

NATURE STUDY AUSTRALIA
THE
OCEAN

SHELLS
SAMPLE



SAMPLE

AUSTRALIAN *Ocean* NATURE STUDY

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www.naturestudyaustralia.com.au

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I'M GLAD YOU'RE HERE



Hi, I'm Marie, and I'm delighted that you are exploring oceans with me. It's been a joy to compile the Ocean Nature Study.

It is my hope that this nature study will encourage you to marvel at our Australian ocean and coastal regions and breathe wonder into your investigations as you explore, discover and engage with ocean life.

The Math in Nature: Measurement guide is a companion guide to this study. However, both guides can be used independently of each other. MIN: Measurement focuses on learning measurement with ocean themed hands on activities. Jo has done an awesome job compiling the activities and sharing her children's work with us. I know you'll love it.

*I share my life with a loving husband, five children, an awesome son-in-law and two (very) lively granddaughters. They keep my life rotating on a merry-go-round. They've all been a great support and long suffering as I've dived into the ocean for this nature study. **Thank you!***

We began our home educating journey thirteen years ago and my three younger children are still walking alongside me as we explore the world together.

*This study would not be possible without two special friends who have offered guidance and support while sprinkling inspiration in my life. You know who you are 😊 **Thank you!** Finally, our Creator receives the glory for all He has made possible.*

***Say G'Day** by popping in to visit me on Facebook at **Nature Study Australia** or on Instagram at **nature_study_australia** or **#naturestudyaustralia**. I love to hear from explorers so text me in Messenger or send me an email. Let me know how you're going. 😊*

***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 inconsistent (because life happens) **Nature Study Journal here.

***What's next?** **The Ocean Nature Study** is the first in an eight part Australian habitat series which will include:*

Desert and Outback	Urban	Tundra, Ice & Snow	Freshwater
Rainforest	Dry Forest and Woodland	Wetland	Alpine

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ADVENTURE AWAITS!

How do I Use this Nature Study?

Let's Dive In!

Each chapter in the ocean nature study will prepare you with the knowledge you need to answer questions when they're squirted at you by eager marine explorers. It is by no means exhaustive. I'll be referring you to helpful resources or links on the weeks topic if you'd like to research it further and dive deeper. These resources and suggestions for deep diving is located in the sidebar where you'll find the following five prompts.

Inspire

Be inspired and motivated with activities, videos, songs, field trips or a reminder to review a topic covered in another nature study guide. I hope these ideas enhance your nature investigations.

Discover

Discover stories and poems related to the weeks theme which will offer enjoyment and ignite excitement for the topic. Read them aloud to the children or listen to the read aloud version on YouTube. Included with this guide is a notebook page to list the titles of books you and the children have read. Utilize the book report and poem study notebook pages. File these in the students portfolios.

Most of the books I've listed are either available online or through the library. Please feel free to use your own library for stories related to this unit, and if you've found a gem of a book that would be a great fit, please let me know. 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 and stick to the facts related to the study. Also ensure your children have a firm grounding in Biblical worldview so they'll be able to perceive evolution's point of view on historical science.

Investigate

Research the week's topic with the reference books listed. This is not a complete list and there are many great books available. If you have a resource sitting on your book shelf or have access to another through the library, feel free to use those reference books instead.

Engage

Invite the children to a group activity using the craft or project suggested here. If you don't have time for the extra student assignments, then this is the activity for the week. These ideas will enhance their understanding as they begin to focus on the subject. Photograph activities and use the activity notebook page to paste the image and write a summary of what was made or learned.

Explore

Explore the ocean and its ecosystems with the ideas listed. Allow the children to play freely and once their energies have been exhausted (somewhat) begin to engage them with questions and activities. Give them the opportunity to ask questions and share their nature discoveries with you. You'll be able to gauge their interest and understanding of the content covered. Photograph the excursions and use the field trip activity page included with this unit to record places you've visited. Place activity pages into their individual portfolios.

Assignments & Projects

Assignments and projects have been suggested for the four learning styles. The learning styles have been categorised according to how a particular personality learns best. This model was developed by the [Myers-Briggs](#) system. This is a brief description of the four learning styles:

- **The Feeler** is the people person who enjoys participating in group activities. They are concerned with how people are affected and impacted by circumstances and topics in the world, in the country and their community. They work best with people in good relations with them.
- **The Intuitor** flows with ideas about how to design projects, what materials to use and how to put it all together. They are full of suggestions and ideas for all types of topics, but they need encouragement to implement and complete assignments.
- **The Thinker** just wants the facts and they're not interested in opinions. They enjoy research, using textbooks and thrive on a schedule. It's important to be organised with this type of learner.
- **The Sensor** prefers to get their hands dirty. They insist on starting projects right away and completing them soon. This person is always busy and moving continuously. They don't enjoy research or lengthy discussions, instead, they'd prefer to efficiently accomplish a project with physical effort.

