

# Teacher Notes

## Themes

- Egg-laying creatures
- Animal diversity
- Habitats and nesting

## Key learning outcomes

- Understand the diverse range of animals that lay eggs to produce young
- Learn how animal parents care for and protect their eggs
- Identify the different environments and nests where animals choose to lay their eggs

## Key curriculum areas

- **Science:** Science Understanding (Biological sciences); Science as a Human Endeavour
- **English:** Language; Literature; Literacy
- **The Arts:** Visual arts
- **Cross-curriculum Priority:** Aboriginal and Torres Strait Islander Histories and Cultures

## Publication details

*Hatch*

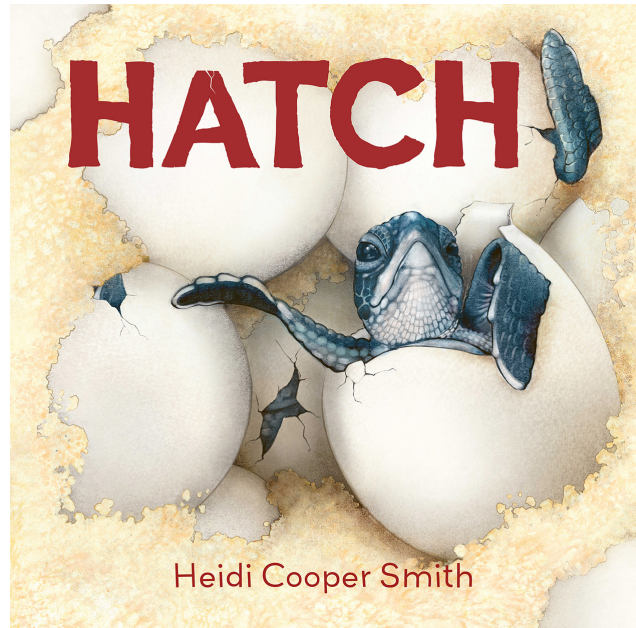
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Teacher notes prepared by David Gullan.

CSIRO Publishing  
Private Bag 10  
Clayton South, VIC 3169, Australia

Website: [www.publish.csiro.au](http://www.publish.csiro.au)  
Tel: 1300 788 000 (local call in Australia)  
Email: [publishing.sales@csiro.au](mailto:publishing.sales@csiro.au)



# Hatch

Heidi Cooper Smith

## About the book

What kind of animals lay eggs? Where do they lay them, and how do they look after them?

Meet some of Australia's incredible egg-laying animals. Starting at the sea, *Hatch* takes us on a journey inland and underground, to the treetops high above, and back down to a waterhole, till finally we reach the sea once more.

With detailed and vibrant illustrations, *Hatch* provides a glimpse of these amazing egg-laying creatures, the unique habitats in which they live and how they look after their young.

## Recommended for

Readers aged 5 to 9 (Years 1 to 4)



PUBLISHING

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## About the author/illustrator

Heidi Cooper Smith has always held a love and fascination for animals, particularly those that could be found in her own backyard. Growing up in the bush on a diet of David Attenborough documentaries, she wants to help foster this appreciation in the next generation.

## Pre-reading questions or activities

### Who lays eggs?

We are about to read a book all about eggs. What animals can you name that lay eggs? Do you know any others? Let's make a list and keep an eye out for any others as we read.

### What do eggs look like?

Do you know what eggs are? Where have you seen an egg? What shape do you think eggs are? How big do you think eggs are? What colour are eggs? Let's read the book and pay attention to all the different eggs we see throughout the story.

## Discussion questions

### Science

1. There are many animals that lay eggs in this story. Can we name them all? Do you think there is a reason why so many different species of animals, in so many different environments, lay eggs to produce young rather than give birth to live young?
2. We saw many animals use a variety of nests to lay their eggs in. What are some of the nests you can remember from the story? Why are nests important and why are there different kinds?
3. A usual definition of a mammal is an animal that breathes air, produces milk to feed their young, has fur and gives birth to live young. Platypuses and echidnas are mammals, but what makes them different to all other mammals?
4. The author describes most of the animals looking after their young as females, but did you notice any males in the story looking after the eggs? Which animal was it? Why was this animal looking after the nest?

# Teacher Notes

## English

1. The author uses a lot of alliteration in this story. Alliteration is the repetition of sounds at the beginning of words in the same sentence. For example, ‘murky mangroves’. What other examples of alliteration do you remember from the story? Why do you think the author used this literary device?
2. The sea turtles make an appearance at the very beginning and the very end of the book. Why do you think the author chose to do this? How does it help the story?
3. The author uses lots of adjectives to describe the different eggs throughout the story. Let’s make a list. What inference can we make about eggs from all the different adjectives on our list?

## The Arts

1. The illustrator of *Hatch* created some incredible endpapers. Endpapers are the first and last pages of a book (on the inside front and back covers). They may often be left blank, but some authors and illustrators choose to include images related to the story on these pages. What do the endpapers of this book show? How do you think this helps the story?

## Aboriginal and Torres Strait Islander Histories and Cultures

1. The eggs of Australian animals have long since been an important part of Indigenous culture. From being an important food source, to being used for art and storytelling, they hold a lot of cultural importance. There are many rules and practices that govern how and when eggs of different animals can be collected. Why do you think this is?

# Activities

## Science

### *Ocean eggs experiment*

In this experiment we are going to observe and discuss the impact that something acidic, like vinegar, can have on an egg.

### Materials:

- 2 fresh eggs
- Jar
- 500 mL vinegar

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## Method:

Step 1: Place a fresh egg into a jar of vinegar.

Step 2: Leave the egg in the vinegar for 1 to 2 days.

Step 3: Remove the egg and gently rinse with water.

Step 4: Carefully feel the egg and compare it to a fresh egg that has not been sitting in vinegar, and discuss.

## Explanation:

Eggshells are made of calcium carbonate, just like many marine organisms such as corals, oysters and snails. Vinegar is an acid that breaks down calcium carbonate and causes the eggshell to slowly dissolve, taking away its protection and making it vulnerable.

When there is too much carbon dioxide (CO<sub>2</sub>) in the atmosphere, it can dissolve in the ocean and cause the water to become acidic, just like the vinegar from the experiment. The increase in the acidity of the ocean causes the shells and skeletons of eggs and marine organisms to slowly dissolve, which weakens them and makes it difficult for them to survive.

## Discussion questions:

What might happen to the eggs in the ocean if the ocean becomes too acidic?

What can we do to prevent oceans from becoming too acidic?

## Life cycles

There are many different species in this story, from monotremes to amphibians, insects, arachnids, birds, reptiles, crustaceans and molluscs. For each of these species, eggs play an important part in their life cycle. Select one of the animals from the story and research their unique life cycle. Use your research to describe and illustrate the life cycle on a poster to be displayed in the classroom.

## English

### Animal alliteration

As mentioned in an earlier discussion question, the author of this book uses a lot of alliteration. This activity will see you taking inspiration from the author and creating your own animal alliteration. Students can choose an animal from the story and use its name, parts of its habitat, behaviour and diet to create a passage about the animal that is full of alliteration. Remember to use nouns, adjectives, verbs and adverbs to create more alliteration.

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## *Life after hatching*

Students select one of the animals from the story and write about their life after hatching. The students should first research the life cycle, diet, habitat, behaviour and threats of their chosen animal, then use this information to write a narrative that follows the life of the animal after it has hatched from its shell and is faced with the big wide world.

## **The Arts**

### *Eggshell exhibit*

Often we think of eggs as quite plain-looking things, but if we look at some of the eggs illustrated on the endpapers we can see how vastly different eggs can actually be. We can also look at some of the eggs at the Melbourne Museum: <https://museumsvictoria.com.au/article/the-colour-of-birds-eggs/>.

Today we will be creating our own beautiful eggshells.

### **Materials:**

- White paper
- Pencil
- Watercolours
- Paintbrushes
- Skewers
- Sponges
- Cup of water

### **Method:**

Step 1: Draw one or more egg shapes on a blank page.

Step 2: Using a brush, paint the shell of your eggs with the lighter watercolours.

Step 3: Use the skewers and the sponges to apply some of the darker watercolours to your eggshells, creating different patterns on the shells.

## Australian Curriculum Links (Version 9.0)

Year level	Learning area: Science	Other learning areas
Years 1/2	<p><b>Science Understanding: Biological sciences</b></p> <ul style="list-style-type: none"> <li>Identify the basic needs of plants and animals, including air, water, food or shelter, and describe how the places they live meet those needs (<a href="#">AC9S1U01</a>)</li> </ul> <p><b>Science as a Human Endeavour: Use and influence of science</b></p> <ul style="list-style-type: none"> <li>Describe how people use science in their daily lives, including using patterns to make scientific predictions (<a href="#">AC9S2H01</a>)</li> </ul>	<p><b>English: Language: Text structure and organisation</b></p> <ul style="list-style-type: none"> <li>Explore how texts are organised according to their purpose, such as to recount, narrate, express opinion, inform, report and explain (<a href="#">AC9E1LA03</a>)</li> <li>Identify how texts across the curriculum are organised differently and use language features depending on purposes (<a href="#">AC9E2LA03</a>)</li> </ul> <p><b>Language: Language for expressing and developing ideas</b></p> <ul style="list-style-type: none"> <li>Experiment with and begin to make conscious choices of vocabulary to suit the topic (<a href="#">AC9E2LA09</a>)</li> </ul> <p><b>English: Literature: Literature and contexts</b></p> <ul style="list-style-type: none"> <li>Discuss how language and images are used to create characters, settings and events in literature by First Nations Australian, and wide-ranging Australian and world authors and illustrators (<a href="#">AC9E1LE01</a>)</li> </ul> <p><b>English: Literacy: Texts in context</b></p> <ul style="list-style-type: none"> <li>Discuss different texts and identify some features that indicate their purposes (<a href="#">AC9E1LY01</a>)</li> </ul> <p><b>Literacy: Interacting with others</b></p> <ul style="list-style-type: none"> <li>Use interaction skills including turn-taking, speaking clearly, using active listening behaviours and responding to the contributions of others, and contributing ideas and questions (<a href="#">AC9E1LY02</a>)</li> <li>Use interaction skills when engaging with topics, actively listening to others, receiving instructions and extending own ideas, speaking appropriately, expressing and responding to opinions, making statements, and giving instructions (<a href="#">AC9E2LY02</a>)</li> </ul> <p><b>The Arts: Visual arts</b></p> <ul style="list-style-type: none"> <li>Experiment and play with visual conventions, visual arts processes and materials (<a href="#">AC9AVA2D01</a>)</li> <li>Use visual conventions, visual arts processes and materials to create artworks (<a href="#">AC9AVA2C01</a>)</li> </ul>
Years 3/4	<p><b>Science Understanding: Biological sciences</b></p> <ul style="list-style-type: none"> <li>Compare characteristics of living and non-living things and examine the differences between the life cycles of plants and animals (<a href="#">AC9S3U01</a>)</li> </ul> <p><b>Science as a Human Endeavour: Use and influence of science</b></p> <ul style="list-style-type: none"> <li>Consider how people use scientific explanations to meet a need or solve a problem (<a href="#">AC9S4H02</a>)</li> </ul>	<p><b>English: Language: Text structure and organisation</b></p> <ul style="list-style-type: none"> <li>Describe how texts across the curriculum use different language features and structures relevant to their purpose (<a href="#">AC9E3LA03</a>)</li> </ul> <p><b>English: Literature: Examining literature</b></p> <ul style="list-style-type: none"> <li>Discuss how an author uses language and illustrations to portray characters and settings in texts and explore how the settings and events influence the mood of the narrative (<a href="#">AC9E3LE03</a>)</li> </ul> <p><b>English: Literacy: Interacting with others</b></p> <ul style="list-style-type: none"> <li>Use interaction skills to contribute to conversations and discussions to share information and ideas (<a href="#">AC9E3LY02</a>)</li> </ul> <p><b>The Arts: Visual arts</b></p> <ul style="list-style-type: none"> <li>Experiment with a range of ways to use visual conventions, visual arts processes and materials (<a href="#">AC9AVA4D01</a>)</li> <li>Use visual conventions, visual arts processes and materials to create artworks that communicate ideas, perspectives and/or meaning (<a href="#">AC9AVA4C01</a>)</li> </ul>
All	<p><b>Cross-curriculum Priority: Aboriginal and Torres Strait Islander Histories and Cultures</b></p> <ul style="list-style-type: none"> <li>First Nations communities of Australia maintain a deep connection to, and responsibility for, Country/Place and have holistic values and belief systems that are connected to the land, sea, sky and waterways (<a href="#">A_TSICP1</a>)</li> </ul>	

# Teacher Notes

## Related books from CSIRO Publishing

For younger readers:

- *Cassowary Dad* (<https://www.publish.csiro.au/book/8116>)
- *Swoop* (<https://www.publish.csiro.au/book/8054>)

For older readers:

- *Sensational Australian Animals* (<https://www.publish.csiro.au/book/8094>)

## Double Helix magazine

Packed with fun, exciting and quality articles, Double Helix magazine is created to inspire young readers. It covers a range of topics across science, technology, engineering and maths.

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## Double Helix Extra

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## Other CSIRO resources

CSIRO has developed and delivered a broad range of high-quality STEM education programs and initiatives for nearly 40 years. Our programs aim to inspire the pursuit of further STEM education among students and the community, to equip the emerging workforce with tomorrow's skill sets, and to strengthen collaboration between industry and classrooms across Australia. For more information visit: <https://www.csiro.au/en/Education>