion can be borrowed from Scott County Extension for one month. A World in Motion is provided by SAE International an organization of engineers dedicated to advancing mobility on land, in sea, air and space.