

April 2018

Volume 1, Issue 3

Nature Study Australia

# AUTUMN

Nature Science for Aussie Families

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## Items for a weather station:

- Wind Scale
- Thermometer
- Rain Gauge
- Barometer
- Wind Vane
- Compass
- Hygrometer



Homemade Rain Gauge

## Weather Watch

The weather affects the clothes we wear, the places we go and the things we do. We rely on the rain to fill our water tanks, feed our crops and supply the rivers, lakes and dams with precious water which is then sent to our taps to drink and use. Frost destroys fruit crops and fog can ground an airplane. Strong winds blow roof tops away and floods have affected peoples homes and businesses. We'll often assess a weather forecast before making a decision. The weather matters to us.

This month, we're observing the weather as we move from summer into winter. Autumn is the transitional period between these two seasons and the South will enjoy fine days and windy, cold and (hopefully) rainy days the next; while in the north, the rains will dissipate and the winds will pick up momentum for a time.

The weather can be observed by:

- Recognizing cloud types and predicting the weather.
- Understanding the water cycle.
- Identifying the factors that make up the weather like the temperature, wind, clouds, humidity, air pressure and evaporation.
- Keeping a weather chart for a week or a month, depending on the ages of the children participating in the weather watch assignments.
- Creating a weather station at home and documenting the records.
- Sketching or painting an Autumn day in the backyard and comparing it with the Summer day sketch in February.

Focusing on the weather this month will be an interesting exercise. Join us!

## Weather Station Links

[Make your own Weather Station.](#)

[Make a Rain Gauge.](#)

[Make a Barometer.](#)

[Create your own Thermometer.](#)

[Make a Wind Vane.](#)

[Build a Hygrometer.](#)

*"Let them get in touch with Nature, and a habit is formed which will be a source of delight through life."*

~ Charlotte Mason

# Picture of the Week Challenge & Show & Tell



Spider by Chareen



Caterpillar by Jessie



New Holland Honeyeater by Jacob



Frog Observations by Cindy



Bee Art by Kylie



"I am the sun." by Rachel



Shelling Macadamia's by Tracey



Autumnal Equinox Sunset by Jo



Creating Beehives by Kylie



Engage Senses by Jess



Hunting Frogs by Minnie



Making Bird Nests by Sally



Bush Walk Memories by Kirsten



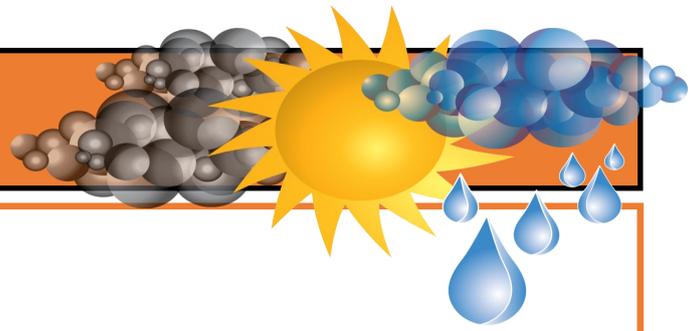
Bush Walk Fun by Sally

Join our Nature Community on [Nature Science for Aussie Families](#) on FB or [#naturestudyaustralia](#) on Instagram. We'd love to follow your nature journey, explorations and activities.

Case Moth by Rhiannon



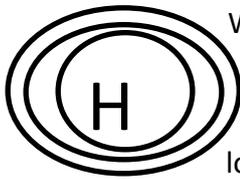
# WHAT CAUSES THE WEATHER?



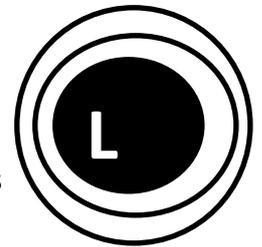
Weather is the condition of the air which includes the temperature, precipitation, wind direction and speed, air pressure and cloud conditions.

The temperature is caused by sunlight which enters our atmosphere and is absorbed by heating the earth's surface. As the earth's surface heats the ground, it in turn, heats the atmosphere above it. At night the infrared rays cool the earth; unless there are clouds in the atmosphere which trap in the heat like a blanket. Have you noticed on clear winter nights it's so much colder than on nights when we have cloud cover?

Precipitation is the moisture that falls to the ground in the form of rain, hail or drizzle. It is formed as warm air rises into the atmosphere. As the air rises, it cools while the water vapour remains the same. Eventually, the temperature cools to a point where the water vapour condenses to form clouds. The clouds continue to rise and the water droplets grow larger until gravity pulls them down.



