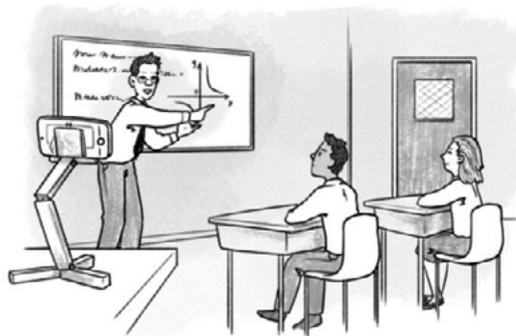


Aussie
STEM Stars

EDDIE WOO

Superstar Maths Teacher

Written by Rebecca Lim



Teacher Notes

written by

Vanessa Ryan-Rendall

PUBLISHED BY



TABLE OF CONTENTS

About the series	3
Reasons for studying this book.....	3
About the author.....	3
About Eddie Woo.....	3
Outcomes linked to the Australian Curriculum	4
Outcomes linked to the NSW Curriculum	4
Before you begin reading this book.....	5
Key projects	6
Teaching and learning activities	8
Extension questions for further thinking	14
Elaboration of outcomes to the Australian Curriculum	16

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 and the world.

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. **Aussie STEM Stars** series uses narrative non-fiction as a tool for educating children – making it as fun and interesting as fiction books for these readers. 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

Rebecca Lim is a Melbourne writer, illustrator, editor and lawyer. She is the author of over 20 books, including *Tiger Daughter* and *The Children of the Dragon* series. Her work has been shortlisted for the Prime Minister's Literary Awards and Foreword INDIES Book of the Year Awards, shortlisted multiple times for the Aurealis Awards and Davitt Awards and longlisted for the Gold Inky Award and the David Gemmell Legend Award. Her novels have been translated into German, French, Turkish, Portuguese, Polish and Russian. Like Eddie, Rebecca was a full-on English and English Literature geek in high school and loved Biology and Chemistry (although Maths was also not her thing, and she muddled through that, hoping for the best). Rebecca was a migrant, just like Eddie's parents, and when she was growing up, never saw any characters in children's books who looked like her, or like Eddie. Rebecca will never stop trying to ensure that Own Voice stories – just like Eddie's – are heard and read and widely shared.

About Eddie Woo

Eddie Woo has already packed a lot into his short life. Australian high school Maths teacher, education ambassador and advisor, author, TV host and YouTube sensation, Eddie has been putting the magic in maths for the past ten years, allowing students to learn in creative and practical ways, and being at the forefront of school-based integrated STEM education. His 'WooTube' channel now has over 1 million subscribers around the world. Eddie is well known across Australia as an advocate for teachers and the importance of teaching. He has written for and been featured in specialist teaching press and in national and international media; served on on education advisory boards; given TED talks; published his own books; and won numerous awards, including Australia Day Local Hero of the Year and being named as one of the world's Top 10 teachers.

OUTCOMES

Australian Curriculum

KEY FOCUS AREAS

Literacy Stage 2–4

Personal Development Stage 2–6

OUTCOMES

NSW Curriculum

KEY FOCUS AREAS

Literacy Stage 2–4

Personal Development Stage 2–6

BEFORE YOU BEGIN READING THIS BOOK

Front cover

- What do you know about Eddie Woo?
- What do you think about Mathematics or mathematics teachers? Discuss and compare the variety of feelings students have towards mathematics and the causes behind this variety of views.

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 from Eddie Woo on page 5

I only have one rule in my classroom and I call it the human rule. It's very simple. I will treat you like a human and I expect you to treat me like a human, too.

— Eddie Woo

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

- Outline the glossary at the back and how to use it.
- Who is the author of this book? Explore other books Rebecca Lim 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 - Society and culture - Racism

Define racism using examples throughout history.

What does it look like now in Australia compared to the past?

Key project 2 - Personal development - Bullying

Consider how Eddie was bullied and how the school reacted.

Consider your school's policy on bullying and if it works to prevent and stop bullying.

