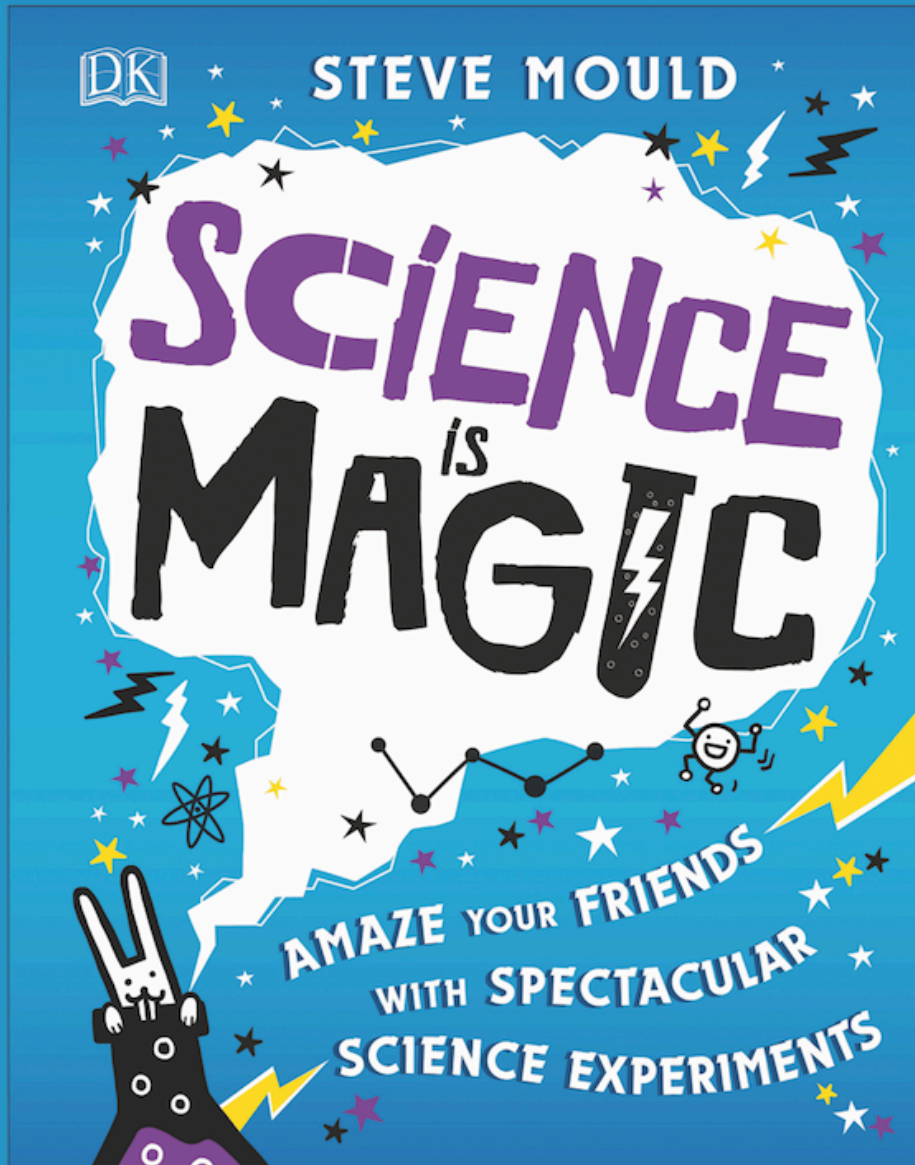


SCHEME OF WORK



PERFECT FOR: Ages 7+; studying non-fiction writing, layout and design; creative writing opportunities including biographies, fact-files, newspaper reports, diary entries and poetry; mind-bending artwork; famous magicians; sorting and classifying rocks; understanding how light travels; the respiratory system; the pH scale; comparing solids, liquids and gases; and lots of magical, jaw-dropping experiments.

KEY FOR CROSS-CURRICULAR OBJECTIVES:

English: Reading Comprehension; Creative Writing;
Writing to Entertain and Inform; Poetry;
Explanation and Recount Texts
Drama, Speaking and Listening
Design Technology & Art
Science
Geography
Computing
History
Music
Physical Education

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SUGGESTED OBJECTIVES

Reading: Comprehension

- Make predictions about a non-fiction text, using clues.
- Ask questions to improve understanding of a text.
- Identify how language, structure, and presentation contribute to meaning.
- Retrieve and record information from non-fiction.

Writing to Inform and Explain

- Identify the features of an information text.

