

# Scorpio Technology NEWSLETTER

## INSIDE THIS ISSUE

⚙ Page 1

Primary - [Energy – Electricity](#)  
Teacher Conferences & Workshops

⚙ Page 2

Primary - [Projects That Can Be Completed At Home](#)

⚙ Page 3

Secondary – [Working at home](#)

⚙ Page 4

This Month's Q&A Technology Tips:  
[Calculating Resistance Values](#)

### TEACHER CONFERENCES & WORKSHOPS



Scorpio is attending or supports these Design & Technology teacher activities:

~~DATTA VIC - Friday 1-05-2020 Design Interruption, Cancelled~~

~~DATTA QLD - 25/26-06-2020 Creative Integration, Cancelled until 2021~~

DATTA WA - 03-07-2020, Edith Cowan University – Mt Lawley

SCITECH 2020 - 12-9-2020, Conference for Science & Technology Teachers, Daramalan College, Dickson Canberra

DATTA AUSTRALIA - Design & Technologies Week

ITE (NSW) - 25 to 27-11-2020

DATTA VIC – 12.2020 Makerspace

## WELCOME



The rapid spread of Covid-19 has led to the WHO declaring it a global pandemic. We hope that you, your students, coll colleagues, family and loved ones are doing as best as possible under the circumstances.

As always, we are here to help, so if you have any issues or questions, don't hesitate to contact us at (03) 9802 9913 or [sales@scorpiotechnology.com.au](mailto:sales@scorpiotechnology.com.au)

## PRIMARY: ENERGY - ELECTRICITY

*Build on students' curiosity and connect STEM learning to solving real world problems, including through collaborative and individual learning experiences that are hands-on and inquiry-based and support the achievement of deep knowledge.*

National STEM School Education Strategy, 2016 – 2026  
[www.educationcouncil.edu.au](http://www.educationcouncil.edu.au)

Electricity is so much a part of our daily life. Primary students are excited to discover the properties of electricity by performing experiments using safe components such as batteries, light globes, switches and wires. NO experiments should be conducted with household electricity supply.

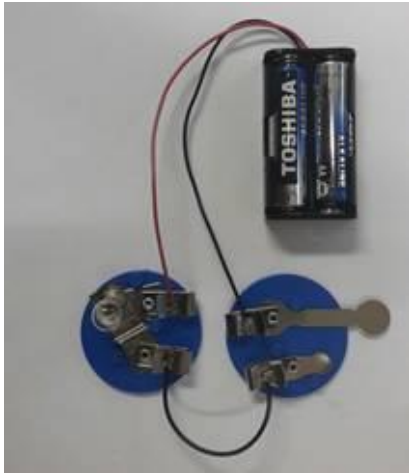
Circuits are a great starting point for many experiments. This includes open and closed circuits, lighting a globe, conductivity and more.

**Q. What are the Economy Globe Holder and Switch used for?**  
(Code: BULBHECO2052)

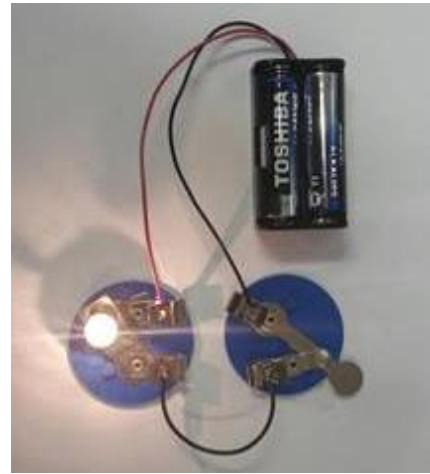


1. This set enables the student to set up a simple circuit. Electric wire is placed between the Fahnstock clips.
2. The circuit can be added to, using Fahnstock clips to add additional components and wires.





With the Switch open NO electricity flows to the light bulb



With the Switch closed electricity flows to the light bulb and it glows:

### FAHNSTOCK CLIP (Code: FAHNCLIP)

A Fahnestock clip is an early type of spring clamp electrical terminal for connections to bare wires. It is designed to grip a bare wire securely. The wire is released with the push of the tab.



Sold individually \$0.06 per clip (limited quantity available)

### IDEAS WITH SIMPLE CIRCUITS

Students design and make simple circuits. Encourage them to devise ways to use these in a project. A great project idea for students in isolation.

- Make an electric quiz (Science, Maths problems etc.). The correct answer lights up the light bulb.
- Design and make a model house or lighthouse. Make a circuit to turn lights on and off.

### SCORPIO PROJECTS THAT CAN BE COMPLETED AT HOME DURING ISOLATION

Continue teaching with these Scorpio projects which can be made at home with minimum equipment. Students keep a diary showing their work.

MYOB CODE	NAME OF KIT	LEVEL
<b>PRIMARY KITS</b>		
BLUEY	Bluey – Blue Brothers	Basic
BREEZY	Breezy – Blue Brothers	Basic Mechanical & Intro Electric Circuits
BLUEBIRD	Bluebird – Blue Brothers	Basic Mechanical & Intro Electric Circuits
BLUESKY	Blue Sky – Blue Brothers	Solar Energy & Intro Electric Circuits
CDCLOCK22 B/G	CD Clock 2212 Black / Gold	Clocks making
CDCLOCK27B/G	CD Clock 270 Black / Gold	Clock making
LPCLOCK27B/G	LP Clock 270 Black / Gold	Clock making
MORSE	Morse Code Kit	Electric Circuits
SIMPCIRC	Simple Circuits	Electric Circuits



## SECONDARY: WORKING AT HOME

With schools closing during the Covid-19 pandemic we would like to suggest the following kits that students could make at home. They require no solder and few tools. You may like to make a You Tube presentation showing how the kit is made or have a video conference (e.g.. Zoom) with your students.