Develop a school bullying policy that you think will work for everyone so that bullying can be something that does not happen at your school.

Key project 3 - Growth and change - Mathematics

How has the author used language to show how Eddie is changing throughout the book in his feelings about mathematics?

Survey your class before and after this book to see if viewpoints about mathematics change.

Provide reasons why people may feel differently towards mathematics at different times in their lives.

Key project 4 - Study of people - Empathy

Using Eddie Woo's story and understanding of how empathy has made him the person he is today, find some other prominent people in the world today or in the past who have demonstrated empathy.

DISCUSS:

- How they display empathy
- How they are making the world a better place
- How different forms (how we show it) of empathy work for different communities around the world
- How their upbringing has made them more empathetic.

Key project 5: 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? Using research, find some evidence to show this.	
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

- The chapter opens with: “What’ve you got there, slant eyes?” How does this make you feel? How does it make you feel towards what might happen in this story?
- What are allergies?
- How does Eddie feel about school because of the bullying?
- What did Eddie hate most about the bullying? What do you think is the worst type of bullying someone can receive?
- Why do you think the teachers have not noticed this bullying? Think about the time when this happened and how bullying could have occurred.
- **Key activity:** Create a word web and write down the sentences and words used to describe all of the bullying Eddie had to put up with. Include emotions and imagery.
- **Key activity:** Eddie does not like his Year 3 class teacher. Explore what you think teachers should be like. Write down the qualities of what your ideal teacher. Design a survey that you think all teachers should do before they have their own class. Consider all of the different qualities they should have so that students learn well, feel safe and happy and love school.
- How do you feel at the end of this chapter? Fill in the ‘reflection on literature’ table to explore these feelings. Continue to do this for all chapters.

Chapter 2

- Why didn’t it matter to the other children what Eddie liked or where he lived?
- What is a ‘Chinese Burn’? Is this term still used today? Should we use slang or terms that offend others even if we think it is okay?
- What was the ‘White Australia Policy’? If there is time the students could research what this was, why we had this policy and what were the events which made this policy end.
- The term ‘Lucky Country’ is used in this book by Eddie’s parents. Why do they consider Australia a lucky place to live when they experience racism every day?
- What do the terms ‘nerd’ or ‘dork’ mean to you? Have you ever used them or used them towards someone else?

- How is a library like a refuge?
- **Key activity:** How does Eddie’s mum help him to be brave? Draw a character web to outline all of the ways she acts through her stories and actions to comfort him on bad days. Consider how some of these actions may help him to become the person he is today.

Chapter 3

- Why do you think the teacher reacted to Eddie like this?
- Students can often get grouped according to ability. How does this help these students? Do you think this would work well in your school? How could this be done so that like-minded students can work together more often yet also work in mixed abilities at times too?
- **Key activity:** Explore the word ‘empathy’ and how we can show this in our daily lives. How do prominent people show empathy? How has empathy helped people and can it be harmful?

Chapter 4

- **Key activity:** Neuroscience: what is it? Students could undertake a bigger project to learn more about what neuroscience is.
- Eddie really enjoys the community he has at church. Why and how is it a positive experience for him? Name some other groups that can give the same sense of support to a young person.
- Siblings were very supportive of Eddie. With siblings like this he was able to have a very safe and supportive family environment despite the bullying at school. How can family help or hinder our development?
- **Key activity:** Create a family web for the Woo family and fill in what we know about the different family members and the influence they have on Eddie.
- Why is it important that we find people we can be comfortable with?
- **Key activity:** *Eddie hadn’t grown that much since the bullies started messing with his things and his life, but his mind had grown a lot over the years.* Discuss all of the key moments in Eddie’s life so far that have helped him to grow. Discuss how difficult times can help us later on in our lives.

Chapter 5

- Before reading, discuss the title ‘Maths is not really my thing’. Have you ever said this? Have you ever said this about another subject area and why? Explore with students why we think things are not really ‘our thing’.

