Scorpio Technology NEWSLETTER

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TEACHER CONFERENCES & WORKSHOPS

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

DATTA VIC - Friday 21-02-2020 *Workshop*: Build your own Infrared, Remote controlled, STEaM Model
DATTA VIC - Friday 1-05-2020 *Design Interruption,* Harvester Technical College
DATTA QLD - 25/26-06-2020 *Creative Integration*, Brisbane Convention & Exhibition Centre, Sth Brisbane
DATTA WA - 03-07-2020
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

WELCOME

We hope you had a refreshing break and are ready to take on the challenges of another school year.

2020 is already shaping up to be a busy year. We hope you stop by and visit us at one of the DATTA conferences this year.

PRIMARY

CREATIVITY, DESIGN and CONSTRUCTION

Create a learning environment to stimulate students by creating experiences.

"Design and Technology in primary schools develops young children's skills and knowledge in design, structures, mechanisms, electrical control and a range of materials, including food. Design and Technology encourages children's creativity and encourages them to think about important issues."
https://www.data.org.uk/

Children question, experiment and explore the world around them. Design and Technology, STE(a)M and Makerspace provide the platform for them to experience, create and learn.

Scorpio has a range of projects and components that allow these experiences to take place. Whether you want them to make their own projects or try following a planned project we know there will be something to suit their level. Please check out our online catalogues which are updated regularly.

Do you have an idea for a project? Please ask and we will try our best to help you achieve your vision!

Have you checked out the **Primary Super Clearance Catalogue?** It covers the topics **Volume, Space & Geometry** (*click link*). Great savings - FCFS (first come, first served).

- Density Comparison Kit
- Clear Plastic Geometric Volume Set
- "View Thru" Geometric Solids
- Large Geometric Shapes
- Transparent Relational Geo Solids
- "Giant" Geo Solids

SPECIAL OFFER: Buy one of each set of Geoboards and pay only $65.00

- Geoboards In Action K – 3
- Geoboards In Action 4 – 6

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www.scorpiotechnology.com.au

Project Sheets

Scorpio has developed many great resources such as our free Project sheets found in the Teaching Unit section of the Website or (click on the link). The list of project sheets will continue to grow as we continue to develop projects which we don't plan to sell as kits. Do you have a project that you would like to share?

Cooking with Solar Energy
Solar Chargers
ZIF Socket PICAXE Programmer
Scorpio Rear Bike Lamp
Scorpio Christmas Tree

IC SOCKET 18 PIN ZIF (Code: IC-18ZIF)
Price: $4.95 each

This IC (Integrated Socket) mount can be soldered to a prototyping board, and being ZIF (Zero Insertion Force) using the lever to release the IC, allows for easy insertion and removal of the ICs.

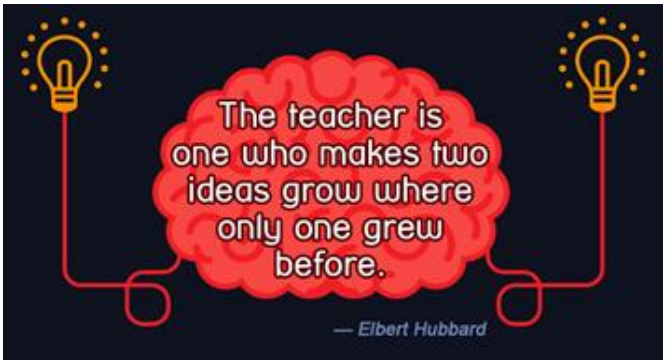
Note: *Click here for a copy of our "ZIF Socket PICAXE Programmer" project sheet showing how to make a PICAXE programming station.*

DIGITAL MULTIMETER KIT (Code: KG9250)
Price: $22.00

Build your own multimeter. Learn everything there is to know about component recognition and basic electronics with this comprehensive kit. From test leads to solder, everything you need for the construction of this meter is included together. With test questions and schematic supplied in the manual, the kit can be geared to an individual or class learning environment. Kit includes DMM case, LCD, solder, battery, test leads, PCB and electronic components. Comprehensive 18 page learning manual included.

Science & Physics

Our new Science & Physics stock will arrive mid-February. Check out the online catalogue for what's coming.



Learn to make.
Make to learn.

This Month's Q&A Technology Tips: SUCCESSFUL SOLDERING

Q: How do I properly solder wire or components ?

A: Soldering is an integral part of electronics. Pat McMahon has shared his 5 simple easy steps for 100% soldering success.

STRIP – TWIST – TIN – NIP – JOIN

1. **Carefully strip off the plastic shielding** preferably using wire strippers (use 1.0mm gap).
2. **Twist the strands 8 times** to form a thick strand.
3. **Tin the wire**. Use a third hand to hold the twisted wire. Using the soldering iron, heat the wire for 2 seconds, feed in solder for 2 seconds, dragging the soldering iron to the end, away from the plastic insulation and let it cool for 5 seconds. (**PAT'S RULE:** 2-2-5)
4. **Nip or cut off the end bulge**. When you drag the iron away the end of the wire will get a solder bulge or bubble which needs to be nipped or cut off. This helps insertion off the newly tinned wire into a small donut pad or drilled PCB.
5. **Join the pre tinned wire to the other pre tinned wire or donut pad**. Heat both parts together with the soldering iron until they join. Usually no extra solder is required if they are both pre tinned.

