Engineering Explorations

Course Length: 1 Semester

Unit and Topics	Duration
Unit 1: Introduction and Engineering Process	1 week
Unit 2: Mechanical Engineering – Mousetrap Vehicles Design, construction, and optimization of a mousetrap-powered car.	4 weeks
Unit 3: Electrical Engineering - Blinky Soldering, circuit board construction.	1 weeks
Unit 4: Civil Engineering - Bridges Bridge design, construction, and testing to measure forces.	4 weeks
Unit 5: Mechanical /Aeronautical Engineering – Hot Air Balloons Forces, buoyancy, balloon design, and balloon manufacturing.	3 weeks
Unit 6: Aeronautical Engineering - Delta Flyer Airplane design, testing, and optimization. Lift, drag and control surfaces.	3 weeks
Unit 7 (Semester 2 only): 3D Design using Tinkercad Students are introduced to 3D Computer Aided Design and use the tools and their imaginations to design a project.	2 weeks