Teacher Resource

# Astronauts Return

**EPISODE 8**
25 March 2025

**KEY LEARNING**
Students will learn more about the impact space has on the human body.

## Focus Questions

Discuss the BTN story as a class and record the main points of the discussion. Students will then respond to the following:

1. Discuss the BTN story with another student. Record the main points of your discussion.
2. Why were two NASA astronauts recently stranded in space?
3. What is microgravity?
4. How does space travel affect the human body? Give 2 examples.
5. Why do we get taller when we've been in space?

## Activity: Note taking

Students will practise their note-taking skills while watching the BTN Astronauts Return story. After watching the story, ask students to reflect on and organise the information into three categories. What information in the story was positive, negative, or interesting?


## Activity: Comprehension

After watching the BTN Astronauts Return story students can answer one or more of the following comprehension questions, for example:

- What are some keywords from the BTN story?
- What did you learn from the story? Write a summary.
- What is the purpose of this news story? To entertain, persuade, inform, explain or describe?


**CURRICULUM**
**Science – Year 5**
The Earth is part of a system of planets orbiting around a start (the sun).

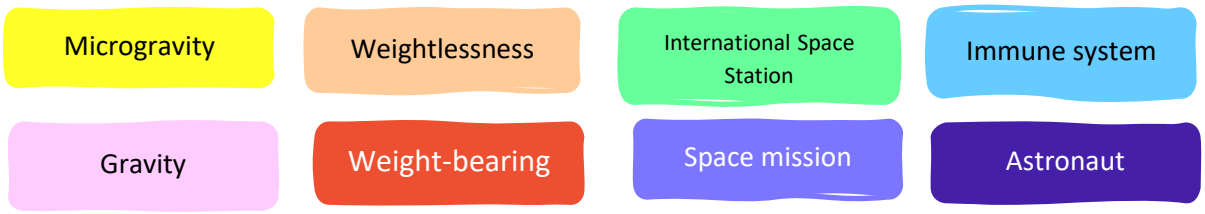
Scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples' lives.

**Science – Years 5 & 6**
Scientific knowledge is used to solve problems and inform personal and community decisions.

**Science – Year 7**
Scientific knowledge has changed peoples' understanding of the world and is refined as new evidence becomes available.

## Activity: Key words

Students will brainstorm a list of key words that relate to the BTN Astronauts Return story. Here are some words to get them started.

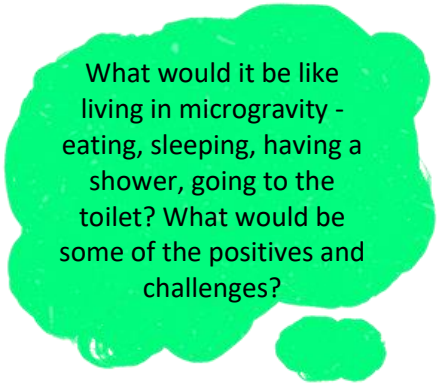



Ask students to write what they think is the meaning of each word (including unfamiliar words). They will swap definitions with a partner and ask them to add to or change the definition. Check these against the dictionary definition.

## Activity: Effects of space on the human body

Discuss the information raised in the BTN Astronauts Return story. What questions were raised in the discussion and what are the gaps in students' knowledge? Students will develop their own question/s to research or choose one or more of the questions below.

- Why do astronauts have to exercise in space? How do they exercise? Watch the Exercising in Space video to learn more.
- How does space radiation affect the body and what do astronauts do to stay safe?
- What health problems have astronauts had in the past? What changes have been made to overcome the health problems?
- What happens to the body's sleep patterns in space?
- What are the ethical considerations of sending humans on long-duration space missions, considering the impact on their bodies?
- What are the psychological effects of long space missions?
- Investigate the effect space has on an aspect of the human body, include information about what happens, why it happens and what can be done to reduce the effects. Choose one from the following:
    - Bones
    - Muscle
    - Eyes
    - The spine
    - Inner ear and balance system
    - Sense of taste




**Further investigation**

Astronauts going to the ISS can sign up for a range of experiments that will help scientists understand how the human body reacts to long-duration space missions. Learn more about the NASA experiments here
Students will imagine they are an astronaut on the ISS and design an experiment to study one of the effects of space on the body. Think about – what they need to measure (bone density, muscle strength), how they will conduct the experiment, how often they would collect measurements, and what equipment they will need. Create a labelled diagram or write a short explanation of their experiment to share with the class.

## Activity: Choose a project

Individually or in small groups, students will choose one of the following projects to work on and then present their findings to the class.

**Puffy Head Bird Legs**
Find out what is meant by the term *Puffy Head Bird Legs* and why it happens. This video helps to explain it. Summarise the explanation.

**Onboard the ISS**
Tour the ISS with astronaut Suni Williams. What information was surprising? What did you learn?

**Did you know?**
Using the information in the BTN story and your own research, create a *Did You Know* fact sheet about space and the human body. Publish using Canva.

**What's your space height?**
Did you know that you grow taller in space? You can try your own experiment here on Earth. Measure your height in the morning and again before you go to bed in the evening. Did you grow taller or get shorter? How does it relate to astronauts in space?

## Activity: Quiz

Hold a class discussion asking students to share one interesting fact they learned about how space effects the human body. Record students' responses to create a list.

Students will use the information they have discovered to create a quiz and then test their classmates. Students will include a range of quiz styles, for example:

- Multiple choice
- True or false
- Fill in the blank
- Use photos or pictures
- When an answer is revealed, provide extra information to explain the answer.


Students can make their quizzes in Kahoot or Quizizz.

## Useful Websites

- Living on the ISS - BTN
- Astronauts: What are the effects of space travel on the human body? Newsround
- Butch Wilmore and Suni Williams are back on Earth. What does nine months in space do to the body? ABC News
- Gravity and the human body – TED Ed
- What outer space does to your body – TED Ed