Springboard Connect

30a Mrs Kim's Ketchup

30b Blind Triathletes

30c Cracked!

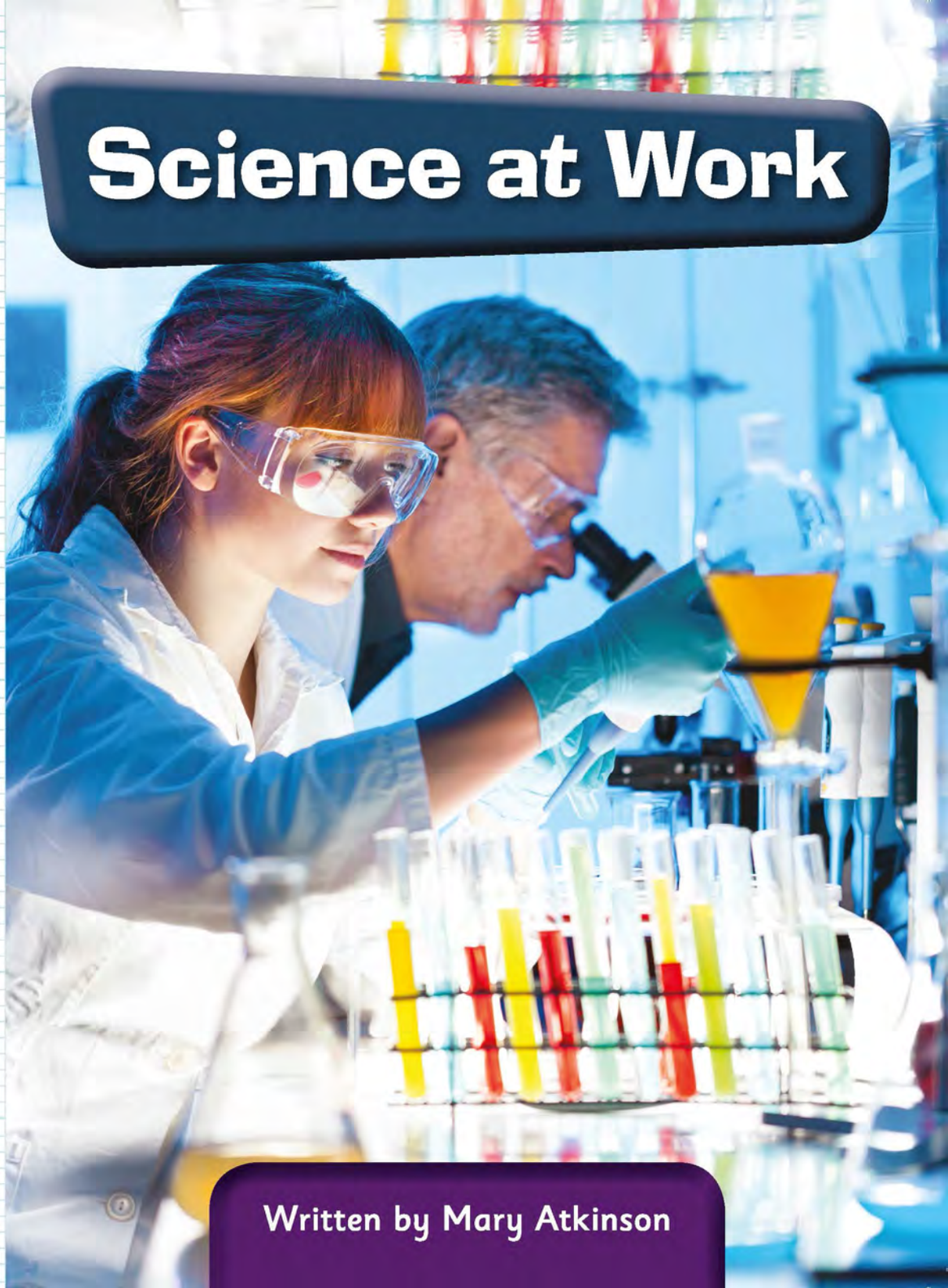
30d Science at Work

30e Earth, the Sun, and the Moon

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Science at Work



Written by Mary Atkinson

Word Count	1,000
Text Type	Information Report
High-Frequency Word Focus	add
Content Words	brain, diseases, doctors, Earth, environment, machines, robots, science, scientists, weather
Language Features and Text Structure (specific text features, sentences, punctuation, vocabulary, sound and letter knowledge)	less common letter combinations, such as *-tion*; morphemes

