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.