SPACE TECHNOLOGY

in Space and on Earth



Cara Torrance

PM

Space Technology in Space and on Earth

Level 30

Running Words 2991 **Text Types** Information Report (Informative) pages 2–19
Explanation (Informative) pages 20–30

Curriculum Areas Science; Technologies

Think and Talk About …

Fact boxes in the book encourage each student to explore the statements further and to share the information with others.

Oral Literacy Focus for Students

Key issues from the text to encourage critical thinking and stimulate group discussions:

1 Justify why solar panels must be used to supply power during space missions
2 Suggest reasons for inserting memory foam in American football helmets.
3 Establish how the invention of water filters has changed the lives of many children.
4 Explain how a scratched visor on a space helmet would make missions more difficult for an astronaut
5 Discuss the topic 'The force of gravity'.

Written Literacy Focus for Students

Key issue from the text to present in visual and written form to an audience:

1 Research the topic 'Asteroids'.
2 Prepare a text by a TV announcer informing viewers of the destruction caused by an asteroid striking Earth.
3 Edit and revise the text.
4 Present the text to an audience.
5 Critically analyse your presentation for content and voice production.

Links with other PM Guided Reading Books and Cards

Level 29	Book	Narrative	*Stranded in Space*
Level 30	Book	Information Report	*Unexplained Mysteries*

For Review Only

SPACE TECHNOLOGY in Space and on Earth

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Living in Space and on Earth

Astonishing technology has been developed for space travel. Things that are simple to do on Earth – such as breathing air, drinking water or using electricity – pose serious challenges when space missions are being planned. To meet these and other challenges, scientists have made many technological advances.

Scientists and engineers at the National Aeronautics and Space Administration (NASA) in the USA have spent decades researching and developing new technology for space missions. Many technological breakthroughs have been made as a result.



In space, there is no air, no water and no gravity.

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Often, technology that has been developed for use in space can then be **adapted** for very different purposes on Earth. Many products that people use in daily life might never have been invented if not for space travel. Some of these inventions have changed people's lives.



Artificial limbs are more comfortable to wear thanks to space technology.

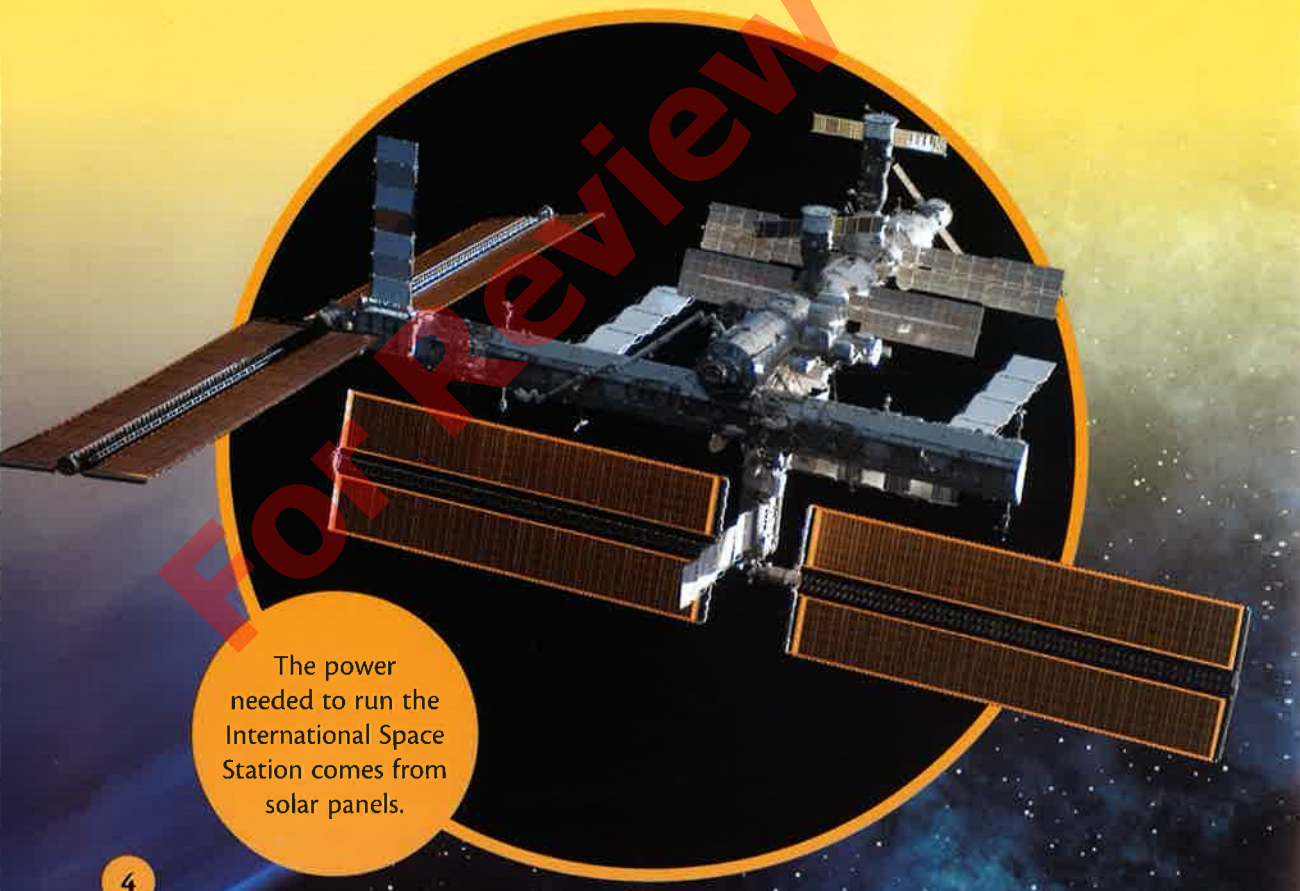
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Solar Panels

The Sun is the only source of electricity in space. Solar panels absorb energy from the Sun and convert it into electrical energy.

Solar panels were not invented for space travel, but NASA engineers developed the technology to make it more and more powerful and efficient. Solar energy supplies the power used during space missions, for both life support and vital spacecraft systems. The International Space Station has huge solar panel **arrays** that stretch to a length of 35 metres.

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The power needed to run the International Space Station comes from solar panels.

The research undertaken at NASA has helped other engineers to develop better solar panels for use on Earth. People use solar panels to power their homes and businesses. Small solar panels are often used in handheld devices such as calculators and torches. Special heavy-duty solar panels can be used to pave parking lots that double as electricity sources. In the future, they could even be used to build roads.



Solar panels on the roof provide power for a house.

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Improved Baby Food

In the 1980s, NASA scientists were looking for a way to create oxygen in space. Oxygen on Earth is created through **photosynthesis**. The scientists were trying to find out if they could use **algae** to photosynthesise oxygen during long space missions.



The interior of a manned spacecraft needs to be filled with a constant supply of oxygen for astronauts to breathe.

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The food babies eat can affect their future development.

By chance, the scientists discovered that certain types of algae contained some important natural acids that are present in mother's milk. The scientists realised that this could be a way to help babies grow strong and healthy.

After they had left NASA, these scientists set up their own company. There, they carried out more research into the benefits of these natural acids. They found that the acids can help the development of babies' brains and eyesight.

Using this research, the scientists developed improved, or **enriched**, baby food. Like other baby food, it contained fruits and vegetables **pureed** to a soft, soup-like consistency, but it was also enriched with the natural acids developed from algae. Today, babies are given enriched baby food in more than 60 countries around the world.

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