



Teacher Resource

Aussie Astronaut

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. Who will Katherine Bennell-Pegg train with to become an astronaut? Where will she train?
2. Why is Katherine excited about going to space?
3. Why does Katherine think it's important to get more young women into STEM?
4. Complete the following sentence: Katherine would really like to discover life elsewhere in our solar system because...
5. What was surprising about the BTN story?

Activity: What do you see, think and wonder?

After watching the BTN Aussie Astronaut story, students will respond to the following questions:

- What did you SEE in this video?
- What did you LEARN from this story?
- What do you WONDER about this story?
- What QUESTIONS do you have about this story?

Activity: Class Discussion

After watching the BTN Aussie Astronaut story, hold a class discussion using the following discussion starters.

- What role has Australia played in space exploration?
- Is it important for Australia to be involved in space exploration? Why or why not?
- How do you become an astronaut? Make a list of some of the skills required to become an astronaut.
- What questions would you like to ask an astronaut?



EPISODE 7

21st March 2023

KEY LEARNING

Students will learn more about Australia's role in space exploration. Students will investigate careers in space science.

CURRICULUM

Science – Year 5

The Earth is part of a system of planets orbiting around a star (the sun).

Scientific knowledge is used to solve problems and inform personal and community decisions.

Science – Years 5 & 6

With guidance, pose clarifying questions and make predictions about scientific investigations.

Science involves testing predictions by gathering data and using evidence to develop explanations of events and phenomena and reflects historical and cultural contributions.

Science – Year 7

Scientific knowledge has changed peoples' understanding of the world and is refined as new evidence becomes available.

Activity: Glossary

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

| | | |
|--------------|----------------|--------------|
| EXPLORATION | ASTRONAUT | SOLAR SYSTEM |
| MICROGRAVITY | SPACE INDUSTRY | MISSION |

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.

Further activities for students:

- Expand on your glossary and create your own glossary of astronaut jargon. Include terms like abort, command module, airlock, cosmonaut, G-force, No Go, zero gravity and uplink.
- How did this story make you feel? Make a list of words that describe how you felt after watching the BTN Aussie Astronaut story.

Activity: Questions and Answers

Are your students curious about space? Students will make a list of questions they have about space exploration. For example:

- [What is puffy-head bird-legs?](#)
- How do astronauts get back to earth?
- [What happens to the brain in zero gravity?](#)

Students will use the internet to find answers to their questions.

What happens to your body in space?

How can I become an astronaut?

What questions do you have about space exploration?

Q&A with a space expert

All scientific discoveries start with a question! As a class, come up with some questions you think astronauts ask and solve in relation to space exploration.

As a class, make a list of questions that you would like to ask a space expert. Organise the questions into common themes.

Book into one of the Australian Space Discovery Centre's [digital sessions](#) to get an insight into what a career in space really looks like, as well as answering any questions you may have. Sessions go for 45 minutes.



Activity: Career in Space

Learn more about the space sector and [pathways for a career in space](#). Choose one job that you would like to know more about. Investigate what the job involves and what you need to study to become one. Present the information to a small group or class. Students will think about the following during their research:

- What study do you need to do for the job?
- What skills are needed to do the job?
- What are some of the responsibilities of the job?
- What sort of research is involved once you are in this job?
- Can you interview someone who has this job to find out more?

Visit the Australian Space Agency to learn more about [pathways for a career in space](#).

I want to be a <space>... Technician

My Journey

Strengths
Practical
Good with hands
Problem solving

School Subjects
Mathematics
Physical Education
English

Vocational Courses
Electrical Engineering
Aeroskills/Avionics
Aircraft Maintenance Engineering
Electronics and Communications

Space Careers
Automation/Robotics Technician
Mechanical/Assembly Technician
Electrician/Electrical Technician
Space Facility Management
CNC Machinist

Arts & Communication | Engineering | ICT | Law | Medicine | Science | Technical & Trades
discover.space.gov.au

[A space for everyone: careers in space \(pdf\)](#)

Space Systems Engineers

Design, build and test spacecraft, launches and ground-based systems.
Specialty areas include: **Analysts, System and Subsystem Leads and Subsystem Architects** for:

- Mechanical, structures and mechanisms
- Thermal
- Propulsion
- Guidance, navigation and control
- Operations, Fault Detection Isolation and Recovery (FDIR) and Software

- Assembly, Integration and Test Systems
- Mission systems

Further specialty areas include:

- Aerothermodynamics
- Operations
- Payload types such as radar and optical

Study pathways

At Australian Universities, study:

- Bachelor of Engineering (Honours) (Mechanical)
- Bachelor of Engineering Honours (Mechanical and Mechatronic)
- Bachelor of Engineering (Mechanical and Advanced Manufacturing)

For higher level industry and research jobs, postgraduate aerospace engineering study at Masters and/or PhD level is recommended.