An activity or project is suggested for the three age groups within the learning styles with the following icons as indicators:



Preschool



Primary



Secondary

Challenge the children by mixing up their preferred activities with more challenging assignments to strengthen their weaknesses.

Some of the assignments will have related notebook pages. If there is no notebooking (NB) page for an activity then please encourage the children to design their own.

Videos can be uploaded and saved in files for individual children. Investigate [the Seesaw App](#) which is an online journal where children's work can be displayed and saved according to subject areas for each student. Share the children's projects with family members or friends by inviting them to see and comment on their accomplishments. [Daybook](#) is another app where photographs can be stored along with text explaining the activity.

Notebook Pages & The Portfolio

Notebook pages have been included with this ocean nature study. Please use them to record field trips, activities, experiments and projects. File the pages into a ring binder to provide a safe place for all the work accomplished through the unit. All notebooking pages are to be filed in a portfolio for presentation and record keeping purposes. The portfolio can be subdivided with the weekly themes or according to subject areas. It's up to you.

Vocabulary Words

A list of vocabulary words have been included for your convenience. They can be defined through dictionary work or used as spelling words. File the list in the portfolio.

Further Study

This section includes a list of topics that are related to the current lesson. If a child is interested in learning about a concept then engage him/her in a mini project to indulge their curiosity. Record the work and add it to the portfolio.

READ ALL ABOUT IT

What Books do I Need?

Following is a list of suggested resources to complement the ocean nature study. The list is not exhaustive, so please use books from your home or community library if you can't find these. The * indicates book titles may be in the library.

Ocean Reference Book:

Choose **one** reference book appropriate for your child's age.

- *Oceans Alive by Sandy Tasker for preschool students. (Australian)
- *The Ultimate Guide: Ocean by John Farndon and Barbara Taylor for Primary students. This book includes two posters: one of ocean zones and the other of the coral reef.
- Wonders of Creation: The Ocean Book by Frank Sherwin for Secondary students. (A Christian resource).

Choose
1 only

Sea Life Reference Book:

These resources are brimming with photographs and facts about the amazing diversity of Australian sea life. Choose **one** or **two** titles appropriate for your child's age. I preferred the first two titles.

- *Junior Encyclopedia of Australian Sea Life by Steve Parish for preschool and Primary students.
- *Amazing Facts about Australian Marine Life by Dr. Tony Ayling & Steve Parish for upper Primary or Secondary students.
- *Amazing Facts about Australian Marine Fish by Dr. Tony Ayling & Steve Parish for upper Primary and Secondary students.
- Australian Sea Life by Matt Chun for everyone. Includes beautiful sea life illustrations and information on some ocean species.
- *Animals and Their Habitats: Oceans by World Book for Primary students.
- *Molluscs and Similar Sea Creatures by World Book for Primary students.
- *Fish by World Book for Primary students.
- *Everything You Need to Know about Sharks and Other Creatures of the Deep by DK Publishing for everyone.

Choose
1 or 2

- *Australia's Most Dangerous Snakes, Spiders and Marine Creatures by Australian Geographic for everyone.
- *Australian Shells by E.R. Wilson and K. Gillett for upper Secondary and adults.

Endangered Animal Resource Book:

Choose **one** title to investigate this topic. I preferred the first book.

- *Australia's Endangered Animals and Their Habitats: A Focus on Coasts and Oceans by Jane Hinchey.
- *Endangered Animals of Australia's Coasts and Oceans by Greg Pyers

Choose
1 only

Australian Field Guides for Preschool Students:

The field guides are great for identifying ocean species noticed in tide pools and on the beach but they're not necessary. Check your local library for ocean themed field guides.

- First Guide to Australian Fish by Steve Parish
- First Field Guide to Australian Marine Life by Steve Parish
- Australian Guide to Beaches and Rockpools by Bob Winters
- Australian Guide to Seashores by Gould League
- Australian Guide to Whales and Dolphins by Gould League

Choose 1
if you
must 😊

Australian Field Guides for Primary Students:

- *A Wild Australian Guide to Marine Fish by Dr. Tony Ayling & Steve Parish
- *A Wild Australia Guide to Sea Mammals by Steve Parish & Lynne Adcock

Australian Field Guides for Secondary Students:

- *Sea Shells and Other Marine Mollusks of Australia: A Green Guide
- *A Field Guide to Australian Shells by B.R. Wilson and K. Gillett
- National Field Guide Apps for Australia

Choose 1
OK! 2

Books for Family Reading:

Choose a family read aloud book or assign a book for individual reading from the list below.

