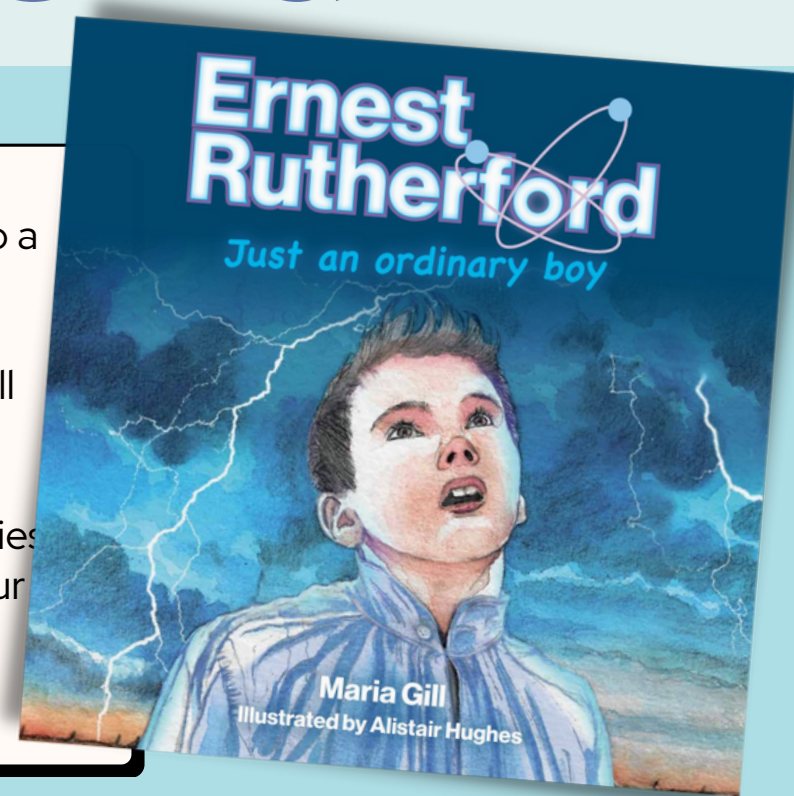


Ernest Rutherford

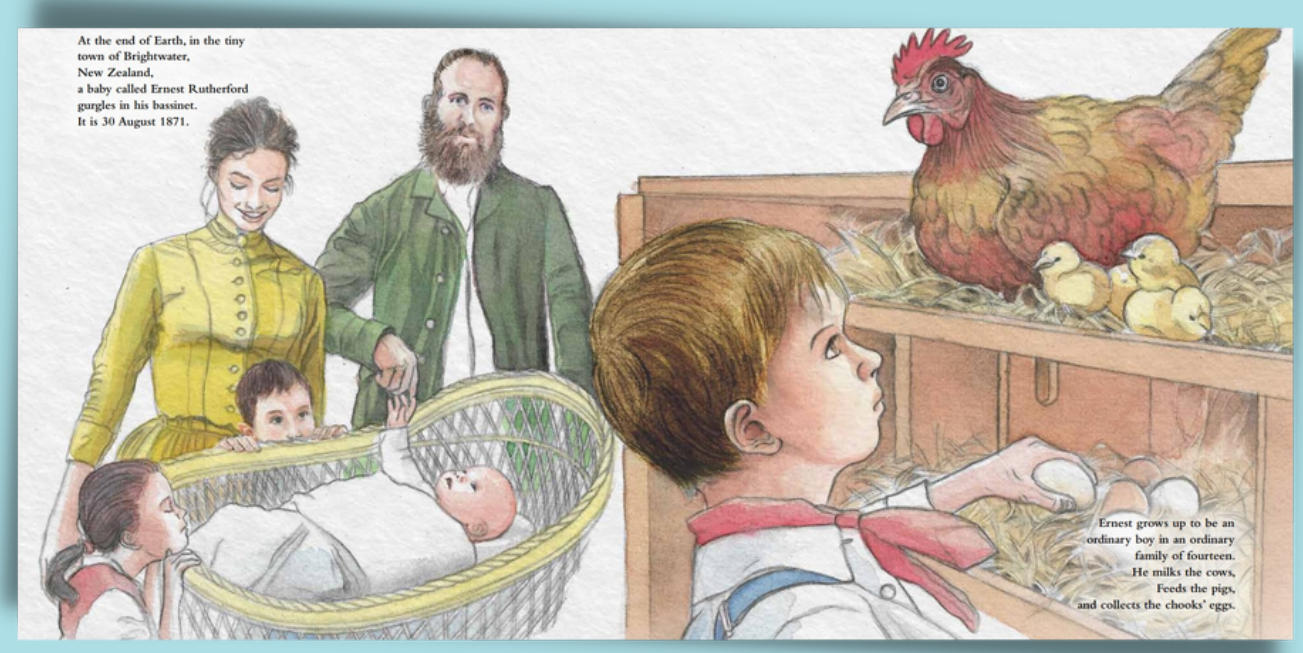
Young Ernest Rutherford loves to carry out experiments, but they don't always turn out how he expects. Born into a family of fourteen, living in a back-water country town during hard times, Ernest Rutherford must rely on his determination and hard work to help him achieve his dreams. He has a thirst for knowledge and longs to one day make exciting discoveries. To further his education, he must compete for a scholarship; the first of three, which will change his life forever.

