

Australian Nature Study Guide

Backyard Edition



- Ants
- Ladybugs
- Grasshoppers
- Native Bees
- Summer Flowers
- Grasses
- Eucalyptus Trees
- Willy Wag-tail
- Geckos
- Daddy Long-legs

SUMMER/
SPRING

AUSTRALIAN
NATURE STUDY
GUIDEBOOK

Summer and Autumn

Volume Five

Backyard Edition

First Published by Marie Viljoen 2019

First Edition 2019

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Cover, Colouring Pages, Notebook Pages & Fact Cards by Jo

Edited by Elizabeth

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About the Author

Marie Viljoen has been home educating for eleven years. She shares her life with her wonderful husband and lives on the land with four of her five children who delight in assisting dad. Two of her daughters have graduated and she's the grandparent of two **precious granddaughters** so far.



Marie Viljoen

In those rare moments when there's time to breath and cappuccinos and chocolate are bliss, she loves to read, bush walk and journal. Above all, she adores her Saviour and exploring His exquisite creation brings her joy while sharing the experience with her children. She's so excited for the opportunity to write and share nature discoveries with you.

Dedication:

To my children for their patience and support – Thank you for tagging along with me on my excursions and being patient when I linger too long. To my longsuffering husband – Thank you for giving me the time to chase my dreams and for not complaining when dinner is late. Again! To my special friend, Elizabeth – Thank you for your consistent encouragement and support. To my amazing friend Johanna – Thank you for simply believing in me, and for the motivation and inspiration you sprinkle in my life. I appreciate all you do. To my Creator – Thank you for giving me the 'eyes to see' Your marvellous creation.

A warm thank you to the photographers
who kindly contributed their photographs for this project.

Get in Touch!

It is my hope this guide will encourage you to marvel at the Aussie wildlife in your backyard and refresh your spirit as you explore and enjoy the gift of creation.

[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 of the outdoors.

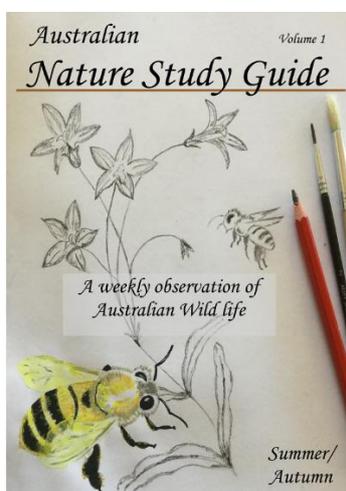
[Become a part of our email community](#) for additional support and free resources that'll enrich your nature study encounters by subscribing to our monthly Nature Study Journal [here](#).

Pop in and visit me at:

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[Facebook: Nature Study Australia](#)

[Nature Study Australia Forum](#)



I invite you to take a weekly walk through Australian wildlife with the

[Summer/Autumn Nature Study Guide](#).

WELCOME NATURE ENTHUSIAST!

The Australian Nature Study Guidebook: Weekly Observations of Australian Wildlife was born out of a need to share nature with my children through the southern hemisphere's seasons. In the [Summer/Autumn guide](#), we observed honeybees, searched for Blue-tongue lizards, explored amphibian metamorphosis and investigated the habitat of a summer tree. We also crept up to Golden Orb spiders and attracted Emperor Gum moths to examine. It was a joy to observe the season while connecting with our unique Aussie wildlife.

Now, I invite you to slow down with us and explore nature in the backyard or park where we'll encounter common, but interesting and complex creatures living alongside us like native bees, ants, grasshoppers and ladybirds. We'll learn interesting facts relating to our iconic eucalyptus trees and investigate summer's blossoms.

I encourage you to take a leisurely walk through this guide, pausing a while should a child be particularly interested and inspired to explore a little longer on a topic. A weekly theme can be extended into a month of adventure where the child is immersed into the secret worlds of nature and natural play.

I hope you'll be inspired to step outdoors with your family and enjoy making precious memories while following the seasonal transformations in the backyard.