- [Pagoo by Holling Clancy Holling](#). Read about two chapters a week at the start of this unit. (Primary)
- [Seabird by Holling Clancy Holling](#). Read about three chapters a week at the start of this unit. (Primary)
- *[Oil Spill](#) by Tricia Oktober (Primary)
- *[Storm Boy by Colin Thiele](#). (Upper Primary/Adult)
- *[Blue Fin by Colin Thiele](#). (Upper Primary/Adult)
- *[My Story: The Yankee Whaler by Deborah Lisson](#). (Upper Primary/Adult)

Picture Books for Read Aloud:

Following is a list of picture books or story titles related to the weeks lesson. The books are not essential to the ocean nature study but they do offer information in a more relational way and they're fun. Books marked with an * can be found at the library.

Lesson 1 | Ocean:

- The Bible: Creation account in [In Genesis 1-2:4](#).

Lesson 2 | Continents:

- The Bible: Flood account [In Genesis 6:9-9:17](#).
- [True Story of Noah's Ark](#) by Tom Dooley.
- *[Flood](#) by Jackie French. [Read Aloud](#)
- *[Cyclone](#) by Jackie French.

Lesson 3 | Ocean Topography:

- *[Down, Down, Down](#) by Steve Jenkins.

Lesson 4 | Ocean Motion:

- *[Ella and the Ocean by Lian Tanner](#). **(Teacher Notes)**



Lesson 5 | Ocean H₂O:

- Hello Ocean by Pam Munoz Ryan. [Read Aloud](#)
- *Waves by Donna Rawlins, Mark Jackson and Heather Potter. (Australian Migration). [Read Aloud](#)

Lesson 6 | Biomes:

- *Ecosystems of Australia: Oceans by Greg Pyers.
- *Where the Forest Meets the Sea by Jeannie Baker. [Read Aloud](#).
- *Junior Encyclopedia of Australian Sea Life by Steve Parish.
- *Marine Life by Tony Ayling & Steve Parish

Lesson 7 | Shorelines

- *Magic Beach by Alison Lester. [Read Aloud](#)
- *There's a Sea in My Bedroom by Margaret Wild. [Read Aloud](#)

Choose one seashell book :

- Seashells by the Seashore by Marianne Berkes. [Read Aloud](#)
- Next Time You See a Seashell by Emily Morgan
- What Lives in a Shell ? by Kathleen Weidner Zoehfeld. [Read Aloud](#)

Lesson 8 | Rockpools:

- *Rock Pool Secrets by Narelle Oliver.
- In One Tide Pool : Crabs, Snails and Salty Tails by Anthony D. Fredericks
- *Life in the Rockpool by Greg Pyers.
- Inky's Amazing Escape : How a Very Smart Octopus Found His Way Home by Sy Montgomery (New Zealand)
- A House for Hermit Crab by Eric Carle. [Read Aloud](#)

Lesson 9 | Coral Reefs:

- *Reef by Tricia Oktober.
- *Zoby and the Zoox: A Story of Coral Bleaching by Ailsa Wild, Aviva Reed, Briony Barr & Gregory Crocetti.
- Waru : The Green Sea Turtle by Paul Ashford Harris.
- *Go Facts: Coral Reef by Katy Pike & Garda Turner.
- *Amazing Journeys: Inside a Coral Reef by Carole Telford & Rod Theodorou.

- [*Australia's Endangered Animals and Their Habitats: A Focus on Coasts and Oceans](#) by Jane Hinchey.

Other titles about the coral reef and reef animals you may be interested in:

- [*Where is The Great Barrier Reef ?](#) by Nico Medina.
- [*One Night in the Coral Sea](#) by Sneed B. Collard III.
- [*Journey of the Sea Turtle](#) by Mark Wilson.
- [The Smallest Turtle](#) by Lynley Dodd
- [One Tiny Turtle](#) by Nicola Davies
- [Mister Seahorse](#) by Eric Carle
- [Seahorse : The Shyest Fish in the Sea](#) by Chris Butterworth

Lesson 10 | Kelp Forests:

- [*The Hidden Forest](#) by Jeannie Baker. [Read Aloud.](#)
- [Kelp: The Underwater Forest](#) by Patricia Fletcher.