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Front cover photograph: young scientist and her senior supervisor pipetting and microscoping in the life science research laboratory, shutterstock.com/Matej Kastelic.
Alamy/Caro, **10**; courtesy of commons.wikimedia.org, **5** bottom; courtesy of the National Oceanic and Atmospheric Administration/Department of Commerce, Eric Kurth, NWS/WR/WFO/Sacramento, **20**; courtesy of Wellcome Collection, http://www.wellcomecollection.org, **2** right; Getty Images/Bloomberg, **14–15**; Inmagine.com/BSIP, **13** top; photonewzealand/Corbis/Brooks Kraft, **18**, /Minden Pictures/Mark Moffett, **5** top, /Xinhua Press/Xinhua, **19**; shutterstock.com/Aleksei Potov, **7** wear a sunhat, /Allies Interactive, background, /Blulz60, **3** right, /box912, **7** sunscreen, /Chris Burt, **21**, /chungking, **16**, /Dima Sobko, **2** left, /fotohunter, **8**, /Grandpa, **3** left, /ifong, **11**, /Konstantin Chagin, **6**, /MAHATHIR MOHD YASIN, **7** wear sunglasses, /MANDY GODBEHEAR, **7** wear protective clothing, /michaeljung, **22**, /Photodiem, **4**, /TijanaM, **12**, /Torsten Lorenz, **17**, /Zurijeta, **7** stay in the shade.

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For teachers' inspection ONLY

GETTING STARTED

Activating prior knowledge: Ask students: What is science? Ask them how science has helped them in their lives. Ask if they know of any ways in which science has created problems.

Book introduction and prediction: Using the interactive digital book, or the printed version, read the title to students. Ask students what the people in the photograph on the cover are doing. Ask them to flick through the book or the screens, looking at the photographs and layout. Have them use the graphics and structure to suggest the text type and to predict what the book may be about. Read the entries on the contents page to confirm their predictions. Identify and discuss any words or features that may cause concern.

Outlining focuses: Explain to students that, as well as reading about different sciences, they will talk about the structural features of an information report, paragraphs, root words, and the suffixes *ist* and *tion*.

DURING THE READING SESSION

Literacy

Modelling: Depending on what is appropriate to the group, you can remind students of, and model, specific reading strategies, such as how to approach unfamiliar words and identify signal words.

Guiding: Ask students to read their books independently. As you move about the group, use your knowledge of each student's ability to help you decide when to intervene or assist. For example, if a student cannot read a word, or can read it but appears not to understand it, give prompts or clues to assist. Suggest strategies, such as using picture cues and knowledge of letter/sound patterns.

Interacting, interpreting, analysing and evaluating: At appropriate intervals, and/or at the conclusion of reading, ensure students make meaning from the text by asking questions and encouraging discussions. What problems has some technology caused? How have scientists helped doctors and improved people's health? Why are weather scientists important? What scientific invention do you think is the most amazing? Have students discuss whether this is an imaginative, informative, or persuasive text and the audience to which they think the author was directing the book.

Literature

Responding and examining: Ask students if this book about things that affect their lives has changed their preferences for a text type.

Language

If you are using the digital book, invite students to take turns to operate it for the following activities.

Text structure and organisation: Discuss the structural features of this report – contents, subheadings, glossary, and index. Ask students why each feature is important. Use pages 6 and 7 to discuss how longer texts are organized into paragraphs, each beginning with a topic sentence that is elaborated by ensuing details. Use pages 8 and 9 to confirm this fact.

Expressing and developing ideas: Focus on the word *scientists* on page 2. Ask students if they know another word that begins with the first five letters. Discuss the meaning of the word *science* and how the suffix *ist* changes the word to mean someone who practises science. Ask them what these people do or practise – zoologist, dentist, artist, florist. Ask if they know any other words ending in *ist*.

Draw attention to the word *inventions* on page 6. Have students identify and tell you the meaning of the root word. Ask them how the addition of the suffix *tion* has changed the type and meaning of the word. List other *tion* words on the board and repeat the exercise.

PUTTING THE LEARNING INTO PRACTICE

Small group/independent activities: Have students reread the text independently, then proceed to the activities in the Teacher Guide.

