

WELCOME

April has arrived bringing with it cooler autumn weather! This is a great time to think environmentally and have fun doing it.

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

🔗 Page 1

**Primary - STEM – Environmental Science
Teacher Conferences & Workshops**

🔗 Page 2

What's New?

Total Solar Eclipse- 20.04.2023

🔗 Page 3

"STARGAZING: A Knitted Tapestry"
Humour – Just for laughs

🔗 Page 4-5

Feature Article – Invest in our Planet

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

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

PRIMARY STEM: ENVIRONMENTAL SCIENCE

With the weather changing it can be a time to bring the environment inside.

- Investigate changes in the weather (measure the temperature inside/outside, record rainfall, measure wind speed),
- Use a magnifying glass to look at nature up close or even closer with a microscope,
- Plant grass in a cup and watch and record its growth.
- Learn about solar energy. You could try many of Scorpio's solar projects. Those in warmer areas may try the fun **Cooking with Solar Energy** pizza box oven that really does work! **Click here:** <https://www.scorpiotechnology.com.au/project-sheets>



WEATHER & METEOROLOGY

Anemometer – Cup (Code: **1055043**)

4M - Weather Science (Code: **FSG3402**)

4M - Weather Station (Code: **FSG3279**)

Various large thermometer models available

Click here:

<https://www.scorpiotechnology.com.au/weather-and-meteorology>

MAGNIFYING TOOLS

Field Magnifier (Code: **MGHJ2118**)

Handscope (Code: **MGHJ2126**)

Magnifier with Tripod (Code: **MG0255**)

Click here:

<https://www.scorpiotechnology.com.au/laboratory-general-equipment>

ALTERNATIVE ENERGY STEM KITS

Click here: <https://www.scorpiotechnology.com.au/primary-kits>

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

**LEARN TO MAKE,
MAKE TO LEARN**

"In all things of nature there is something of the marvelous."

*Aristotle (born 384 bce - died 322)
Ancient Greek philosopher and polymath*





SOLDER PRACTICE

Do you have students still struggling with soldering? Our solder practice kit (Code: SOLDPRAC) has solved this problem for many students. One kit can be used by a number of students.

We also have discontinued PCBs from our Wander/Seeker project kits. These would be great for soldering practice. (NOTE: NO electronic components included in this offer). BE QUICK & PICK UP A BARGAIN! LIMITED QUANTITIES! **ONLY \$0.10 each** [Click here: https://www.scorpiontechnology.com.au/on-sale/pcb-for-soldering-practice?rq=pcb](https://www.scorpiontechnology.com.au/on-sale/pcb-for-soldering-practice?rq=pcb)

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.

TOTAL SOLAR ECLIPSE

A total solar eclipse will occur on **Thursday, 20th April** and it will be visible SE. Asia, E. Indies, Australia, Philippines, and New Zealand. In Australia it will be best viewed over the North West Cape, a remote peninsula of Western Australia. This eclipse has been given the aboriginal name "The Ningaloo Eclipse":

This is a special Hybrid eclipse. The Earth, Moon and the Sun align. The last occurred in 2013 and the next one will occur in 2031. A solar eclipse can only occur during the time of new Moon, and only when the Moon is close to a node in its orbit.



An eclipse may be partial, total, or annular. Each has its own characteristics. The total solar eclipse on 20th April will not appear to be a total solar eclipse due to the angle of the alignment.

Locality	Begins	Ends	Duration
Perth	10:00 am	12:46 pm	2 hours, 47 minutes
Melbourne	1:15 pm	3:01 pm	1 hour, 46 minutes
Canberra	1:29 pm	3:12 pm	1 hour, 43 minutes
Sydney	1:36 pm	3:18 pm	1 hour, 42 minutes
Brisbane	1:43 pm	3:41 pm	1 hour, 58 minutes

WATCHING SAFELY

The sun can damage our eyes in a few seconds. The safest way to watch an eclipse is through proper eye protection, like eclipse glasses or a special solar filter. Sunglasses are not suitable nor is looking through a telescope or binoculars.

A safe way to view is through a pinhole projector. Remembering to always keep your back towards the Sun when using it. You may like to try making **DIY: Simple Card Projector** which can be found at <https://www.timeanddate.com/eclipse/make-pinhole-projector.html> or <https://blog.doublehelix.csiro.au/solar-eclipse-viewer/>

REFERENCES

<https://www.timeanddate.com/eclipse/solar/2023-april-20>
<https://www.space.com/solar-eclipses-2023-special-year>
<https://www.sws.bom.gov.au/Educational/5/4/2>



HANDMADE UNIVERSE – “STARGAZING: A Knitted Tapestry”



Sarah Spencer's tapestry “*Stargazing*”, is composed of wool, cotton and LED lights.

Sarah Spencer is an artist and Software Engineer who has created a unique STEAM project. She has hacked a 1980's manual domestic knitting machine and used it to create a gigantic tapestry of the night sky filled with 88 constellations. The constellations are lit up by 842 LEDs with the touch of your finger using a special app that Sarah wrote.

Sarah added a colour changer and created a new algorithm for making three-colour knitting patterns. By adding network capabilities, her knitting machine became her printer. Sarah states “I wanted to bring my own enthusiasm for technology and for knitting, so I thought, “If I'm going to inspire and engage, particularly young people in the sciences what better way than to show them the stars?”. The amazing tapestry has been donated to the State Library Victoria.