Science

- Understand how light travels.
- Set up simple practical enquiries, comparative and fair tests.
- Report on findings from experiments, including written explanations, displays or presentations of your results and conclusions.

Design Technology & Art

- Learn about Escher and apply his style and techniques to create a mind-bending piece of artwork.

COMPREHENSION QUESTIONS

1. Look at the front cover of the book. On a whiteboard or post-it note, record everything you can see. What sort of book do you think this is? Is it fiction or non-fiction? Why do you think this?
2. Look at the Contents Page. On which pages might I find out about the following? *Bendy water; Spooky drink can; Invisible light beams; Balancing act; Disappearing Statue of Liberty.*
3. Take some time to explore the book up to page 10 – is there anything that has particularly interested you? Can you choose one fact to share with a partner? Is there anything that has puzzled or confused you?
4. How do the numbers and bullet points help you understand the text?
5. Why might you need to put rubber gloves on before beginning this experiment?
6. Find and copy a word on page 10 that means the same as 'vanish'.
7. Why has step 3 in the experiment been presented in this way? What effect does it have on the reader?
8. Complete this sentence: If something is transparent, it...
9. Why is 'through it' written in italics?
10. Explain why everything looks wobbly when looking through a glass?

EXTRA ACTIVITIES

Using the features of an information text, identify and label the following features on these pages: *introduction, titles, sub-titles, words in bold, pictures and captions, diagrams, written in present tense, charts and graphs.*

Explore how light travels and how we see. Create a fact file or poster to explain your findings. Remember to include diagrams, labels and a glossary of technical terms. You may wish to include information about the eye and how shadows are formed.

In small groups, design your own experiment to answer the question, 'Can light change direction?'. Remember to make a prediction, set up a fair test, draw and label a diagram of your experiment and record your results. Think carefully about refraction and reflection!

You may wish to explore 'Hidden Pictures' on pages 54 and 55, which is all about optical illusions.

Conduct some independent research into the mind-bending artwork of Escher. Plan and create your own strange, optical illusion in the same style, designed to trick the eye and brain!

SUGGESTED OBJECTIVES

COMPREHENSION QUESTIONS

EXTRA ACTIVITIES

Reading: Comprehension

- Identify how language, structure, and presentation contribute to meaning.
- Discuss words and phrases that capture the reader's interest and imagination.

Drama, Speaking and Listening

- Perform a segment for a television show, thinking carefully about how to use volume, pace and expression to engage the audience.
- Understand and empathise with Houdini's thoughts, feelings and attitudes and express these through the use of role-play.

Science

- Understand the role of the heart, lungs and brain in the human body and how the respiratory system works.

Writing to Inform

- Using information from the text, write a newspaper article using the correct features.

Writing to Inform and Entertain

- Write a biography, including a range of features to engage the reader.

1. Look at the title on page 14. What do you predict the information on these pages will be about?
2. Can you point to the introduction? What are its purposes? What information do you learn from it?
3. What is the 'Chinese Water Torture Cell'?
4. Harry Houdini was born on 25th March 1784. True or false? Can you write some of your own 'true or false' questions about these pages and test a partner?
5. Complete this sentence: The shackles may have had a secret release mechanism, but...
6. What does the adjective 'wild' suggest about the audience? (page 14)
7. Look at page 15. Why are some words written in bold?
8. Why did Houdini perform on an empty stomach?
9. Explain why 'Incredible Divers' is an appropriate caption for the photograph on page 15. Can you think of another?
10. Which words and phrases does the author use to engage, surprise and interest the reader? Are they successful?

Study the human body and the respiratory system. Using your research, work in groups to write a script for an informative TV show about the human body, aimed at children. Remember to include stage directions and props and to perform your engaging TV show with enthusiasm. Perhaps you can record your show and evaluate it?

Role play and freeze frame key moments in Houdini's life:

- Being born in Hungary in 1874
- Moving to the United States
- Practicing for the magic trick
- Being lowered into the water tank
- Escaping from the shackles to wild applause

Write your own newspaper report about Houdini's daring escape. Remember to include a headline, an introduction, a main body and witness statements.

Research a famous magician and write a biography about their life, including all the important events, information about their family and their most famous magic tricks and stunts.

SUGGESTED OBJECTIVES

Reading: Comprehension

- Retrieve and record information from non-fiction.
- Summarise the main ideas in the text by choosing the most relevant information

Geography

- Use maps to locate places and landmarks.
- Compare and contrast two localities.

Drama, Speaking and Listening

- Interpret and perform a poem, using expression, actions and instruments.

