Junior Field Naturalists SA

Newsletter - April 2020

Hi Junior Field Naturalists,

City Nature Challenge

"Imagine how many species you could document if everyone in Australia just spent a few hours a day for 4 days documenting the biodiversity in their own backyard."

City Nature Challenge is GO from 24 - 27 April!

Welcome to the biggest backyard bioblitz Australia has ever seen! For the first time, the international **City Nature Challenge** is being contested by four Australian cities. Due to current world-wide circumstances, the Australian organisers of the City Nature Challenge are encouraging everyone in Australia to join in the fun and bioblitz in their own backyards (or balconies) in the name of science.

The nature challenge runs from **24th to 27th April** inclusive - and the whole family can be involved.

Download the **iNaturalist** app and get started!

- Visit iNaturalist.org
- Download the app from the AppStore or Google Play
- Sign In
- Start sharing your observations
- Get feedback from actual scientists, experts, and other naturalists

It is anticipated that more than 40,000 people worldwide will make & share over 1 million observations of nature in over 230 cities from the 24th to 27th of April inclusive. All Australian iNaturalist research-grade observations are added to the **Atlas of Living Australia** via the iNaturalist Australia node.

Help us to compete with cities from around the world by making the most natural observations possible from April 24-27 2020. Let's show the world the incredible diversity Adelaide has to offer, from ants and kangaroos to other fauna and flora of all shapes and sizes.

During the four-day window of this challenge, snap a photo of your natural observation and upload it to the iNaturalist website, making sure to include the location. The observations will automatically be pooled to this project so that we can compete with participants from cities all over the world.

More info: https://citynaturechallenge.org/

Cleland Wildlife Park Membership

As a member of Junior Field Naturalists SA, each child has received free membership to **Cleland Wildlife Park** until March next year. As you know, the Park is currently closed but - as soon as it reopens - our club members will enjoy unlimited free visits.

We will keep you up to date when information becomes available as to when the wildlife park will reopen for visitors to once again enjoy the experience of interacting with native animals such as koalas, wombats, bettongs, potoroos, reptiles, birds and so much more.

Future Field Trips

As well as our regular monthly meetings, we had a number of field trips planned throughout this year. These included our annual Fungi Foray, Bird Banding, exclusive activities at Cleland Wildlife Park and beach-combing.

In addition, we had other special events organised, including sessions with the electronics group who ran our hugely successful Lantern and Cartesian Diver events at the Clipper Ship last year. Some of their activities planned for our Club this year included Magnetic Compass, Lighthouse and Christmas Trees.

We are hoping that some of these field trips and activities can proceed later in the year.

Meanwhile the **City of Adelaide Clipper Ship** has produced an activity boooklet.

Clipper Ship Activity Booklet

Message from the Clipper Ship:

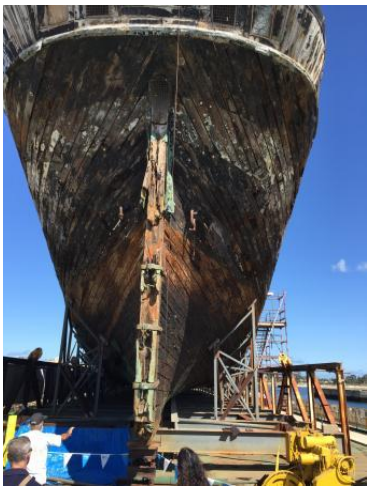
This small booklet has been produced for the entertainment of children and their families during the current COVID-19 restrictions. Art work is by Swee Wah Yew, and much of it is from extracts of the "Clipper Ship City of Adelaide. Fun, facts & figures!" book by Meredith Reardon & Peter Christopher, published by Axiom Publishing, Australia. Please enjoy, and we look forward to welcoming you back to the ship once we re-open.

This fun and informative booklet includes lots of activities and facts. It can be downloaded at:

https://www.cityofadelaide.org.au/covid-19-activity-booklet

About the City of Adelaide Clipper Ship

The **City of Adelaide Historic Clipper Ship**, built in 1864, is the world's oldest surviving composite clipper ship (wooden hull on iron frames). The only other is the **Cutty Sark**.



The massive vessel was purpose built to carry up to 300 passengers and cargo to and from the city of Adelaide, South Australia, after which it was named. It undertook 23 return voyages between the UK and Adelaide from 1864 to 1887, then went into the North American timber trade, then was an isolation hospital for infectious diseases, including smallpox cholera and scarlet fever from 1893 at Southampton.

In 1923 it was bought by the Royal Navy, and renamed HMS Carrick. From 1948 she became clubrooms for the Naval Reserves. Recovered from Scotland after a 14 year campaign to save the vessel, the City of Adelaide arrived in Adelaide in 2014.

It was renamed back to its original name City of Adelaide by HRH the Duke of Edinburgh in October 2013 at Greenwich while being transported from Scotland to Australia. It is planned to be the centre-piece of a seaport village, offering the perfect interactive environment for visitors to learn about Australian maritime and colonial history. The City of Adelaide carried immigrants from England, Scotland, Cornwall, Wales, Ireland, Germany and Scandinavia. The ship is now at Dock 2, Honey St, Port Adelaide.

Did you know ...?

