# Scorpio Technology NEWSLETTER

## INSIDE THIS ISSUE



## LEARN TO MAKE, MAKE TO LEARN

Hi there, we're back for another year and excited to be delivering more information, tips, and hints to inspire you to present great learning opportunities to your students in 2019.


We have expanded our range to include so many new products, but there's not enough room to list them all! We now supply items for **Design & Technology**, **STEaM**, **Physics**, **Primary** and more.

Check out our easy to read online catalogue with colour pictures and descriptions.

## TECHNOLOGY AT PRIMARY

Primary students introduced to technology develop a deeper understanding of the world around them. Students can use this knowledge to find practical solutions to real life problems.

Experiencing technology is fun. We've sourced projects and kits that cover a huge range of topics. We can help you with Electricity, Electronics, Structures, Simple vehicles, Sustainability, Alternative energy and much more. Check the online catalogue.

## DID YOU HEAR?

NSW teacher, Bernie Livermore, has adapted and expanded Scorpio's DRAGSTER unit, as well as preparing teaching resources for that unit. This teaching resource has been included in the NSW Department of Education's sample units that support the implementation of the new Technology Mandatory syllabus from 2019. The resources can be found at:

https://education.nsw.gov.au/teaching-and-learning/curriculum/key-learning-areas/tas/s4-5/resources/electric-vehicles-the-dragster

## TEACHER CONFERENCES & WORKSHOPS

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

**DATTA VIC** – 29th March, 2019; Workshop: Build your own Infrared, Remote-controlled STEaM Model at Camperwell HS
**DATTA VIC** – 10th May, 2019: "Emerging Technologies"
**DATTA QLD** - 27-28 June, 2019
**DATTA ACT** - 21 September, 2019: TECHnow Conference
**DATTA AUST** - 14-20 October 2019: Design & Technologies Week 2019
**IIATE -** 27–29 November 2019


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# DESIGN BRIEF

The Design Brief is the foundation of any project. It is usually a short statement that gives clear expectations, direction and limitations of what is to be accomplished, but it does not provide a solution to the problem.

## What should the design brief include?

| | |
|---|---|
| Project description | What problem should the design project solve?<br>Expectations of the design work (what is to be included). |
| Target market | Who's going to use it, when and why?<br>What age group? Demographics? |
| Constraints | • Timing – timeframe for project completion<br>• Budget – estimated cost of development and product, cost per unit<br>• Size, weight, aesthetics, durability, sustainability<br>• Materials<br>• Safety<br>• Laws (Industrial standards) |

***Great projects need a great Design Brief***

**The Design Steps:** The student is presented with a Design Brief or they write their own. They can now start the Design process.

**Investigation**: The first stage to research similar products, conduct surveys, check magazines, websites or other sources. Research materials and technology, manufacturing costs and possible selling price.

| | |
|---|---|
| **WHO** will use the product? | **WHAT** does the product need to do? |
| **WHERE** will it be used? | |
| **WHY** is the product needed? | **WHEN** will it be used? |

**Plan / Design:** Planning stage is used to try a variety of designs. Brainstorm different ideas. Record these ideas using mood boards, sketches or diagrams. Explain how the designs solve the problem.

- Make a time line to ensure that the design is completed within the allocated time.
- Does the plan contain a sequence of logical steps?
- List the skills or processes needed to make the design
- The design proposals may include:
  Size, shape, aesthetics (colour, form, finish)
  Resources required – Materials, components, tools and equipment
  Assembly guide
  Safety considerations
  Durability

**Create**: Construct the project, refining procedures, material or anything else required during the construction stage.

**Evaluate**: Analyse the completed project. How can it be improved? What are its strengths and weaknesses. Suggest improvements and / or make improvements if required.

## REFERENCES USED:


- http://theindustry.cc/2012/03/04/design-your-how-the-importance-of-the-design-brief/
- http://www.tridentdesign.co.uk/the-importance-of-a-design-brief/
- http://zakmcleod.yolasite.com/design-cycle.php

## This Month's Q&A Technology Tips: Working with ICs

**Q: Are there any tools that make working with integrated circuits easier?.**

A: Yes. Scorpio now stocks these products.

**IC INSERTER** (Code: **ICINSERT**) is designed to reduce the risk of bending the IC's legs when inserting them into an IC socket or PCB. Suitable for 14/16-Pin Integrated circuit chips. $9.55

**IC EXTRACTOR** (Code: **ICEXTRACT**) reduces the risk of bending the IC's legs when pulling the IC out of a socket or PCB. Use with 8-40 Pin Integrated circuit chips. $3.75

**IC PIN STRAIGHTENER** (Code: **ICSTRAIT**) Straightens pins on integrated circuits. $10.95

**COMPONENT LEAD FORMING TOOL** (Code: **COMPLFT**) provides uniform hole spacing from 10 to 38mm for resistors and diodes to fit into PCBs. The tool is double sided: one side for use with diodes and the other side for 1/5W resistors. $8.95

**TWEEZERS - NON CONDUCTIVE** (4 piece) (Code: **TWST83**) Ideal for SMT & small parts. Suitable for any static-sensitive devices. Overall length 11.25cm (approx.) $15.00

# The 3 Rs:


## WASTE NOT...

Every household, school or business creates waste. Scorpio Technology has been tackling waste for over 30 years. We have a number of procedures that encourage the 3 **R**s – Reduce, Reuse and Recycle. These measures reduce the cost to the environment, lower overheads for the business and lowers cost to you, the customer.

**Reduce** – our kits are packed in snap lock bags without additional packaging or labelling. These bags are reused throughout the project and beyond.

We purchase components in large quantities. The distance these goods travel varies from locally to overseas. By shipping in bulk we reduce transport and environmental costs.

**Reuse** – Where packing materials are necessary, we use newspaper and reuse polystyrene and other packaging materials supplied in which our goods were received. This extends the life of these items. Small items such as clock hands are packed in used envelopes. Scorpio has been doing this since its very beginning in 1989.

We collect packing tape cardboard rolls, electric motor trays, electronic components tubes and much more. These are collected and passed onto collection agencies such as Reverse Art to be used by schools or clubs such as Makerspace.

**Recycle** – We actively recycle paper, cardboard and other recyclable items.