July 2018

Volume 1, Issue 6

Inside this issue:

Items for Observing the Sky:

- Night Sky App for Apple iOS devices.
- Sky Map for Android Devices.
- Picnic Blanket or Chair.
- Thermos with Hot Chocolate.
- Star Chart.

Pleiades by Rawastrodata

Sky Watch

The sky has fascinated people for centuries as they've wondered about the stars and how they came to be. They've used the stars as a compass to find their way, know the time and seasons with star maps, calendars and clocks.

The sky doesn't stay the same; it's always changing. Night and day continue to cycle as does the moon as it waxes and wanes and the seasons come and go.

We notice seasonal change during the daylight hours when we're observing nature outdoors and notice migratory birds leaving in Autumn and returning in Spring. We notice the heat of the sun is less as it sits low in the sky during winter, but do you ever venture outdoors at night to explore the changes in the heavens through the seasons? Do you look up and wonder about the stars?

Our night sky lights up with a brilliance as the Milky Way becomes the centerpiece of our southern winter sky as Sagittarius and Scorpius come into view. We can also search for Libra, Virgo, Lyra, Aquilla and the Southern Cross.

Stars rise in the east and set in the west like the moon and sun while the earth spins from west to east and learning how we rotate will help us to understand the stars and locate them.

We can find out where we are in the world by 'fixing our position' in relation to the south pole. If we know this information we'll begin to understand and work towards knowing how to use the stars as a compass. Find out how to use the Southern Cross to find the South Celestial Pole here. And here.

Sky Watch Links:

Seasonal Constellation Activities by Museums Victoria

How the Sky Works: A Beginner's Guide to Finding Stars and Planets

Download Winter Sky Tour and Take a Virtual Tour and Audio Tour from ABC Science

How to Paint Skies with Watercolour Part 1| John Muir Laws and Part 2.

Picture of the Week Challenge

Fairy Wren by Jacob

Red-capped Robin by Jacob

Joy's Groodle had gorgeous pups.

Mushrooms by Clare

Seals by Kylie

Flowering Banksia by Shelleys

Moonlit Possum by Sarah

Bracket Fungi
by Sarah

Banksia at Sundown by Allie

Moon by Day captured by Stephanie

Nature Science for Aussie families is a F.B. Group where outdoor mamas share their adventures, explorations and activities to motivate, encourage and support one another. We'd love to have you come along side us and share in our joy or #naturestudyaustralia on Instagram.

Show & Tell

Drawing Wattles by Sarah

Sarah set up a Resource Centre.

Heather is observing Bowerbirds and their nests as they become active.

Building a snowman in Canberra by Hayley

Snowman by Cindy

A Solstice Winter Lantern made by Alice's 3yr old.

A winter walk yielded Banksia Blossoms and Cones by Jessie

Collecting autumn leaves with an Adanorack by Sarah

Purple Crust Fungus | Lopharia

Building Cubbies by Joanna

Bush Walk Collections by Sarah

Jelly-like fungus in the Otways, Vic.

Coral Fungus by Sarah

Collecting Flowers by Renae

Nature patterns with playdough by Renae

Making Lavender Oil by Nini

Light in the Sky

As we begin to look up at the stars you may begin to wonder why the sky changes colour; from blue during the day to the most fantastic hues of orange, red and pink at sunset to black at night.

The sun is the closet star to earth and it shines down light and warmth upon the earth. The light coming from the sun includes all the colours of the rainbow. These colours travel to us through the atmosphere in straight wavelengths until it hits the atmosphere around the earth.

The atmosphere is made up of gases like nitrogen, oxygen and other particles like dust, smoke, pollen and salt from the ocean. As the light from the sun shines through the atmosphere, the different colours separate. The blue light is made of shorter wavelengths which scatter as it bumps into dust and gas particles, and because the blue light is shining in different directions it gives the sky a blue appearance. Watch Why the Sky is Blue Here to see it in action.

A Fun Activity:

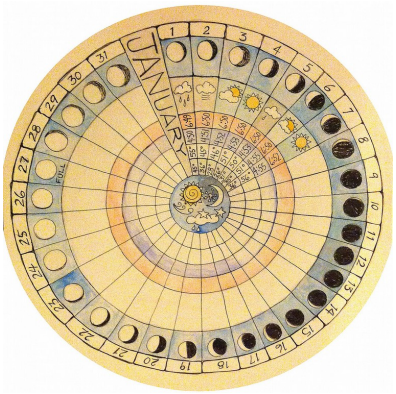
Watch a sunrise and sunset and notice how the colours change as the sun arcs over the sky. Use coloured pencils or paints to scribble or journal these colours as they change through the day.

