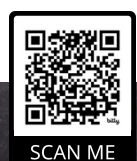


# Teaching Notes & Resources

Key Stage 2

Themes: Technology | Science | Artificial Intelligence



# Introduction

## About the Book

**The only book you need on AI - for all curious, fact-gobbling kids.**

What actually is AI? Will it take over the world? And one day, will it tidy your bedroom...?

In this beginner's guide, learn everything you need to know about AI, from how it helps us discover epic stuff up in space or under the sea, to whether it might help you build your own dinosaur.

With **AI expert** and **Futurist, Brian David Johnson**, discover what AI is, where it came from, the incredible ways it's being used today, and how it might shape and reimagine your future. Learn that AI is just software and that it won't replace human creativity or imagination, but it could help us do some really cool things. And uncover amazing facts, myth busters and insight from experts around the world!

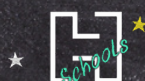
## About the Author

**Brian David Johnson** has made the future his business. From 2009 to 2016, Johnson was Intel Corporation's first-ever futurist. Currently, he is a professor at Arizona State University's Global Futures Laboratory and the School for the Future of Innovation in Society.

He also works in a private practice with a broad range of groups, including governments, militaries, corporations, non-profits and start-ups, to help them envision their future. Johnson holds over 40 patents and is the author of both science fiction and fact books.



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## Dedication

*To you, the reader! Be curious and courageous. The future belongs to you!*

What does this indicate to you about the author?

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## Fact Finder

As you read through this book, create an information board of fascinating facts that are new to you. You could use sticky notes for your jottings and write/draw them up in more detail afterwards.

## Vocabulary Detective

Note any words that you are unfamiliar with and find out what they mean. Create a glossary. See if there are any synonyms for that word. Make a sentence using the word, so that you are comfortable using it.



## Front papers

Look carefully at the designs. What do you think they represent? Are they identical?

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## Chapter 1 - All your AI Questions Answered

Before you read this chapter, draw up a list of questions you have about AI. Once you've read it, try answer the questions below:

What is the difference between a prediction and a possibility?

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What sort of tone does the author use in this book?

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What is BDJ's attitude towards thoughts that we find frightening?

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Why does BDJ think the term artificial intelligence is problematic?

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Make a timeline or an infographic about the history of the computer using p21-25.

Consider the below questions:

Why are some people scared of AI?

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How do you feel about AI?

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Create your own scenario for a computer game and list the hazards that have to be overcome. Think about the setting, characters, and choices presented to the characters. You could draw up a storyboard to help.

Explain in your own words the Myth Buster on p.41 -42

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What does BDJ mean by: AI isn't just AI ? (p. 48)

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What is an anthropologist?

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What do you think is meant by cultural anthropologist?

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What do you understand from this statement by Dr Genevieve Bell?

*'It's all about the humans. The human impact is what makes AI so massively impressive. Without the humans, AI isn't really important at all.'*

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## Chapter 2 - Gigantic Things: Dinosaurs, Volcanoes and the Bottom of the Ocean

What do you find surprising about the opening two pages of chapter 2?

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Create a graph to represent the advances made in travel times, using the information on page 51-52.

Using a thesaurus, find synonyms for big and small. Order the words in terms of size suggested, smallest to largest.



What new facts have you learned about dinosaurs?

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Create your own eye-catching infographic about dinosaurs.

How is machine learning different from human learning?

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In what ways do you think predictive analytics could help the planet?

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How do UUVs (unmanned underwater vehicles) help us? Why is their work important?

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Which creatures do you find most fascinating/ugly/beautiful/surprising? Which names do you like?

Create a short illustrated descriptive piece of writing about one of them.





### Chapter 3 - AI and Sport: Putting YOU in the Game

In what ways can AI be used to improve the performance of teams and individuals?

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How do you, or any friends or family, use AI to improve physical health?

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What are the hazards of AI generated sports reports and how can these be counteracted?

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How can natural language processing (NLP) help us?

