



## *Dr Karl's Random Road Trip Through Science*

By Dr Karl Kruszelnicki

### Summary

Dr Karl is on a mission to track down Awe and Wonder in the Universe.

Why do wombats poo cubes?

What nearly destroyed humanity on Halloween 2015?

How do you use an incinerating toilet?

Find out why we've sent a spacecraft with Dr Karl's name on it to kiss the Sun, whether cannibalism is nutritious, and the answer to the Biggest Question of All – why does spaghetti always break into three pieces? Plus a whole lot more.

So strap in and get ready for a random ride through the Universe. Who knows where you'll end up!

### Key Learning Outcomes

ACELA1528, ACELA1543, ACELA1549, ACELA1766, ACELY1723, ACELY1725, ACELY1765

### Themes

Science in the world, Curiosity, Experimentation, Understanding informational texts, Technology, Investigation and analysis, Popular science

Recommended Ages: 8+

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## CLASSROOM ACTIVITIES

1. Dr Karl makes science popular using anecdotes, storytelling techniques and humour. One element of humour that he uses to engage his audiences is puns. A pun is a joke that makes a play on words.
  - a. Can you think of any puns that you've heard?
  - b. Take a look through the chapter 'Why is Wombat Poo Cube-Shaped?' (pages 6–11) What puns can you find in this chapter? Does the use of puns make it easier for you to read about the science in the chapter?
  - c. Discuss in class how humour can be used as a tool to explain difficult concepts (like science) to people who might not otherwise have a special interest in it.
  - d. How might you use humour (puns or otherwise) to explain something that you're passionate about to someone who doesn't know it as well as you do.
    - i. Choose an area of science that fascinates you or you are passionate about.
    - ii. Compose three puns that communicate important information about this area of science.
2. 'Curiosity takes you places you could only imagine' (page 5). Why is curiosity so important to scientific discoveries?
  - a. What kinds of questions do people ask to learn more about something they're curious about?
    - i. Make a list of questions that can spark scientific discovery. Start with who, what, why, where, when and how, and see where you go from there.
  - b. What questions have (or might have) led to the discoveries Dr Karl shares in the book?
  - c. Do you have extra questions that you would like to ask about any of the subjects?
    - i. How might you go about finding the answers?
3. A picture paints a thousand words. Illustrations appear on every page of the book, for different reasons.
  - a. Select two chapters from the book. What is the purpose of the illustrations in each chapter?
    - i. Are they different to the images you might find in a magazine? A picture book? A comic? How?
  - b. Why is it important to have accurate images in books about science?

- c. Look at the following rules of scientific drawings:  
(<https://www.goodsience.com.au/year-7-chemistry/scientific-diagrams/>)
    - i. Why is clarity so important?
    - ii. What elements of scientific drawings can you see in the book?
    - iii. Why might there be more freedom in a book like this than in a textbook?
  - d. How are the images in *Dr Karl's Random Road Trip* used to convey information?
  - e. Draw some illustrations to go with your humorous explanation of your passion topic (from 1d).
4. We need to update scientific knowledge as new facts or technologies come to light. Why is this important?
    - a. What examples of science being updated because of new information or technology can you find in the book?
  5. The internet gives us access to more information than ever before, but can we trust it?
    - a. How can we be sure that the information we find on the internet is accurate?
    - b. Find an example of a scientific issue that is disputed online (climate change will be an easy one). What are the different sides of the argument?
    - c. What side/s does the science support? (It's important to remember that the science on some subjects isn't conclusive; there may be more than one plausible explanation for existing evidence. A good example of this is why the dinosaurs became extinct.)
    - d. Write your own deduction, including a paragraph outlining why your information is accurate and trustworthy.
  6. This book is a road trip spanning many scientific issues, from the body to technology and the natural world. What kinds of science does Dr Karl explore?
    - a. What do the topics explored in the book tell you about the world?
    - b. If someone was reading this book in the future, it would give them a good overview of the world we live in now. What would you add to the book that someone in the future might need to know?
    - c. Imagine that you are reading this book in the future. What might have changed?
    - d. Write a creative response to the book, imagining that you live more than fifty years in the future.
      - i. How would you interpret the facts in this book? How would you respond to them? What might have changed? What new evidence might have come to light?

7. Choose the chapter in the book that interests you the most. What about it interests you?
  - a. What is the question the chapter is trying to answer?
  - b. What is the process of scientific discovery?
  - c. How is the information presented on the page?
  - d. Use your responses to 7a–c as a template to compose your own chapter about something scientific that interests you. Before you begin, consider:
    - i. What information do you need to give someone so that they understand?
    - ii. How could you present it to them so that they find it interesting?
    - iii. Is it important to present your information in an interesting way, or just to lay out the facts?

#### ABOUT THE AUTHOR

Dr Karl Kruszelnicki AM just loves science to pieces, and has been spreading the word in print, on TV and radio and online for more than thirty years. The author of forty-five books, Dr Karl is a lifetime student with degrees in physics and mathematics, biomedical engineering, medicine and surgery. He has worked as a physicist, labourer, roadie for bands, car mechanic, filmmaker, biomedical engineer, taxi driver, TV weatherman, and medical doctor at the Children's Hospital in Sydney. Dr Karl has test driven four-wheel-drive vehicles in the Australian outback for two decades, covering fifteen of the seventeen deserts. Since 1995, he has been the Julius Sumner Miller Fellow at the University of Sydney.

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