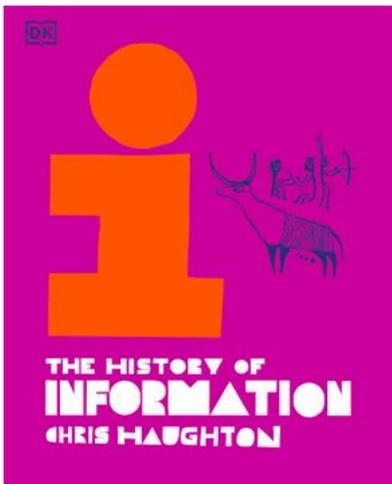


The history of information

This is one of a series of activity sheets to use alongside the books which have been shortlisted for the Royal Society Young People's Book Prize 2025.



Each activity sheet contains ideas for activities to do with your pupils, provides information relating to careers, and has a maths focus to help pupils understand the importance of mathematics education across the curriculum.

Working with scientists

These investigations can be done as standalone activities or carried out as an in-depth sequence to develop pupils' disciplinary and substantive knowledge. The deeper learning and science capital development of your pupils could be made more memorable through collaboration with a scientist such as a data scientist or an engineer specialising in robotics or artificial intelligence. You could do this by applying for a Royal Society Partnership Grant of up to £3,000. For more information, visit: royalsociety.org/partnership-grants

Scientific collaboration

In 1662, the Royal Society was formed when scientists in London began meeting to share ideas. You can find out more at the bottom of page 57. Explain that the Royal Society still exists today and it promotes and supports excellence in science. This includes inspiring young people through activities such as the Young People's Book Prize.

Encourage groups of pupils to set up their own "science societies" to share their scientific questions and ideas to encourage others to develop an interest in science. They could make a list of things to discuss and share at their first meeting.

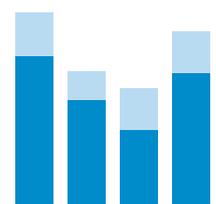
Collecting and using data

Read on pages 58 – 59 about how science depends on carefully recorded data. Explain to pupils that data can be numbers, words or pictures, and that scientists collect and record data to help them to learn more about the world and answer their questions.

Ask pupils to work in small groups to collect and record their own data by choosing something simple to count or measure, for example:

- Survey classmates about their favourite fruit or animal.
- Count how many cars of each colour are in the school car park.
- Measure how much ice melts in a container left in the classroom for 20 minutes.

Pupils should think about which type of graph, like the ones William Playfair invented, will best help others to understand their data. They could choose a bar chart, line graph, pie chart or something else, and then have a go at presenting their data using this type of graph.



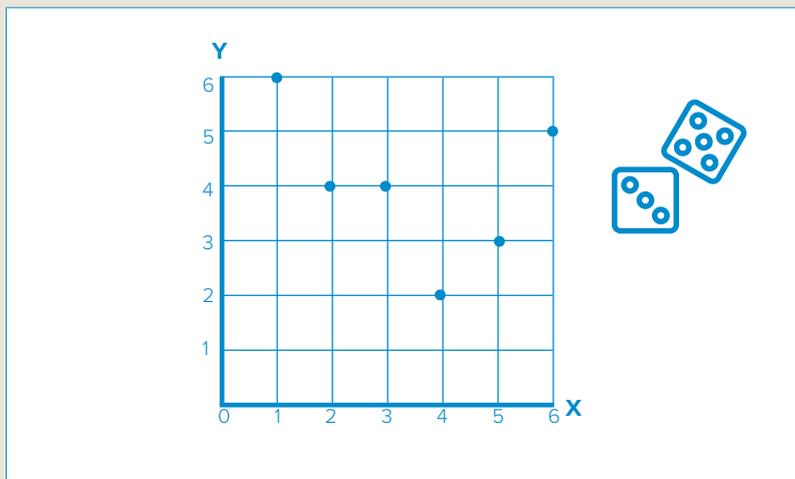
The story of a graph

Give pupils graph paper with both axes drawn and numbered 0 – 6.

Pupils roll a dice six times and use the numbers they roll to plot six points on the vertical axis, placing them at horizontal positions 1 to 6. They then join the points with straight lines to create a line graph.

Explain that their graph represents data collected over six days, showing the amount of money in a money box. Pupils should label the horizontal axis: Time (days) and the vertical axis: Amount of money (pounds). Ask them to describe ‘the story’ of their graph to a partner, using their own ideas to interpret what the data might mean, for example: On day one I earned £4 by doing jobs at home, but on day two I spent £2 on sweets.

What different stories might pupils create?



Disinformation

Have pupils heard about fake news? Do they know what it is and why it exists?

Explain that fake news can be a type of disinformation or misinformation. Disinformation is when information is made up or changed on purpose whereas misinformation is not deliberate, it is spread by a mistake. Discuss with pupils how not everything they read online can be trusted.

Support pupils to evaluate this post from an online influencer: ‘Like and subscribe to my vlog for homework tips that will get you full marks on your next science test.’

When evaluating sources of information, encourage pupils to think about: who wrote it, why it was written and what evidence was used.