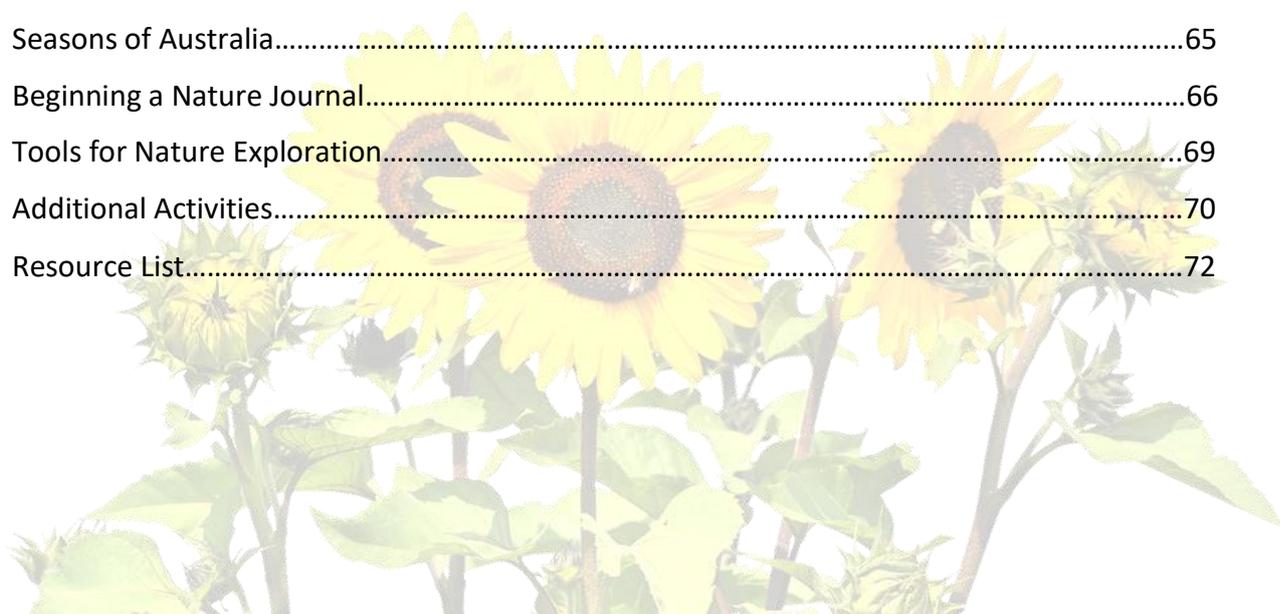
As a Christian, my writing will be flavoured with a Christian worldview and as home educators, we have the liberty to take what we need from a resource and leave what we don't, so you have the freedom to tailor this guide to your unique family and personal beliefs. We all have the same goal in mind: to give our children an exceptional education fashioned to their own capabilities and interests.

The information included in this guide can be used by all home educators regardless of your preferred learning style. It is flexible and easily tailored to your preference whether it be Charlotte Mason, Unit Studies, Unschooling, Project-Based, Classical, Traditional, Montessori or Waldorf based.

This guide will encourage observation, exploration, adventure, discoveries, creations, research, writing, reading, drawing, painting, comparisons, discussions, wonder and much more. So, come along. Walk with me.

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STARTING OUT

“We are all meant to be naturalists, each in his own degree, and it is inexcusable to live in a world so full of the marvels of plant and animal life and to care for none of these things.” ~ Charlotte Mason

Let’s Get Started

This section will provide information on the topic being researched before you head out doors, so that you are equipped with the knowledge you need to answer questions when they’re fired at you. It is by no means exhaustive. Instead of reinventing the wheel, I’ll be referring you to helpful resources or links on the weeks theme if you’d like to research it further and dig deeper.

Nature Rambles

Nature rambling is a time to explore the backyard and notice which creatures are living amongst you or visiting for a season. Encourage children to investigate the yard for the subjects of your study and observe them; noticing their behaviour, habitat and feeding habits. Once discoveries have been made, the child is free to play or note their observations within a nature journal or by using the notebook pages provided with the guide.

Literature Jaunt

I’ve included a list of children’s books relevant to the theme of the week which will offer enjoyment and ignite excitement in the subject to be explored. Enjoy them by reading the stories outdoors if the weather permits or introduce them to your ‘circle time’ or ‘morning basket.’

The studies do not rely on these books, so don’t stress if you can’t find a title or if you’re unable to visit the library. After reading a story to your children, ask them to narrate it back to you. Start with the youngest child so the older children are challenged further to recall what was read to them.

Please preview the books first to see if they meet your standards. There are a few books that have a secular worldview. I'd suggest skipping the historical viewpoints to the facts related to the study. Also ensure your children have a firm grounding in the creation of the world by God as then they'll be able to perceive evolution's point of view on historical science.

