

Scorpio



Technology

NEWSLETTER

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Feature Article: Think Global

TEACHER CONFERENCES & WORKSHOPS



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

ITE – 17-18/03/2022 Technology Education Conference, Sydney

DATTA QLD - 16-17/06/2022 Brisbane Convention and Exhibition Centre

WELCOME

We hope you had a restful break over the festive season, and enjoyed some quality time with family and friends.

It looks like the uncertainties of the last 2 years will continue in 2022, but we now have all discovered ways to work with it to try to bring the best learning outcomes for our students.

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

PRIMARY STEM: EXPLORE THE OUTDOORS

Summer is a great time to investigate and explore the outdoors. Whether you choose to examine concepts such as **weather**, **sustainability**, **energy**, or **Environment Science**, Scorpio has a product that will make the learning real and meaningful.

Check out the Primary School catalogue for inspirational ideas.

Click here:

<https://www.scorpiotechnology.com.au/catalogues>



**LEARN TO MAKE,
MAKE TO LEARN**

"One of the greatest discoveries a man makes, one of his greatest surprises, is to find he can do what he was afraid he couldn't do."

Henry Ford



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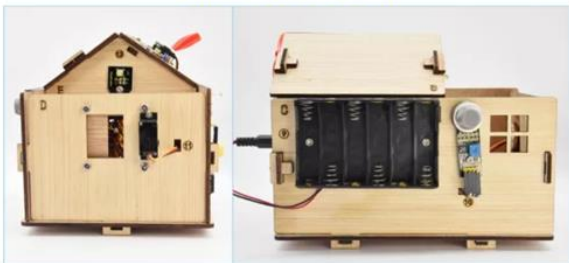


KICK OFF THE NEW SCHOOL YEAR WITH OUR NEWEST PRODUCTS

We've found some great **ARDUINO** microcontroller projects that assist students to learn programming in a fun and educational way. We hope you love them as much as we do!



Smart Home Kit

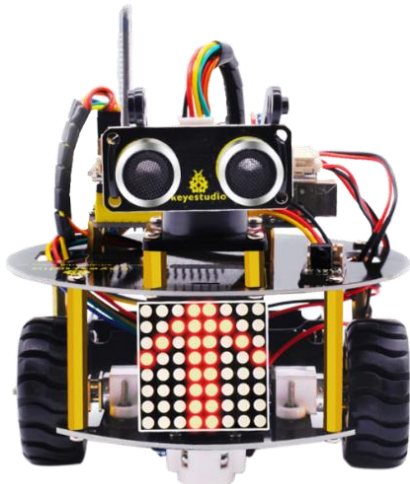


Smart House kit for Arduino

Code: SMARTHOUSE

Experience an automated home where you can remotely turn on the lights, cooling, computer, close windows, and much more.

- Step-by-step tutorials to make 15 fun projects e.g. basic LED Blink program to a complex fully functional smart home with fan control, motion, moisture detection, BLE remote control and more
- All the necessary programs and codes, software and driver installation files are included.
- Assembly is relatively easy using the included tools.
- The kit does not have WIFI related functions, but the kit is equipped with a Bluetooth module, which can be controlled via Bluetooth.
- Making the Smart home:
<https://www.youtube.com/watch?v=vhyZUj5e64Y>



Smart Turtle Robot Car

Code: TURTLESM

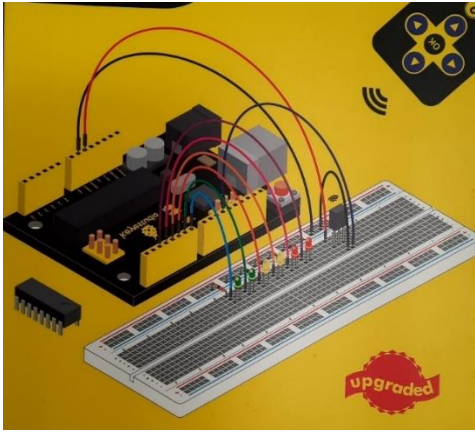
- 15 learning projects, from simple to complex.
- Introduces the knowledge about sensors and modules.
- Turtle car integrates obstacle avoidance, line tracking and IR and Bluetooth control.
- It is made up of DC geared motors, wheels, sensors and acrylic boards.
- Simple assembly: No soldering circuit required.
- Basic programming : C language code of Arduino IDE.
- See it in action:
<https://www.youtube.com/watch?v=tvFxA4OPAFA>



