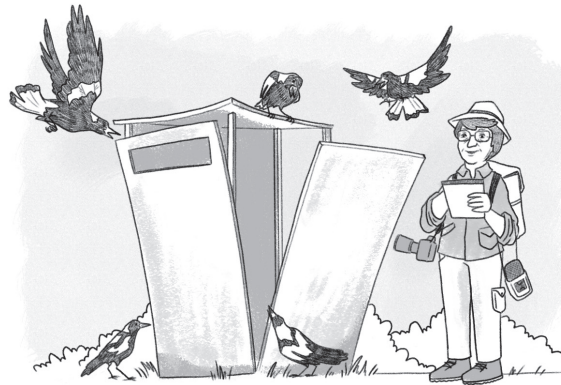


Aussie
STEM Stars

GISELA KAPLAN

Bird and primate scientist

Written by Emily Gale



Teacher Notes

written by
Vanessa Ryan-Rendall

PUBLISHED BY



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ABOUT THE SERIES

Aussie STEM Stars is a fresh and unique series for children and young teens aged 10-13 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.

Reason 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 in this market. 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

Emily Gale writes for children and teenagers. Her Young Adult novels have been published in Australia, the UK, the USA and Germany, and her junior fiction character, Eliza Boom, about a young female inventor, has been translated into ten languages. *The Other Side of Summer*, for ages 10+, was shortlisted for the Victorian Premier's Literary Award, the Aurealis Award, and was a Junior Library Guild title in the USA. Emily's latest YA novel *I am out with Lanterns*, was shortlisted for the Ethel Turner Prize and the WA Young Readers' Award.

About our STEM Star: Prof. Gisela Kaplan

Gisela Kaplan's story contains several lifetimes, beginning in post-war Germany where she endured many challenges as a child that led to a profound curiosity, care and compassion for all living beings. She is a leading voice in animal behaviour worldwide with a special expertise in birds. As well as caring for hundreds of birds in her wildlife rehabilitation work – from wedge-tailed eagles to tiny rosella chicks – her captivating scientific studies on Australian magpies, tawny frogmouths and other iconic species have uncovered incredible facts about their complicated lives that will delight and fascinate children and adults alike.

Professor Kaplan is on a mission to spread the word about how intelligent and surprising birds are, before time runs out for many of them.

OUTCOMES

Australian Curriculum

KEY FOCUS AREAS

Literacy Stage 2–4

Numeracy Stage 3–4

Science Stage 2–6

OUTCOMES

NSW Curriculum

KEY FOCUS AREAS

Literacy Stage 2–4

Numeracy Stage 3–4

Science Stage 2–6

BEFORE YOU BEGIN READING THIS BOOK

Front cover

- What do you know about Prof. Gisela Kaplan?
- What are primates?
- What do you think about scientists or ornithologists and ethologists?
- Discuss and compare the variety of feelings students have towards birds and what they know about local bird life.

Back Cover

- Read the blurb. What can you gather about this book from the blurb? Why do we need blurbs for all types of books?

Before you start reading

- Highlight Quote on page 5

Every living thing on this planet has a right to be, has intrinsic value and deserves empathy and due regard for its needs.

— Gisela Kaplan

Write this quote on a poster as a class or small groups. 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 Emily Gale 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.

KEY PROJECTS

Key project 1: History - World War Two

How did the events of World War Two leave major scars both physically and emotionally on the people of Germany? Explore the aftermath of World War Two through Gisela's story as well as other stories from survivors. Research what happened to them before and during the war but also in their life afterwards.

Compare different stories of survival after the war and to this day.

Key project 2: Zoos

Explore the various purposes of places we keep animals in around the world, from zoos, homesto wildlife sanctuaries.

Research and present **three different case studies** about how we keep animals around the world in various places.

Look into the positive and negative effects these places have on the animals, the environment and people. (For example, zoos in different countries, wildlife sanctuaries, differences in standards across the world for keeping animals, and animals for tourism.)

