

A DINOSAUR

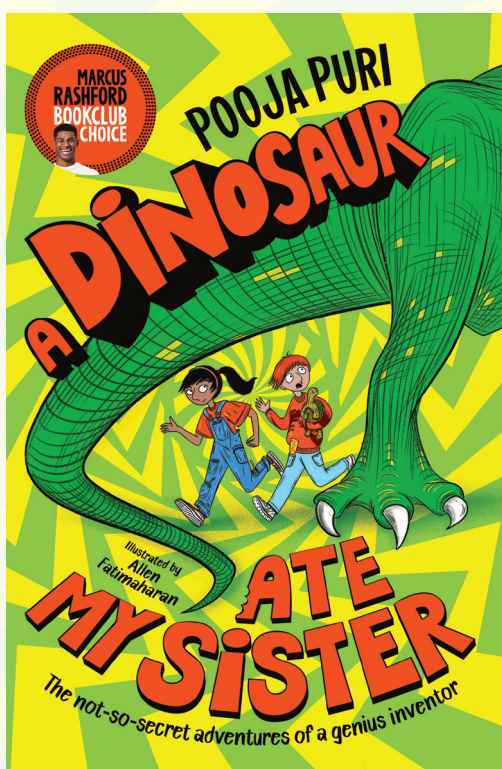
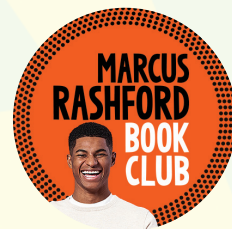
ATE MY SISTER

A Marcus Rashford Book Club Choice

WRITTEN BY POOJA PURI

Illustrated by Allen Fatimaharan

TEACHING RESOURCES



INTRODUCTION

Suitable for: Children aged 8+

Based on: The adventures of genius inventor Esha Verma and apprentice Broccoli who go on a prehistoric rescue mission to save Esha's big sister who is stuck in the Age of the Dinosaurs

Ideal for: Emerging readers who enjoy diary-style books, especially inventors-in-the-making!

Includes: 4x lessons that build towards children creating their own invention

Themes: Inventing; Dinosaurs; Time Travel; STEM; Family; Expectations; Creation & Ideas

ABOUT A DINOSAUR ATE MY SISTER

A Dinosaur Ate My Sister was the first book selected in the Marcus Rashford Book Club, which is in partnership with children's food charity Magic Breakfast and has reached children in over 850 primary schools across England and Scotland.

Esha Verma, her snotty apprentice Broccoli and his cunning pet tortoise have a dream. They are going to win the legendary Brain Trophy – the ultimate inventing prize. This year's entry: A TIME MACHINE. But the day before the competition, Esha's IGNORAMUS big sister hijacks the time machine and is lost in the Cretaceous age. With help from a new recruit for The Office of Time, Esha and Broccoli will have to face hungry dinosaurs,

mysterious black holes and malfunctioning inventions to get them back in time.

Between Esha's inventions and Broccoli's note taking, this book is perfect inspiration for children and families who are looking for STEM support in reading for pleasure. This brilliantly illustrated, laugh-out-loud, wacky adventure through time by Pooja Puri is the perfect blend of *The Hitchhiker's Guide to the Galaxy* and *Jurassic Park*.



ABOUT THE AUTHOR

POOJA PURI

Pooja Puri graduated from King's College London with a first-class degree in English Language and Literature. Whilst at university, she read for a publishing house and has since worked in the education sector. A winner of the 'Ideas Tap Inspires' competition run by the National Centre for Writing, she went on to complete an MA in Writing for Young People at Bath Spa University. Her debut novel *The Jungle* was published by Black & White's YA imprint Ink Road and nominated for the CILIP Carnegie Medal. *A Dinosaur Ate My Sister* is her first middle-grade novel.

You can follow Pooja on Twitter @PoojaPuriWrites

ABOUT THE ILLUSTRATOR

ALLEN FATIMAHARAN

Allen Fatimaharan was born in Sri Lanka, but grew up in Southern India and France. He first fell in love with drawing after reading comic books including Asterix, Moomins and Tintin. Allen now lives in the UK and works as an illustrator and animator. In 2018, he won second place in the FAB Prize for Illustration. *My Hair* by Hannah Lee was the first picture book Allen illustrated, published by Faber & Faber in 2019.