- How has the exam setting been described by the author? Write about a time you have felt so nervous that you can vividly remember what things smelt and looked like too.
- **Key Activity:** How has Eddie’s excitement about getting into the James Ruse High School been described? Write about a time you have achieved something you really wanted, how it felt and what happened.
- How important is it to ‘find your tribe’ in life? Think-Pair-Share about how Eddie managed to find his tribe and compare it to yourself – have you found your tribe?
- **Key Activity:** Reflect on this chapter and how it is different from the first four chapters. Look at any character descriptions of Eddie and see if changes need to be made or extra information added to show the changes that have happened to him.

Chapter 6

- **Key activity:** Think back to how the teachers at Eddie’s primary school treated him compared to how teachers treat him at high school. Compare the differences in how the teachers talk to him, how they behave and how he feels because of these actions.
- Why do you think the author had repeated Eddie’s feelings about maths several times throughout the book so far?
- How does the word cancer make you feel?
- Why isn’t teaching seen as a great career by Eddie’s family and also the wider community? Discuss the different thoughts students have on becoming a teacher.
- Do you think this quote is something we should all take into account when we come across someone who seems rude or unfriendly: *Be kind, for everyone you meet is fighting a hard battle.*
- **Key activity:** Reflect on this chapter before and after. Before you read, write down what you know about cancer. After reading it, what did you learn about it through this chapter and the new ideas you may have developed.

Chapter 7

- Explore the questions that Eddie asks himself at the start of the chapter by having the students quietly reflect on their own or, if comfortable, in pairs or small groups.
- Revisit the thinking students have done before about Eddie’s relationship with maths. Add any extra information to this about how he feels, if there are changes or additional pieces of information.
- **Key activity:** Where might you see mathematics everywhere and in everything? Make links between the current maths strand you are learning and the real world.

Help students to make connections and perhaps even teach ideas that link the skills to real world practice.

- Why do you think the professor spoke to Eddie? If Eddie had not been spoken to by this professor, what do you think may have happened with Eddie's career? Consider different options and opinions.

Chapter 8

- Add more information to the mathematics concept map to see how Eddie's feelings are starting to change.
- **Key activity:** Fractals, Fibonacci Sequence, Pi, Irrational numbers – what are they and where are they found in nature?
- How is maths like human connection?
- Does Eddie enjoy mathematics now? Find the information that shows the transition from not enjoying mathematics to now enjoying it. Look for the time when this change occurred and why.
- What is the image on page 95 telling you about this chapter and how Eddie feels about maths? Students could write their ideas around a copy of this image about how this makes mathematical connections, how it makes them feel about maths and how maths can be seen everywhere in the world.

Chapter 9

- Over time Eddie changes how he teaches his class. Identify the changes that Eddie makes to his teaching so that he does not feel 'cynical or worn down'.
- **Key activity:** How has the author described what Cherrybrook Technology High School is like? Write your own short summary of what the students are like there, what the teachers might have to do for them and how a teacher might have to change how they behave to ensure the students are learning in the best possible way?
- What is radiotherapy and chemotherapy? How are they different in the ways they help people with cancer?
- Where is Cobar in NSW and why is this important to Eddie's story?
- **Key activity:** Have any of the students watched 'Wootube'? Take some time to watch one of these videos which links in with a current topic so they can see how his explanation may help them to learn more.

Chapter 10

- **Key activity:** What is the New South Wales Premier's Prize for Innovation in Science and Mathematics Education? CHOOSEMATHS Teacher Excellence Award? Alumni Award from Sydney University? The Commonwealth Bank also awarded Eddie a Teaching Fellowship for his MathsPASS program. Who else has won these prizes over the years and why?
- Eddie remembers his mum in this chapter and her wise words. Can you recall what she told Eddie earlier on in this story? Find these words and link them to how they have influenced Eddie now he is a well-known teacher.
- Why has the author mentioned that people in rural communities were surprised by Eddie's knowledge of farming? Why is this important to the themes of this novel?