Students could keep an electronic diary of their work so that there is a record of the work undertaken, including their achievements and challenges. This diary could be emailed to you with photos of the progress.

MYOB CODE	NAME OF KIT / ITEM	LEVEL
<b>TECHNOLOGY KITS – NO SOLDER</b>		
BALAN-NS	Balance Plane (No Solder)	Introductory
BELTCAR-NS	Belt Driven Car (No Solder)	Introductory
BUBBLE-NS	Bubble Blower (No Solder)	Introductory
BUGGY2WD	Buggy 2WD Robot	Introductory
CAPTIVE-NS	Captive Aeroplane (No Solder)	Introductory
DRAG-NS	Dragster (No Solder)	Intermediate
FERRISV2-NS	Ferris Wheel V2 (No Solder)	Intermediate
INTROELEC	Introducing Electronics	Electronics
INTROELEC10	Introducing Electronics (Class Pk of 10)	Electronics
MARK-NS	Mark's Monster (No solder)	Intermediate
PROPC-NS	Propelled Car (No Solder)	Introductory
SOCCER-NS	Soccer 'Bot (No solder)	Introductory
SOLARB-NS	Solar Car (Basic), (No solder)	Introductory
SOLCORHOUSE	Solar House Project – Corflute	Solar Projects
SOLCOMP	Solar House Project – Components Kit	Solar Projects
SOLPROJBRD	Solar Project Baseboard	Solar Projects
SOLHOUSEK	Solar House Kit	Solar Projects
WHIRLY-NS	WHIRLY (No Solder)	Introductory

Some of our other kits can be converted to No Solder kits by the use of the terminated wires, twist-on connectors and substituting switches with wires to the normal small slide switch. These include the Hovercraft (Code: **Hover**) and Simple Vehicle (Code: **SIMPLE**). Ask us for more information.

MYOB CODE	NAME OF KIT / ITEM	LEVEL
<b>SOLAR CHALLENGE KITS – NO SOLDER</b>		
AXBKTK	Axle Bracket kit	Solar Challenge
AXFRK	Axle And Frame kit	Solar Challenge
FAUMOTK	Faulhaber Motor & Mounting Kit	Solar Challenge
FERRISV2-NS	Ferris Wheel V2 (No Solder)	Intermediate
HARNESS26	Wiring Harness Kit (Solar 26)	Sheridan
SBTADV	Advanced Solar Boat	Solar Challenge
SHERIDAN	Sheridan Car Challenge	Solar Challenge
SOCCER-NS	Soccer 'Bot (No solder)	Introductory
SOLARB-NS	Solar Car (Basic), (No solder)	Introductory



MYOB CODE	NAME OF KIT	LEVEL/TYPE
<b>GEARBOX KITS***</b>		
GADVAN	Multi-Ratio Advanced Gearbox Kit	Subsystem - Gearboxes
GBASIC	Basic Gearbox & Motor	Subsystem - Gearboxes
GBOXVBUBM	Gearbox (Bubble Version)	Subsystem - Gearboxes
GBOXVJOUJ	Gearbox (Jouster Version)	Subsystem - Gearboxes
GFOUR	Four Ratio Changeable Gearbox	Subsystem - Gearboxes
GINTER	Intermediate Gearbox Kit	Subsystem - Gearboxes
GMULTI	Multi-Ratio Gearbox	Subsystem - Gearboxes
GRED	Gearbox & Motor / Generator Kit	Subsystem - Gearboxes
GSHALL	Shallow Gearbox	Subsystem - Gearboxes
GTWOR	Two Ratio Gearbox Kit	Subsystem - Gearboxes
GVERS6	Versatile Gearbox Kit-6 Speed	Subsystem - Gearboxes

\*\*\* Gearbox kits (sub-systems) can, with the use of terminated wires, be used without the need to solder wires to the motor terminals.

NOTE: All of our Primary Kits (which are also suitable for use by junior secondary students) are no solder kits.

## This Month's Q&A Technology Tips: Calculating Resistance Values

**Q: How do I calculate Resistance values in a series circuit?**

**A:** When Resistors are in a **series** the value is the total of the resistor values is.

$$R_{Total} = R1 + R2 + R3 \text{ etc.}$$



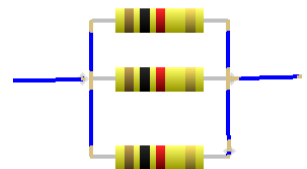
**HINT:** The value for the Resistor Total (RT) is ALWAYS **bigger** than the **largest** resistor value.

**Q: How do I calculate Resistance values in a parallel circuit?**

**A:** When Resistors are in a **Parallel** Circuit the formula is:

$$\frac{1}{R_{Total}} = \frac{1}{R1} + \frac{1}{R2} + \frac{1}{R3} \text{ etc.}$$

**HINT:** The value for the Resistor Total (RT) is ALWAYS **smaller** than the **smallest** resistor value in the circuit.



Upon request we can email teachers a copy of the Excel spreadsheet for calculating resistance values.

### DID YOU KNOW?

if you replace "W" with "T" in "What, Where and When",  
you get the answer to each of them.

**ENJOY YOUR HOLIDAY BREAK** and keep safe and healthy.