A coming-of-age story of Ernest Rutherford's life from birth until he leaves New Zealand shores on the brink of a world-famous science career. Included in the back section is information about how his legacy carries on, summaries about his experiments, a timeline and a glossary. Covers themes such as perseverance, family bonds, pursuing your dreams, and scientific discoveries.



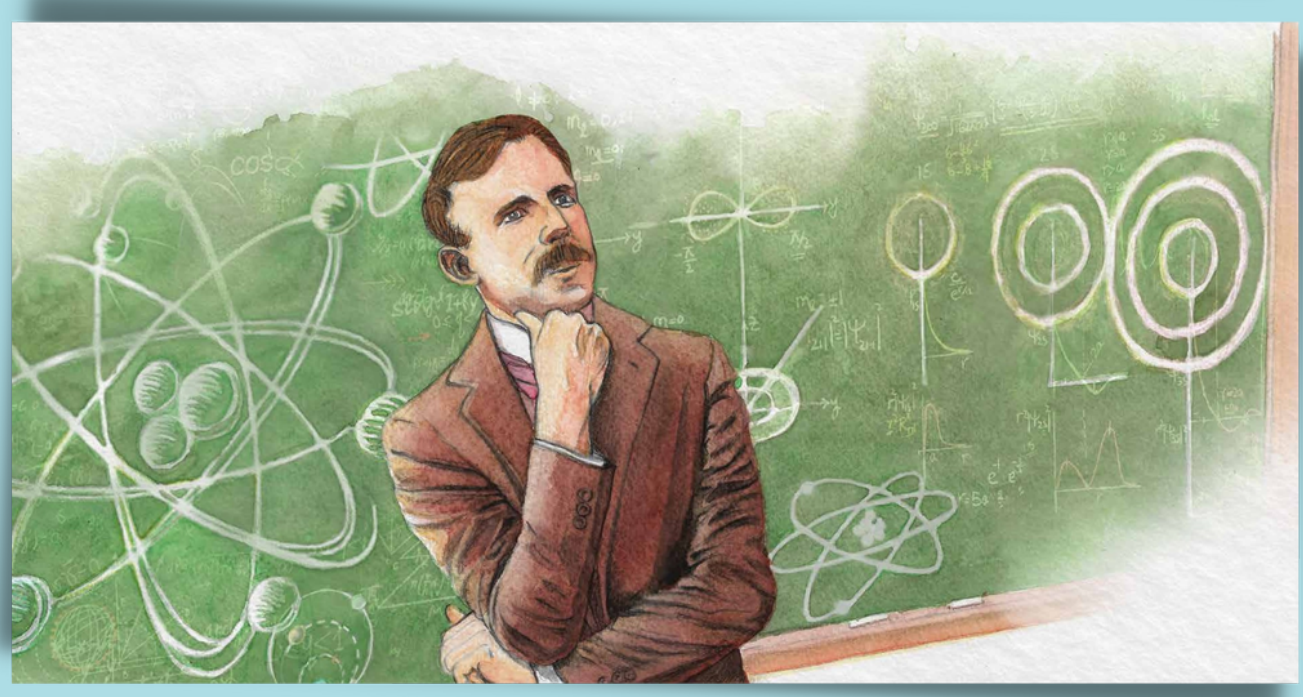
Author

Maria Gill has written over 60 books for children and teachers. In 2020, Storylines awarded Maria the Margaret Mahy medal for services to children's literature. She's written biographical stories on famous New Zealanders including *New Zealand Hall of Fame*, (winner of the 2012 Children's Choice, nonfiction category), *New Zealand Sports Hall of Fame*, (shortlisted for the LIANZA awards), *Anzac Heroes*, (winner of the 2016 NZ Book Awards for Children & Young Adults nonfiction prize, as well as the Book of the Year award). She has also written three creative nonfiction picture books featuring famous New Zealanders: This is her third book with Upstart Press and Alistair Hughes. www.mariagill.co.nz