MEDIAN AUSTRALIAN SALARY:
Entry Level \$72,000
Experienced \$140,000

[Careers in space booklet \(pdf\)](#)

Activity: Space Research

After watching and discussing the BTN Aussie Astronaut story, what questions do students have? The KWLH organiser provides students with a framework to explore their knowledge on the topic of space exploration and consider what they would like to know and learn.

| What do I know ? | What do I want to know? | What have I learnt ? | How will I find out? |
|-------------------------|--------------------------------|-----------------------------|-----------------------------|
| | | | |

Questions to research

Students will develop their own question/s to research about space exploration. Students will collect and record information from a wide variety of sources. Students may develop their own question for inquiry or select one of the questions below.

- Who is Australia's first female astronaut? Explore her background, experience, and training. Create a biography.
- What role has Australia played in space exploration? Research one aspect in more detail.
- What types of careers are there in space exploration? Learn more about the space sector and [pathways for a career in space](#). Choose one to explore in more detail.
- What is the Australian Space Agency? Explore its role in space exploration.
- What STEM skills do astronomers need?
- Is space exploration important? Why or why not?
- Create a timeline showing the history of space exploration. Highlight Australian involvement on your timeline.

Activity: Fierce Girls podcast

Ruby Payne Scott – The Girl Who Listened to the Stars

In the 1940s when Ruby Payne Scott went to university, she was the only girl in her class. Back then, you could count the number of female physicists in the entire country on one hand.

Listen to the [Fierce Girls Podcast](#) to learn more about her life and her contribution to space exploration. Students will listen to the podcast and then respond to the following questions:

- What were some of Ruby Payne Scott's challenges? List some of the roadblocks she faced.
- What course did she graduate in at university?
- What top secret job did Ruby Payne Scott do during WWII? Illustrate an aspect of her job.
- What is radio astronomy?
- What were some of Ruby Payne Scott's achievements?



Andrea Boyd — The Girl Who Became the Voice of Space

Andrea Boyd worked hard to become the International Space Station's only Aussie flight controller, talking to the astronauts who lived in the space station as it orbited Earth. But Andrea didn't stop there — she wanted to bring space exploration to Australia. She convinced the country's leading academics, businesspeople, and the government to open the Australian Space Agency.

Listen to the [Fierce Girls Podcast](#) to learn more about her life and her contribution to space exploration. Students will listen to the podcast and then respond to the following questions:

- What is one of the best places for stargazing?
- What TV show inspired Andrea Boyd to reach to the stars?



- What is the International Space Station (ISS)? Describe.
- What is Andrea Boyd’s job for the ISS?
- What is a Soyuz?
- How would life be different without satellites?
- Summarise Andrea Boyd’s achievements in space exploration.

Activity: BTN Stories

As a class watch one or more of the following BTN stories to learn about Australia’s role in space exploration. After watching any one of the BTN videos ask students to respond to the discussion questions (to find the discussion questions and teacher resources go to the related BTN Classroom Episode and download the Episode Package).



[Aussie Space Agency](#)



[Aussie Astronauts](#)



[Parkes Telescope Anniversary](#)



[Apollo 11 and Parkes](#)


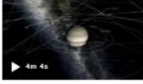





BTN Space Science stories

Visit BTN’s collection of stories which focus on space science and space exploration. After watching any one of the BTN videos ask students to respond to the discussion questions

To find the discussion questions and teacher resources go to the related BTN Classroom Episode and download the Episode Package.

[Link to collection of BTN Space Science stories](#)

Space Science

| | | | |
|--|--|---|--|
|  <p>Space Food Tue 21 Feb 2022 at 12:00pm</p> |  <p>Jupiter Profile Astronomers have discovered 12 new moons around Jupiter. Tue 14 Feb 2023 at 12:00pm</p> |  <p>Aussie Rocket Launch We visit one of the world's biggest rocket testing facilities in South Australia, to find out more about the upcoming launch. Mon 31 Oct 2022 at 11:30pm</p> | |
|  <p>NASA DART Mission We find out more about NASA's DART mission. Mon 10 Oct 2022 at 11:30pm</p> |  <p>Artemis Launch We find out more about Artemis mission and its role in NASA's plans to send humans back to the Moon. Mon 5 Sep 2022 at 11:30pm</p> |  <p>Space Junk We find out more about space junk and it's potential for causing problems in orbit and here on Earth. Mon 8 Aug 2022 at 11:30pm</p> |  <p>Russia Space Race Russia has announced it's leaving the International Space Station by 2024. Mon 1 Aug 2022 at 11:30pm</p> |

Useful Websites

- [Adelaide woman to become first female to train as astronaut under Australian flag](#) – ABC News
- [Aussie Astronauts](#) – BTN
- [Astronaut Training](#) – BTN
- [Pathways for a career in space](#) – Australian Space Agency
- [Life of an astronaut](#) – TedEd
- [Fierce Girls](#) – ABC