

Junior Field Naturalists SA

Newsletter - November 2021

Hi Junior Field Naturalists,

David Christophel Memorial Quiz Night

When: **Tuesday 30 November**, 7.00pm, Bellevue Heights Primary School Gym

This will be our last meeting for 2021 - our annual **Quiz Night**.

Our Quiz Master for the evening will be **Cameron McDonald**.

The evening is always a lot of fun - with a bit of learning thrown in. Questions will be general knowledge ones. Nothing too difficult - the aim is for the children to try to answer the questions before the parents jump in to help.

There will be prizes, plus a small gift for each child. *Join us!*



David Christophel

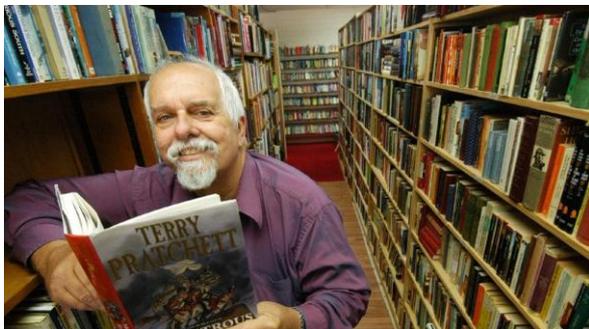


Image: adelaidenow.com.au

David Christophel was a gifted academic, a well-respected paleo-botanist and a popular local identity, being the owner of Blackwood Books. He was published in numerous scientific journals and was renowned for his work relating to fossil leaves and uncovering evidence of a tropical rainforest in south-east Australia that existed during the Eocene Epoch about 40 million years ago.

David had long been an invaluable support to our club in so many ways, including presenting talks, helping us to source speakers, and donating prizes. He took particular delight in being our **Quiz Master** at our end-of-year celebrations. To honour David, after his sudden passing in 2018, our club has named this function in his memory.

Thanks to our Supporters

Our club would like to thank everyone who has supported us over the past 12 months. They include:

- Our monthly **guest speakers** who generously give up their time to present talks at our meetings.
- Other scientists and experts in their fields who took us on **field trips**.
- **Bellevue Heights Primary School** for the continuing use of the school facilities free of charge.
- Our club's **committee members**: Joel Catchlove, Michele Hamdorf, Wendy McKeown, Kirstie Morandell and Lou Petherick, as well as Cameron McDonald, our Quiz Master.
- And a very special THANK YOU to our **club families** who have continued to support us throughout this year.



Club Patron



A *thank you* also goes out to the Patron of our club, **Prof Chris Daniels**. Chris is:

- The Presiding Member of **Green Adelaide Landscape Board**
- CEO of the **International Koala Centre for Excellence**
- Special Advisor to **Cleland Wildlife Park**

We are privileged to have someone of Chris's calibre as our Patron and we very much appreciate his ongoing support.

And some science jokes just for fun ...

What travels around the earth all year without using a drop of fuel?

The moon

Why didn't the Sun go to university?

Because it already had 1 million degrees

What stays in the corner, but travels around the world?

A stamp

Where do fish keep their money?

In the river bank

What do you call an elephant in a phone booth?

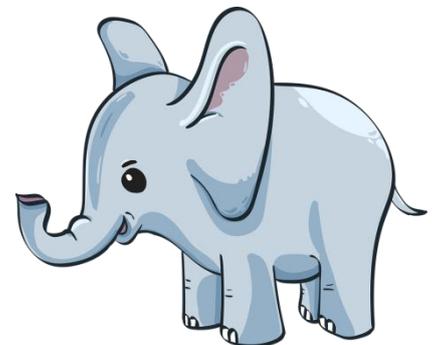
Stuck

Teacher: *What is the molecular formula of water?*

Student: H, I, J, K, L, M, N, O

Teacher: *That doesn't make sense. How can you say that?*

Student: Because it is H to O





Science Alive! really is all kinds of awesome. Join in a fun family day out and discover how science and technology influence our everyday lives.

When: Friday 19 November 2021 | 9am – 3pm (for high school students)
Saturday 20 & Sunday 21 November 2021 | sessions at 9am – 1pm and 1.30pm - 5.30pm (general public)

Where: Adelaide Showground

More Info & Book Tickets: <https://www.sciencealive.net.au/>



With over 60 exhibitors, including all the big names in science and technology, experience interactive and dynamic displays, plus spectacular science shows and performances for all ages. *There's something to spark the curiosity in all of us!*

Highlights include a Robot Combat arena; an impressive LEGO display; Daleks; Slime, slime and more slime; a Marine Science Zone; Virtual Reality experiences; Hands-on exhibits; Robotics; Astronomy; Electric cars; Drones; Animals, Bugs and so much more!