Illustrator

Alistair Hughes has provided art for six children's books, including the 2020 New Zealand Society of Authors Heritage Book Award-nominated 'Ice Breaker! An Epic Antarctic Adventure' also with Maria Gill. His other books include 'The King's Medal', 'Snapper: The Real Story', 'Kea: Curiouser and Curiouser', and 'The Monarch Butterfly'. He has also written and illustrated two books, InfoGothic and a book on astronomy coming out in 2023. For two decades he wrote and illustrated for a major media organisation. He later founded his own company, Shoreline Creative. www.shorelinecreative.co.nz



Comprehension Questions

- Before reading the book ask the class:**
- What do you know about Ernest Rutherford?
 - What discoveries do you think he made?
 - Why were his discoveries important?
 - Record this information on a wall chart saying: What we know now.
- During reading students answer comprehension questions**
- Who is the main character and where is the setting?
 - Why do you think the author has included the scene about the chores?
 - What does the second and third double pages tell us about the main character?
 - Why do you think the author and illustrator included the scene of Ernest playing rugby? What does it say about Ern's character?
 - Why did Ern conduct his experiments in corridors, halls and basements?
 - How do you think Ern felt when he fails the third time to receive a scholarship (this time to do research overseas)? What kind of work do you think he could do with the qualifications he already had?
 - How would Ern have felt when he received a telegram that he had won the scholarship?
 - What does Ern discover about atoms?

Comprehension Questions

- How did fame change Ernest's life?
- Name some other famous scientists not mentioned in the book?
- Write a paragraph about one of the other famous scientists and why you think they are also considered one of the greatest scientists.
- Why is perseverance, curiosity, and patience such important qualities to learn for yourself? How did it help Ernest Rutherford?
- What were Ern's three major discoveries and why were they so important?
- What major prize did Ern win and why was it such an honour to win it?
- Name something in your house that might not be there unless Ern discovered it?
- Why was splitting the atom so important?
- What do people often attribute to Ernest Rutherford but is not true?
- How did the Greek alphabet come in handy for Ern and where did he originally learn it?
- What other achievements did Ern achieve during his lifetime?
- Name some of the things Ern's face or name appears on?
- Where is the Rutherford Museum in New Zealand?

Activities

- Return to the wall chart 'What we Know Now' and make another chart called Fact Splash, brainstorming all you've learnt from reading the book. Compare the two charts.
- Find the places Ernest lived in on a New Zealand map. They include Brightwater, Foxhill, Havelock, Christchurch, New Plymouth and Pungarehu. Use a map of the world to find Montreal, Manchester, and Cambridge, the places Ernest did his famous research.
- Write a play script about Rutherford's life and then act it out in front of the class.
- Describe some sacrifices Ern might have had to make and his plan to achieve his goals.
- What if Ern had been female, an immigrant, or Māori, would s/he have been so successful? Why? Why not? What other obstacles would have been in their way?
- Write a book review of the novel: include a summary of the key elements and what you liked about the story.
- Imagine you are Ernest Rutherford and the school has invited him to your school. Write a two-minute speech that he might have given, which will encourage students to achieve their dreams.
- Draw a picture of an atom and label the parts.
- Write a newspaper article on Ern receiving the Nobel Prize.
- What animals use underwater sound communication? How do they generate and receive the sound. How do echo-sounders work?
- Make a kite using the materials would have had in his time Consider how you'd improve it.
- Draw a Venn diagram and compare technology including transport in 1882 and 2023+.
- Investigate how sound travels in air compared with water. One person will need to stand 25 metres away and will make a sound, for example, tapping two stones together. The second person will need to listen for the sound with their head above water and then submerged under water (such as a bath or a swimming pool). The first time the second person closes their eyes and needs to try to detect where the sound comes from. Second time, do experiment with person listening with eyes open. Which was easiest to hear? Could they detect what direction it was coming from?