Lesson 11 | Open Oceans:

- [Under the Sea](#) by Anna Milbourne and Cathy Shimmen.
- [Blueback](#) by Tim Winton.
- [The Deep](#) by Tim Winton.
- [Emma & The Whale](#) by Julie Case.
- [* Down, Down, Down](#) by Steve Jenkins
- [*Fish Everywhere](#) by Britta Teckentrup (Primary)
- [Fish](#) by Steve Parker | A Collins Eyewitness Guide. (Upper Primary)
- [*Amazing Facts About Australian Marine Fishes](#) by Tony Ayling & Steve Parish
- [Fabulous Fish](#) by Susan Stockdale.

Choose 1
or 2

Lesson 12 | Estuaries:


- [*The Secret Bay](#) by Kimberley Ridley & Rebekah Raye.
- [*Circle](#) by Jeannie Baker | [Read Aloud](#)
- [*E3 Call Home](#) by Janet Hunt
- [Seabird](#) by Holling Clancey Holling.
- [*Swamps and Estuaries](#) by Frank Haddon



PLAN AHEAD

What Supplies do I Need?

<p>Lesson 1 Oceans</p> <p>Ocean themed paraphernalia to prepare and create a study corner.</p> <p>Choose an individual activity for child/children and prepare the supplies needed. Print Project NB page & Field Trip NB page.</p>	<p>Lesson 4 Ocean Motion</p> <p>Field trip to ocean. Nature Journal. Field Trip NB page.</p> <p>Rope. Canvas & Paints. Scientific Experiment NB page.</p> <p>Project Materials: transparent, 500ml soda bottle, water, blue food colouring and baby oil. Project NB page.</p>	<p>Lesson 6 Biomes</p> <p>Project Materials: A marine ecosystem will be created for this unit. Please collect your materials from this link. Print Project Page.</p> <p>Choose an individual activity for child/children and prepare the supplies needed. What notebook pages will they need to record their work?</p>
<p>Lesson 2 Continents</p> <p>World Map or Globe.</p> <p>Noah's Ark model purchased here for corresponding lesson 1 in the Math in Nature Guide. Display the model in your study corner.</p> <p>Project Materials: tray, sea sand, water, pebbles, seaweed, shells, coral and ocean themed toys. Print Project NB page.</p> <p>Choose an individual activity for child/children and prepare the supplies needed. What notebook pages will they need to record their work?</p>	<p>Choose an individual activity for your child/children and prepare the supplies needed. What notebook pages will they need to record their work?</p>	<p>Lesson 7 Shoreline</p> <p>Field Trip to beach. Nature Journal. Field Trip NB page. Print Beachcombing Log, Food Chain NB page & Scientific Observation NB page.</p>
<p>Lesson 3 Topography</p> <p>Ocean Depths poster from The Ultimate Guide: Ocean by John Farndon.</p> <p>Project Materials: flour, salt, blue food colouring, water and shoe box. Print Project NB page.</p> <p>Choose an individual activity for child/children and prepare the supplies needed. What notebook pages will they need to record their work?</p>	<p>Lesson 5 Ocean H2O</p> <p>Field trip to beach. Nature Journal. Print Field Trip NB Page.</p> <p>Water Cycle Chart for revision.</p> <p>Project Materials: cold water, ice cube, string, salt, container, magnifying glass and eyedropper. Print Scientific Experiment NB page.</p> <p>Choose an individual activity for child/children and prepare the materials for experiments using plastic jewels, cups, bottle, salt and microscope. Print NB page.</p>	<p>Large shell to 'hear' the ocean.</p> <p>Project Materials: Print and prepare Shell Identification 3 part cards and black shell NB cards to classify and identify shells. Project NB page.</p> <p>Choose an individual activity for child/children and prepare the supplies needed. What notebook pages will they need to record their work?</p> <p>Print and utilize the Ocean Animal NB pages to record creatures found on the shoreline. Print Shoreline Habitat NB page.</p> <p>Note: You may need a whiteboard, marker and pictures of ocean animals to draw a food web for pre-schoolers.</p>
	<p>Lesson 6 Biomes</p> <p>Dangerous Sea Creature Cards from the Math in Nature: Measurement Guide. Print Habitat NB page.</p>	


