



WELCOME

This month's newsletter looks at simple circuits. We also have a look at the inventions of Alessandro Volta whose invention of a battery that delivered a steady and continuous flow of electricity opened the gates for further development.

Remember, we're here to support you, however we can. Contact us at (03) 9802 9913 or email us at sales@scorpiotechnology.com.au

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Humour – Just for laughs

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Feature Article – Alessandro Volta

TEACHER CONFERENCES, WORKSHOPS & EVENTS



Scorpio is attending or supports these teacher activities:

[DATTA QLD State Conference 2023](#)
online and onsite, Brisbane Convention
& Exhibition Centre from 15 – 16-06-
2023

[Design and Technologies Week](#)
October

[DATTA ACT Conference](#) Daramalan
College, Dickson, Sat 09-09-2023

[Victorian Model Solar Vehicle
Challenge](#) 14-15-10-2023

[iTE Technology Education
Conference 2023 TechExpo](#), Sydney
Masonic Centre, 30-11-2023 – 01-11-
2023

[DATTA WA Conference](#) "Bridging the
Gap" Edith Cowan Uni, Perth, 30-11 to
01-12-2023

[DATTA VIC Conference](#) "Future
Innovators", NCAT Preston 01-12-2023

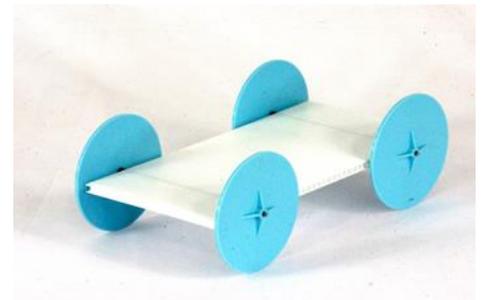
PRIMARY STEM: SIMPLE CIRCUITS

Simple circuits are the basis for electricity. There are only three requirements for a simple circuit: (1) an energy source e.g. battery, (2) an energy receiver e.g. light bulb and an (3) energy pathway such as electric wire. There are two types of simple circuit – series and parallel. Of the two, a parallel circuit is a better alternative as only the faulty pathway will stop working not the whole circuit.

Kids enjoy experimenting with electricity and you don't need much equipment or experience to teach it. To help you we have just launched a cost effective Simple Circuit kit INTRODUCING SIMPLE CIRCUITS (FAHNSTOCK) Code: SIMPCFAHN. This is just one of Scorpio's great range of simple hands-on electricity products. Simple and safe to use.

Remember to check out our **Snap Circuits** range is being **drastically reduced to clear**, while stocks last. See our website for prices. Great for small groups and also homeschooling settings.

Our **Primary School catalogue** for more inspirational ideas.



LEARN TO MAKE,
MAKE TO LEARN

"Everything begins with an idea."

Unknown





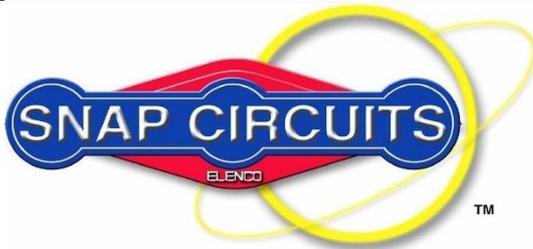
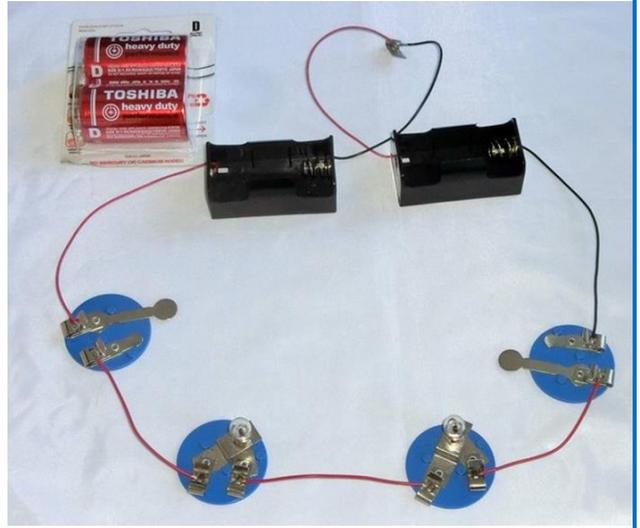
INTRODUCING SIMPLE CIRCUITS (FAHNSTOCK) Code: SIMPCFAHN

This *SIMPLE CIRCUIT* kit allows you to introduce students to electricity. By using the supplied components students can experiment with Basic circuits, Simple circuits, as well as learning about Series and Parallel circuits. The kit includes 2 x D cell batteries.

The kit can be expanded by adding additional components, such as a motor and propeller, and a buzzer.

Click here:

<https://www.scorpiotechnology.com.au/technology-components>



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Click here: <https://www.scorpiotechnology.com.au/snap-circuits>



DID YOU KNOW?

A Microwave uses more electricity powering its digital clock than it does to power food.



What was the light bulb's occupation?

He was a conductor.

What did the lightbulb say to the generator?

