Ames Public Library **@HOME Activities**

Circuits!

Electricity is the flow of tiny particles called electrons. A circuit is a complete path through which electricity can flow. A circuit must include an energy source, conductors, and an electrical load. Most circuits also include a switch. See a related video on the Library's YouTube Channel at http://bit.ly/APLvideos.

Books and Media:

Title	Author / Performer	Call Number
Science Fair Projects With Electricity & Electronics	Bonnet, Robert	J 507.8 BON
Electricity & Magnetism	Adamczyk, Peter	J 537 ADA
Electricity & Magnetism	Crane, Cody	J 537 CRA
You Wouldn't Want To Live Without Electricity	Graham, Ian	J 537 GRA
Discover Electricity	Vogel, Julia	J 537 VOG
Amazing Makerspace: Electricity	Holzweiss, Kristina	J 537.078 HOL
Cool Battery & Electricity Projects: Fun & Creative Workshop Activities	Felix, Rebecca	J 621.3 FEL
Wired	Suen, Anastasia	J 621.319 SUE
Little Bits	Lovett, Amber	J 621.381 LOV
Electronics for Kids	Øyvind Nydal Dahl	J 621.381 NYD
Connect It!	Olson, Elise	J 621.381 OLS
Electronics for Kids	Shamieh, Cathleen	J 621.381 SHA
Building Squishy Circuits	Thomas, AnneMarie	J621.3815 THO
Electricity	Walker, Sally	e-book on Overdrive
Electricity	(Britannica Educational Publishing)	e-book
Electricity (DVD)	Nye, Bill	J 537 (DVD) ELE
The Science of Disney Imagineering – Electricity (DVD)	(Disney)	J 537 (DVD) SCI
The Way Things Work – Electricity (DVD)	(Schlessinger Media)	J 537 (DVD) WAY

Websites:

URL	Notes
https://kids.britannica.com/kids/article/electric-circuit/443114	
https://science.howstuffworks.com/electricity.htm	*Contains a video that explains static electricity*

ames™ PUBLIC LIBRARY

Vocabulary

Circuit – A path that an electric current follows in order to reach its final destination. For example when electricity goes from the meter in your home to the computer it is following a circuit. Circuits need to be complete or closed for it to work.

Conductors – Materials that allow electric current to pass through them easily. Conductors can be linked to the positive and negative ends of a battery to create a circuit.

Load – Any device attached to an electrical circuit that is activated or energized by the flow of electricity to it.

Switch – The switch provides the control that closes (continues) or opens (breaks) the electrical energy flow on the circuit.

Battery – A cell or a group of cells that can create an electric current.

Current – (here), the flow of electricity.

Electricity – The flow of electrons is called electricity. Electricity helps power our world, and can be seen in nature in a bolt of lightning.

Electrons – Electrons are the negatively charged particles of an atom. Electrons are extremely small compared to all of the other parts of the atom. The mass of the electron is almost 1,000 times smaller than the mass of a proton.

Insulator – An item that does not allow electricity to run through it. Certain items may be insulated to keep electricity where it is supposed to be. Examples of good insulators include – glass, plastic, rubber, and wood.

Socket – An opening in your home where you can plug electronics into to connect your devices to the electricity coming into your home.

Volt – A volt is a way to measure how much force an electric current has when it moves through an object, or a conductor.

Sources :
https://kids.britannica.com/kids/article/electricity/353091
https://sciencenotes.org/what-is-a-proton/
https://science.howstuffworks.com/electricity.htm
http://www.chem4kids.com/files/atom_electron.html
https://static1.squarespace.com/static/54a1ab67e4b092556fa8c9e1/t/55b8020ae4b0568a75e33cc6/1438122506107/circuit-vocab.pdf

Take Away Kit: Build a Circuit

Bag Contents:

- 1 – 9 volt Battery
- 1 Buzzer
- 2 Alligator clips

A circuit is a path that an electric current follows. A circuit needs to be closed or complete for it to work properly. Here you are going to build a simple circuit to activate the buzzer.

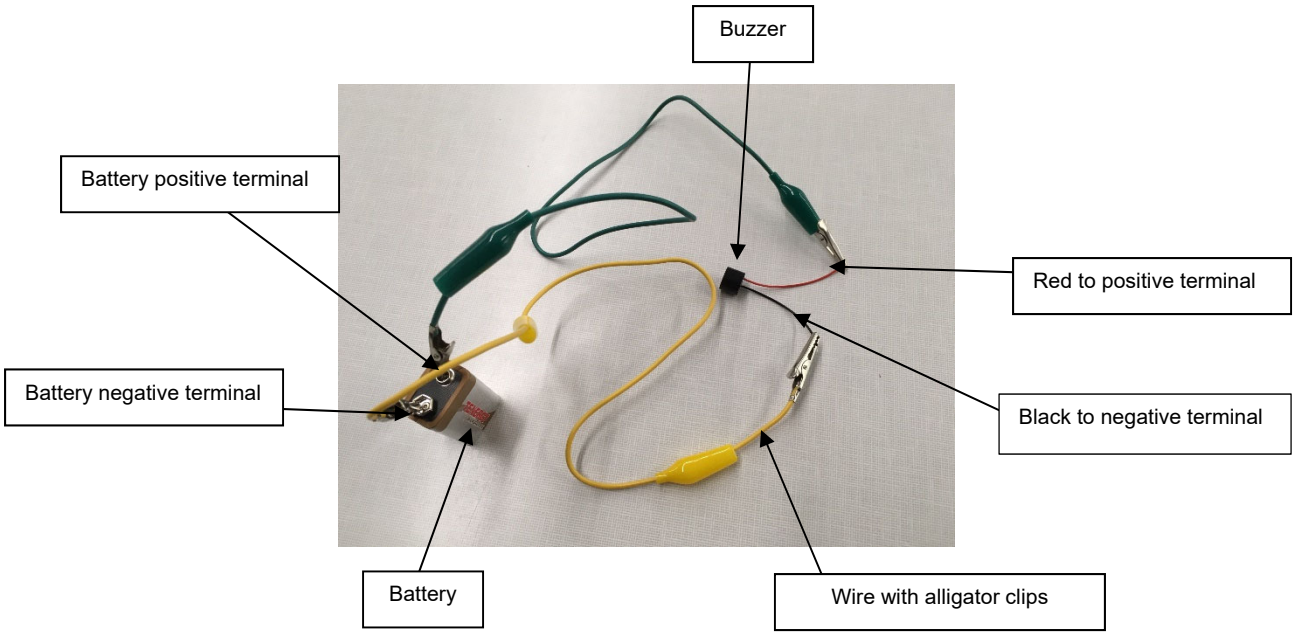
Take out all the items in your bag; you will need all of the items listed in the contents to make a complete circuit.

The battery that you have has stored charge. The battery has a positive and a negative terminal. Locate them; it is essential when building this circuit that the positive terminal of the battery is connected to the red wire on the buzzer and the negative terminal is connected to the black wire on the buzzer.

Positive to Red; Negative to Black.

Using the alligator clips connect the battery terminals to the buzzer. If your buzzer sounds then you created a complete circuit for electricity to flow. If the buzzer does not sound, check your connections and try again.

For more information, watch the video on Circuits on APL's YouTube Channel at http://bit.ly/APLvideos.



ames™ PUBLIC LIBRARY