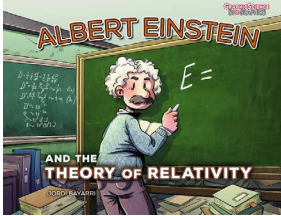


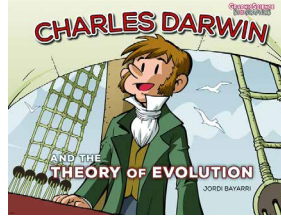


Walker Books Classroom Ideas

GRAPHIC SCIENCE BIOGRAPHIES: Albert Einstein & Charles Darwin



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*Notes may be downloaded and printed for regular classroom use only.

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Outline:

Albert Einstein's restless intelligence drove him to ponder the biggest topics the universe has to offer: light, time, mass, energy, and more. His conclusions changed the way people thought about the laws of physics. But first, he had to pass his university entrance exams. This graphic biography traces Einstein's path from his home country of Germany to his studies in Switzerland to his time in the United States. It also follows his life as an international scientific celebrity and his refusal to stay silent in the face of anti-Semitism.

Charles Darwin's scientific work transformed the way people think about life on Earth. From his childhood in England to his pivotal ocean voyages, he took every opportunity to study the natural world. And he helped shape a new understanding of how life forms change over time. This graphic biography highlights Darwin's youthful push to become a naturalist—against the wishes of his stern father. It also shares a look at his field research, collaborations, and scientific breakthroughs.

Author/Illustrator Information:

Jordi Bayarri is a freelance comic-book artist based in Valencia, Spain.

How to Use These Notes:

This story works on many levels. The suggested activities are therefore for a wide age and ability range. Please select accordingly.

These notes are for:
• Primary 3-6
• Ages 8+

Key Learning Areas:
• English
• History
• STEM

Example of:
• Graphic Novel

Themes/Ideas:
• Adventure
• Friendship
• Mystery



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Discussion Questions and Activities:

Before Reading

Before reading a Graphic Science Biography, view the cover and title and identify the following:

- The title of the book
- The author
- The publisher
- The blurb

What do you already know about the biography subject? What are they famous for? Make a mind map, and revisit it after reading. Did anything you learnt about them surprise you? What new facts can you add to the mind map?

Exploring the Text: *Albert Einstein*

Discuss how living in different parts of the world shaped Einstein. Why did he move so much? How was his life different living in different countries?

Ask the class what they already know about Hitler and WWII. How does the Nazi party and their views on science change Einstein's life?

Did you have an idea of what Einstein looked like before reading the book? How is that opinion different now? How does the art show Einstein aging?

Einstein says "the purpose of a university education is not to memorise facts, but to train the mind to think" (page 30). What do you think this quite means? Do you agree? Why/why not?

Why is there tension involved in giving Einstein a Noble prize? How does the Nobel committee solve it?

"Now people are saying everything is relative. It has nothing to do with my theory! They haven't understood a thing! I have to give it another name" (page 26). Write down what you think Einstein's theory of relativity means and then check the glossary at the back of the book. Was your description closer to the theory of general relativity or special relativity? How are the theories similar or different?

Exploring the Text: *Charles Darwin*

Discuss how Darwin's childhood love of nature influenced his life, both personally and professionally.

How does the art demonstrate Darwin is unwell? Consider when he sees the surgery, when he eats the bug, and when he gets seasick.

What are the first sparks that inspire Darwin's theory of evolution? How does his theory change and grow over time?

Choose one of the words on Darwin's board of specialists (entomologists, botanical gardens, hospital doctors, Geological Society of London, gardeners, explorers, cattle farmers) on page 30. Why do you think he chose them? How could they be connected to researching his theory?

Darwin's father and uncle both write lists on why Darwin should/shouldn't be allowed to go on the trip. Write your own version of one of those lists. Be sure to use persuasive language to make it convincing!

Wallace and Darwin come up with similar theories entirely separately, and their work on evolution is published together. Why do you think Charles Darwin has been remembered when Wallace has not? Do you think this was fair?

Graphic Science Biographies: Series Questions

As you read the book, keep a "Vocab Journal" and make a note of any words you come across that are unfamiliar. Check the Glossary at the back of the book, or look up their meaning if you can't find it there. Does understanding the terms help your understanding of the book?

Take a section of one of the graphic novels and recreate it as unillustrated prose. Think about how to convey the mood, imagery, action and dialogue in words, rather than in graphic novel style. After completing this exercise, have a class discussion about the advantages and disadvantages of each style. Which do you prefer writing?

In most graphic novels (and comics), there is usually a white space between the panels called the gutter. Consider the difference between large and small panels, square and irregular shapes and full-page illustrations. Copy a page of either book, cut out the frames and arrange them on a piece of paper with a smaller gutter between each frame and then with a larger gutter. What difference does this make to our reading?



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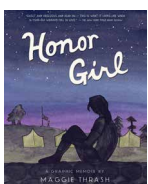
The graphic novel format allows authors to employ filmic techniques in the narrative. Find examples of filmic techniques in the novels and discuss how the author has used them to enhance the narrative.

Choose several spreads from the books and perform a visual analysis by responding to the following points:

- Objects – What objects and people can you see?
- Size – What size are the objects in relation to each other?
- Setting – Is a setting obvious? What is it?
- Colours – What are the predominant colours used?
- Position – Where are objects in relation to each other? Are they in the fore-, middle- or background?
- ‘Camera’ angle – From what angle do the pictures appear to be drawn? For example: high eye level, low, bird’s eye view.
- ‘Shot’ type – What type of ‘shot’ has been used: close-up, medium, long, very long, etc.?
- Depth of Field – What is and isn’t in focus?
- Light – Is the picture light or dark? Is it the same all over?
- Lines and vectors – In what direction do lines in the picture lead the eye?
- Body language and clothing – What facial expressions, gestures and use of space can you see? What is being worn?

Visit your school or public library and collect several other graphic novels. Compare them with the Graphic Science Biographies series. How are they similar or different to other graphic novels?

Other Great Titles From Walker Books:



Honor Girl
Maggie Thrash
9780763687557 PB



Lost Soul Be At Peace
Maggie Thrash
9780763694197 HB
Classroom ideas available



The Inkberg Enigma
Jonathan King
9781776572663 PB
Classroom ideas available



Snow White
Matt Phelan
9781536200553 PB
Classroom ideas available