

Focus Questions

As a class, discuss the stories featured in the episode of BTN Classroom and record the main points of the discussion. Students will then respond to the following focus questions.

Petrol Prices

- 1. What has happened to the price of petrol recently?
- 2. Why have many countries and oil supply companies decided to stop buying oil from Russia recently?
- 3. Apart from petrol, what other things might go up in price?
- 4. Many are calling on the federal government to help lower the cost of petrol by cutting the fuel excise which is basically a
- 5. Name three facts you learnt watching this story.

Harbour Bridge Anniversary

- 1. The Sydney Harbour Bridge has just celebrated its _____ birthday.
- 2. Why was the Harbour Bridge built?
- 3. Why was the bridge known as `the iron lung' in the 1930s?
- 4. Why was the ribbon-cutting ceremony to open the bridge interrupted?
- 5. What makes the Sydney Harbour Bridge unique?

Check out the <u>teacher</u> resource on the Teachers page.

Women's History Month: Nancy Bird

Walton

- 1. What sparked Nancy's interest in flying?
- 2. Which famous pilot gave Nancy flying lessons?
- 3. At 19 years old Nancy made history. What happened?
- 4. Why was Nancy Bird Walton known as the `angel of the sky'?
- 5. What did Nancy do to encourage more women to get into aviation?

Aussie Astronauts

1. The federal government has announced more funding for the Australian Space Agency. What will the money be spent on?

EPISODE 8

22nd March 2022

KEY LEARNING

Students will view a range of BTN stories and use comprehension skills to respond to a series of focus questions.

CURRICULUM

English – Year 4

Use comprehension strategies to build literal and inferred meaning to expand content knowledge, integrating and linking ideas and analysing and evaluating texts.

English – Year 5

Use comprehension strategies to analyse information, integrating and linking ideas from a variety of print and digital sources.

English – Year 6

Use comprehension strategies to interpret and analyse information and ideas, comparing content from a variety of textual sources including media and digital texts.

English – Year 7

Use comprehension strategies to interpret, analyse and synthesise ideas and information, critiquing ideas and issues from a variety of textual sources.

- 2. What has made it easier and cheaper to get people into space?
- 3. What do you need to study to become an astronaut?
- 4. Do you think it's important for Australia to be involved in space exploration? Why or why not?
- 5. Would you like to be an astronaut? Why or why not?

Check out the <u>teacher</u> resource on the Teachers page.

AFL Sports Science

- 1. Sports science is used to ______ the performance of athletes.
- 2. Describe the job of a sport scientist.
- 3. What data does the GPS tracker worn by the players collect?
- 4. Can you think of other sports that use science to help improve the performance of athletes?
- 5. Think of at least one question you would like to ask a sports scientist.



Harbour Bridge Birthday

Focus Questions

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

- The Sydney Harbour Bridge has just celebrated its _____ birthday.
- 2. Why was the Harbour Bridge built?
- 3. Why was the bridge known as `the iron lung' in the 1930s?
- 4. Why was the ribbon-cutting ceremony to open the bridge interrupted?
- 5. What makes the Sydney Harbour Bridge unique?

Activity: See, think and wonder

After watching the BTN Harbour Bridge Birthday story, students will respond to the following questions:

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



Activity: Discussion

Discuss the BTN Harbour Bridge Birthday story in small groups or as a class. Ask students to record what they know about the Sydney Harbour Bridge. What questions do they have? Use the following questions to help guide discussion:

- Where is the Sydney Harbour Bridge? Find on a map.
- When and why was the Sydney Harbour Bridge built?
- What is unique about the Sydney Harbour Bridge?
- How is the Sydney Harbour Bridge different to other bridges around the world? Compare and contrast.

EPISODE 8 22nd March 2022

KEY LEARNING

Students will explore the history of the Sydney Harbour Bridge. Students will explore a range of historic places and their importance to people.

CURRICULUM

HASS – Year 4 Pose questions to investigate people, events, places and issues.

HASS – Year 5 & 6

Develop appropriate questions to guide an inquiry about people, events, developments, places, systems and challenges.

Locate and collect relevant information and data from primary sources and secondary sources.

