Teacher Resource

International Space Station

EPISODE 3
15th February 2022

KEY LEARNING
Students will learn what the International Space Station is and what it does.

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

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.

Focus Questions

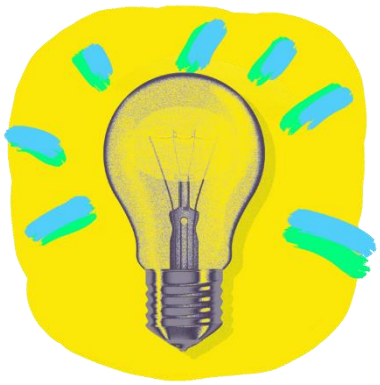
Discuss the BTN International Space Station story as a class and record the main points of the discussion. Students will then respond to the following:

1. Which two superpowers worked together to launch the International Space Station?
2. The ISS is modular. What does that mean?
3. What is the purpose of the ISS?
4. Why is NASA planning to retire the ISS?
5. When and how will it be retired?

Activity: Class Discussion

Discuss the BTN International Space Station story as a class. What do students know about the ISS? What questions do they have? In small groups, ask students to brainstorm responses to the following questions:

- Why do humans explore space?
- What is the International Space Station?
- What is the purpose of the ISS?
- Give examples of what astronauts on the ISS do.
- What questions do you have about the ISS?



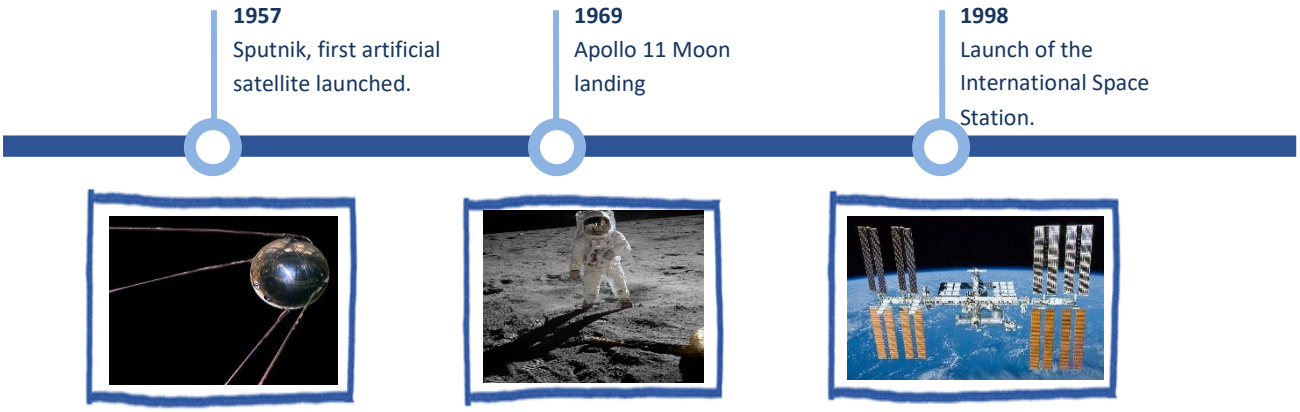
Activity: Glossary

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

INTERNATIONAL SPACE STATION	ASTRONAUT	MICROGRAVITY
ORBIT	EXPLORATION	EXPEDITION

Activity: History of space exploration

Students will investigate the history of space exploration and present their research as a timeline, infographic or a presentation. Below are some key events in the history of space exploration



- 1957 – Sputnik, first artificial satellite launched into space
- 1961 – Yuri Gagarin, first person to enter space
- 1969 – Apollo 11, Moon landing
- 1990 – Launch of Hubble Space Telescope
- 1998 – Launch of International Space Station
- 2011 – Curiosity launches to Mars
- 2019 – First image of black hole released
- 2020 – Perseverance launches to Mars

Activity: ISS Research

Discuss the information raised in the BTN International Space Station story. What questions were raised in the discussion and what are the gaps in students' knowledge? The following KWLH organiser provides students with a framework to explore their knowledge on this topic.

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

Students will develop their own question/s to research or choose one or more of the questions below.

- What is the ISS? Why do we have an International Space Station?
- What do astronauts do on the ISS?
- How long do they stay on the ISS?
- What is it like living in microgravity? Eating, sleeping, having a shower, going to the toilet.
- What impact does microgravity have on the human body? Bones and muscles, sense of taste.

- What do you think the challenges of living in space would be?
- How does the work carried out by the ISS astronauts contribute to science and affect life on Earth?
- How has technology used in space exploration changed over time?
- How will the International Space Station be decommissioned safely?

Activity: Get to know the ISS

Who's on the ISS – Meet the Expedition 66 crew. Choose an astronaut and write a short biography about them.

Learn more about the Spacewalks at the Station

Find out what the astronauts are up to on the ISS and the research what they are doing by checking out the Space Station blog update

Spot the International Space Station. Watch the ISS pass overhead from locations all around the world. It is the third brightest object in the sky and easy to spot if you know when to look. Enter your location to find out when you can see it.

Activity: How do astronauts live in space?

Students will learn more about what life is like on the International Space Station. These videos provide a snapshot of what living on the ISS is like.
Everything about living in space
Life inside the ISS

Students will describe a day in the life of an astronaut on the ISS, including information about sleeping, eating, personal hygiene, exercising and carrying out work on the ISS. What do astronauts do in their spare time?

As a class, watch the Eating in Space video for an in-depth look at how and what astronauts eat to stay healthy. Students will then respond to the following questions:

- What food do astronauts eat?
- Is there any food they can't eat?
- Does food need any special preparation before it can be eaten?
- Why is nutrition important for astronauts?
- If you lived in space, what foods would you miss the most? Why?

Watch the Exercising in Space video and explain why it's important for astronauts on the ISS to exercise.

Activity: Space Mission

Students will choose a space mission to explore in detail. Students can choose one of the space missions below or choose another mission.

- International Space Station
- Perseverance Rover
- Hubble Space Telescope
- Parker Solar Probe

Students can use the following questions to guide their research.

- Briefly summarise the mission.
- When did the mission take place?
- What was the purpose of the mission?
- Who was the crew? What were their roles?
- What did the mission discover?
- Which countries were involved in the mission?
- How has the mission helped us understand space?
- What were some challenges of the mission?
- Include photographs and diagrams in your research project.

Useful Websites

- The International Space Station will meet its end in 2031. Where will it crash and what will take its place? – ABC News
- 23 facts about the ISS – Newsround
- The 20 most amazing moments of the ISS – Newsround
- Life in Space – BTN
- How do astronauts go to the bathroom in space? – Curious Kids
- A day in the life aboard the International Space Station – NASA