- The known universe is made up of up to 50,000,000,000 galaxies. There are between 100,000,000,000 and 1,000,000,000,000 stars in a normal galaxy. In the Milky Way alone, there might be as many as 100 billion Earth-like planets. *Still think you're alone?*
- An individual blood cell takes about 60 seconds to make a complete circuit of the body.
- At 38cm, the eyes of giant squids are the largest on the planet.
- The low frequency call of the humpback whale is the loudest noise made by a living creature.
- In 5 billion years the Sun will run out of fuel and turn into a Red Giant.
- The thermometer was invented in 1607 by Galileo.

Dinosaur University

Prof Flint - the singing palaeontologist who has presented special programs for our Club - has set up **Dinosaur University**.

At these times of social isolation, access to on-line stories, science and education are critical - especially when it comes to the world of dinosaurs! Join Prof Flint as he takes us on journeys exploring the world of palaeontology. Suitable for ages 5 to 12 ... and everybody else!

He'll also be travelling to a number of different - and awesome - locations in the coming weeks so, if you don't already, you should *Like* his page:

https://www.facebook.com/DinosaurUniversity/

There you'll find dinosaur information (of course!), live streams, activities, links to other dinosaur sites and so much more.

Have fun with science ...

Lava Lamp

Introduction

Have you ever seen a **lava lamp**? They might look complicated, but you can make your own using common kitchen supplies. *Try this activity to find out how!*

Background

If you look around your kitchen, there are probably a lot of **different liquids**, including water, juice, milk and oil. Many of these liquids have different properties that you can see, feel and taste. For example, milk is opaque and white whereas water is transparent and clear, and oil has a "slimy" texture that makes it difficult to clean if you spill it.

Each liquid also has other properties that might not be so obvious because you can't "see" them easily. For example, they all have different **densities** (the amount of mass per unit of volume). Many common household liquids such as juice and milk have a density very close to that of water, so you might not notice a difference. Oil, however, has a lower density than water, meaning it can float on top of water. (It is **buoyant**.) You can see this if you try putting a few drops of oil in a glass of water - they will float on the surface.

For this experiment you will need:

- Clear glass
- Tap water
- Vegetable or mineral oil
- Food colouring
- Alka-Seltzer tablets
- Flashlight (optional)

What to do:

- Fill your glass about one quarter full with **water**.
- Add several drops of **food colouring**.
- Fill the rest of the glass with **oil** (not all the way to the brim).
- Break an **Alka-Seltzer tablet** into four roughly equal-size pieces.
- Drop one of the pieces into the glass. *What happens?*
- Wait for the bubbles to stop, then drop in another piece. *How long do the bubbles last for each piece?*

What happened in this experiment?

When you pour the oil into the glass, you should see it does not mix with the water - it forms a separate, clear layer on top. *This occurs for two reasons:*

- First, the oil and water are different densities - the oil is lighter, so it stays on top.
- Second, the water (and food colouring) molecules are **polar**, so they are strongly attracted to one another. The oil molecules are not polar, so they don't mix with the water or the food colouring. This is why you'll get the same result no matter what order you pour substances into the glass - the water and food colouring will always sink to the bottom instead of mixing with the oil.

When you drop an Alka-Seltzer tablet into the glass, it sinks to the bottom. It sinks straight through the oil without any chemical reactions occurring. When it touches the water, however, a chemical reaction occurs that releases **carbon dioxide gas bubbles**. These

bubbles are less dense than the water or the oil, so they float to the top - but they "stick" to the water a bit, dragging some water droplets up toward the surface with them. When they reach the surface, the gas bubbles pop and the water droplets sink back to the bottom - creating a lava lamp effect.

Eventually the Alka-Seltzer tablet will be completely consumed, and the chemical reaction will stop. If you let the glass sit still, all the water droplets will sink back to the bottom. (Remember, they don't want to mix with the oil.) But as long as you have more tablets, you can keep the reaction going!

Extras you can try:

- Stand a large flashlight on its end, with the light facing up, and place the glass on top. Turn off the lights in the room and turn the flashlight on. Drop in another Alka-Seltzer tablet, and you've made a lava lamp!
- Try the activity with different temperatures of water. *How does water temperature affect your results?*
- Try using half a tablet or even a whole tablet at once. *What happens?*
- Try pouring some salt into your glass instead of using an Alka-Seltzer tablet. *What happens?*
- Try reversing the order in which you add substances to the glass. *What happens if you pour the oil in first, then add the water and food colouring?*
- Review the information in the "background" section. Try making a lava lamp with different liquids you can find in your kitchen. *What combinations of liquids work, and which ones don't? Can you figure out why?*

Cleanup

Do not pour all that oil down the drain! It could cause a serious clog. Ask an adult for help disposing of it. Options may include putting it in a sealed container in the trash or pouring it outside.

Experiment sourced from ***Science Buddies***

Take Care Out There

Take care of yourselves and your families - and we very much look forward to meeting up again and participating in many more fun and educational activities with Junior Field Naturalists SA.

Rona Sakko, President - Junior Field Naturalists SA
0419 827 723 jfnsa.com.au
ronadel@dodo.com.au or rona.sakko@gmail.com
Patron: Prof Chris Daniels