You can follow him on Instagram @allen_fatimaharan



NATIONAL CURRICULUM OBJECTIVES

ENGLISH

Reading: comprehension

Develop positive attitudes to reading, and an understanding of what they read, by:

- i. discussing words and phrases that capture the reader's interest and imagination

Understand both the books that they can already read accurately and fluently and those that they listen to by:

- drawing on what they already know or on background information and vocabulary provided by the teacher

Understand what they read, in books they can read independently, by

- identifying how language, structure, and presentation contribute to meaning
- drawing inferences such as inferring characters' feelings, thoughts and motives from their actions, and justifying inferences with evidence

Writing: composition

Discuss writing similar to that which they are planning to write in order to understand and learn from its structure, vocabulary and grammar

Develop positive attitudes towards and stamina for writing by:

- writing narratives about personal experiences and those of others (real and fictional)

HISTORY

- Learn about the lives of significant individuals in the past who have contributed to national and international achievements.
- Know and understand the history of these islands as a coherent, chronological narrative from the earliest times to the present day.

SCIENCE

- Recognise that fossils provide information about living things that inhabited the Earth millions of years ago.

DESIGN AND TECHNOLOGY

- Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology.
- Design purposeful, functional, appealing products for themselves and other users based on design criteria.
- Select from and use a wide range of materials and components, according to their characteristics.
- Evaluate ideas and products against design criteria.



LESSON OBJECTIVES AND OUTCOMES



LESSON 1: A WORLD OF INVENTION

Objectives:

- To appreciate the power of knowledge and to show how discoveries and inventions have changed our lives.
- To recognise the amazing creative powers of the human mind.

Outcomes:

An introduction to the range of inventions in our world; a consideration of what makes a good inventor; and writing a report about a real-life inventor.

LESSON 2: DINOSAURS GALORE!

Objectives:

- To investigate the timeline of events at the end of the Mesozoic Era and discuss what it would have been like to live in the late Cretaceous period.
- To research, evaluate and debate different extinction theories.

Outcomes:

A creation of a human timeline; a drama activity to show the life of a famous female paleontologist; and the participation in a debate about different extinction theories.

LESSON 3: EXPECT THE UNEXPECTED

Objectives:

- To encourage us to consider how we deal with setbacks in life, and to learn to look at our mistakes and failings in a positive way.
- To realise the determination involved in being convinced of one's ideas.

Outcomes:

A class conversation about times when things haven't been as they were expected; a completed display of motivational posters about what to do in the event of failure; and the creation of short inspirational quotes.

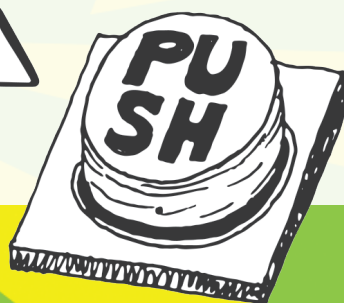
LESSON 4: FROM PROTOTYPE TO PRODUCT

Objectives:

- To evaluate the usefulness and appeal of various inventions.
- To devise a solution to a problem by designing an invention.

Outcomes:

A balanced argument about the best invention according to each child; the creation of combination inventions to discuss the generating of ideas for inventions; and the performance of presentational pitches in the style of Dragons' Den.





LESSON ONE: A WORLD OF INVENTION

QUESTIONS:

- Who are inventors?
- What makes a good inventor?
- Do you know any famous inventors or inventions?



