

8th Grade HS Science Team Remote Lesson Plan

<p>Teacher/Subject :Brock, Godfrey, Long , Martin 8th/HS Science</p>	<p>Date: Thursday, May 7, 2020</p>	
<p>Standards:</p>	<p style="text-align: center;">8th Grade</p> <p>S8P5a. Construct an argument using evidence to support the claim that fields (i.e., magnetic fields and electric fields) exist between objects exerting forces on each other even when the objects are not in contact.</p> <p>S8P5b. Plan and carry out investigations to demonstrate the distribution of charge in conductors and insulators.</p> <p>S8P5c. Plan and carry out investigations to identify the factors (e.g., distance between objects, magnetic force produced by an electromagnet with varying number of wire turns, varying number or size of dry cells, and varying size of iron core) that affect the strength of electric and magnetic forces.</p>	<p style="text-align: center;">High School</p> <p>SPS10a. Use mathematical and computational thinking to support claim regarding relationships among voltage, current, and resistance.</p> <p>SPS10b. Develop and use models to illustrate and explain the conventional flow (direct and alternating) of current and the flow of electrons in simple series and parallel circuits.</p> <p>SPS10c. Plan and carry out investigations to determine the relationship between magnetism and the movement of electrical charge.</p>
<p>Objective:</p>	<p style="text-align: center;">8th Grade</p> <p>To learn about and gather evidence that magnetic and electric fields exist between objects not in contact.</p> <p>To carry out investigations through simulations to identify factors that impact the strength of magnetic and electric forces.</p>	<p style="text-align: center;">High School</p> <p>To learn about the relationships between voltage, current, and resistance.</p> <p>To carry out investigations through simulations to identify factors that impact the strength of magnetic and electric forces.</p> <p>To illustrate and explain how direct and alternating currents work and the advantages and disadvantages of these types of currents.</p>

Student
Activities:

It's Electrifying

Two Graded Options:

OPTION 1 (120 minutes) – You must complete each of the following steps A to E. You will submit two documents to Google Classroom: One document with all of your notes and one is a Word document with the Gizmo you choose on it.

- a. All **notes** should be on ONE document (handwritten or a Word doc) and submitted via Google Classroom.
- b. SEE - Watch the Mr. Brock's Neighborhood video. Bullet point **notes** 10 things learned from the videos.
- c. SEE - Choose ONE video. Take 10 bullet point **notes**.
- d. READ - Choose ONE of the reading options - Must take 10 bullet point **notes**.
- e. DO – Choose ONE Gizmo to complete. Download the Word document to your device from Google Classroom. You will be able to write directly on this document on your device. Login to explorlearning.com. Search for the Gizmo you selected (by name or in your folder). Open and complete the Gizmo Word document. Use the Word document to guide you through the activity and record your answers in **RED**. Save your work then upload and submit in Google Classroom.

OPTION 2 (120 minutes) - You will submit one document to Google Classroom for this activity.

- a. Choose one option from **each** of the following sections: SEE, READ, and DO. Make sure you do these activities this is where you will learn the information that you use in your final product.
- b. Create a product to share about the topic of electricity. Product ideas and information are located in the SHOW section below. You will upload and submit this product to Google Classroom. No Power Points or Google Slides may be submitted for your product. Be creative!

See

- Mr. Brock's Neighborhood – Circuitry Video
 - <https://safeYouTube.net/w/gePB>
- GPB Physics in Motion –

		<ul style="list-style-type: none"> ○ Series Circuits - https://www.gpb.org/physics-in-motion/unit-5/series-circuits ○ Parallel and Complex Circuits - https://www.gpb.org/physics-in-motion/unit-5/parallel-and-complex-circuits ○ Generators and Motors - https://www.gpb.org/physics-in-motion/unit-5/generators-and-motors
	Read	<ul style="list-style-type: none"> ● Science Online Textbook <ul style="list-style-type: none"> ○ HS Text Ch 6 Electricity pg 170-195 ○ 8th Grade Ch 7 Electricity & Magnetism pg 431-467 ● Physics Classroom Tutorials <ul style="list-style-type: none"> ○ Static Electricity - https://www.physicsclassroom.com/class/estatics ○ Electric Circuits - https://www.physicsclassroom.com/class/circuits ● Explain that Stuff! <ul style="list-style-type: none"> ○ Electricity - https://www.explainthatstuff.com/electricity.html ● Physics4Kids <ul style="list-style-type: none"> ○ Electricity Overview - http://physics4kids.com/files/elec_intro.html ○ Charges - http://physics4kids.com/files/elec_charge.html ○ Conductors - http://physics4kids.com/files/elec_conduct.html ○ Electric fields - http://physics4kids.com/files/elec_field.html
	Do	<ul style="list-style-type: none"> ● Circuit Builder Gizmo <ul style="list-style-type: none"> ○ Go to explorlearning.com ○ Login and select <u>Circuit Builder</u> ○ Login with your username and password ○ Word Doc is in Google Classroom ● Advanced Circuits Gizmo <ul style="list-style-type: none"> ○ Go to explorlearning.com ○ Login and select <u>Advanced Circuits</u> ○ Login with your username and password ○ Word Doc is in Google Document
	Show	<p>To show what you have learned about electricity you will be developing a product to teach others about it. <u>Products must be visually appealing, have a title, accurate details, and pictures</u> (hand/computer drawn or from internet). Please remember to provide citations for pictures, apps used, and research if not from your textbook.</p>

	<p>Product ideas include, but are not limited to:</p> <p><u>Digital Products</u>: PowToon, Piktochart/digital poster</p> <p><u>Written Products</u>: Pamphlet, brochure, fable/myth with truths explained</p> <p><u>Video Products</u>: Puppet show, panel discussion of “experts,” short documentary film</p> <p>*You should create a different product for electricity than you did for magnetism. Keep it interesting...</p> <p>The following list of terms/concepts MUST be included in your product and will help to guide your research: Electric charge, friction, static electricity, induction, conduction, materials that make good conductors, insulators, how are electrical and magnetic fields related, current (direct and alternating), battery, voltage, potential difference, circuit, load/resistors, wires, series circuit, parallel circuit, how do electromagnets and generators work, how do simple electric motors work</p> <p>OPTIONAL: Benjamin Franklin, Thomas Edison, Nikola Tesla</p>
<p>Resources:</p>	<p>Ms. Godfrey’s Website: atomsandapples.weebly.com/</p> <p>Online Text:</p> <ul style="list-style-type: none"> • 8th Grade: To access go to ClassLink, HMH Ed and look for the tab at the top labeled “Assignments.” • HS: To access go to ClassLink, McGraw Hill Education <p>Google Classroom: Login and open GC for science class</p> <p>Gizmo: To access go to explorellearning.com, login with username - your lunch # and password – your birthday</p>
<p>Help Session Hours:</p>	<p>Thursday, May 7 10am-12pm</p>