Chapter 11

- **Key activity:** What is an Australia Day Address? Watch Eddie's address and compare information from this book to what he speaks about. Does he discuss similar themes, feelings and actions? [Australia Day Address 2018 by Eddie Woo - Australia Day in NSW](#)
- By linking ideas from the book as well as how the students see mathematics, discuss this quote: *Mathematics can make us all more human. Mathematicians learn to see things from a different perspective and when you do that with a fellow human being – that's called empathy.*
- What is a 'Local Hero'? Through the Australia Day website, find out more about who your Local Heroes are.
- What is a Gold Harold Award? Why do we need awards like this and how do the judges make the final decision?
- Check out the videos made by the Sydney Opera House with Eddie Woo: [Eddie Woo: Maths of the Sydney Opera House - Sydney Opera House](#)
- **Key activity:** The final part of this chapter really sums up Eddie and his views about teaching and life. Choose some aspects of this to write a description of who Eddie is now compared to Eddie of his youth. Show how he has changed and the key moments which led to different changes. Make connections from different parts of his story to show this change and growth.

EXTENSION QUESTIONS FOR FURTHER THINKING

Make Connections

TO YOURSELF

Choose some parts of the book that make you

- proud to be an Australian
- ashamed of being an Australian
- inspired to learn more and believe in yourself.

TO OTHER BOOKS

- How does the series – STEM superstars – fit with Eddie Woo?
- What defines this story and makes it stand out in the series?
- Is it possible to compare the various STEM superstars 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 this should be recognised and admired to for their passion, compassion and creative thinking.

Provocative question

Do we need to have an award for Australian of the Year? To answer this question, find out more about these awards and the reason they were created.

Examining Trends

Why did the professor at Eddie's university convince him to become a mathematics teacher? Why is there a shortage of science and mathematics teachers in Australia? Discuss the different reasons behind this and how this can be changed. Why do we need more students to study STEM subjects at school and university?

Big Idea

What is the big idea in this story? Can you narrow it down to one major idea or do you need to choose more than one? Justify your choice with examples.

Your turn

Eddie believed that mathematics always needed to be engaging and linked to students' lives. Design your own lesson – on any subject area – that you think will teach and engage the students in your class to learn something new. Before you start planning, consider who is in your class, how they like to learn and what you can bring to the lesson so that they can see your strengths and knowledge.

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 authors' reasons (ACELT1594).

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

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

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)

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

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 and begin to evaluate texts by drawing on a growing knowledge of context, text structures and language features (ACELY1680).

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).

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).

Personal Development

STAGE 1

Explore how success, challenge and failure strengthen identities (ACPPS033).

Describe and apply strategies that can be used in situations that make them feel uncomfortable or unsafe (ACPPS035).

Describe how respect, empathy and valuing diversity can positively influence relationships (ACPPS037).

Investigate how emotional responses vary in depth and strength (ACPPS038).

Describe strategies to make the classroom and playground healthy, safe and active spaces (ACPPS040).

Research own heritage and cultural identities, and explore strategies to respect and value diversity (ACPPS042).

STAGE 2

Examine how identities are influenced by people and places (ACPPS051).

Investigate community resources and ways to seek help about health, safety and wellbeing (ACPPS053).

Plan and practise strategies to promote health, safety and wellbeing (ACPPS054).

Practise skills to establish and manage relationships (ACPPS055).

Investigate the role of preventive health in promoting and maintaining health, safety and wellbeing for individuals and their communities (ACPPS058).

Identify how valuing diversity positively influences the wellbeing of the community (ACPPS060).

STAGE 3

Evaluate strategies to manage personal, physical and social changes that occur as they grow older (ACPPS071).

Practise and apply strategies to seek help for themselves or others (ACPPS072).

Investigate and select strategies to promote health, safety and wellbeing (ACPPS073).

Investigate the benefits of relationships and examine their impact on their own and others' health and wellbeing (ACPPS074).

Analyse factors that influence emotions, and develop strategies to demonstrate empathy and sensitivity (ACPPS075).

Plan and use health practices, behaviours and resources to enhance health, safety and wellbeing of their communities (ACPPS077).

Investigate the benefits to individuals and communities of valuing diversity and promoting inclusivity (ACPPS079).