TASK 1:

To introduce inventions, talk through a range of things that the children may have done that morning before coming to school (e.g. *Perhaps you were awakened by an alarm clock, you turned on the light, you used the shower, the toilet and a toothbrush, you put on your school uniform, you may have read a book, watched television or you may have used a computer, phone or tablet*). As you are telling a morning routine story, ask the children to raise their hand if they did any of the things listed and to keep it raised. See how many children's hands are up. You may want to extend the story by adding more details to see if you can get every child's hand raised by the

end of the story, e.g. *The washing machine may have been working away to clean your clothes or perhaps you then jumped into the car and were driven to school*. Explain that these are the things that some children may do everyday, but have they stopped to think that someone actually came up with the ideas for all these things and how different our lives would be without them? Children can create their own storyboard using four, six or eight boxes to show 'A day in the life of...' highlighting that brilliant inventions are all around us and getting them to fully appreciate how our world is full of things that have been invented by people.

TASK 2:

Ask the children to consider the character of Esha Verma. What is she like? Can children describe her? What makes her a good inventor? List their suggestions as a range of adjectives on the board. Now look at a range of real-life inventors from across industries such as science, engineering, manufacturing, sport, the arts and many more. Ensure that a wealth of diversity and representation is included. Encourage children to discuss with a partner if they think they would make a good inventor. What are their strengths? Try to relate them back to the descriptions of Esha on the board to make connections. Discuss how the subjects of Maths, Science, Design and Technology

and Computing as well as others that we learn about in school can be applied to the work of an inventor. Can they list other jobs that depend upon the application of knowledge and skills in these subjects? Ask children to create an inventor job advert poster in the style of a person specification thinking carefully about the skills they would need and why they would need them, e.g. *Do you have a bright idea? Are you full of enthusiasm? Apply now!*

Extension: Children can write a letter to the inventor job advert replying with the attributes they have and why they think they would be a good inventor.

TASK 3:

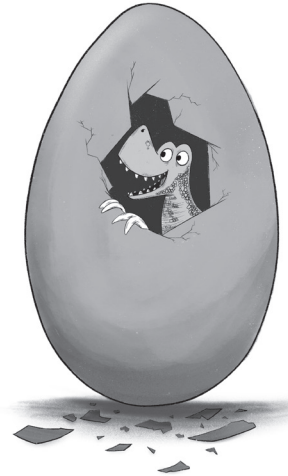
Following on from Task 2 with the examples of real-life inventors, ask the children to research a chosen inventor. Look at inventors throughout history in order to give historical background and context. Again, provide a range of inventors including young, Black, LGBTQ+

and women inventors who challenge the stereotype or misconception that inventors are middle aged, white and male. Using their research, children can create a report or poster depicting their achievements. Display these in the classroom as a gallery of inventing inspiration.

LESSON TWO: DINOSAURS GALORE!

QUESTIONS:

- When did dinosaurs exist?
- How long did dinosaurs exist on Earth?
- What is an expert who studies fossils to find clues about dinosaurs & prehistoric creatures called?
- What killed the dinosaurs?



TASK 1:

Begin by asking children to brainstorm what they know about dinosaurs, including names and physical characteristics. Talk about the names and the appearance of the dinosaurs the children already know. Ask children how long ago do they think dinosaurs existed on Earth? Take a range of suggestions and write them on the board. Examine the lengths of time provided by the children and talk about them in terms of chronology and duration. Try to relate them to things that they would understand. After the discussion, elaborate that Earth is 4.55 billion years old. Point out how dinosaurs lived in the Mesozoic Era, during the Triassic, Jurassic and Cretaceous periods, and how difficult it is to imagine how far back in time this was. To model and illustrate this for children in a way that they could

better understand, ask them to stretch out their arms to represent the whole age of Earth (4.55 billion years old), from right-hand fingertip to left-hand fingertip. First life starts at your right armpit – this is the age of the oldest fossils ever found (4.28 billion years ago). Dinosaurs begin at the crease of your left wrist (230 million years ago) and become extinct where your middle finger starts (66 million years ago). The earliest humans evolved just below the tip of your middle finger of your left hand (200,000 years ago).

Extension: Stretch a string or length of fabric across the arm span and use clothes pegs or glue to add pictures for visual reference.