Present ideas, findings, viewpoints and conclusions in a range of texts and modes that incorporate source materials, digital and non-digital representations and disciplinespecific terms and conventions.

HASS – Year 7

Construct significant questions and propositions to guide investigations about people, events, developments, places, systems and challenges.

Apply a methodology to locate and collect relevant information and data from a range of primary sources and secondary sources.

Present ideas, findings, viewpoints, explanations and conclusions in a range of texts and modes that incorporate source materials, citations, graphic representations and discipline-specific terms, conventions and concepts.

Activity: Inquiry based-learning

After watching and discussing the BTN Harbour Bridge Birthday story, what questions do students have and what are the gaps in their knowledge? The following KWLH organiser provides students with a framework to explore their knowledge on this topic and consider what they would like to know and learn.

What do I <u>k</u> now?	What do I <u>w</u> ant to know?	What have I learnt ?	How will I find out?

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

- When and why was the Sydney Harbour Bridge built? What bridge is the Sydney Harbour Bridge based on?
- How long did it take to build the Sydney Harbour Bridge? Who built the Sydney Harbour Bridge?
- What is the history of the Sydney Harbour Bridge? Explore the history of the bridge and plot your findings on a timeline.
- The Bridge walk was a march for reconciliation. What does this mean? Investigate the significance of the Bridge Walk in 2000.
- What is an historical site and a heritage site? Find a definition. Make a list of heritage sites you know about around the world.
- What is the difference between natural heritage, Indigenous heritage and historic heritage? Use a Venn diagram to record your findings. Find definitions for 'types of heritage' here – <u>Australia State</u> of the Environment

Activity: Heritage sites in your community

In this activity, students will explore and research a range of heritage sites and then create their own tour to teach others about the history of their local area.

Discussion

Before planning your heritage tour, hold a class discussion. Use the following questions to get the discussion started:

- What are some types of heritage sites? For example, bridges, museums, statues, Aboriginal sites (ceremonial sites, rock art and carved trees), amphitheatres, shops, churches, temples, sculptures, factories, shipwrecks, archaeological sites and parks.
- What is the difference between natural heritage, Indigenous heritage and historic heritage? Find definitions for 'types of heritage' here <u>Australia State of the Environment</u>
- What are some heritage sites in your local area that you already know about? Make a list. Investigate what other sites are in your area and add to your list. Use the internet, visit your local library/museum or contact your local council to find out more about the history of your area.

Investigation

Students will choose one heritage site in their local area to investigate further and become experts. Students will collect and record information from a wide variety of primary and secondary sources and present the information they find in an interesting way. Students will respond to the following questions:

- Where is it? Locate on a map.
- When was it built or created? How old is it?
- Who built or created it?
- What does it look like? Draw a picture. Write a brief description.
- Why was it built or created? What was its function and who used it? Why is it important?
- What are some interesting facts about the heritage site? Include a brief history on the site.
- What does the site tell us about previous societies?

Provide students with the opportunity to visit the heritage site they have researched. Students will take photos, sketch drawings and record their observations.

Design & Create

Students will combine the research they have conducted to create a tour for their community to learn about the history of their local area. Students can use the following as a guide:

- What type of tour will you create? It could be a walking self-guided tour, a guided tour, a virtual tour, or a QR code informational tour.
- What will the journey feel like? Will it be anecdotal (stories told from a personal point of view), will there be a theme? What stories will you tell to engage the audience?
- Identity the heritage sites that you will include in your tour. What order should the sites be visited?
- Who is the tour for? Is it for families? Is it accessible?
- How will you present the information on your map? E.g., grid system or numbered.
- Will your tour and map be digital or a printout? Sketch a map and include grid lines which you can use to reference the heritage sites on your tour.
- List each of the sites on your map and include a bit of information for each site.
- What extra information will you include, e.g., photographs, QR codes, legend, scale, distance and time of tour, nearby attractions, public transport.

Activity: Visual literacy

In this activity students will examine, analyse and query a range of images which show the Sydney Harbour during a point of time. Students will choose one or more of the photographs below (alternatively, students can find an image themselves to analyse). Students will then respond to the following:

- Write a short paragraph describing what you see in this image.
- When and where was the photo taken?
- What do you think is happening?
- How does this image make you feel? Describe your emotions.
- Write a caption for each image using your own words.
- What question/s would you like to ask about the image? Choose one of your questions to investigate in more detail.