We can tell a warm front is approaching by observing the type of clouds in the air. Cirrus clouds are the first we'll notice and they're quite high in the atmosphere. As the warm front draws near, the clouds will become thicker and lower and precipitation will fall.



A cold front happens when cold air replaces hot air. Since the cold air is heavier it'll dive beneath the hot air and the warm air is forced upwards. The rising air condenses and causes rain to fall.

Warm front



Cold front



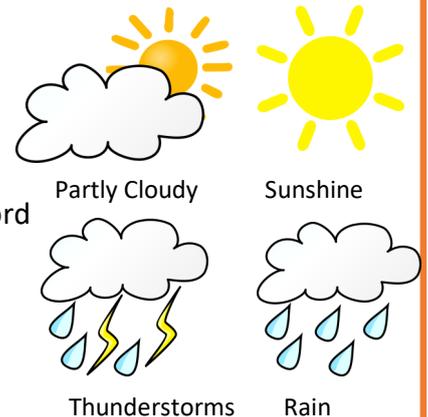
Stationary front



Occluded front

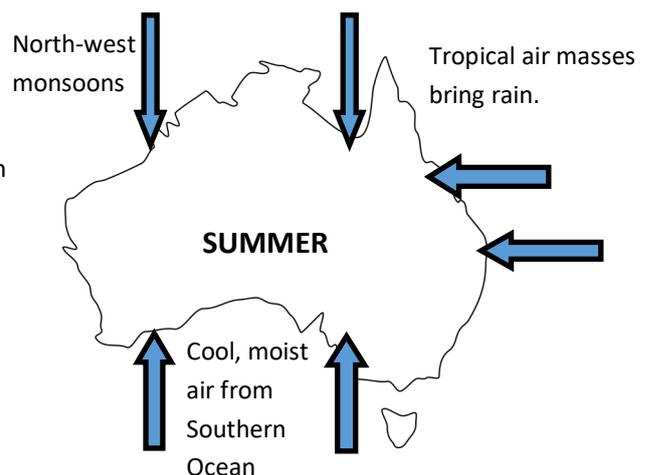
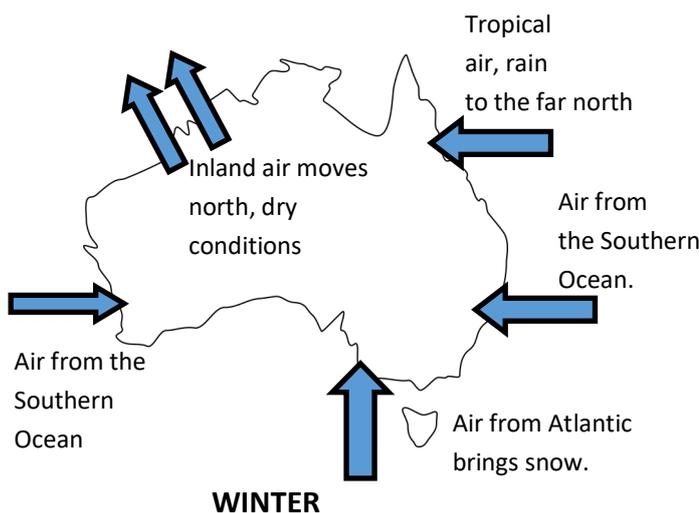


Graphic symbols are used to show the kind of weather we can expect or are experiencing. We can use them as we observe and record the weather.



Symbols on a Weather Map

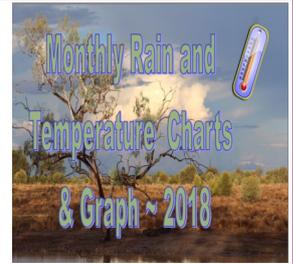
## Winds and Air Masses Over Australia



# Making Weather Observations

Weather Observations can be made by:

- Recording the daily max and minimum temperatures with a thermometer.
- Noticing from which direction the wind is blowing and how fast it's moving. You can make a wind vane or use a compass to observe the wind direction.
- Measuring the air pressure with a barometer. When a barometer measures a low pressure, the weather is stormy, and when the air is recorded as high, we can expect fine weather.
- Measuring the amount of rainfall you're receiving. It's interesting to know how much rain falls from one season to the next and how this affects crops, animals and people. Use the [Rain & Temp Chart](#).
- Observing the types of clouds in the atmosphere. There are three main types of clouds: Stratus Clouds are low altitude, grey clouds which form a flat base. Light rain and drizzle will fall from Stratus Clouds. Cumulus Clouds are the white puffy clouds we imagine images with. Their bottoms are flat while the tops change shape. These clouds are often seen on a lovely, sunny day. These clouds can change into cumulonimbus clouds and then we can expect a possible thunderstorm.
- Recording the data you've collected on a Weather Record Chart. These records can be kept to compare with each season that passes or with one autumn to another.
- Taking photographs or making sketches of all the different clouds you notice and learning their names.