<p style="text-align: center;">Lesson 8 Rockpools</p> <p>Field Trip to rockpools. Nature Journal. Field Trip NB page. Rockpool Log NB page. Ocean Animal NB pages. Print Rockpool Habitat NB Page.</p> <p>Project Materials: Thermometer</p> <p>Art Supplies.</p> <p>Choose an individual activity for child/children and prepare the supplies needed. What notebook pages will they need to record their work?</p>	<p style="text-align: center;">Lesson 10 Kelp Forest</p> <p>Field Trip to beach after a storm to collect and investigate seaweed. Field Trip NB page. Seaweed NB page. Kelp Habitat NB page.</p> <p>Magnifying glass and bucket or zip lock bags for seaweed.</p> <p>Microscope</p> <p>Resource to review photosynthesis.</p> <p>Project Materials: Seaweed scrapbook. A5 visual diary or nature journal or card and laminator. Tray. Glue. Blotting paper. Project NB page.</p> <p>Optional Art Project: Hidden Forest by Jeannie Baker. A collection of beach materials such as sand, dried seaweed, shells etc to create a collage on canvas. Playing with Collage by Jeannie Baker. Art NB page.</p> <p>Choose an individual activity for your child/children and prepare the supplies needed. What notebook pages will they need to record their work?</p>	<p>Choose an individual activity for child/children and prepare the supplies needed. What notebook pages will they need to record their work?</p> <p style="text-align: center;">Lesson 12 Estuary</p> <p>Field trip to an estuary. Field Trip NB page. Nature Journal. Bird Field Guide. Estuary NB page. Bird NB pages.</p> <p>Research Project: Shorebird Resources</p> <p>Project Materials: Pictures of estuary ecosystems and animals that live there from magazines or the internet. Poster board. Project NB page.</p> <p>Choose an individual activity for your child/children and prepare the supplies needed. What notebook pages will they need to record their work?</p> <p>*NB – Notebook</p> <p>Tips:</p> <p>Read through each lesson prior to teaching it. Review links.</p>
<p style="text-align: center;">Lesson 9 Coral Reef</p> <p>The Coral Reef Poster from The Ultimate Guide: Ocean by John Farndon.</p> <p>Dangerous Sea Creature Cards from the Math in Nature: Measurement Guide.</p> <p>Field trip to coral reef or an aquarium. Nature Journal.</p> <p>Research Project: Endangered sea animal pictures and a sheet of poster board.</p> <p>Project Materials: A reef zone model will be made with this lesson. Collect materials from this link.</p> <p>Art Project: Examine the art of Ken Done with this set of boxed cards. Canvas and paints.</p> <p>Optional: Mini aquatic toys may be used for a variety of activities.</p> <p>Choose an individual activity for your child/children and prepare the supplies needed. What notebook pages will they need to record their work?</p>	<p style="text-align: center;">Lesson 11 Open Ocean</p> <p>Field Trip to an aquarium or go whale watching in winter. Field Trip NB page.</p> <p>Project Materials: Find a Shark Smart resource for your state and discuss shark/beach safety. Project NB page.</p> <p>Print Deep Ocean habitat NB page & Ocean animal NB pages.</p> <p>Print Art and Poem NB pages.</p> <p>Research Project: Poster board. Fish images. Plan a fishing trip.</p>	<p>Have all the books, supplies and notebook pages ready before the lesson begins.</p> <p>Make your own playdough.</p> <p>Get involved and work alongside the children. It's fun and inspiring.</p> <div style="text-align: right;">  </div>

SCHEDULE IT

How do I Make the Nature Guide Work for Me?

The following schedule is a suggestion only. Please modify it to suit your family. Don't be a slave to the schedule, fit the unit in when you are able to. There are a few options to choose from :

- There is a lot of information to digest in each lesson and to fully enjoy the experience, I suggest that you take a leisurely walk by aiming to complete a lesson every fortnight. There's enough content here for a 20+ week study.

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Introduction and Inspiration	Discover	Investigate	Engage	Explore
Choose a project to work on this week.				

- If you'd prefer a brisk walk through the unit then read the introduction, follow the prompts in the sidebar and leave the extra activities and projects.

MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
Introduction and Inspiration	Discover	Investigate	Engage	Explore

- You could also complete a lesson in a full day or two. Adjust it to make it work you.

A Note: *Step out and play with the children. They are usually more interested and engaged when you are exploring alongside them, enjoying their activities and discussing their discoveries. Create your own nature journal pages or use the notebook pages provided to compile your own portfolio. It's so much fun learning things together.*

Sometimes, children are not interested or motivated to explore nature or journal, but I promise, if you step forward with excitement, your child will become inspired by your work. The dishes can wait and the unmopped floors will still be there when you return home. Children are young for such a short time. Enjoy the moments ; the smiles, the tears and the frustrating screams.

Now ! Come along, let's dive in.

Inspire

Inspire children with this rocky shore habitat [video](#).

Discover

Read [Rockpool Secrets](#) by Narelle Oliver.

Read [A House for Hermit Crab](#) by Eric Carle. [Read Aloud](#)

Read [In One Tide Pool : Crabs, Snails and Salty Tails](#) by Anthony D. Fredericks

Investigate

Understand the rock pools by diving deeper:

- Read [Oceans Alive](#), pg. 28-31 (Preschool)
- [Life in a Rockpool](#) by Greg Pyers.



