

## Intro to Electricity @ <https://myfunscience.com/>

Can you imagine a world without electricity? How would we survive without our computers, phones, TVs, x box, or tablets? Not to mention lights, refrigerators, microwaves, and air-conditioning. This one semester (15 week) course covers the basic concepts of electricity. You will become familiar with the scientists of electricity who were instrumental in the developments that have brought us to where we are today. Students will learn and apply concepts related to electric charges, current flow, batteries, electrolysis, resistance, series & parallel circuits, ac/dc, electric power, magnetism, electromagnetism, transformers, motors, digital components, and solar cells. We will have an extraordinary time reading, watching, and performing hands- on experiments.

**Grades:** 7-12  
**Prerequisites:** none  
**Instructor's Name:** Anna Pollard  
**Instructor's Email:** [apollard@myfunscience.com](mailto:apollard@myfunscience.com)  
**Textbook:** eBook (free) will be provided

### **Additional Supplies/Resources Needed:**

- 1) **Introduction to Electricity Lab Kit ~\$39.95 (purchase early)**  
<https://www.homesciencetools.com/electricity-investigation-kit>

Please have your lab kit in your possession by the first day of class.

- 2) headset, microphone, notebook, a device (such as a phone-nothing fancy)to take pictures of your experiments
- 3) common household supplies such as (paperclip, scissors, tape, a balloon, a comb, a piece of cork, magnets, drinking straw, thumb tack, a nail, tinfoil, extra batteries, etc...

**Weekly Homework:** Homework will be assigned at the end of each live class session and will be due before the next live class. Homework should take approximately 2 hours per week.

HW will consist of ...

1. answering questions from the previous weeks assignment
2. completing experiment(s) & submitting lab notes & a picture
3. reading about the “new” topic that we will discuss in our next class

**Homework Policy:** The goal of homework is to reinforce and explore the concepts that were taught in class. Contact me if your assignments will be late. I will work with you. Otherwise, 5 points off per day.

**Additional Policies:** Students should conduct themselves appropriately with their speech and texts during our live class. Students who are unable to adhere to this type of conduct may be separated from the class or removed from the session.

**Evaluation:**

Weekly questions	30 % of final grade
Weekly Experiments/Activities	30% of final grade
Tests	<u>40 % of final grade</u>
	100%

**Grading Scale:**

100-90:	A
89-80:	B
79-70:	C
69-60:	D
59 – 0:	No effort: F

**Anticipated Weekly Course Schedule:**

<b>Week</b>	<b>Topic</b>
<b>Week 1</b>	Electron Theory, Charges, Static Electricity
<b>Week 2</b>	Simple Circuits, Batteries, Current Flow, Electrical Power
<b>Week 3</b>	Work and Energy
<b>Week 4</b>	Series Circuits
<b>Week 5</b>	Series Review & Parallel Circuits
<b>Week 6</b>	S-P Circuits ,LED, breadboards, 3 way switch, rheostats
<b>Week 7</b>	Catch up on Circuits & Review GAME CH 1-5
<b>Week 8</b>	Midterm Jeopardy
<b>Week 9</b>	CH.6 Magnetism
<b>Week 10</b>	CH.7 Electromagnetism <b>Pt.1</b> Electricity, Magnetism
<b>Week 11</b>	CH.7 Electromagnetism. <b>Pt.2</b> Inductance, Transformers
<b>Week 12</b>	CH7 Electromagnetism <b>Pt.3</b> Generators, Motors
<b>Week 13</b>	Motor Review
<b>Week 14</b>	Digital Components
<b>Week 15</b>	Solar Fun & Final Game