TASK 2:

Beforehand, ask children to bring in any fossils they want to show the class. Explain to children that they are going to learn about where to find fossils in the UK. Ask them, has anyone been fossil hunting or just found a fossil by chance? Where did you go? What did you find? Talk about their experiences and relate them to how a paleontologist is someone who studies the history of ancient life, and in order to do that, they look for fossils, which are the remains or imprints of living things from long ago. Introduce them to Mary Anning, who is remembered as being one of the greatest fossil hunters

to ever live. Share how she made many incredible discoveries including an ancient reptile called an ichthyosaur (which means 'fish lizard'), a long-necked marine reptile called a plesiosaur and a flying reptile called a Dimorphodon. Research using books and the internet about her life including where she grew up on the Jurassic Coast and her early life when as a baby, Mary had a lucky escape when a woman carrying her was struck by lightning. Children then improvise a short play to tell other children about Mary Anning, drawing on all their previous research.

TASK 3:

Tell the children that one of the great, unsolved mysteries in science is the disappearance of the dinosaur. Pose the question "Why do you think the dinosaurs became extinct?". Record all the children's responses as to what they think caused the disappearance of the dinosaurs. As a class, identify and discuss the variety of extinction theories including the four main theories; an asteroid hit the Earth, the tectonic plates moved resulting in volcanic eruptions which

suffocated the dinosaurs, the climate changed and got colder, and disease spread through the food chain which led to food imbalances starving the dinosaurs. Split children into four groups to research each of the theories, compiling reasons 'for' and 'against' each theory, in readiness to plan and engage in a debate, each group arguing the case for their extinction theory, and voting for the most plausible theory.

LESSON THREE: EXPECT THE UNEXPECTED



QUESTIONS:

- Have you ever tried to make something and it just didn't work out as expected?
- What is failure?
- Was there a time where you wanted to give up?



TASK 1:

In this book, there are a lot of things that happen unexpectedly such as Esha making a time machine and her sister hijacking it and being sent back to the Age of the Dinosaurs. On page 29, Esha even says that *'inventioning is an unpredictable business, after all'*. Ask the children the question 'Have you ever tried to make something and it just didn't work out as expected?' from above. You may even want to share a story about something that you have made that didn't go to plan. Perhaps it was a cake. It may have looked light and delicious

in the recipe book, but came out of the oven flat and hard, or even burnt. Maybe it was a science experiment and the results were not as you expected. Express how it is easy to feel disappointed and discouraged when this happens, perhaps even to feel like giving up the whole idea. In pairs, encourage children to retell a time where something has not turned out as they expected. Children to write a short account of this using the past tense to share their emotions.

TASK 2:

Following on from Task 1, recap how sometimes things don't happen how we wanted them to. Explain how nobody likes to fail and that we find it easy to embrace our successes. But how about embracing our failures? Talk about times where we have failed and what has happened afterwards. Did children find it hard to accept that? Discuss failing as a learning experience. Present three reasons to the children why we should think more about embracing failure to learn to look at our mistakes and failings in a positive way. Firstly, failure helps us to learn from experience. Discuss how we can learn

to approach a situation after having done it before. What can we do differently? Can it help us have more confidence? Secondly, failure helps us to learn more about ourselves. What does failing do to us? Does it make us want to stop and give up? Or does it make us stronger and we try again? Thirdly, failure helps us to learn who our true friends really are. Do our friends celebrate each others' successes and failures together? In small groups, ask children to generate their own three reasons posters to display in the classroom to remind them what to do in the event of failure.

TASK 3:

Share with the children that one of the most valuable qualities for an inventor to have is persistence. Explain how sometimes we call it perseverance or resilience. Does anyone know what these words mean? Discuss how inventors spend years developing prototypes, amending them to find the solution for their ideas. Share the story of James Dyson who spent 15 years fighting off debt and discouragement, producing 5,127 prototypes before he presented the finished product

of the Dyson vacuum cleaner to the world in 1993. Except it wasn't the finished product. The original model has been through more than 50 iterations since its initial release. Show quotes like 'It's not that I'm so smart, it's just that I stay with problems longer,' by Albert Einstein and 'I have not failed. I've just found 10,000 ways that won't work' by Thomas Edison. Ask children to construct their own quote about the quality of resilience. What will it be?

LESSON FOUR: FROM PROTOTYPE TO PRODUCT

QUESTIONS:

- What is an invention?
- Does an invention have to be a brand new idea?
- How does an invention go from idea to product?