Music

- Use your voice and instruments with control to create a magical soundscape based on the aurora borealis.

Physical Education

- Perform a dance inspired by the aurora borealis, using a range of movement.

Design Technology & Art

- Use the techniques employed by Edvard Munch and Georgia O'Keefe to create a piece of artwork.

COMPREHENSION QUESTIONS

1. What does the adjective 'sensational' suggest about the lightshow? Can you think of a synonym for 'sensational'?
 2. What is the purpose of the arrows and labels on these pages? How do they direct and support your reading of the information?
 3. Write a definition for 'aurora borealis'. How would you explain what the aurora borealis is to someone younger than yourself?
 4. Complete this sentence: When the solar wind is strong,...
 5. Where would you need to travel to see the aurora borealis?
 6. Can you think of a simile to describe the appearance of these light shows?
 7. What are electrons?
 8. What colour do the electrons turn when they hit oxygen particles?
 9. Would you like to visit the North and South poles to see these light shows? What might you see, hear and touch?
 10. What is the most important piece of information on these pages?
- Summarise the contents on pages 28-29 in three sentences. Now try to do the same, but in two sentences. Can you summarise the information now in one sentence?

EXTRA ACTIVITIES

How are the North and South Poles similar and different? Conduct research into their climate, the animals that live there and the landscape. Present your findings using a Venn diagram.

Look at *The Aurora Borealis* by Hannah Flagg Gould (1789-1865). Discuss what you like and dislike about it, anything that puzzles you and what the poem reminds you of. Work in small groups to perform the poem, thinking about how you can use your voice and actions.

Create a soundscape to accompany these beautiful light shows. Use your voices, body percussion and various instruments to create a magical composition.

Create a dance inspired by the aurora borealis. Can you perform expressively, developing different ways of moving, to reflect the 'huge, wavy curtains of colour'?

Explore Edvard Munch's 'Starry night' and Georgia O'Keefe's 'Starlight Night'. What materials have the artists used? How does each painting make you feel? How are the paintings similar? Now, paint your own Northern Lights inspired artwork, drawing on the techniques used by Munch and O'Keefe.

SUGGESTED OBJECTIVES

COMPREHENSION QUESTIONS

EXTRA ACTIVITIES

Reading: Comprehension

- Identify how language, structure, and presentation contribute to meaning.
- Retrieve information from a non-fiction text.

Science

- Set up simple practical enquiries, comparative and fair tests.
- Report on findings from experiments, including oral and written explanations, displays or presentations of your results and conclusions.
- Carry out research into the pH Scale and create an informative poster about acids and alkalines.

Writing to Inform

- Create a leaflet about acids and alkalines, thinking about the language, structure and presentation of your work.

Maths

- Use a range of different containers to measure capacity and volume.
- Convert between millilitres and litres.

1. Why do you think the 'Warning!' is presented in a red circle?
2. Why do you think Step 1 begins with 'very carefully'?
3. Why do you need to use a sieve?
4. Can you think of another scientific word for 'see-through'? (page 34)
5. How does the layout and positioning of the illustrations help you to understand the order of the experiment?
6. Define 'flourish'. Does it sound like any other words you know? Can you use it in a sentence of your own?
7. Why might your friends' 'jaws drop' at the end of the experiment? How might they be feeling? Can you use the phrase 'jaws drop' in a sentence of your own?
8. What is the pH scale?
9. Complete this sentence: Strong acids have a pH of 1, but...
10. Explain what anthocyanin is and what role it plays in this experiment.

In small groups, carry out the experiment on these pages. What other materials can you put into the cabbage juice? How will they affect the colour of the cabbage juice? You could try vinegar, lemon juice, black coffee, milk of magnesia and soapy water. Remember to make a prediction, set up a fair test, draw a diagram and record your results.

As a group, set up an experiment to answer the question, 'Which type of water is the most acidic?' Have six jars of water (with sugar, salt, vinegar and baking soda in them, as well as tap water and filtered water). Make sure you label the jars! Use litmus paper to test the acidity of each solution, thinking carefully about how to make this a fair test.

In groups, conduct research into the pH scale and what it is used for. Create an informative leaflet to show your findings. Make sure you refer to acids and alkalines. Include a catchy title, paragraphs with sub-titles and labelled diagrams.

Using a variety of different sized containers, estimate how much water each one will hold. Discuss your estimates with a partner. Use a measuring cylinder to record each container's volume and capacity. Can you convert your measurements from millilitres to litres?