Rockpools

Where are the tidepools?

Tidepools occur on rocky platforms between the high and low tide zones. Ocean water is caught in pockets along with trapped ocean creatures as the tide recedes.

This creates an amazing habitat for many marine animals who interact with one another. Organisms living in this community are constantly adapting to their environment as water evaporates and becomes saltier while temperatures rise and oxygen levels plummet.

Some rockpool creatures are able to survive out of water for a short time like barnacles and periwinkles, while other animals need to stay submerged in water like the sea stars and octopods.

Rockpool animals are exposed to predators. Birds feast in the pools while the tide is low.

The [Eastern Reef Egret](#) hunts rocky shores day and night for fish, crustaceans and insects. They breed year round and create nests lined with seaweed. Nests can be up in trees or under shrubs. Both parents incubate the eggs which hatch in 6 weeks.

Who lives in the tidepool?

[Crabs](#) hide in rock crevices during the day and hunt at night. They're omnivores who feed on algae, hunt for molluscs or eat scraps of dead things off the floor. Male crabs fight over females and hiding holes and they'll play dead when threatened by a predator. A cast of crabs will drum their feet or wave their pincers to communicate.

Crabs shed their exoskeleton when they've grown out of it, and the soft case underneath will eventually harden into a new shell. A female can lay up to 200 thousand eggs which she carries until they hatch.

Investigate

Note: Look at images of marine creatures in the [JNR Encyclopedia of Australian Sea life](#) and [Amazing Facts about Australian Marine Life](#) by Steve Parish publications.

Engage

During rockpool investigations, collect temperatures of various rockpools. Which rockpool had the highest temperatures and which had the lowest temperature? Why?

Discuss why rockpool creatures live in various rockpools with different temperatures and salinity levels.

Compare rockpool temperatures with open ocean temperatures.

Is there a difference between plant life in each pool?

Starfish crawl along rocks or the seafloor eating algae and dead animals. They also eat shellfish by opening the shell with their rays, then folding their stomach out of the mouth to consume it. The starfish's mouth is on the underside of the centre disc. Starfish can have 5-40 arms or rays with suckers underneath which help them to crawl.

Sea Stars don't have brains and instead of pumping blood, they filter water through their bodies. Eye spots are located at the end of each arm which detect light and dark.

Amazingly, a starfish is able to regenerate a new ray when one is torn off, and should a ray be lost with a piece of the central disc, a whole new starfish will grow.

Octopods defend themselves from predators in various ways. They may hide in tiny rock crevices, move fast with jet propulsion or expel clouds of black ink that disrupt the predators sense of smell and irritate the eyes while disappearing.

The most extraordinary defence mechanism of the octopod is the ability to swiftly camouflage itself by using its chromatophore cells within its skin pigmentation. The texture of the octopod also changes as it mimics the antics of another marine friend to trick a predator into thinking it's something else.

Octopods are intelligent, active predators who enjoy a meal of crabs, but they will also eat small fish.

These creatures don't live for very long and die soon after mating. The male will place sperm pockets within a female's mantle cavity and die within 6 months. The female diligently cares for the eggs and protects them in her lair without eating. Once the eggs hatch, the female emerges too weak to protect herself and succumbs to predators, while the octopus larval float in clouds of plankton where they feed and grow.

Sea urchins are round creatures covered in spines which protect its vulnerable body from predators like starfish. Seaweed and sponges are their favourite foods. They walk by moving their tube-like feet in a

Explore

Explore rockpool habitats for marine creatures.

Ask questions: What lives here? What does it feed on? How does it eat? How does it move?

Take care when moving about and leave rocks as they are found.

Log rockpool creatures on the Rockpool NB page. File the list.

Draw or paint a rockpool creature into your nature journal.

Activity

Download [Junior Ranger](#) rockpool activities:

Explore Rocky Shore activity pages [here](#) or [here](#).

Learn more about limpets with [this](#) activity page.

[Identification guide for rocky shores.](#)



similar way to starfish. Sea urchin skeletons wash up on shore in a variety of shapes, colours and sizes.

[Sea squirts](#) are colonial creatures who live together in one place. They are filter feeders with two openings; one opening (oral siphon) sucks water in then passes it through a basket-like sieve where plankton is trapped and water is squirted out the other opening (atrial siphon).

The larval look like tadpoles and they swim a while before attaching to a rock where it will transform into an adult. They are sessile creatures which means they stay in one place their whole life like coral polyps.

[Sea hares](#) are large, green marine sea slugs that glide over rocks feasting on algae. They release a purple dye into the water which helps them to vanish when they feel threatened.

[Scallops](#) are the largest of the bivalve, mollusc family. They live in between two shells and filter water to collect plankton to eat. They're able to escape predators by clapping their valves together which enable them to swim away.

[Barnacles](#) are related to the crustacean family. They are tiny creatures living inside hard plates of calcium carbonate which are stuck to hard surfaces including rocks, piers, boats and whales. The barnacle hunts during high tide by lying on its back and capturing prey with its feet through the open shell. When the tide goes out, the animal tightly closes the shell door to stay moist.

[Chitons](#) are nocturnal and feed on algae or plankton. They slide around like a slug on one big foot while scraping food off rocks. Their soft bodies are protected with eight plate like shells that can be smooth and shiny or hairy and dull.

[Limpets](#) hide beneath cone shaped shells and slide along rock surfaces with a 'foot' while scraping algae with their radula. They seal themselves in with mucus which keeps them from drying out at low tide.

[Shrimp](#) are transparent and difficult to spot in rockpools. They're filter feeding animals that eat

Memorise

[Ocean Life](#) by Anna Jacobson

Fun Links

Exploring for Tidepool Creatures | Brave Wilderness: [Video](#)

Creepy Rockpool Creatures | Brave Wilderness: [Video](#)

Making a Tidepool Aquarium | Brave Wilderness: [Video](#)

Catching an Octopus | Brave Wilderness: [Video](#)

Sea Creature Adventure | Brave Wilderness: [Video](#)

Mystery Rockpool Fish | Snake Artist: [Video](#)

Big Octopus vs Small Holes: [Video](#)

Meet the Octopus | SciShow Kids: [Video](#)

How to Draw a Crab | Snake Artist: [Video](#)

scraps. Shrimp are an important part of the rockpool food cycle as many creatures feed on them.













The sea mouse is actually a worm covered in bristles that look like fur. There are many species of sea worms in a variety of shapes and sizes. Common marine worms are tubeworms that attach themselves to rocks and [flatworms](#) which are the prettiest worms of the ocean.

[Blennies](#) are small, long, slimy fish that hide in tight crevices and hunt crustaceans. They have firm front fins which help them to 'walk' from one pool to another.

[Porcupine fish](#) have long, pointy spines on the head and body. They can blow up like pufferfish by swallowing water to increase in size. Other fish living in rockpools are pipefish and toadfish.

Rockpools are inhabited by creatures that sting and bite. Be aware while exploring.



Sensor	Thinker
<p> Sing along to the tidepool song here.</p> <p> Explore the high and low tide rockpools and notice the groups of animals living under different conditions. Can you name a group of animals living together in a community with similar conditions? What is the food chain for this group of animals? Complete the food chain NB page. File it.</p> <p> Dissect a starfish with this 3D dissection model. Use the Project NB page.</p>	<p> Notice where the animals in the rockpool are situated. Are they at the top, middle or bottom of the tidepool? Is there any algae on the rocks or in the pool? Video the activity and save it.</p> <p> Classify rockpool creatures into groups who are rock dwellers, swimmers, crawlers, filter eaters, bivalves, univalves, herbivores and carnivores and so on. File the classification chart in the portfolio.</p> <p> Observe and record the animals found in the rockpool on the NB pages provided.</p>
Feeler	Intuitior
<p> Search for patterns amongst the rockpool creatures. Which animals have patterns on them? What kind of shapes do you notice? Video activity and save it.</p> <p> Listen to this sea star mini documentary, then create a sea star fact sheet or use the NB page provided for you. File the fact sheet in your portfolio.</p> <p> You are an animal living in a rockpool community. Describe a day in your life. File the story in your portfolio.</p>	<p> Can you identify four creatures living in a rockpool habitat? Video the activity and save it.</p> <p> Make up a conversation between a crab and a sea star. What might they say to each other? Video the activity and save it.</p> <p> Identify rocks in the tidepool area. Discuss ways in which the pools may have been formed. Share your explanation and thoughts in a video recording. Save the file.</p>

Primary and Secondary students can use the notebook pages provided to record mini profiles of each of the ocean creatures they have met in the rockpool ecosystem.

Capture rockpool creatures in your nature journal.

APPENDIX A

How Can I Keep Safe on the Beach?

The beach is a wonderful place to play and explore, but we need to know [how to stay safe](#) while visiting the shoreline.

Here are a few things to remember when going to the beach:

- Always swim and visit the beach with an adult.
- Lifeguards patrol safe places on the beach where you can swim. Swimming in between the lifeguard flags is the safest place to be as you will be protected from dangerous currents called rips that can pull you into the ocean.
- Slip on UV protective clothing.
- Slop on sunscreen.
- Slap on a hat.
- Take water to drink on the beach.
- Wear shoes when walking on the beach and rock platforms. Beware of broken glass.
- Always keep your eyes on the tide.

When exploring ocean ecosystems:

- Wear gloves and shoes.
- Leave reptiles, jellyfish and octopods alone.
- Lift stones slowly towards you. If you notice a dangerous creature, return the rock slowly and move away.
- Don't put your hands into holes and cracks.
- Jellyfish tentacles trail in the current. Step away from the flowing water.
- Visit the lifeguard if you have been stung or are hurt.
- Keep an eye out for big breakers when rock pooling.



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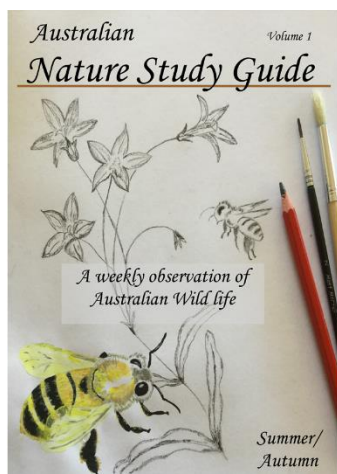
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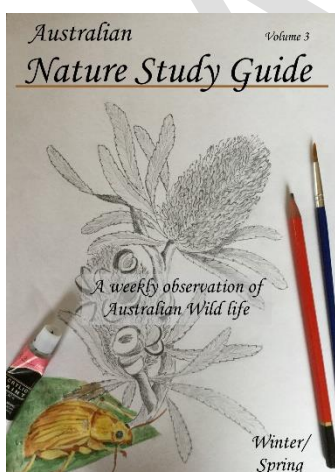
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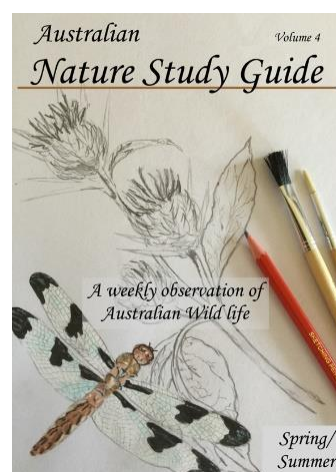
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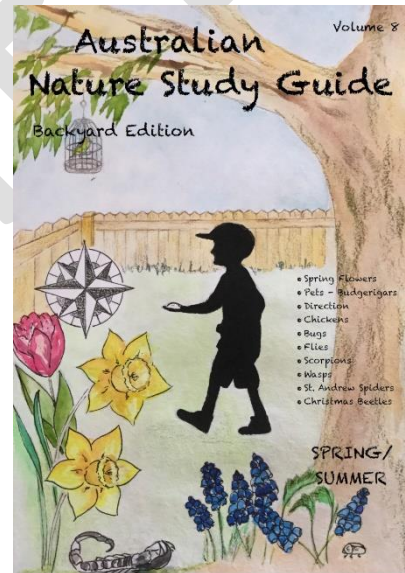
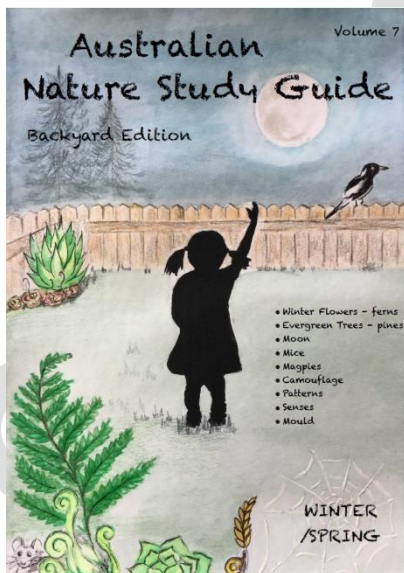
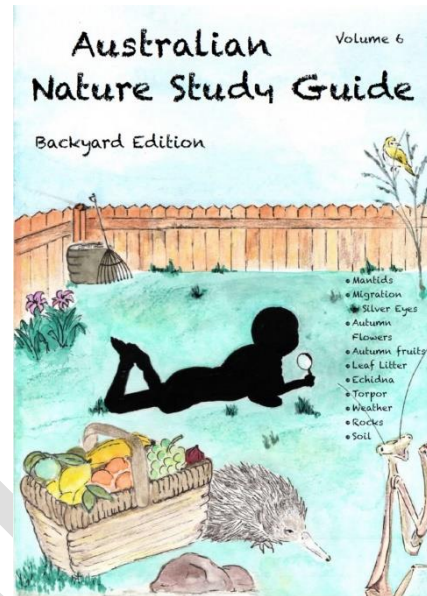


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Winter/Spring | Volume 7

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