Poetry Picnic

Reading poetry while enjoying a snack is so refreshing and I guarantee, that if the children aren't keen on poetry, they'll be there for refreshments. Pull out your blanket, and a snack to enjoy while reading the poems included in this section with your children. Due to copywrite laws, I haven't included the poems in the guide, but most of them can be found with an internet search. The poems can be used as copy work, either as handwriting practice or as an addition to their nature journal entry. They can also be used for dictation and memory work.

Picture Study

Picture study is a fun way to include art appreciation into your schedule. Children are exposed to wonderful works of art and ideas. The artworks can be found by using the internet in a quick search. Charlotte Mason's method of picture study is for the children to look at the picture intently, and for as long as they need and then answer these few questions:

- Ask them what they saw and expect them to describe it in as much detail as they can. Start with the youngest child so the older children are challenged to include more detail.
- What time of day is it?
- What season do you think it is?
- Is there a story to the picture or is it a scientific sketch?
- Do you like the picture? Why or why not?

Digging Deeper

In this section you'll find activities that will help the children to dig deeper into the nature study should they choose to. There are activities for research, science, crafts, writing, art and much more. Allow the children to choose an activity that's most appealing to them unless you'd like to take a unit study

approach and work on these assignments over a few weeks. I've included assignments to be enjoyed by a variety of ages. As families, we know it's important to enjoy the outdoors together, and as busy people, we can save time by integrating all ages into one study.

Consider its Ways

We'll consider the ways of nature: the work of insects, the perseverance of plant life and the faith and contentedness of birds in an effort to learn how we can build character qualities to honour God and bless others. Proverbs 6:6-6 encourages us to, "Go to the ant, you sluggard; consider its ways and be wise." As we observe creation, we'll notice how God has wired each creature with instinct and initiative. We'll ponder its ways and become wise as we strive to build similar character qualities within ourselves that'll sustain us through life.

Notebook Pages

You'll find four notebook pages per study; two pages are designed specifically for the weekly topic, while the other two pages are generic, allowing you to use them for observations unrelated to the topic of the week. They have been designed by a friend to be a blessing to you.

The note booking pages can be placed in plastic sleeves and filed as a nature journal reference or you could paste the page in an inexpensive botany exercise book. The child could 'journal' on the blank page opposite the pasted notebook page. Keeping a record of the season's investigations and observations is a rewarding exercise and one that can be enjoyed for years to come.

You Can Do It!

You may be wondering how on earth you're going to fit nature study into your busy schedule? Here are a few ideas to consider:

- Integrate subjects.
- Include **all** children together as each one works at their own level.
- Set standard 'academic work' Monday through to Thursday, leaving Friday free for nature exploration, expression, activities and art.
- Spread a seasonal theme across the span of a month by **diving in** and **immersing the family** in a **single** topic. You may feel that one week is just

not enough to enjoy the study and cover all you'd like to know about a subject. **So feel free to linger a while as there's no need to keep up to your neighbour's brisk walk.**

- Schedule nature study over the course of a week and **dip your toes** in like this:

Monday	Tuesday	Wednesday	Thursday	Friday
Introduction as read aloud in Let's Get Started.	Read stories related to the weeks theme.	Poetry and Picture Study	Nature Ramble	Nature Journaling or Activities & Consider its Ways

Exploring the outdoors and creating fond memories with your children is a special opportunity which will nurture a love for all creation within their hearts as they glimpse at the magnitude of how big and awesome our God is.



TAKING THE PLUNGE

Summer

“Nature is but a name for an effect whose cause is God.”
~ William Cowper

Ants

Let's Get Started

Ants are amazing creatures who like to farm. They care for herds of aphid, mealybug or scale ‘cows’ and milk them for their delicious ‘milk’ known as honeydew. The ants will herd these insects to new feeding grounds and protect them from predators.

Aphids, mealybugs and scales will attach themselves to plants and insert sharp sucking tubes allowing them to feed on plant juices. The sap is excreted as honeydew which the ants collect and store for their sisters in the nest. Ants have two stomachs: one which stores food for the nest and another which digests nectar for itself. Mutual feeding between worker ants is common and is known as [trophallaxes](#) which means ‘exchange of food.’

Green Tree ants tend to and protect [Blue Lycaenidae caterpillars](#) in exchange for honeydew. Caterpillars attract certain species of ants while repelling others through chemical secretions produced through special glands. Guardian ants will simply stroke the caterpillar with its antennae and drops of honeydew appear.