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Science at Work

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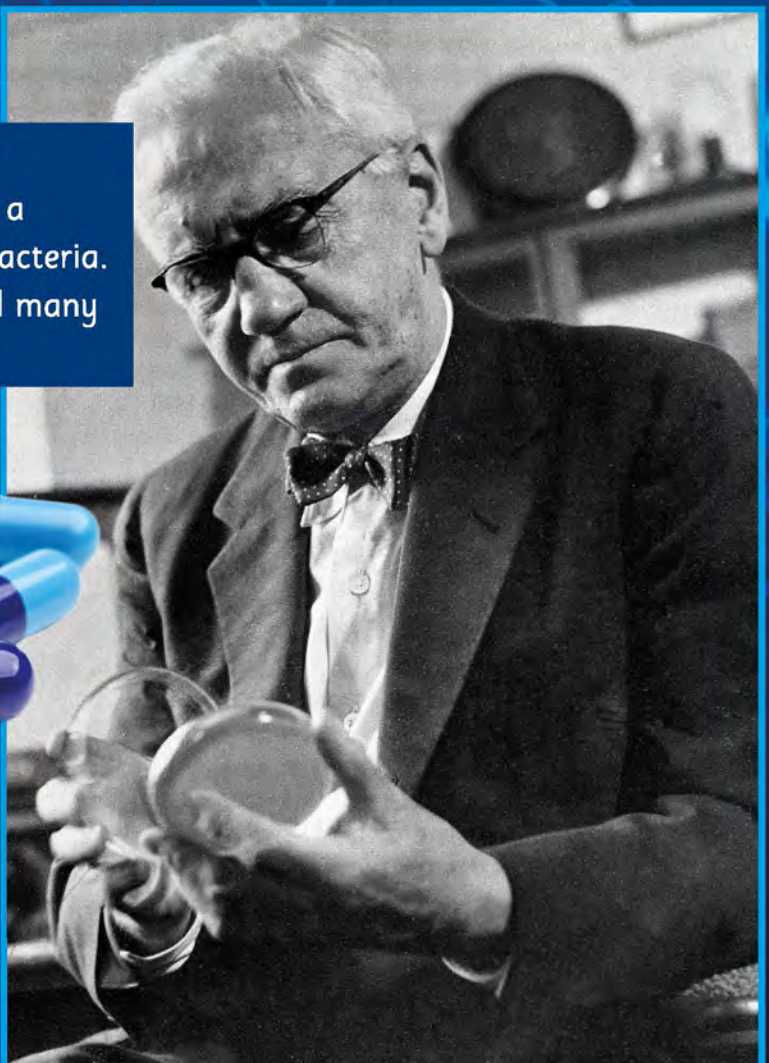
Written by Mary Atkinson

What Do Scientists Do?

In the last century, scientists have come up with many clever ideas. They have helped save many lives. They have found ways to help keep us healthy. They have found ways to make our lives easier.

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Scientist Alexander Fleming discovered a mould that killed bacteria. His discovery saved many people's lives.

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Scientists have made new machines, tools, and methods, or **technology**. Many things made with new technology help make life more fun, but it is not all good news. People buy more and more new technology to add to their homes. They throw away old things. They live in ways that harm the environment. Now, many scientists work to find ways to help Earth as well as people.



Throwing away old technology is bad for Earth.



Recycling old technology is much better for Earth.

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Why Do Scientists Work Outside?

Some scientists work outside to protect our planet. They study the environment. They help find ways to keep water, air, and soil safe. These scientists find out how we harm our environment. They work out how we can change our ways. For example, they look for ways to farm without adding too many chemicals to the soil. Some scientists work with animals or plants. Others help design parks and green spaces.



A scientist checking groundwater samples

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A scientist checking tree health in Washington, US



A scientist counting fish in the Indian Ocean

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Why Do Scientists Work with Doctors?

Some scientists work with doctors in the field of preventing and treating illness, or **medicine**. They make chemical substances to help people's health, or **drugs**. They make tools and machines. For a long time, doctors used X-rays to see inside our bodies. Now, machines with newer technology show more detail. For example, an MRI scan can show all the parts of our brain. It helps find problems before they get too bad. Other machines check our heart rate and blood pressure. These machines or tools that people design are called **inventions**. New inventions in medicine add to the quality of our lives.



Doctors check an MRI scan.

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Scientists help us stay healthy. For example, they found out that too much sun harms our skin. We now know to add a layer of sunscreen when we are out in the sun.

Ways to Stay Safe in the Sun

Wear protective clothing





Wear sunscreen with SPF 30 or higher



Wear sunglasses



Wear a sun hat



Stay in the shade