SUGGESTED
OBJECTIVES

Reading: Comprehension

- Identify the difference between fact and opinion.
- Make predictions from details stated and implied.
- Retrieve and record information from non-fiction.
- Use a dictionary to check the meaning of words.

Writing to Entertain

- Write a diary in role, thinking carefully about the conventions of a diary and the layout and features for this type of writing.

Science

- Compare and group materials into solids, liquids or gases.
- Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.

Maths

- Create Venn and Carroll diagrams to sort materials.

COMPREHENSION
QUESTIONS

1. Create a glossary of definitions for the following words: *mysterious, puzzled, shallow, solved, devices.*
2. Where are 'sailing stones' found? Why?
3. Why do you think this mystery puzzled scientists for so long?
4. What role does the wind play in the formation of 'sailing stones'?
5. How did scientists eventually solve the mystery?
6. Why are these rocks called 'sailing stones'?
7. Can you think of three adjectives and one simile to describe the 'sailing stones'?
8. Using the information from the text, decide whether these statements are fact or opinion: *the scientists must have felt very excited when they solved the mystery, shallow ponds form on the desert floor, the 'sailing stones' are beautiful, 'sailing stones' are found in smooth, flat deserts, the author likes rocks.*
9. Look at the sub-titles on this spread. How do they help you understand the text? Can you think of new sub-titles for each section of the text?
10. Why do you think there isn't a lot of text and writing on this spread?

EXTRA
ACTIVITIES

Write a diary entitled 'A Sailing Stone: A Day in My Life'. Imagine you are a 'sailing stone' in the desert. How did you get there? What can you see, smell and hear? What will happen when the water beneath you freezes? Remember to write in the first person, in the past tense and refer to your thoughts and feelings throughout.

Look at a selection of pictures of materials – can you group them into solids, liquids and gases? Now, work in small groups to act out the structure of particles in solids, liquids and gases. Is sand a solid or liquid?

Look at a selection of rocks (if this is not possible, look at pictures of different rocks instead). How can you group these rocks? By appearance? Colour? Texture? Size? Now create Venn and Carroll diagrams to sort the rocks, thinking carefully about the headings you will use.

Walk around the school and ask the children if they can see any examples of where rocks and stones are being used. In small groups, research how the following rocks are used and record your findings in a table: *limestone, marble, granite, chalk, coal, clay, slate, pumice.*

SUGGESTED OBJECTIVES

Reading: Comprehension

- Identify how language, structure, and presentation contribute to meaning.
- Retrieve and record information from non-fiction.
- Evaluate your opinion, using evidence from the text to support your ideas.

History: Boats

- Understand the role that boats have played throughout history and in different cultures.
- Use research methods to extend historical learning.

Writing to entertain and inform

- Plan and write a Kenning poem about an animal that walks on water.

Computing

- Design an informative presentation, including animations and slide transitions.

Design Technology & Art

- Explore a range of moving picture books, looking at how levers, pivots and wheel mechanisms work.
- Create a new page for the book, considering how to illustrate, present and frame your work.

COMPREHENSION QUESTIONS

1. Why is 'mere mortal' written in brackets? How should this part of the text be read?
2. Do you think these instructions are easy to follow? Why? Why not?
3. What equipment do you need to conduct this experiment?
4. Look at step 4. Why must you try and keep your hand steady?
5. Who might enjoy this type of experiment? What age group do you think this is aimed at?
6. This is the easiest experiment in the book. Do you agree? Why? Why not?
7. Why is the sticking power of water particles stronger at the surface?
8. How does the diagram on page 89 help you understand what surface tension is?
9. How are pond skaters adapted to moving on the water? Can you describe a pond skater in three words?
10. How does the author feel about science? How do you know? How does he want us to feel about science? Has this book changed your mind about science and its role in our lives?

EXTRA ACTIVITIES

Research the history of boats, how they have changed and their role in different cultures. You may wish to explore *Boats: Fast and Slow* by Iris Volant and Jarom Vogel and present your findings in a similar style.

Create a PowerPoint and prepare a presentation about animals and insects that seem to float on water. Try to include animations, interesting slide transitions and sound clips in your PowerPoint presentation.

In pairs, summarise the information you have learned about animals that walk on water in the form of a Kenning. For example:

- Pond-racer*
- Water-floater*
- Waxy-waver*
- Hairy-skater*
- What am I?*
- A pond skater.*

Create a new page for this book. What magical science wonder might the page be about? You may wish to explore a range of moving picture books or 'How Machines Work' by David Macaulay, and look at how levers, pivots and wheel mechanisms work. Can you construct and include a moving element for your page?