REFERENCES

<https://www.facebook.com/ABCARTS/videos/431060205860506/>

Sarah Spencer | Handmade Universe artist diary: <https://www.youtube.com/watch?v=h8kMgfjYugk>

Installing Stargazing by Sarah Spencer: <https://www.youtube.com/watch?v=RDPxHakH8zQ>

<https://www.slv.vic.gov.au/handmade/>

<https://www.artshub.com.au/news/reviews/exhibition-review-handmade-universe-2566748/>



🚗 **Two electric car owners were seen today fighting over a charging port.**

The police have said it was a charged environment and they will amp up patrols around the area. A lot of witnesses were shocked and some saw someone socket to the other.

🚗 **I was in front of a grocery store, some guy came up to me.** He said "Hey, do you have a moment to help save the environment?"

I said "Absolutely." So, he gave me a pamphlet, I recycled it right away.

🚗 **I totally pay attention to sustainability when baking.** With a little skill, bread dough, heat and love it becomes an excellent doorstop that gives pleasure for weeks.



“Invest in Our Planet”

Anita Vejins

The world population has reached 8 billion people on November 15, 2022 according to the United Nations and will continue to grow. This growth brings with it the obligation to look after Earth for our future generations.

To encourage thinking about our Earth there are global days. **World Water Day** (March 22) **Earth Hour** (25 March) when lights are switched off for the planet for one hour, **Earth Day** (22 April), **World Environment Day** (5 June), **World Environmental Education Day** (14 October). You can find many more on a global and national level.

The main aim of these days is to raise awareness among the world’s people about climate change, the need to have a healthy Earth, biodiversity and to protect Earth’s natural resources.

“You cannot get through a single day without having an impact on the world around you. What you do makes a difference, and you have to decide what kind of a difference you want to make”. Jane Goodall

A TEACHING PERSPECTIVE

Rethinking how and what we use in the classroom affect the environment. Schools and businesses such as hospitality and medicine are known to produce large amounts of waste. Students learn by example.

Changing to recycled and sustainable alternatives is a long term goal. Unfortunately, many recycled items or sustainable alternatives are more expensive to purchase than traditional. This is due to the cost of collecting, cleaning and reworking involved.

“The truth is: the natural world is changing. And we are totally dependent on that world. It provides our food, water and air. It is the most precious thing we have and we need to defend it.” Sir David Attenborough

IDEAS FOR TEACHING

These ideas can be adapted to any skill level.

- Earth Day colour is green. represents all the grass, trees, bushes, leaves, etc. Blue can also be used. Blue represents the water in our world.
- Explore the environment. Investigate local vegetation, birds and wildlife, waterways, soils and more. Your local council may have information to help you.
- Planting - Plant pollinator species native to your area. This supports local populations of butterflies, bees, and other organisms critical to sustained biodiversity in your ecosystem.

“It is our collective and individual responsibility, to preserve and tend to the world in which we all live.”

Dalai Lama



- Design and build a ...
 - Solar oven made from a pizza box (<https://www.scorpiotechnology.com.au/project-sheets>)
 - Model solar house**,
 - Solar-powered classroom
 - Simple vehicle powered by a rubber band,
 - Simple vehicle powered by the wind **,
 - Insect for a specific environment,
 - Model house that could be used in a flood prone area,
 - Model house for an earthquake prone area,
 - Sorting machine for recycling etc.
 - Compost system or a worm farm
 - Model that makes the best use of recycled materials.

Many of these projects can be found in Scorpio Technology's catalogues **.

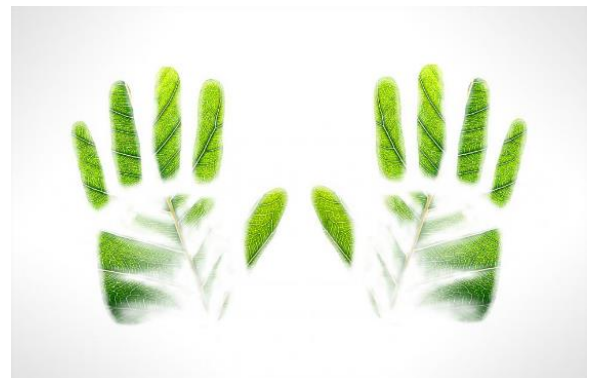
EARTH DAY VOCABULARY

The following vocabulary list can be used as a starting point for topics of study etc.

alternate energy	deforestation	landscape
area	ecological	nature
atmosphere	ecological footprint	non-renewable energy/resource
biodiversity	economic	recycle
carbon footprint	ecosystem	reforestation
chemical	energy conservation	renewable energy/resource
climate	environmental	solar power
climate change	forests	surroundings
conditions	fossil fuels	sustainability
conservation	habitat	sustainable
context	infrastructure	system

DO-ABLE GREEN IDEAS

1. Minimize chemicals and waste by choosing eco-friendly alternatives.
2. Compost food waste to save landfill space.
3. Stop drinking bottled water. Use a reusable water bottle.
4. Think before you shop. Choose products made from natural, biodegradable or recyclable materials. Do you really need this item? Bring your own shopping bags.
5. Choose quality over convenience. Choose items that are built to last, made from sustainable materials, have minimal packaging and are energy smart.
6. Minimize rubbish. Dispose responsibly. Reuse, recycle or repurpose everything that you can.
7. Recycle e-waste to ensure that they don't end up in landfill. E-waste takes up space and can leak dangerous toxins. Precious metals contained in e-waste can be retrieved.



REFERENCES

- <https://www.earthday.org/>
- <https://education.nationalgeographic.org/resource/earth-day/>
- <https://gradesofgreen.org/five-ways-to-celebrate-earth-day/>
- <https://greensourcedfw.org/articles/20-green-tips-2020>
- <https://www.sciencebuddies.org/blog/earth-day-activities?from=Newsletter#vocabulary>