Then there's the spectacular science shows such as The Colourful Chemistry Show, Scientific Circus Show, and Dinosaurs Down Under, to name a few.

You can also join in some of the crazy challenges such as Paper Plane Challenge, Spaghetti Tower Challenge and Mousetrap Racers.

There's no better event to experience firsthand all fields of science and technology.



Did you know ...?



1) Tallest dinosaur

The tallest of all the dinosaurs is thought to have been *Sauroposeidon proteles*, mainly thanks to its giraffe-like neck, which stood at a rather impressive height of 17 metres.

2) Shortest dinosaur

In contrast, one of the smallest dinosaurs to exist on Earth was the bird-like *Oculudentavis khaungrae*, weighing only around two grams, which is smaller than the smallest bird species alive today, the bee hummingbird.

3) Fastest dinosaur

Two of the quickest of all dinosaurs were the Ornithomimus and Gallimimus, which are estimated to have been able to reach speeds of 113km per hour.

4) Feathered friends?

Contrary to their portrayal in films, many dinosaurs were actually feathered like birds, with the Sinosauropteryx being the first to be unearthed by palaeontologists

5) Velociraptor myths

The Velociraptor, made famous by the Jurassic Park films, was not actually as big as it was portrayed, standing less than 2 metres long and only 60cm high.



(Information from howitworksdaily.com)

Bluetongue Lizards



In summer you might hear the rustling of leaves in a garden bed, or see movement in between your pot plants, and come face to face with a **Common Bluetongue lizard**, *Tiliqua scincoides*. These lovely lizards grow up to 55 cm and are common in our gardens as well as a wide range of other habitats. If you approach them, they will freeze and flatten themselves, or wedge themselves into a tight space, until they sense an opportunity to make a run for it.

The stripes and colours on their backs make for excellent **camouflage** so they are often living alongside us without our knowledge. If you have a pair living nearby and sufficient habitat and food sources, you may soon have a booming population, as these lizards give birth to between 8 and 20 live young.

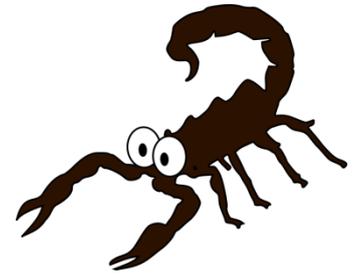
Unfortunately there are a number of threats to them in our suburbs, including predation by cats and dogs, and injury and death from lawnmowers and cars. With a diet of invertebrates (including snails) and small frogs, our indiscriminate use of pesticides can reduce prey items available to them, or poison them through contaminated prey.

From NRM Education



Interesting Facts about Scorpions

- Scorpions are **predatory animals** of the class *Arachnida*, making them cousins to spiders, mites and ticks.
- Scorpions have eight legs, a pair of pincers (pedipalps) and a narrow segmented tail that often curves over their back, on the end of which is a **venomous stinger**.
- The scorpion uses their **pincers** to quickly grab prey and then whip their poisonous tail stinger over to kill or paralyse the prey. The tail is also used as a useful defence against predators.
- Scorpion species range in size from **0.09 cm to 20 cm**.
- Scorpions can be found on all continents except for **Antarctica**.
- There are over **1750 known species** of scorpion. While humans generally fear the scorpion and its poisonous sting, only about 25 of the species have venom capable of killing a human.



- Under **UV light**, such as a black light, scorpions are known to glow due to the presence of fluorescent chemicals in their exoskeleton.
 - The scorpion is **nocturnal**, often hiding during the day under rocks and in holes in the ground before emerging at night to feed.
 - Scorpions can eat a **massive amount of food** in one meal. Their large food storage organs, together with a low metabolism rate and an inactive lifestyle, mean that, if necessary, they can survive 6-12 months without eating again.
- Areas of China have a traditional dish of **fried scorpion**, and **scorpion wine** features in Chinese medicine.
 - The scorpion is one of the **12 signs of the Zodiac**, with the Scorpio constellation identified in the stars.
 - **Scorpions moult**, they shed their exoskeleton up to 7 times as they grow to full size. They become vulnerable to predators each time until their new protective exoskeleton hardens.

(Information from Science Kids)



Have fun with science ...

Red Cabbage Chemistry

<https://www.stevespanglerscience.com/>



Ahh, the sweet smell of science! This activity is super-smelly, but a really cool experiment. Plug your nose and get ready to make your own red cabbage indicator that will test the acidity or alkalinity of certain liquids.