You could use this lesson about using reliable sources of information; developed by CIEC for the Oak National Academy:

<https://shorturl.at/aHzjE>



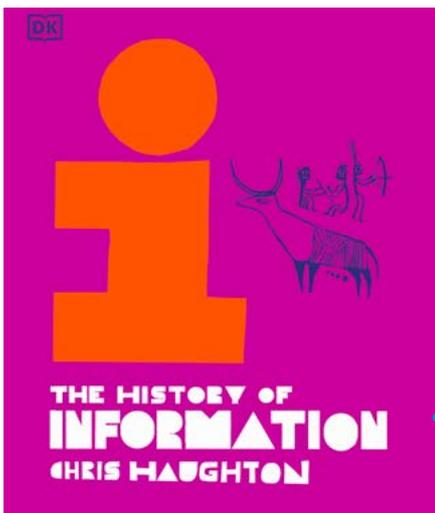
Career links



- Data scientists** are ‘number and information detectives’ who find hidden patterns and answers to big questions. They use computers and maths to help people make smart decisions, like predicting the weather or finding the best video to watch next!
- Robotics engineers** design, build and test robots and robotic systems that can perform tasks humans might find difficult, dangerous, or repetitive, from factory robots that build cars to medical robots that assist in surgery. These engineers need to understand machines, electricity and computers.
- Machine learning engineers** need to know about artificial intelligence (AI). They design and build computer systems that can learn from data and make decisions on their own. Some examples include programming computers to recognise faces, translate languages or drive cars safely.
- Bioinformaticians** combine biology, computer science and information technology to analyse data about plants and animals. They work closely with medical professionals, and use computer programs, to make sense of large sets of data. They can help with developing new medicines and treatments for people with complex diseases.

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The history of information takes you on a fast-paced journey from cave paintings and ancient scrolls to computers, the internet, and beyond. Packed with eye-catching illustrations and surprising facts, it shows how humans have shared ideas across time and the world. You'll discover how messages shaped history and how the way we communicate keeps changing. It's like a time machine for your brain.

"Today our species dominates the globe, and our technologies have transformed the world. How did this happen? How did such an extraordinary change come about?"

Mathematics challenge: Using symbols

Thousands of years ago, humans began using simple marks and shapes to communicate their ideas. These early symbols were the first steps towards writing. Symbols are still used in maths today because they make problems easier to write, read and understand, for example, writing + is much faster than writing 'add these two numbers.'

What other symbols have you used in maths? Make a list of symbols and think about of what ideas they represent.

Symbol	Idea / meaning
+	adding

Do you recognise these symbols used in maths? Do you know, or can you find out, what they mean, and add them to the table of symbols that you have started?

% ° < ≥ ≠ ()

Have a go at making some true or false questions using mathematical symbols. Challenge a friend or family member using your questions and the ones below:

$$7 + 2 = 10$$

$$9 \div 3 = 3$$

$$5 \times 2 < 12$$

$$50\% \text{ of } 100 \text{ is } 20$$

$$2 (3 \times 4) \neq 14$$

Symbols for science

Scientists use symbols to communicate information for everyone to understand, such as weather conditions and components in an electrical circuit.

Tip: The symbol does not need to look exactly like the real thing, for example:



Can you think of other symbols used in science?

What symbols would you use to help communicate the meaning of these science words?

melt	gravity	deciduous tree	transparent
opaque	observe	question	change



Symbols for safety

Symbols can be used to communicate danger, or hazards, in quick, easy-to-understand ways. In the UK, hazard warning road signs are triangle shaped with a red border. Do you know what the dangers ahead could be from their warning symbols?

Scientists use hazard warning symbols to warn people around harmful materials, equipment or situations. Do you know what this hazard warning symbol means?



Try this hazard warning activity: What's in my kitchen cupboard? from CIEC's Kitchen Concoctions publication: york.ac.uk/ciec/resources/primary/kitchen-concoctions/

The art of remembering

Before writing was invented, all information had to be remembered and passed on by speaking. To do this accurately, people relied on observation and memory skills. Try this for yourself... ask a partner to find ten small everyday objects and place them under a towel. Remove the towel and look carefully at the objects for 30 seconds. Try to remember what you see because writing is not allowed.

Replace the towel and try to name as many objects as you can. Reveal the objects again and compare what you remembered with what is actually there. How easy was it to recall everything? What helped you to remember?





Author profiles

Chris Haughton is a designer, illustrator, and children's author who uses bright colours and creative storytelling to help young readers understand big ideas. He began his career as a designer working around the world before turning his love of art and stories into award-winning picture books. His latest book, *The history of information*, takes readers on a journey from cave paintings and early languages all the way to today's digital world, showing how humans have shared and stored information through history. Watch this video of Chris Haughton at work to find out more about his illustration process:

vimeo.com/177450574?fl=pl&fe=vl



Loonie Park is a former journalist, now working as a non-fiction author. She helped make *The history of information* easier to understand by adding clear explanations about how science and technology have changed the way people share knowledge. She also researched real scientific discoveries to make sure the book's facts were correct and exciting for young readers.