Look at the different effects these places can have on humans. (Gisela saw the poor treatment of the fox and this stayed with her for life.)

Key project 3: Birds

Choose 4 different types of birds from Australia and compare the differences and similarities between these birds.

You may choose birds from the same area of Australia or select birds that live in completelydifferent habitats. (Think of the southern forested areas of NSW, Victoria and Tasmania, thetropical rainforests of Queensland or the deserts of the Northern Territory and WA.)

Learn about the habitat, diet and habits of each bird.

Extend further into the lineage of the bird to its ancestors.

Argue why we need to take better care of the environment and these birds.

Key project 5: Series study

Read the other books in this series to explore the characteristics all of these people have in common.

Discuss what makes them each stand out and how they contribute to a better society in Australia and the world.

Discuss why children need to read books about people like this.

Key project 6: Reflection on literature

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

Chapter	
How did I feel during this chapter?	
How did the key characters feel? What did they do?	
What real-life events occurred? Find some evidence to show this, using research.	
New language used	
How has the author made you feel? Think of the language used to create tension, happiness, wonder, anxiety.	

Reflect on this table after the book has been read

- How did your knowledge change throughout the book?
- How did your feelings change?
- Did how you see the characters change as you learnt more about them?
- How has your understanding of vocabulary changed?

TEACHING AND LEARNING ACTIVITIES

Chapter 1

- Where is Berlin? What year is this chapter set in? Look at some images to compare what Berlin looked like before the war, during the war, during the time Chapter 1 is set and then now. What are the changes you can see and reflect on the various reasons for these changes.
- After reading the first one and a half pages, what can you work out about who Gisela is and her situation? How do the descriptions outline her characteristics without directly telling us about her?
- How has the war broken people on the inside?
- Discuss what a concentration camp is.
- Many people may think that once the war was over life returned to normal. What tells us in this passage that life had not returned to normal for the people of Germany and also someone like Gisela?
- What does it mean if you have a stutter?

Chapter 2

- Rabies – what is it and does it exist in Australia?
- The saving of Knatschke was an act of kindness shown during the war towards animals. Why do you think some people chose to do this?
- Have you been to your local zoo? What have you enjoyed about going there?
- What do you think was going around in Gisela's head after she had been to the zoo and how does this viewpoint change after she has seen the fox with a chain around its neck? Write down before and after thoughts and compare the changes.

Chapter 3

- How was Berlin split into East and West?
- Why do you think Gisela's family had to leave their lovely cottage with a neighbour who was a cellist?
- How did Gisela get her daily news and how is this different from how you find out about daily events?
- What is a journalist and what do you think her mother is writing about?

- How would you describe Gisela's relationship with her parents?
- Draw up a timeline and start to record the different events in Gisela's life so far. This can be added to throughout the book. To extend students, they can also write about Gisela's relationships, her view of the world and animals and then compare these feelings as she grows older.
- How does the gift of the budgie help Gisela?

Chapter 4

- How is Gisela's life difficult? Why do you think her mother does not want her new baby and does not even feel happiness about Gisela's good marks?
- Why were books burned in Germany and how did this affect German society for many years afterwards?
- Do you have any 'stones' in 'your river' – people who help you along the way? Why do you think we need people like this in our lives? Discuss and draw how these stepping stones have helped or continue to help you.
- Why were there people who risked their own lives to save others during the war?
- Why are libraries important? List why the mobile library was important to Gisela and think about why libraries are important to you. Think of how these lists are similar and different.
- What was the purpose of Frau Weber taking the class to the orphanage? Do places like this exist today and why/why not?
- Why do you think it is important to have a Plan A, a Plan B and a Plan C? What are your plans?