4WD BT Ultrasonic Robot car kit for Arduino

Code: BUGGY4WDUNOUS

- Multi-purpose function: Obstacle avoidance, follow, IR remote control, Bluetooth control, ultrasonic follow and displayed face emoticons.
- Simple assembly: No soldering circuits required.
- High Tenacity: Aluminium alloy bracket, metal motors, high quality wheels and tracks
- High extension: expand other sensors and modules through motor driver shield and sensor shield
- Basic programming : C language code of Arduino IDE.
- See it in action:
<https://www.youtube.com/watch?v=JFJmut94Jpc>



Basic Starter V2 Kit for Arduino (without UNO) Code: UNOSTARTV2-NB

- This Basic Starter V2.0 upgraded kit is developed specially for those who are interested in Arduino. You will have a set of Arduino's most common and useful electronic components.
- What's more, there are detailed tutorials including project introduction, connection diagram, source code and more. You may learn about Arduino from basic projects to more complex projects. This kit will help you control the physical world with sensors.

This Month's Q&A Technology Tips: SUBSYSTEMS

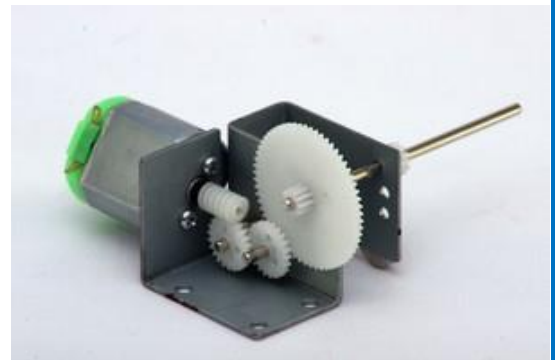
Q. What is a subsystem?

A. Many Scorpio Technology kits use subsystems e.g., gearboxes. We have many different gearboxes to choose from allowing students to investigate and experiment with gear ratios and torque. They can then choose the best gearbox for their project.

Subsystems kits which have been designed to be used as part of a bigger project. These subsystem kits fall into 3 categories and are ideally suited to STEM teaching:

1. GEARBOXES (assembled or unassembled)
2. ELECTRONIC KITS
3. MECHANICAL

Constructing subsystems allows parts to be constructed separately. There are often subsystems inside subsystems. Subsystems can be tested before placing onto the final system. The Systems Engineering Process is not sequential, the functions are performed in a parallel and iterative manner.



Each SUBSYSTEM comes with a Teaching unit which has a complete description of how to make it – how you use it is up to you!



Logic problem: You enter the high school lab and see an experiment. How will you know which class is it?

- If it's green and wiggles, it's biology.
- If it stinks, it's chemistry.
- If it doesn't work, it's physics.

What is the definition of an engineer?

Someone who solves a problem you didn't know you had in a way you don't understand.

Most people believe "If it ain't broke, don't fix it!"

Engineers believe "If it ain't broke, add more features!"



**Even if you
think you are
thinking and
acting
globally,
there is
always more
to learn and
know!**

**Oscar Auliq-Ice (1994-)
Writer, social entrepreneur,
investor, lobbyist,
philanthropist**



Compiled by Anita Vejins

The aim of being a good designer is to have an influence. If you design furniture or lifestyle, you should influence the way people evolve globally. It's good to have an influence.

Olivier Theyskens (1977 -) Belgian fashion designer

Teachers are pivotal in equipping their students with knowledge, skills and values. These skills prepare them for their place in society and contribute to finding solutions to the challenges our planet and humanity are facing today, both locally and globally.

Providing opportunities for real-life understanding that fits within the Curriculum framework can be challenging. The existence of a wide range of **international and national days** can provides a tool to begin discussions or as a start to a classroom design challenge.

These international days are supported by global networks such as the United Nations, UNESCO and many others. They aim to raise awareness of global issues including sustainable development, the protection of human rights, and humanitarian action.