So why is the sky red during a sunrise or sunset? In the morning or late in the afternoon, when the sun is low in the sky, the light from the sun passes through the particles in the atmosphere through a longer path where the colours like red and orange have longer wavelengths. The intensity of these colours in the sky depend upon the gasses and particles within the atmosphere at the time. Have you ever wondered why, when there has been a fire and the air is thick with smoke, the sunsets are the most brilliant? Now you Know! Watch why the Sunset is Red here.

Have you wondered why it's black and dark at night? That's because the earth has turned away from the sun and no scattered light reaches us during this time except for the light which the moon reflects onto us.

So why does the moon shine? The moon shines because it's surface reflects light from the sun onto the earth. The moon orbits our planet and how much light we receive from it depends on where it is in it's cycle. It takes the moon 29.5 days to circle our planet and this makes our monthly calendars.

As the earth orbits the sun and the moon circles the earth we notice the many phases of the moon from New Moon to First Quarter; Full Moon to Last Quarter and Waning Crescent to New Moon again. The moon waxes as it grows larger and wanes as it grows smaller. When the moon is between the sun and the earth, the side which reflects light onto us is turned away and that's when we experience a "new moon." Watch Why Does the Moon Change here.



Follow the Phases of the Moon with a Phenology Wheel

This is a fantastic way to journal the phases of the moon through a month. There are eight smaller circles within a larger circle and it's further divided by sectioning the circles into 32 slices for each day of the month. Within each slice the sections show min and max temperatures, sunrise and sunset times, the weather and moon phase. Learn how to make a wheel here or use this template.

Jacob's Adventures

Sometimes the things that I find in nature, are not actually natural. I often find rubbish and items that have been left behind, which I like to collect and make things from. At the moment, we are travelling around South Australia and so far I have collected: 2 bolts, 1 fork, 2 metal discs, 2 washers, a bell shaped piece of metal, 1 cork, 1 tent peg, 1 cable tie, 1 nut and 1 drill bit. I have brought some tools from home and I also have a multi tool which I use to make things from these items. I also like to use the multi tool for carving wood.

When I see rubbish in nature I feel disgusted. At least by using these bits and pieces that I find, I'm helping to clean up nature.

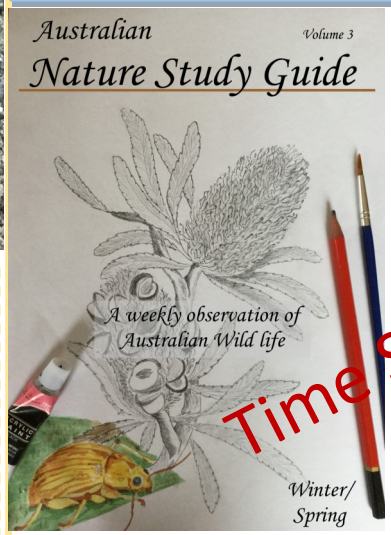
Here are some before and after photos of a knife I made from a fork I found next to a walking track. I cut the fork in half and then sharpened the handle to make a blade. I then put the blade into a handle which I had carved from a stick and secured it with cable ties.

Meet Jacob! He enjoys exploring outdoors, travelling, playing card games and photographing birds. Jacob is sharing his adventures and activities with us. Jacob is currently hosting a Bird Challenge on the Nature Science for Aussie Families FB Group as he travels South Australia.

Do you have an activity or adventure to share with us? You could be the spark of inspiration for someone else! Together, we can encourage and support one another as we explore nature. Send your article and photographs to marie@naturestudyaustralia.com.au.

Identification Challenge

Do you know the identity of this beetle? Let me know by email at: marie@naturestudyaustralia.com.au. Who will be the first to guess and receive a nature guide by *Steve Parish?*



Download Free Lesson Here!

NATURE COLOURING PAGE

Time Sensitive!

Download Colouring Page!

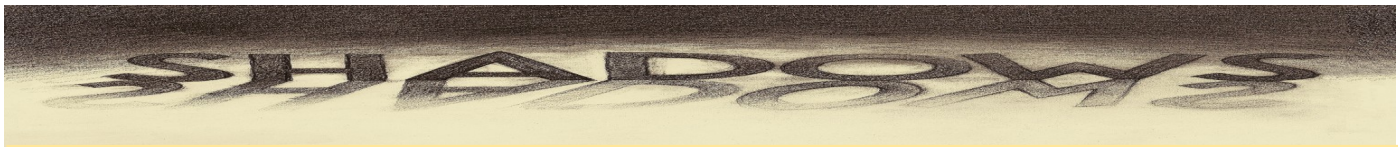
Stephanie's Hobby!

I'm Stephanie and I love taking photo's!