Chapter 5

- Why was marathon running seen as something only boys could do? What else was seen as a boys-only activity 50 years ago? You could ask your grandparents about this.
- Why is Gisela nicknamed 'The Professor'? Do you think she liked this?
- Why were her parents still afraid of others knowing they were Jewish? How does Gisela's new knowledge change her life at school?
- What was the purpose of the wire fence put up by the East German government?
- How would you feel if you had to leave your home suddenly? Focus on feelings, people and places rather than the objects you would have to leave behind.

Chapter 6

- How is the ballroom described? Which emotions are evoked when you read about this? Explore how your feelings change from reading about the young boy being shot while climbing the wall to the scene of the ballroom. How does this reflect on society and how we act on various events that happen around the world?
- Why did Gisela turn down the opportunity to become a lion tamer?
- Describe what you think the audience would think of Gisela if they saw her at the opera. Consider how her voice and mannerisms have been described.
- How old do you think Gisela was when she left home? How old would her brother have been? Why was this decision difficult for her?
- Predict what you think might happen next after reading the final paragraph.

Chapter 7

- Why was migrating difficult for Gisela? Consider all the different barriers to moving to a new country in 1968.
- How was the flight different from what you might expect on a flight today?
- What was something Gisela noticed as she looked out of the plane's window? Why do you think this is?
- What are the birds that Gisela has in her backyard?
- How did a child's television show help Gisela with English? Can you work out why this might still help adults today?
- Why do you think the factory had rules like this? Do you think these rules were fair and could they still exist today in Australia or in other countries?
- How does the phrase 'Bring a plate' confuse Gisela? Can you think of any other Australian colloquial phrases that could confuse someone new to the country?

Chapter 8

- How is Gisela's life exhausting? Why does she have to do all of these things?
- How does becoming a driving instructor start to change Gisela's life?
- The television show Marine Boy has been mentioned several times. Can you find out more about this show to see how it helped Gisela?
- Where are the Gunai people from in Australia? Find this area on a map of Australia.

- How has art helped Ron to avoid prison and the hardships of his childhood? How can art help people at any stage in their life? Why do you think this?
- What is *The Age*? Why were results published here? How are results for Year 12 exams published now? How does this make it different for students?

Chapter 9

- How did Gisela become a professor?
- Look up a map to find out where Borneo is and why deforestation is increasing.
- Can you think of any other books or movies that are set in jungles? How do these stories make you feel about jungles and visiting them?
- List the different animals Gisela might come across in this jungle and how she might feel towards them.
- Why are orangutans hunted?
- What do you think Abbie was thinking as she was holding onto Gisela?
- How did this moment inspire Gisela in her future work?

Chapter 10

- How does understanding human behaviour help Gisela in her new path of studying primates?
- Why do you think it takes so long to get a grant to study something new?
- Why is studying orangutans challenging? List all of the different obstacles scientists face when they study any animals.
- What signals did the macaques give Gisela that they meant harm? What are some other facial expressions that scientists have discovered? Why did the hissing scare them?
- How is the moment with Abbie a moment of awe?
- How was the first book Lesley and Gisela wrote together educational for the world?
- How do tourists impact on animal behaviour? Do you think this happens in other areas of the world? What about in Australia?

Chapter 11

- What do all of these birds look like? Take some time to look at images of the birds that Gisela and Lesley have in their garden. Find differences and similarities with their looks, habits and behavior.
- What is an aviary and why did Gisela choose to rehabilitate birds instead of animals she already knew about?
- Which animals came to live at their property in Armidale? Why did they each come there?
- Can you find any information in local newspapers about Gisela's work with birds in Armidale? Explore and discuss how the community has felt towards the work she has done.
- How does the saying of Gisela's Nan – "If you have hope and determination, that is all you need" – ring true for Gisela now and throughout her life? Find some examples to back up the importance of Nan in Gisela's life throughout the novel.
- What has Gisela discovered about Australian birds? Choose one fact that you think is the most interesting and explain why.