PAT'S 2-2-5 RULE
(use with 0.7-0.8 solder):

2 seconds – soldering iron on
2 seconds – solder in
5 seconds – let cool

Q: What tools are useful when soldering?

A:

- Soldering Station (Code: SOLDSTN)
  OR
- Soldering Iron (Code: SOLDIRN) and
- Soldering Iron Stand (Code: SOLDIRNSTD)
- PCB Holder For Soldering (Code: PCBHOLD)
- Solder Roll Holder (Code: SOLDHOLD)
- Wire Stripper (Code: WIRESTR)
- Small Side Cutters (Code: SIDECUT or SIDECUTM)
- Solder – 60/40 resin cored 0.71mm diameter (Code: SOLD250 or SOLD500)

… and for **TROUBLESHOOTING**:

- Thirdhand with Magnifier (Code: THIRDHAND)
- Solder Sucker (Code: SOLSUC)

Refer to Scorpio website: Technical information section, Technology Kits for **Troubleshooting Electronics** pdf file.

BOOK REVIEW:

Tech by Design Student book and **Tech by Design Workbook**
Authors: Mark Tory, Jacinta O'Leary, Jill Livett
Student book:ISBN-10**:** 0170400204, Workbook ISBN: 9780170400206
Published: 2017
Australian Curriculum, Years 7, 8, 9 and 10

These two books are a go to resource for teaching Design and Technology and STEM. They provide clear information, instructions, photographs to make learning interesting within the current curriculum framework. Covers technologies and society, engineering principles and systems, food and fibre production, materials and technologies specialisations, and creating designed solutions strands and sub-strands. **Features** include Teacher Resources: Teacher plans, Syllabus maps, Assessment rubrics and Weblinks. The student workbook has design challenges with areas to record sketches and drawings, questions (with answers provided) and much more.

Available from DATTA Vic (pl@datta.vic.edu.au).

THE ROARING 20'S

"I've always really loved the '20s and the whole Art Deco time. I just think it was just the most amazing era for style and design."

Jenny Packham

(British designer b. 1965)

This decade is gearing up to be one influenced by the Art Deco period which began in the 1920's.

Art Deco first appeared in France just before World War I.The name Art Deco takes its name from 1925 ***Exposition Internationale des Arts Décoratifs et Industriels Modernes*** in Paris. Following this exhibition the Art Deco style quickly spread around the world.

Art Deco can be seen in such diverse objects as:

architecture	*jewellery*	*radios*
cars	*movie theatres*	*trains*
fashion	*ocean liners*	*vacuum cleaners*
furniture	*product design.*	*visual & decorative arts*

Art Deco combined expensive materials and craftsmanship into modern forms. This can be seen in the luxury of furniture, jewellery and the interiors of the Art Deco buildings of the late 1920s and 1930s.

The Art Deco style declined at the beginning of World War II. Styles became more functional and less adorned as materials and skills available declined. A hundred years on Art Deco's influence can still be seen and admired. This was a great achievement for a period lasting only about 20 years.

Characteristics	• Buildings have a sleek, linear appearance with stylized, often geometric ornamentation. • Buildings often feature a series of set backs that create a stepped outline. • Low-relief decorative panels can be found at entrances, around windows, along roof edges or as string courses.
Colours, Shapes & Patterns	• Typical colours are black, brown, and tan. • Colours are bold. Contrast in schemes of silver, black, chrome, yellow, red, cream, green, and beige. • Metallic textures, geometric patterns • Designs are characterized by trapezoidal, zigzagged, and triangular shapes, chevron patterns, stepped forms, sweeping curves and sunburst motifs
Materials used include:	• Stucco, concrete, smooth-faced stone, and Terracotta. • Steel and aluminium with glass blocks and decorative opaque plate glass (vitrolite).
Art Deco buildings	Australia has a relatively large number of Art Deco style buildings, e.g. • Melbourne - Manchester Unity Building (1932), Former Russell Street Police Headquarters • Castlemaine - Castlemaine Art Museum • Sydney - ANZAC War Memorial (1934), Grace Building, AWA Tower • Other states see https://en.wikipedia.org/wiki/List_of_Art_Deco_architecture#Oceania **New Zealand:** • Napier and Hastings were rebuilt in Art Deco style after the 1931 Hawke's Bay earthquake e.g. Sound Shell (1931) – Napier. • Wellington also has many Art Deco buildings. **United States examples include:** • Manhattan, New York City - Chrysler Building, Empire State Building (1931), Rockefeller Center

Manchester Unity Building, Melbourne

ANZAC War Memorial, Sydney

Chrysler Building, New York City

Empire State Building, New York City

References:

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https://en.wikipedia.org/wiki/List_of_Art_Deco_architecture#Oceania

Vector: 1200x800 Art Deco Period One Of The Most Beautiful Styles In, 1920s Art <a href="http://getdrawings.com/1920s-vector">1920s Vector</ a>