The Purple Azure butterfly scouts for the perfect place to lay her eggs amongst mistletoe leaves in a gum tree. Once the caterpillars hatch, they fall to the ground where Sugar ants welcome them into their nest. The caterpillars will climb the tree at night to feed on mistletoe while the ants escort and guard them until daybreak when they return to the nest.



Bulldog Ant

Myrmecia

Ants have a remarkable symbiotic relationship with many insects and plants. They are an important part to nature's ecology. Ants till the soil while building a colony and plant the seeds they collect by storing them in a pantry. Seeds that have been buried by ants are more likely to germinate and thrive.

Amazingly, through God's design, some plant species entice ants with chemical attractants which encourage ants to disperse their seeds. In return, the ants reap rich nutritional benefits of fatty acids, amino acids and sugars. This partnership is known as [myrmecochory](#).

Ants live in colonies similar to honeybees. The colony is ruled by an egg-laying queen. All regular inhabitants of a colony are infertile females who are the workers; they have different jobs of guardians, foragers, harvesters, hunters, nursers, builders, soldiers and homemakers. Every so often, fertile males and females are produced to begin new communities of ants.

The queen lives a life of luxury, relying on her assistants to feed and groom her. Nursery maids will care for the eggs and larva by washing and moving them when necessary. They'll also produce trophic eggs which are infertile to feed the brood. When the time comes, the larva will spin a cocoon and pupate. During this time, the pupa is in a deep sleep as it changes into an adult ant. The nursery maids know exactly when to assist new ants out of their silk cocoons.

Homemaker ants will keep the nest neat and hygienic by removing droppings, scraps and dead ants. They place the waste on a rubbish heap known as a midden. Soldier ants protect the nest from predators. They have powerful jaws for biting and are larger than the worker ants.

Ants are organised, cooperative and they work together as a community; each one busy with its own work.

The ant fauna of Australia is diverse with about 1300 recorded species. A few ant species to investigate are:

- [Black Ants](#) (*Ochetellus glaber*)
- [Bulldog Ants](#) (*Myrmecia brevinoda*)
- [Sugar Ants](#) (*Camponotus consobrinus*)
- [Green Tree Ants](#) (*Oecaphylla smaragdina*)
- [Spider Ants](#) (*Leptomyrmex rufipes*)
- [Fire Ants](#) (*Solenopsis invicta*)
- [Spiny Ants](#) (*Polyrhachis* sp.)
- [Meat Ants](#) (*Iridomyrmex* sp.)

- [Honey Pot Ants](#) (Formicidae)

Ant Facts:

- Ants, sawflies, bees and wasps belong to the insect order Hymenoptera.
- Ants are insects and as such they have:
 - A body with three main parts; head, thorax and abdomen.
 - Six legs attached to the thorax; three on each side.
 - Attached to the head are the mandibles (jaws).
 - Compound eyes meaning they have many lenses within one eye.
 - Antennas which they use to smell, touch, taste and hear.
- Many species of ants have stingers or poison sacks attached to the end of the abdomen which is used as a defence against predators.
- Ants communicate with each other by touching their antennas together, leaving scent trails known as pheromones on the ground to food sources.
- At certain times of the year, usually after rain, winged males and females emerge from their nests to find a partner, fly away and start a new colony. The male does not live long after mating the female. The new queen will chew her wings off and start laying eggs.
- Ants go through complete metamorphosis which includes four life stages: egg, larva, pupa and adult.
- Different species of ants build different homes. Some are simple mounds of dirt and sand, others carve out tunnels in rotting wood while Spiny ants and Green Tree ants build nests in trees.
- Ant nests consist of a maze of tunnels and chambers and each space has a purpose. The queen lives in her chamber while her brood is tended to in nurseries and food is stored in pantries.
- An ant society is a kind and gracious one where they groom and feed each other. Ants we also transport one another when they move from one nest to another.

Further Exploring

The Wonderland of Nature by Nuri Mass

- The Tiny World of Ants, pg. 28

Insect Life by Arabella B. Buckley

- What is an Insect, pg.1
- Ants and Their Honey Cows, pg. 73

All About Ants by Densey Clyne

Ants Close Up by Andrew Kelly

Ants by Sally Morgan

Related Internet Links

[Aus Ants](#)

[Australian Ants | Oz Animals](#)

[Ants | Kid Cyber](#)

[Ants | National Geographic](#)

Nature Ramble

What kind of ants are living in your backyard? Shall we find out? Perhaps you'll find the common Black House Ant or another species altogether. Ants aren't shy and they happily live amongst us in parks and cities too. An ant nest can be as simple as a hole in the ground or it could be a massive mound protruding from the earth. Ants live in crevices in concrete, cracks in walls, beneath tree bark and in rotting wood. Some species of ants live in the tree tops and sew leaves together to create their chambers.