Chapter 12

- Who are the Anaywan people and where is their country? Use a map to find this.
- What has Gisela learnt about Australian magpies? Place this information in a way which would make it easy for someone to learn from.
- Compare how magpies' behaviour is similar to humans.

Chapter 13

- How are galahs' eyes like the rings of a tree? What else in nature has obvious signs of age?
- Explore the idiom 'birdbrained' and the origins of this. Are there any other phrases that link animals to humans and how much truth is there in them?
- Why are eagles necessary for a healthy ecosystem?
- Eastern rosellas have patterns that camouflage them. What does this mean and what other birds can do this?

Chapter 14

- What does the word 'torpor' mean and why do tawny frogmouths do this? Do any other animals do this?
- Why is it significant that the tawny frogmouths have flown towards Gisela?
- How are humans and birds similar?
- Why do visitors to Gisela's house have to say hello to Pumpkin first?

Chapter 15

- Why does Gisela find the recovery from her illness frustrating?
- How do rising temperatures affect birds?
- Why do you think there isn't enough funding from the government towards the study of birds?
- Why do you think that Gisela does all of the different work that she does, including school visits?
- Read the section on the kookaburra reuniting with its family. How does this passage make you feel? Visualise how the boy and his family see this, what they hear and how they feel.
- How did the view from Boambee headland make her feel?

Reflection activities

- Plot the significant 'ah ha moments' for Gisela. This could be people she met, places she visited, events that made her think or some of her research that changed the way she was thinking.
- Find Gisela's publications to learn more about bird behaviour.

EXTENSION QUESTIONS FOR FURTHER THINKING

Make Connections

TO YOURSELF

- How do birds play a role in your life?
- How could they play more of a role?
- Why should they play a role in your life?

TO OTHER BOOKS

- How does the series – Aussie STEM Stars – fit with Gisela Kaplan?
- What defines this story and makes this story stand out in the series?
- Is it possible to compare the various STEM Stars to find how they all play important roles in STEM?

TO THE WORLD

- As you read the other books in this series, make comparisons to find ideal traits that show how people like these should be recognised and looked up to for their passion, compassion and creative thinking.

Analogy: How is a human like a bird?

Provocative question: Should government money be spent on studying birds but rather than human health. Discuss.

Examining Trends: Many people do not think they can change careers later on in life. Why do you think this is the case? How did this effect Gisela?

Big Ideas: What do you think is a key message Gisela has for the world? Give examples from the book and from extra reading you have done.

ELABORATION OF OUTCOMES TO THE AUSTRALIAN CURRICULUM

Science

STAGE 2

Living things can be grouped on the basis of observable features and can be distinguished from non-living things (ACSSU044).

Science involves making predictions and describing patterns and relationships (ACSHE050, ACSHE061).

With guidance, plan and conduct scientific investigations to find answers to questions, considering the safe use of appropriate materials and equipment (AC SIS054, AC SIS065).

Living things have life cycles (ACSSU072).

Living things depend on each other and the environment to survive (ACSSU073).

STAGE 3

Living things have structural features and adaptations that help them to survive in their environment (ACSSU043).

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

Identify, plan and apply the elements of scientific investigations to answer questions and solve problems using equipment and materials safely and identifying potential risks (AC SIS086).

The growth and survival of living things are affected by physical conditions of their environment (ACSSU094).

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

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

Identify, plan and apply the elements of scientific investigations to answer questions and solve problems using equipment and materials safely and identifying potential risks (AC SIS103).

STAGE 4

Interactions between organisms, including the effects of human activities can be represented by food chains and food webs (ACSSU112).

Classification helps organise the diverse group of organisms (ACSSU111).

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

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

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 (AC SIS124, AC SIS139).

Collaboratively and individually plan and conduct a range of investigation types, including fieldwork and experiments, ensuring safety and ethical guidelines are followed (AC SIS125, AC SIS140).

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

Literacy

STAGE 2

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

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

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

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).

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).

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 2

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 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

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).