What to do:

1. Peel off 3 or 4 big **red cabbage leaves** and put them in a blender filled one-half full with water. Blend the mixture on high until you have purple cabbage juice.
2. Pour the purplish cabbage liquid through a **strainer** to filter out all of the big chunks of cabbage. Save the liquid for the experiments to follow.
3. Set out **three glasses**, side by side. Fill each glass three-fourths full with cabbage juice.
4. Add a little **vinegar** to the first glass of cabbage juice. Stir with a spoon and notice the colour change to red, which indicates that vinegar is classified as an acid. All acids will turn red when mixed with cabbage juice.
5. In the second glass, add a teaspoon of **washing soda** or **laundry detergent**. Notice how the liquid turns green, indicating that this chemical is a base.
6. Keep the two glasses of red (acid) and green (base) liquid for future reference. Fill the third glass of purple cabbage juice to show the colour of a neutral solution.



How does it work?

Some substances are classified as either an **acid** or a **base**. Think of acids and bases as opposites—acids have a **low pH** and bases have a **high pH**. For reference, water (a neutral) has a pH of 7 on a scale of 0–14. Scientists can tell if a substance is an acid or a base by means of an **indicator**. An indicator is typically a chemical that changes colour if it comes in contact with an acid or a base.

As you can see, the purple cabbage juice turns red when it mixes with something acidic and turns green when it mixes with something basic. Red cabbage juice is considered to be an indicator because it shows us something about the chemical composition of other substances.

What is it about cabbage that causes this to happen?

Red cabbage contains a water-soluble pigment called **anthocyanin** that changes colour when it is mixed with an acid or a base. The pigment turns **red in acidic environments** with a pH less than 7 and the pigment turns **bluish-green in alkaline (basic) environments** with a pH greater than 7.

Red cabbage is just one of many indicators that are available to scientists. Some indicators start out colourless and turn blue or pink, for example, when they mix with a base. If there is no colour change at all, the substance that you are testing is probably neutral, just like water.



Take it further:

You can also make your own **pH indicator strips**, like you see lifeguards using to test the pH of pool water. To do this, soak some coffee filter paper in concentrated cabbage juice.

Remove the paper from the cabbage juice and hang it up by a clothespin to dry. Cut the dried paper into thin strips. Dip the strips into various liquids to test their pH. The **redder** the strip turns, the more **acidic** the liquid is. The **greener** the strip turns, the more **basic** the liquid is. If it stays **purple**, you guessed it, the substance you're testing is probably **neutral**.

- Fill additional glasses with purple cabbage juice. Look around your home. Think of other household products that you use daily (shampoo, hand soap, salt, milk, orange juice, etc.). Try adding a small amount of each to your cabbage juice. Note the colour change to determine if the chemical is an acid (red) or a base (green).

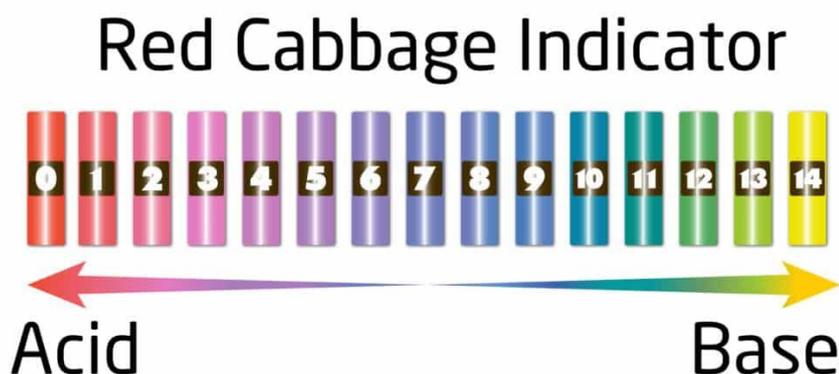


Image from science-sparks.com



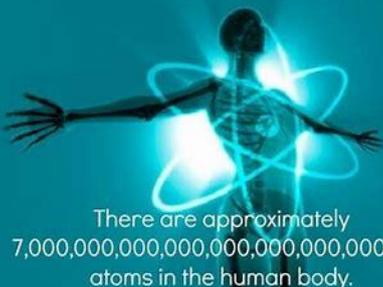


A QUIRKY FACT TO SHARE WITH YOUR CLASS

Earth is the only place in the Solar System where water can be present in its three states: solid, liquid and gas.



treetopdisplays



There are approximately 7,000,000,000,000,000,000,000,000 atoms in the human body.

Enjoy the Holidays!

We wish all our club families a merry Christmas period and we look forward to having you back as members of our club in 2022 for lots more fun and learning.



Image from TeePublic

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