Notice how busy ants are. Where are they coming from and where are they going? Do you think they are following a scent trail? Are they carrying anything? Is it much larger than the ant? What kind of nest do they have? Do you see ants grooming or feeding each other?

I wonder what kind of ants they are? Could they be harvesters, hunters, soldiers or nursers? I also wonder if there are any symbiotic relationships between ants and plants or insects nearby? Can you tell?

The hard working ants remind me of busy honeybees as they live and work in a similar way. What do the ants remind you of?

When flying ants come into season, capture a few to examine. The flying ants are the next generation and they are preparing to start new colonies. It's the perfect time to find a queen and start a formicarium.

Literature Jaunt

One Hundred Hungry Ants by Elinor Pinczes | [Read Aloud](#)

The Story Book of Science by Jean Henri Fabre, pgs. 1-24

[Our Wonderful World by Emery Lewis Howe](#)

- Ant Workers, pg. 30

[Little Busybodies by Jeanette Marks](#)

- Eyes and No Eyes, pg. 167

The Ant and the Chrysalis by Aesops Fables | [Read Aloud](#)

The Trouble with Ants by Claudia Mills

Are You an Ant by Judy Allen

Little Black Ant on Park Street by Janet Halfmann

Hey Little Ant by Phillip M. Hoose

Grant the Ant by Lindy Handy and Dan Holdaway

Poetry Picnic

[The Ants by Jane Taylor](#)

Picture Study

[Ant Hills by Sidney Nolan](#)

Consider Its Ways

As we consider the ways of ants we notice that they are **diligent** workers. There's not one lazy ant amongst them. The queen does not nag her brood to complete tasks set for the day. They are **self-motivated** creatures who plan ahead. They

know that if they don't work hard, they won't last the winter. Their conscientious efforts sustain them.

[Watch](#) as the Green Tree ants of Northern Australia diligently work with one another as they build a new nest.

Now that you've studied ants and know interesting facts about them, what other qualities can you learn from them?

- Servanthood
- Helpfulness
- Kindness
- Cooperation

Ants encourage us to overcome our lazy tendencies and become diligent workers who are kind, thoughtful, cooperative and wise. Think on these things.

“Go to the ant, you sluggard! Consider her ways and be wise. Without leader, administrator or ruler, it prepares its provisions in summer; it gathers its food during harvest. How long will you stay in bed, you slacker? When will you get up from your sleep? A little sleep, a little slumber, a little folding of the arms to rest, and your poverty will come like a robber, your need like a bandit.” Proverbs 6:6

Digging Deeper

Young Students:

- Learn more about ants by visiting with Jess at the Tree House [here](#).
- Compare and discuss the difference between ant species and their nests. Watch how Army ants create a complex structure known as a [bivouac](#) using their own bodies to provide shelter for their queen [here](#).
- Colour in the ant page provided with this guide. Discuss the things you notice.
- Create a clay model of an ant.
- Listen to the Ants go Marching One by One song [here](#).

Older Students:

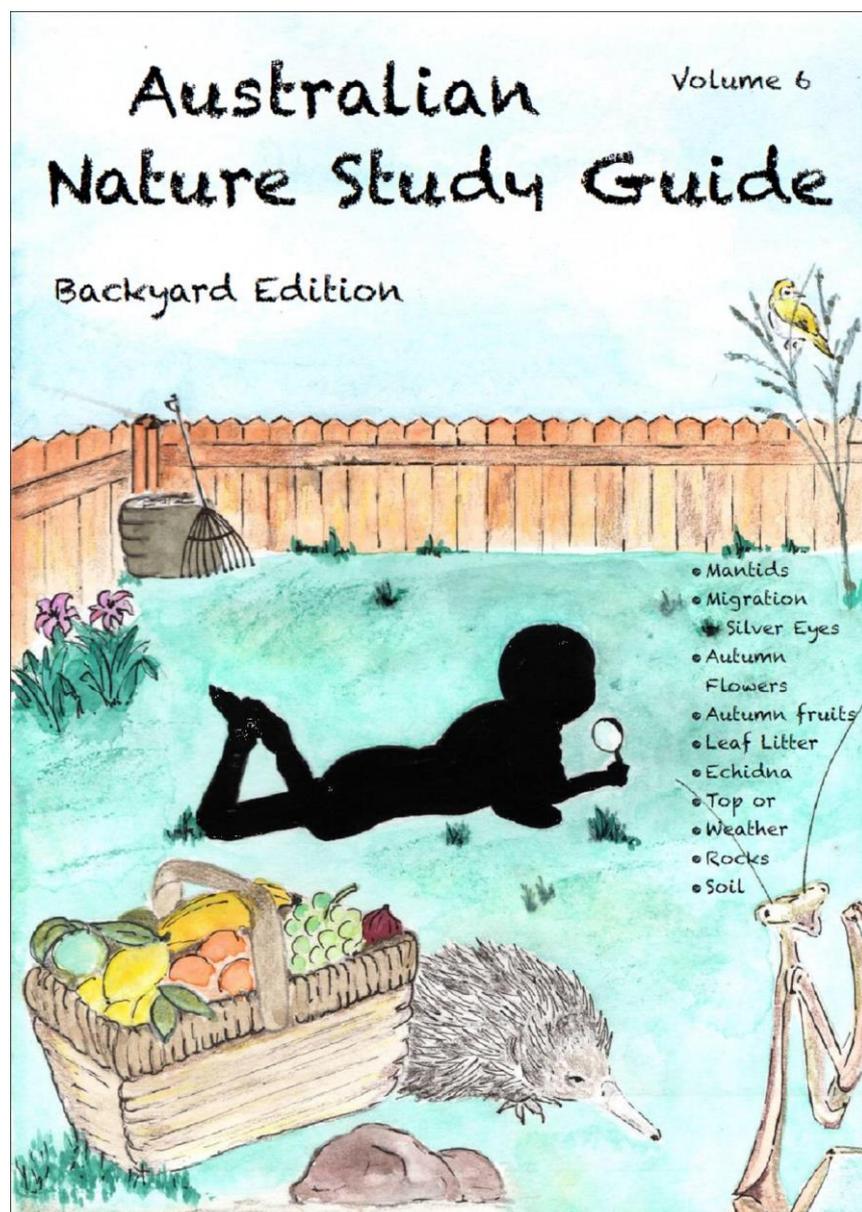
- Watch how ants farm Mealybugs [here](#) and protect them [here](#).
- Use a Venn diagram to compare the differences between ants and termites. Start [here](#).

- Investigate how spiders mimic ants in order to trick them and eat their larva. Start [here](#).
- Create a poster-board project of an ant colony.
- Design a formicarium or ant farm to observe ants building their tunnels. Here's [how](#) and supplies can be obtained [here](#). Capture flying queen ants to place in your ant farm at the [beginning of the anting season](#).
- Draw and label an ants anatomy in your nature journal. Include notes on your observations from the nature walk.
- Use the ant notebook page to record your observations during your nature ramble in your backyard.

Oldest Students:

- Research and write a report on [myrmecochory](#) which is a symbiotic relationship between ants and plants.
- Investigate how Leaf Cutter ants grow fungus like 'mushrooms.' Share your research with your family.
- Create a poster-board project presenting the symbiotic connections between ants and plants, ants and butterflies or ants and aphids.
- Make a journal entry in your diary of the different ant species in your locality and record your observations.
- Use the ant notebook page to record your observations during the nature ramble in your backyard.

I'm thrilled!!
to introduce the
Backyard Edition
of the
Australian Nature Study Guide
Autumn/Winter
Volume 6
Term 2 2019

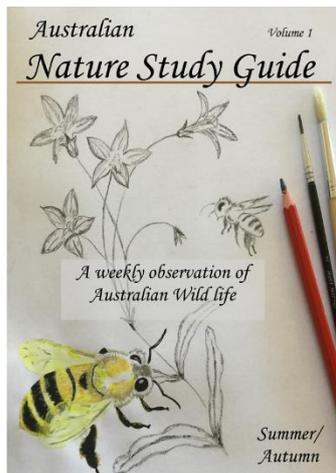


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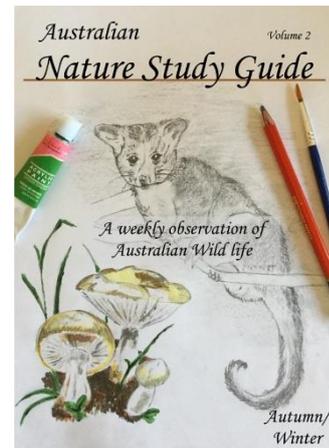
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