Download Rain &



Stratus Clouds



Cumulus Clouds



Cirrus Clouds

## Keep an eye out for:

- Falling leaves
- Macadamia Nuts falling
  - Fungi
  - Swift Moths
- Migrating birds and winter flocking
- Early flowering wattles.
- Processionary caterpillars
  - Flying grasshoppers
  - Goannas

## Weather Topics to

### Explore:

- The Water Cycle
- How to Read a Weather Map
- Fog, Hail & Snow
- Lightning
- El Nino
- Hurricanes & Tornadoes
- Floods & Drought

## Daylight Savings

On April 1st, New South Wales, ACT, Victoria, South Australia and Tasmania set the clocks back one hour. This means we all receive an extra hour of sleep!?! Yes! No? Daylight savings is not observed in Queensland, Northern Territory or Western Australia. We find the change a little unsettling and it takes a week for the children's tummies to adjust to new meal times.

As the earth tilts, the direction of the rising and setting sun changes. Take note of where the sun is in the morning and evening and watch how it moves. Since our days are becoming shorter and the nights longer we can measure how many hours of sunlight we have and how that changes as we near winter with a Sunrise and Sunset Chart.

**AUTUMN NATURE TABLE IDEAS:** Collect Macadamia Nuts | Seeds and Cones | Autumn Leaves | Cloud Images | Collage of Autumn Weather Days | Fungal Spores | Native Flowering Plants | Painting of an Autumn Day | Fruits and Vegetables | Weather Record Chart | Snake and Lizard Skin

# Beaufort Wind Force Scale

Beaufort No.	Type of Wind	Characteristic Effects	Speed in km/h
0	Calm	Smoke rises vertically; flags are limp.	Less than 1
1	Light air	Wind direction shown by smoke drift,	1-5
2	Light Breeze	Wind felt on face; leaves rustle; vane	6-11
3	Gentle Breeze	Leaves and small twigs in constant	12-19
4	Moderate Breeze	Wind raises dust and loose paper; small	20-28
5	Fresh Breeze	Small trees begin to sway.	29-38
6	Strong Breeze	Large branches in motion; flags rise	39-49
7	Near Gale	Whole trees in motion.	50-61
8	Gale	Twigs broken off trees.	62-74
9	Strong Gale	Slight structural damage occurs.	75-88
10	Storm	Trees uprooted; considerable structural	89-102
11	Violent Storm	Heavy structural damage; very rarely	103-117
12	Hurricane	Severe structural damage.	118 and over



**Stratus Clouds**

**Cirrus Clouds**

**Cirrostratus Clouds**

**Cumulus Clouds**

**Nimbostratus Clouds**

**Altocumulus Clouds**

## Autumn/Winter Now Available!

Nature Watch, Mushrooms, Turtles, Possums, Wattle, Giant Earthworms, Winter Solstice

### Australian Nature Study Guide Volume 2



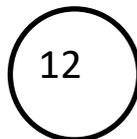
### Cloud Memory Game Key

Cut out the cloud images and names on page 5. Laminate and use them to match clouds to names by playing the matching memory game.

- Cumulus Clouds** White puffy clouds; sunny day.
- Stratus Clouds** Low, gray, sheet; light rain, drizzle
- Cirrus Clouds** High, feathery; warm front
- Nimbostratus** Low gray clouds; rain
- Cirrostratus Clouds** High cirrus clouds, thin milky sheet; light shining through ice causing
- Alto cumulus Clouds** Puffs and rolls, medium height, dark shadows.

