

Exploratory Design & Engineering II

Curriculum at a Glance

Estimated Time Allocations

1 Week	Introduction to class. Policies and procedures. How to draw and read schematics associated with electronics Review of basic drafting skills associated with new symbols How to use a bread board – 1 day Lesson #1 - Resistor Color Code – 2 days	Recommended at beginning of course
1 Week	Lesson #2 - OHM' law and the basic electronic circuit – 2 days Lesson #3 - Parallel Circuit – 2 days Lesson #4 - Diode Action – 1 day	
1 Week	Lesson #5 - Light Emitting Diodes – 1 day Lesson #6 - Electromagnetism – 2 days Lesson #7 - Capacitance – 2 days	These lessons can occur in any order that makes sense for your schedule. For instance, if the class is running 1 st semester you may want to move the Solar Unit to the third week of school.
1 Week	Lesson #8 - Transistor Switch – 2 days Lesson #9 - Variable Resistor LED Dimmer – 2 days	
1 Week	Lesson #10 - DC Motor Experiment – 2 days Lesson #11 - Transistor Oscillator – 2 days	
2 Weeks	Students choose 6 circuits past Lesson #11 to build on their own.	
2 Weeks	Battery Unit <ul style="list-style-type: none"> • Timeline – 2 days • Presentation – 3 days • Lemon Project – 2 days • Potato Project – 2 days 	
2 Weeks	Motor Unit <ul style="list-style-type: none"> • Introductory PowerPoint with activities – 2 or 3 days • Teacher Demo-simple motor – 1 day • Advanced Stationary Motor – 4 days • Wind Turbine – 3 days 	
2 Weeks	Solar Unit <ul style="list-style-type: none"> • Introductory PowerPoint with activity – 1 day • Ice Cube Meltdown – 1 day • Funnel the Sun – 2 days • Shoebox Water Heater – 3 days • Invention/Innovation Presentation – 3 days 	
5 Weeks	Capstone Project Electric Vehicle <ul style="list-style-type: none"> • Design vehicle & begin material list • Complete design & procure materials • Build and test vehicle • Build and test vehicle / begin report • Complete challenges, class presentations and showcase 	Recommended to stay at end.

The timeline above accounts for 18 weeks out of the semester. This leaves some room for individualization, school closings, and district scheduled testing.