TASK 1:

Discuss the concept of inventions with the children. Recap the suggestions of inventions that children have provided throughout these lessons. Write the question 'What is the best invention?' on the board. Stimulate discussion and disagreement between children.

Ask children to produce a balanced argument on what they think is the most important invention of all time and justify, saying why they believe this invention has changed the world.



TASK 2:

Show children an image of a 'lightbulb moment'. Explain that people sometimes talk about having a 'lightbulb moment'. This could be a moment when we have an amazing idea, or when we suddenly realize something. We might have a lightbulb moment when we suddenly understand a piece of work that we have been finding difficult. The moment when the penny drops, the clouds clear and it all makes sense is called a 'lightbulb moment', and many inventors have these when they think of something to invent to solve a problem. On the contrary, share how sometimes inventing things is not necessarily about coming up with

a completely new idea. It can also be about improving or adapting an existing design. Print pictures of various different objects and animals or draw them onto cards and mix together into a deck. Place the cards face down and ask children to take it in turn to choose two at random. They could then create a new idea for a product which incorporates both of the images shown on the cards. For example, 'a vacuum cleaner' and 'a mop' may be picked, so the invention could be 'a mop which hovers as you push it'. Ask children to draw and write about their 'combination invention' making notations and labelling its unique features in detail.

TASK 3:

After Task 2, children could work in groups to pinpoint problems they face in everyday life. They should then discuss which they feel can be addressed, and how. Next, begin to plan their inventions. Provide children with a series of questions to get them thinking about their inventions such as: What would name your invention? What does your invention do? What is the problem you hope to solve with your invention? Who would use this product? How would you describe this invention in three adjectives? To help take the invention from idea to product, ask children to make a one-minute advertisement/pitch for their invention and present it to the class. They can either perform it live in class or make a video using ICT & play it for the

class. Encourage children to think how they will write a script for their advertisement/pitch using persuasive language. Show children examples of pitches and how to organise their thoughts into a logical structure such as introducing themselves; introducing the product; explaining what it is for and how it works; the product's unique selling point; how much money you would like from the Dragon (the teacher) and finishing with a memorable ending. Show advertisements or pitches from the popular TV show, Dragons' Den as good examples for the children to model theirs on. Recreate the style and setup of Dragons' Den in the classroom to present pitches.

FURTHER IDEAS AND ACTIVITIES

- 1.** Read more books that feature inventors and inventions such as *Audrey the Amazing Inventor* by Rachel Valentine and Katie Weymouth; *100 Inventions That Made History* by DK and *Inventors: Incredible stories of the world's most ingenious inventions* by Robert Winston and Jessamy Hawke.
- 2.** Look at inventions that have had an impact on the environment such as biomes, wind turbines and pesticides. Have they been positive or negative inventions?
- 3.** Think about an everyday item that you have at home like a pair of chopsticks or a piece of paper. List as many uses as you can for this item. How many can you think of?
- 4.** Set up an invention role play area within your classroom, to encourage free play, expression and imagination. Make your own gallery of inventions made out of junk models.
- 5.** Measure out the actual lengths or heights of different dinosaurs and compare them.



DISCUSSION GUIDE FOR BOOK CLUB CHAT

1. What did you like best about this book?
2. What three words would you use to describe the book?
3. Which part of the book made you laugh out loud?
4. Which was your favourite illustration by Allen Fatimaharan? Did it match the way the story looked in your head?
5. What do you think of the book's title? If you could choose a title of your own for this book, what would it be?
6. Which character in the book would you most like to meet? Which of these characters would you be friends with? Did any of them remind you of someone you know? Why?
7. Esha Verma is the narrator of the story - how do you think Broccoli or Nishi's telling would be different? What would they say about Esha?
8. What do you think the time machine looks like (you could even draw this if you like)? Why do you think the author hasn't given you too many details?
9. Did this book remind you of any others you have read? If so, which ones?
10. If you got the chance to ask the author or illustrator of this book, Pooja Puri or Allen Fatimaharan, one question, what would it be?