### Taking Nature Journal Notes

Using symbols, brief notes and abbreviations will save you time and space in the nature journal when recording notes in the field. Start using these simple symbols when recording information:



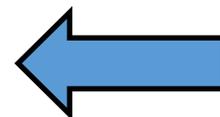
12 birds in a flock

**Force 2**

See Wind Scale pg. 5



Fine and sunny



Wind Direction: West



Heavy Rain

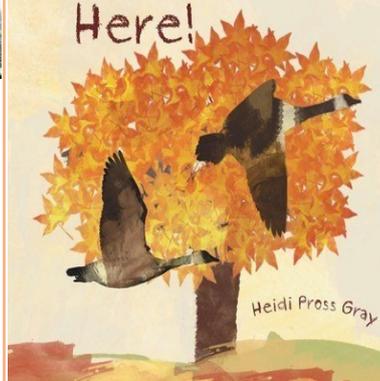
Don't forget to add the DATE, TIME, TEMP & PLACE.



### Identification Challenge

Do you know the identity of this creature? Let me know by email at: [marie@naturestudyaustralia.com.au](mailto:marie@naturestudyaustralia.com.au). Who will be the first to guess and receive a free Nature Study Guide?

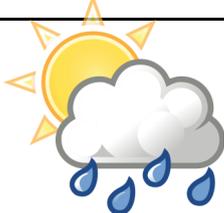
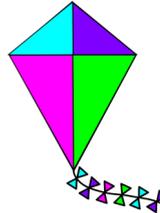
Autumn is Here!

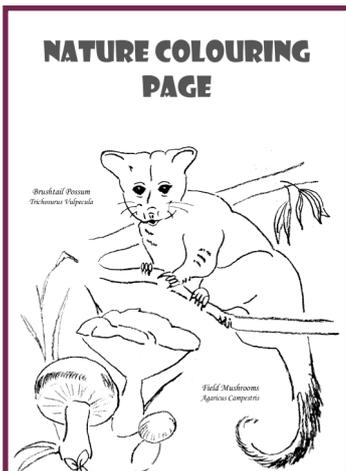


Autumn is Here is a charming book by Heidi Pross Gray. Celebrate the Autumn seasonal change with your child while appreciating beautiful watercolour illustrations. Then enjoy your own outdoor explorations.

# April Nature Watch Chart

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

<p>What animals can you see in the shapes of the clouds?</p> 	<p>Search for fungi and take photographs.</p> 	 <p>Collect nuts and acorns.</p>	<p>Make a windmill.</p> 
<p>Rake up autumn leaves and jump in the pile.</p> 	<p>Play Hide and Seek outdoors.</p> 	 <p>What is the weather like?</p>	<p>Collect autumn leaves and preserve them.</p> 
<p>Jump in the puddles!</p> 	<p>What time does the sun rise and set? Is there a difference from last month?</p> 	<p>Make a kite.</p> 	 <p>Search for Autumn flowering native plants.</p>
<p>Read an Autumn related book.</p> 	 <p>What type of clouds are in the sky?</p>	 <p>Catch raindrops on your tongue.</p>	<p>Plant daffodils and enjoy their beauty in spring.</p> 



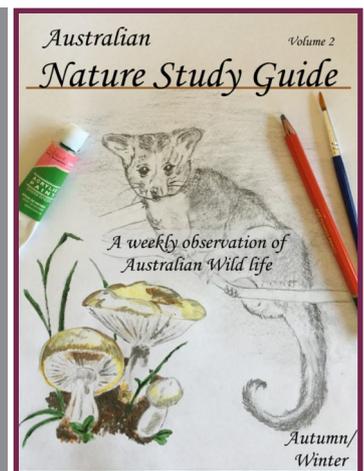
Download Possum & Mushroom Colouring Page



Download February Newsletter



Download March Newsletter



Download V2 Nature Watch Lesson



# Autumn in My Backyard



Draw Autumn in your backyard.

Draw a cloud type:

Hours of Daylight:

Write words which remind you of Autumn.

Draw a cloud type:

Wind Direction and Speed:

Draw a cloud type:

Dew/Mist/Frost:

Colours of Autumn:

Date:

Rain:

Temperature: Min. Max



# *Autumn Nature Walk*

Date:

Time:

Place:

Temperature:

Weather:

I see:

I hear:

I smell:

I feel:

Draw a nature treasure you found:

Scribble the colours you see:

# Sunrise & Sunset Chart

Colour in the hours between sunrise and sunset for one day in each season.

8pm	APRIL	JULY	OCTOBER	JANUARY
7				
6				
5				
4				
3				
2				
1				
Noon				
11				
10				
9				
8				
7				
6				
5am				