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Consider how you feel about the idea that one day computers will be able to read the emotions in our faces and voices.



## Chapter 4 - Furry Friends and Wild Animals

In what ways can AI help pet owners?

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What opinion does the veterinarian have of AI?

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How could AI be used to help animals in the wild?

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Explore through discussion whether you think it is important for us to be able to communicate with other species.

Which creatures would you like to be able to communicate with, and why?

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## Chapter 5 - An Extraordinary You

Have you used any apps or websites to help you learn to do something?

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Think and write about what skills or talents you would like to perfect and why. How do you think AI could help you with this in the future?

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Are there skills which you feel are better learnt within a community of people, rather than in isolation with AI? Give reasons for your opinion.

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Explain why AI is so useful when it comes to analysing big data.

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Where are chatbots in common use today?

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What do you think are the pros and cons of chatbots?

Pros	Cons

Why should people be wary when researching information on the internet?

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Think about how you would design hardware if you were going to use AI to help you with any anxieties.



## Chapter 6 - Let's Go Inside Your Sentient Home

What does the word sentient mean?

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Write a short story or create a poem or comic strip, entitled 'If these walls could talk ...'

What questions would you like the answers to?

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Create a question-and-answer poem in pairs. One person writes a list of five questions, beginning with a question word, such as where, when, why, who, how. The other person writes a set of five interesting answers, without seeing the questions. Unite the two and see what you have created!



Write a design brief for your home of the future, detailing the sentient features you would like to have to improve your quality of life.

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What are hackers and how can we protect ourselves against them?

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## Chapter 7 - Robots! Drones! And the Machines of the Future!

*'Dull, dirty and dangerous.'*

Find out more information to make a list of tasks that would fit into each of these categories which robots can do now or could do in the future.

Undertake further research to prepare for a debate on the pros and cons of using either **DRONES** or **SELF-DRIVING CARS**.

What idea can you generate for the future of AI and robots? Remember that the robotics engineer, Eneni Bambara-Abban, said 'to not be afraid that your idea is too silly or small or far-fetched.'

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## Chapter 8 - Let's go to Space!

Pick a challenge:

1. Create an artwork or poem in response to the information and explanation of the Big Bang, the creation of our solar system and the universe.
2. Create a story, cartoon strip or animation about robots
3. Research and make a presentation about a space exploration project.

Discuss why we need AI if we are to explore our universe further.

## Chapter 9 - Unlimited Creativity

Look at different definitions of creativity and decide which one you think is best.

What area of creativity would you like AI help you to develop?

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How do you think you would use it?

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What are the disadvantages of using AI for creative projects?

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Create a poster warning about deep fakes and how to guard against these.



Extra task:

Find out more about David Hockney's use of AI in art through these videos

<https://www.youtube.com/watch?v=Y7C5DZoJhfY>

[https://www.youtube.com/watch?v=Fq0B4qLc4\\_8](https://www.youtube.com/watch?v=Fq0B4qLc4_8)

How did watching this exhibition make you feel?

Take a pattern you can see in the world about you and create your own piece of art, using joyous colours. You could use the computer to help you generate it.

## Chapter 10 - Important Stuff: School and Jobs

What qualities do you need in order to take full advantage of the learning opportunities offered by AI?

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Which skills that you currently use will be less important in the future, in your opinion?

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What would your ideal school of the future be like?

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Why is work important for people? Think about the implications of job losses with increased use of AI.

The author is addressing you as a member of the future workforce and recommends upskilling accordingly. What happens to those working people without the requisite skills for the changing workplace?

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Compare the present situation with the effects on cloth workers at the beginning of the nineteenth century in the Industrial Revolution. Their traditional skills became obsolete due to the introduction of machines, leaving them in poverty. Meanwhile the industrialists accumulated a great deal of wealth. This led to the formation of the Luddite movement. Find out more information about this.

### Chapter 11 - AI and Your Future

What recommendations does the author and the futurist, Steve Brown, make to you regarding preparing for a successful future? Discuss their advice with others.

What conclusions have you come to?

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