To assist in curriculum planning, we have compiled a list of special days and events you may wish to celebrate in your classroom throughout the year. This is by no means an exclusive list.

We do not advocate using these days as a political platform but as a launching pad for teaching and learning opportunities. These days suit a wide variety of subjects and skill levels. Using an interactive approach students can investigate real issues that affect them, their local community, country or globally. The Covid-19 global pandemic taught us just how much we are a global society and how much we rely on each other.

Every small action matters because when seven billion people do that thing, it changes the world.

Achim Steiner (1961 -) environmentalist with the United Nations

- 11 February **International Day of Women and Girls in Science:** This day is observed as an opportunity to promote full and equal access to and participation in science for women and girls.
- 4 March **World Engineering Day for Sustainable Development:** Celebrates engineers and engineering. The day offers an opportunity to highlight engineers and engineering's achievements in our modern world and improve public understanding of how engineering and technology are central to modern life and for sustainable development.
- The celebration of World Engineering Day is also about promoting engineering as a career and how it is an opportunity to change the world for better
- 26 March **Earth Hour:** Lights are switched off for an hour towards the end of March every year. The aim is to encourage people to do more for our planet especially on climate change.
- 12 April **International Day of Human Space Flight:** Commemorates the first flight in space manned by a human in 1961 by Yuri Gagarin.
- 21 April **International Creativity and Innovation Day:** Raises awareness around the importance of creativity and innovation in problem solving with respect to sustainable development goals, also known as the "global goals".
- 22 April **Earth Day:** Raises the awareness of the need for co-existence between man and nature and to make people more aware of what needs to be done to protect Earth.
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- Typical ways of observing Earth Day include planting trees, community clean-ups, conducting various programs for recycling and conservation.
- 28 April **World Day for Safety and Health at Work:** Raises awareness of occupational safety and workplace hazards – both physical and psychological, and to bring about laws and policies that support a healthy working environment.
- 17 May **World Telecommunication and Information Society Day:** Raises awareness of the role of internet and other communication technologies in society. It promotes safe digital use and developing and implementing common digital standards across the world.
- 5 June **World Environment Day:** Encourages discussions on how to stop destroying the environment, conserve and nurture it, and create sustainable life on the planet.
- 9 August **International Day of the World's Indigenous People:** Promotes the rights of the world's Indigenous population. Celebrates these communities and their knowledge.
- 9 September **National R U OK? Day (Australia):** Reminding everyone to stay connected and make asking "are you OK?" a part of their everyday.
- 15 September **World Engineering Day:** Commemorate the work of engineers and encourages them for improvement and innovation.
- 22 September **World Car-Free Day:** Car Free Day encourages motorists around the world to give up their vehicles for a day

- 29 September **Inventors Day:** Honours inventors of the past, the creators of the present, and encourages the architects of the future
- 10 October **World Mental Health Day:** aims to spread awareness about mental health problems and support.
- 10 November **World Science Day for Peace and Development:** Emphasises the significance of science in the progress of humanity.
- 5 December **World Soil Day:** Ecological balance and soil fertility global importance.


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IDEAS FOR 4 MARCH WORLD ENGINEERING DAY FOR SUSTAINABLE DEVELOPMENT

Primary level we suggest:

Scorpio's **Blue Brothers** series of kits develops Engineering concepts or a kit such as **Kids First Intro to Engineering** (Code: SN576002) provides a wide range of hands-on activities.

	<h3>KIDS FIRST INTRO TO ENGINEERING (Code: SN576002)</h3> <ul style="list-style-type: none"> • Intro to Engineering welcomes young children to the field of engineering with 25 experiments and building projects in five sections. • Suitable for ages 5 - 7. • By engaging in hands-on activities, children will learn how engineers apply their scientific and technical knowledge to design machines and devices. • Begin with basic engineering concepts to more complex experiments. • Complete 48-page guidebook with step-by step, hands-on experiments & building projects.
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Secondary level we suggest:

Scorpio's own kits all follow the **Engineering Design Process**. Choose one or more to suit year level or concept to have fun and learn at the same time!