"I really get a charge out of you."

How did Benjamin Franklin feel after discovering electricity?

Shocked.

My friend told me how electricity is measured, and I was like Watt!



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Alessandro Volta (1745 – 1827) Italian Physicist

Anita Vejins



Volta's Significant Accomplishments

- 1766 Discovery of methane gas
- 1769 scientific paper *De vi attractiva ignis electrici* (On the attractive force of electric fire)
- 1800 Invention of the battery
- Discoveries in electrostatics, meteorology, and pneumatics

“You must be ready to give up even the most attractive ideas when experiment shows them to be wrong.”

Alessandro Volta



Volta - Gas collecting in the marshes at Angera

Electricity was already in use in Volta's time but there was no way to create a steady and continuous flow. The Leyden jar was in use but needed recharging.

Volta's colleague **Luigi Galvani**, a professor of anatomy, was experimenting with electricity. He passed electricity through a dead frog's legs and noticed that they twitched. This led him to conclude that there was **animal electricity**. Volta was not convinced so he began his own experimentation to disprove Galvani's theory. He not only disproved it but invented something groundbreaking doing so.

Voltaic Pile

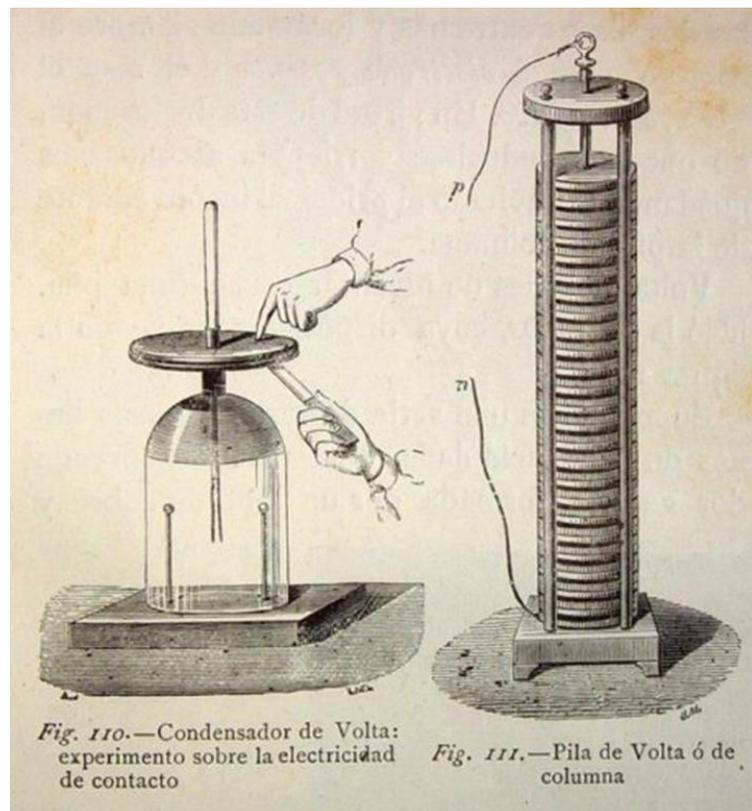


Fig. 110.—Condensador de Volta: experimento sobre la electricidad de contacto

Fig. 111.—Pila de Volta ó de columna

Volta didn't believe that animal electricity was responsible for Galvani's findings. He believed it was actually the metal rods he used that created the twitching in the frog's legs. So, his experimentation began.

Volta was able to produce a steady flow of electricity using bowls of salt solution connected by metal strips. By attaching a wire running from the top to the bottom, he caused an electric current to flow through his circuit.



Volta found that different types of metal could change the amount of current produced by adding discs to the stack. Pairs of copper and zinc discs were separated by a layer of cloth (or cardboard) soaked in brine (an electrolyte). The voltaic pile, formed the first electrochemical cell or battery. Volta's battery provided a sustainable source of electrical current and it was immediately recognized as a useful device. He was summoned to appear before Napoleon Bonaparte in 1801 to demonstrate his battery. Napoleon was impressed by what he witnessed.

In November 1776, while on summer holidays, Volta collected a sample of gas from a marsh on the Italian-Swiss border (Lake Maggiore). He noticed that methane bubbled in the swamp. While experimenting, Volta isolated the methane gas and demonstrated that was highly combustible and could be ignited by a spark or candle flame. He proved that this substance is different from hydrogen, since it needs twice as much oxygen for combustion.

Methane is the main constituent of natural gas that is still used today.

Volta's idea of an electrically induced chemical reaction (igniting methane gas) would later form the basis of the internal combustion engine.

Volta also made discoveries in **electrostatics**, **meteorology**, and **pneumatics**. His most famous invention, however, is the first battery. Volta's work paved the way for further work on batteries and allowed the development of new technology powered by electricity.

Named In Honor of Alessandro Volta

Volt – A unit of measurement for Voltage.

Voltage – The electric force that causes free electrons to move from one atom to another.

Photovoltaic - Photovoltaic are systems that convert light energy into electricity. The term "photo" is a stem from the Greek "phos," which means "light." "Volt" is named for Alessandro Volta.

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