My mum and my younger siblings all love painting and drawing in their nature journals, and will sit for ages, quietly painting things that they have seen in nature. But I have never liked painting, and something always goes wrong, so I decided to do a photo journal instead.

Every time I see something on our nature walks I will take a photo. Then I get them printed at an online shop called 'Snap Fish' and sent to me. After I receive them I put them into my photo album (which becomes my photo journal) and write on the lines… What it is, where I found it and what the date was.

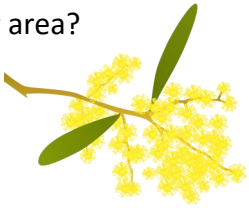
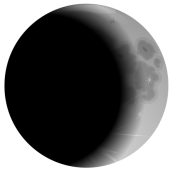
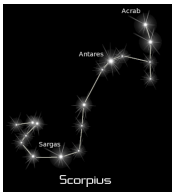
I also lodge my photos on a site called BowerBird. They collect information for the Atlas of Living Australia. So, your photo becomes part of a data base of Australian flora and fauna. If you want to become part of this research, there is a project especially set up for Nature Study Australia! You can find it here.



If you stand with your back to the sun you'll block the sunlight and your shadow will show. Try it! When the sun is high above you, around noon, your shadow will be short, but as the sun becomes low in the sky, your shadow will grow taller. Notice how your shadow changes over a course of a day by observing it at 9am, noon and 3pm. Include the date, time and direction the shadow is facing with your sketches and compare them to your shadows in spring, summer and autumn. Play shadow tag with your family and friends by jumping on each other's shadows. If your shadow is tagged, you're it! Have you ever made animals shadows with your hands on a wall at night? It's great fun! Find inspiration here. During your nature walks, observe the shadows of animals, trees, cars and poles. Check out water shadows too!

July Nature Watch Chart

Use the simple ideas in this chart to encourage outdoor explorations.

What birds are active this month? 	What time does the moon rise tonight? 	Find out why your breath 'steams' on a cold morning. 	Measure the height of the sun and compare it to a measurement two weeks from now at the same time. Find out how here. For older children.
What native flowers and trees are blooming in your area? 	Search for winter buds on trees and shrubs. Identify them and sketch a few into your journal. 	Draw the moon tonight and show which side the sun is shining on it. 	Observe night time shadows during a full moon. 
Observe the Milky Way and find Scorpius. 	Visit the beach after a storm to search for ocean treasure. 	Go for a walk in a forest. 	Use your body to show star constellations. Start with the Southern Cross. 
Go on a nest hunt. How many nests did you see? 	Set out on a rainy day to search for snails. 	Enjoy a night walk to search for fruit bats. 	Visit the wetlands. Which water birds are nesting? 

Keep an eye out for:

- Flowering Mangroves and Wattles
- Turtles Laying Eggs
- Winter Nesting Birds
- Orchids Begin to Flower
- Cherry Trees in Blossom
- Active Bowerbirds
- Honeyeaters Feeding on Grevilleas
- Male Blackbirds Sing

Journal Topics to Explore:

- **Star Constellations.**
- **Moon Phases.**
- **High Tide / Low Tides**
- **Shadows.**
- **Sunrise and Sunset light and colours.**
- **Track the Daylight by observing the Sunrise and sunset times.**

WINTER NATURE TABLE IDEAS: Banksia cones and flowers | Wattle flowers | Tree Buds | Pine needles and cones |Moon Phase Journal | Images of Winter Star Constellations | Star Chart | Star Gazing Books | Silhouette Winter Tree Art

Photography Ideas: The Moon | Shadows | The Sky at Different Times | Clouds |Ice |Dew| Rainbows | Yellow | Circles | Buds | Deserted Nests | Winter Birds and Animals

My Astro Journal

Draw your field sketches and write your observations here.

Date:	Time Started:	Time Ended:

My Observations:-

Study of:

Place:

Time of Sunrise:

Time of Sunset:

Time of Moon Rising

Moon Phase:

Direction of South Celestial Pole:

Is the Sky:

⇒ Very Bright

⇒ Bright

⇒ Fair

⇒ Twilight

⇒ Dark

Weather:

Season:

My Astro Journal

Study of:	Draw your field sketches and write your observations here.

Weather:	Season:	Time of Sunrise:
Time of Sunset:	Time of Moon Rising:	Moon Phase:
Direction of South Celestial Pole:	Is the sky bright, fair or dark?	Place:

Date:	Time Started:	Time Ended:

My Moon Journal

Date:	Location:	Moon Phase:	Rising Time:	Setting Time:

Chasing Daylight

Date:	Sunrise AM:	Sunset PM:	Daylight Hours:	The Difference Is: