

Aussie
STEM Stars

MADDY McALLISTER

Shipwreck detective

Story told by DEB FITZPATRICK



Teacher Notes

written by

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ABOUT THIS SERIES

Aussie STEM Stars is a fresh and unique series for children and young teens aged 9-13 years that focuses on our Australian STEM heroes. Each book is written by an award-winning children's author and follows the real-life stories of Australia's top scientists and inventors, chosen on the basis of their pioneering work. Themes explored in the series include childhood, school, family and formative experiences, what inspired them to pursue their chosen path, how they persevered in the face of challenges and what they have contributed to science in Australia.

Reasons for studying this book

Wild Dingo Press publisher Catherine Lewis is excited about their publication. "These disciplines are more important than ever as we look to our inventors and innovators to solve contemporary problems facing humanity and the planet. Our Aussie STEM Stars series uses narrative non-fiction as a tool for educating children – making it as fun and interesting as fiction books. Our writers are passionate about doing justice to their chosen subjects – and their lives – providing teachers, parents and librarians a wonderful series aimed at encouraging children to develop an interest in STEM at a young age."

About the author

Deb Fitzpatrick lives in Perth, Western Australia. She writes fiction and creative non-fiction for adults, young adults and children. Her books have been named Notable Books by the Children's Book Council of Australia, shortlisted in the West Australian Young Readers Book Awards, published in the US, and optioned for film. Deb lived in a shack in Costa Rica for four years where she became accustomed – well, almost – to orange-kneed tarantulas walking through her house, and sloths and spider monkeys in the trees outside. Deb loves using stories from real life in her novels and regularly teaches creative writing to all ages. She has a Master of Arts from the University of Western Australia, and shares her life with a lovely family and their kelpie, who is absolutely not a failed sheep dog, and may or may not star in a novel for kids, coming out in 2024.

About our STEM Star: Maddy McAllister

Maddy's love of the sea and everything in it was nurtured by a wild early childhood in the Northern Territory of Australia and her beloved grandad, who would take her fishing and snorkelling in the ocean off Busselton, Western Australia. On these trips he would regale her with stories of shipwrecks and share his great curiosity in both the underwater world and in ancient civilisations. By the age of 14, Maddy was a

certified SCUBA diver and had a fascination for archaeology. Her passion for exploring shipwrecks was sparked by the heroic story of two teenagers who, in 1876, saved most of the survivors of a shipwreck off the Margaret River coast in southwest WA, by courageously riding their horses into roiling surf to rescue them.

Check her out: <https://www.maddymcallister.com/>

OUTCOMES

Australian Curriculum

KEY FOCUS AREAS

Literacy Stage 2–4

Science Stages 2–4

HASS Stages 2–4

OUTCOMES

NSW Curriculum

KEY FOCUS AREAS

Literacy Stages 2–4

Science Stages 2–4

HASS Stages 2–4

BEFORE YOU BEGIN READING THIS BOOK

Front cover

- What do you know about Maddy McAllister?
- What do you know about shipwrecks?
- What do you know about the study of oceans and weather patterns?

Back cover

- Read the blurb. What can you gather about this book from the blurb?
- Discuss the image on the back cover. What do you think Maddy is doing?

Before you start reading

- Highlight the quote at the beginning of the book:

*Dive deep into your passions,
let it guide you and be amazed at where it takes you.*
— Maddie McAllister

Write this quote on a poster as a class or small group. Ask students to write ideas around the quote as to what it might mean to them. Add to this poster as the book is studied.

- Outline the Glossary at the back and how to use it.
- Who is the author of this book? Explore other books and pieces of writing Deb Fitzpatrick has written and discuss why she may have been asked to write this book.
- What is the difference between a biography and an autobiography? Explore what this book is and why it is a biography and not an autobiography. Discuss the importance of the STEM Stars series.
- What is narrative non-fiction? Could this book fit into that genre as well?

KEY PROJECTS

Key project 1: Weather

- Weather plays a huge role in our lives, but how does weather affect the maritime environment? Maddy experiences cyclones when she lives in Darwin, but how could these cyclones play a role in the study of shipwrecks?
- Cyclones are called different names in different countries. Write a list of the other terms and where they are used.
- Discover other weather events that can help and hinder maritime archaeology in various ways.

Key project 2: Mermaids

- What are mermaids and how did they become part of human culture?
- Investigate the origins of mermaids through fairy tales, cultural images and sea stories to gather more of an understanding about how these mythical creatures began, and why they still play a role in society today.

You might like to check out: [Mermaid tales appear in myths around the world — Arnhem Land included - ABC News](#)

Key project 3: Shipwrecks

Choose a shipwreck that interests you and research this. Imagine you are one of the people aboard the ship and write a detailed diary recounting the days leading up to the shipwreck, and the days that follow.

Key project 4: Archaeology

How has the field of Archaeology inspired books and films? Find books and films that have been made out of archaeological finds and consider the following:

- How accurate are the books/films
- Why were these particular finds made into books/films?
- Why are people interested in these stories?
- Is the site still significant? Why?
- How do these films help or harm the study of archaeology and the historical sites?

Key project 5: Reflection on literature

Students can fill in this table as they read to record their ideas and feelings:

Chapter	
In one sentence, explain what this chapter was about?	
What did Maddy McAllister or another key person do and say in this chapter? How did she/they feel?	
What real life events occurred?	
Link some dates and extra details to this event.	
List new vocabulary you have learnt in this chapter	
How has the author made you feel? Think of the language used to create tension, happiness, wonder, anxiety, sadness.	

Reflect on this table after the book has been read

- How did your knowledge change throughout the book?
- How did your feelings change? Why?
- Did the characters seem to change as you learnt more about them?
Which events caused change in their characteristics?
- What new vocabulary have you learned?

TEACHING AND LEARNING ACTIVITIES

These questions have been written so that students can explore the book. Not all questions need to be answered, and not all questions are suitable for all students. Choose questions that are aimed at your level of students, so that they can be completed as a book study, a group discussion or whole class activities.

Chapter 1

1. Where is Darwin? Where is Pine Creek? How long would it take for Maddy and her family to drive to Wangi falls from Darwin? From Pine Creek?
2. Who are the Koongurrukun, Mak Mak, Marranunggu, Werat and Warray Aboriginal people? Find out where they live and some of the traditional customs they have.
3. What are gale-force winds?
4. How would you feel if you had to change schools? Describe a timeline of emotions you think you would go through.
5. Why was Maddy surprised by the school 'bus'?
6. Maddy has a diary. Imagine you are Maddy, and write about the first day at Pine Creek primary, using the information from the story as a guide.
7. What are floaties?

Chapter 2

1. Mum uses the idiom 'hold your horses'. Find out what an 'idiom' is and list some other idioms which refer to animals.
2. List the events the students are practising. Which one of these events do you enjoy, why?
3. Why do you think Jasper is groaning?
4. What is damper, and how do you make it?
5. How are the children feeling as they make damper with the Aunties? Give some examples as to why they are feeling like this.
6. What is a bush oven? Draw a labelled diagram of one.
7. Maddy and Ally make up their own lyrics to different songs. Create your own set of lyrics, using a theme from the book so far, to a known tune.
8. List some verbs that are used throughout this chapter, and discuss with your class how they enhance the story.

9. Find Busselton on a map and work out how Maddy and her family could get there by different modes of transport – car, plane, bus.
10. Which country does a Welsh person come from? Is it a separate country from the United Kingdom? Which Australian Prime Minister was born in the same country as Grandad and Nanna?

Chapter 3

1. What does 'the big smoke' mean?
2. In what ways would living in the city be different from living in the country?
3. How does Applejack help Maddy when she is feeling upset by all of the changes around her?
4. Create a timeline of events in Maddy's life so far, including emotions and important people.
5. Locate Geographe Bay on a map.
6. How are Grandad and Maddy catching crabs?
7. Why are stories like the 'Mary Celeste' so intriguing?

Chapter 4

1. What does 'pores over books' mean?
2. What is the difference between archaeology and palaeontology, and how are they similar?
3. What might 'amazed silence' look and feel like?
4. How do we know that Grandad is passionate about looking after the marine environment?
5. List some things that Maddy sees while she is underwater, using adjectives to describe how they look and move.
6. How does Maddy's journal reflect what she will do in the future?

Chapter 5

1. How many schools has Maddy been to in her life so far?
2. Why is Maddy's mother moving the girls again?
3. How has moving closer to her grandparents had a positive influence on her?
4. How is the ocean described? What other ways could the ocean be described in different types of weather?

Chapter 6

1. How was the Viking way of fishing different from modern fishing techniques?
2. What does SCUBA stand for?
3. Why is it important to do so much training before you SCUBA dive?
4. Why does Maddy want to attend the lecture? Give your reasons using information from the story so far.
5. Why did ships of the past carry whale oil? Which towns in Australia were once 'whaling stations'? When did they close down and why?
6. After reading the story of Grace Bussell and Sam Isaacs, consider what made them rescue these people despite the treacherous surf, and what was probably going through their minds.

Chapter 7

1. Why are shipwrecks spooky and ghostly for many people?
2. What is in a maritime archaeologist's heaven?
3. Using the website listed in chapter 7, find out about the different types of sailing ships. Compare and contrast these ships – size, what they are used for, who would sail on them and what they were made of.
4. How can a shipwreck be like a skeleton?
5. List the various ways Maddy feels when she is underwater.
6. Why is Maddy's dad concerned about her wanting to be a maritime archaeologist?
7. Who is Indiana Jones? Why might her dad be concerned that she wants to be like him?
8. Why do whales beach themselves, and why is it important for people to care for them when this happens?
9. Imagine writing a diary entry about helping the pilot whales. Engage with the story, as well as how you think it would feel, smell, sound, and look like.

Chapter 8

1. Why is Maddy's final year of high school a blur?
2. How does Grandad's death impact on Maddy?
3. What does 'defer' mean, and how will it help Maddy?
4. What is the underwater observatory in Busselton?
5. Where does the saying 'that would suit you to a T' come from, and what does it mean?
6. In three words, how would you describe Maddy's time at university?

Chapter 9

1. Find where *Rapid* sank and some historical facts about it.
2. Why would a boat be named *Dirk Hartog*?
3. What made Maddy call out: 'I don't want to leave, I'm not ready to leave!'?
4. What does the word 'horrendous' mean?
5. Why is a shipwreck described as 'treasure', instead of the silver coins found in 1978 aboard the sunken *Rapid*?

Chapter 10

1. What is a curator?
2. Use an atlas to find the Morning Reef, and write a diary entry imagining you are either Maddy discovering the shipwreck or one of the passengers on board when it sank.
3. How did you feel after reading the story of *Batavia*?
4. What is dendrochronology?
5. How does maritime history help us to understand the world? Give an example using the results of the dendrochronology.
6. What is photogrammetry, and how is this similar but different from photography?
7. How has Grandad been a positive influence in Maddy's life?
8. Why is Maddy is known as, The Shipwreck Mermaid?

Cool Shipwreck facts

Have a read through the various facts about shipwrecks, and think about how you could present some of this information to your classmates in a fun and interactive way.

EXTENSION QUESTIONS FOR FURTHER THINKING

Look for the patterns in why shipwrecks occur, and then why they often stay in the public focus.

How are the ethics involved in shipwreck investigation the same as, and different from, other historical investigations?

How are shipwrecks like the pyramids of Egypt?

List some questions you would ask Maddy McAllister if she were to come to your school for a science lesson. Consider what she could teach your class for the day.

How do various points of view influence how shipwrecks are preserved?

How has the thinking about shipwrecks changed, and stayed the same over time?

ELABORATION OF OUTCOMES TO THE AUSTRALIAN CURRICULUM

Literacy

STAGE 2

Discuss texts in which characters, events and settings are portrayed in different ways, and speculate on the author's reasons (ACELT1594).

Draw connections between personal experiences and the worlds of texts, and share responses with others (ACELT1596).

Discuss how language is used to describe the settings in texts, and explore how the settings shape the events and influence the mood of the narrative (ACELT1599).

Make connections between the ways different authors may represent similar storylines, ideas and relationships (ACELT1602).

Plan and deliver short presentations, providing some key details in logical sequence (ACELY1677).

Use comprehension strategies to build literal and inferred meaning and begin to evaluate texts by drawing on a growing knowledge of context, text structures and language features (ACELY1680).

Plan, rehearse and deliver presentations incorporating learned content and taking into account the particular purposes and audiences (ACELY1689).

Use comprehension strategies to build literal and inferred meaning to expand content knowledge, integrating and linking ideas and analysing and evaluating texts (ACELY1692).

STAGE 3

Make connections between students' own experiences and those of characters and events represented in texts drawn from different historical, social and cultural contexts (ACELT1613).

Analyse and evaluate similarities and differences in texts on similar topics, themes or plots (ACELT1614).

Identify, describe, and discuss similarities and differences between texts, including those by the same author or illustrator, and evaluate characteristics that define an author's individual style (ACELT1616).

Clarify understanding of content as it unfolds in formal and informal situations, connecting ideas to students' own experiences and present and justify a point of view (ACELY1699).

Plan, rehearse and deliver presentations for defined audiences and purposes incorporating accurate and sequenced content and multimodal elements (ACELY1700).

Navigate and read texts for specific purposes applying appropriate text processing strategies, for example predicting and confirming, monitoring meaning, skimming and scanning (ACELY1702).

Plan, rehearse and deliver presentations, selecting and sequencing appropriate content and multimodal elements for defined audiences and purposes, making appropriate choices for modality and emphasis (ACELY1710).

Analyse how text structures and language features work together to meet the purpose of a text (ACELY1711).

Use comprehension strategies to interpret and analyse information and ideas, comparing content from a variety of textual sources including media and digital texts (ACELY1713).

STAGE 4

Identify and explore ideas and viewpoints about events, issues and characters represented in texts drawn from different historical, social and cultural contexts (ACELT1619).

Reflect on ideas and opinions about characters, settings and events in literary texts, identifying areas of agreement and difference with others and justifying a point of view (ACELT1620).

Compare the ways that language and images are used to create character, and to influence emotions and opinions in different types of texts (ACELT1621).

Recognise and analyse the ways that characterisation, events and settings are combined in narratives, and discuss the purposes and appeal of different approaches (ACELT1622).

Recognise, explain and analyse the ways literary texts draw on readers' knowledge of other texts and enable new understanding and appreciation of aesthetic qualities (ACELT1629).

Science

STAGE 2

Science knowledge helps people to understand the effect of their actions (ACSHE051, ACSHE062).

STAGE 3

Scientific knowledge is used to solve problems and inform personal and community decisions (ACSHE083, ACSHE100).

Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena and reflects historical and cultural contributions (ACSHE098).

STAGE 4

Scientific knowledge has changed peoples' understanding of the world and is refined as new evidence becomes available (ACSHE119, ACSHE134).

People use science understanding and skills in their occupations and these have influenced the development of practices in areas of human activity (ACSHE121, ACSHE136).

Identify questions and problems that can be investigated scientifically and make predictions based on scientific knowledge (ACSIS124, ACSIS139).

Science knowledge can develop through collaboration across the disciplines of science and the contributions of people from a range of cultures (ACSHE223, ACSHE226).

HASS

STAGE 2

Pose questions to investigate people, events, places and issues (ACHASSI052, ACHASSI073).

The representation of Australia as states and territories and as Countries/Places of Aboriginal and Torres Strait Islander Peoples; and major places in Australia, both natural and human (ACHASSK066).

The journey(s) of AT LEAST ONE world navigator, explorer or trader up to the late eighteenth century, including their contacts with other societies and any impacts (ACHASSK084).

The importance of environments, including natural vegetation, to animals and people (ACHASSK088).

The custodial responsibility Aboriginal and Torres Strait Islander Peoples have for Country/Place, and how this influences views about sustainability (ACHASSK089).

The use and management of natural resources and waste, and the different views on how to do this sustainably (ACHASSK090).

STAGE 3

Develop appropriate questions to guide an inquiry about people, events, developments, places, systems and challenges (ACHASSI094, ACHASSI122).

The nature of convict or colonial presence, including the factors that influenced patterns of development, aspects of the daily life of the inhabitants (including Aboriginal Peoples and Torres Strait Islander Peoples) and how the environment changed (ACHASSK107).

The environmental and human influences on the location and characteristics of a place and the management of spaces within them (ACHASSK113).

The contribution of individuals and groups to the development of Australian society since Federation (ACHASSK137).

STAGE 4

Construct significant questions and propositions to guide investigations about people, events, developments, places, systems and challenges (ACHASSI152).

How historians and archaeologists investigate history, including excavation and archival research (ACHASSK167).

The methods and sources used to investigate at least ONE historical controversy or mystery that has challenged historians or archaeologists, such as in the analysis of unidentified human remains (ACHASSK169).