Art Gallery NSW



Sydney Living Museums



National Museum Australia



National Museum Australia

Useful Websites

- Bridge Walk Memories BTN
- Bridge Walk Anniversary BTN
- Bridge Walk Anniversary (Teacher Resource) BTN
- Join the Sydney Harbour Bridge 90th anniversary party Transport for NSW
- <u>Sydney Harbour Bridge (Teacher resources)</u> National Museum Australia
- Sydney Harbour Bridge for kids National Museum Australia
- <u>Sydney Harbour Bridge: The past in the present</u> State Library NSW
- <u>Statue Debate</u> BTN
- Why do we have museums? TedEd
- <u>Sydney Harbour Bridge</u> National Film and Sound Archive of Australia
- Sydney Harbour Bridge Exhibition National Film and Sound Archive of Australia



Aussie Astronauts

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. The federal government has announced more funding for the Australian Space Agency. What will the money be spent on?
- 2. What has made it easier and cheaper to get people into space?
- 3. What do you need to study to become an astronaut?
- 4. Do you think it's important for Australia to be involved in space exploration? Why or why not?
- 5. Would you like to be an astronaut? Why or why not?

Activity: Class Discussion

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

- Why do we explore space?
- Is space exploration important? Why or why not?
- What are the advantages and disadvantages of space exploration?
- Is it important for Australia to be involved in space exploration? Why or why not?
- How has space exploration affected people's lives?
- How do you become an astronaut?
- What skills are needed to be an astronaut?
- What questions would you like to ask an astronaut?

Why should we explore space?

What questions do you have about space exploration? EPISODE 8 22nd March 2022

KEY LEARNING

Students will learn more about Australia's involvement in space exploration and what training is required to become an astronaut.

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.

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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	ORBIT	MISSION

Activity: Space Research

The KWLH organiser provides students with a framework to explore their knowledge on the topic of astronauts and space and consider what they would like to know and learn.

What do I <u>k</u> now?	What do I <u>w</u> ant 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.

- Why should we explore space?
- Is space exploration important? Why or why not?
- What are the advantages and disadvantages of space exploration?
- How has space exploration changed since the 1960s?
- What is the future of space exploration?
- What role has Australia played in space exploration?
- How has technology used in space exploration changed over time?
- How have advancements in space technology helped us on Earth?
- What types of careers are there in space exploration?
- How will space exploration change in the future? Make a prediction about how space exploration will change in the future. Illustrate your prediction/s and provide an explanation.
- Create a timeline showing the history of space exploration. Highlight Australian involvement on your timeline.

Activity: Life as an Astronaut

<u>Listen to astronaut Jerry Carr</u> talk about his training to become an astronaut and the years he spent at NASA. Students can then respond to the following questions:

- How long does astronaut training usually take?
- Describe the training Jerry did to become an astronaut.
- Why do human space travellers need so much training?
- Would you ever travel into space? Give reasons for your answer.
- What was surprising about Jerry's talk?



Activity: Train like an astronaut

Do you have what it takes to become an astronaut? In this activity, students will investigate what some of the physical demands are for astronauts.

Using a range of physical activities students will use the same body parts/systems as astronauts do in training and on missions in space. Choose from a range of these <u>NASA</u> activities, or use the activities we've picked out below.



Mission 1: Taste in Space

Mission question: Can I compare taste sensations on Earth and in space? In this activity, students will investigate and discover variables that affect their own sense of taste. Download the <u>Taste in Space</u> <u>handout</u>.

Mission 2: Agility Astro-course

Mission question: How can you perform a physical activity that will improve your agility, coordination, and speed? In this activity, students will complete an agility course as quickly and as accurately as possible to improve agility, coordination, and speed. Download the <u>Agility Astro-course handout</u>.

Mission 3: Jump for the Moon

Mission question: How could you perform a physical activity that would increase bone strength, as well as heart and other muscle endurance? In this activity, students will perform jump training with a rope, both while stationary and moving, to increase bone strength and to improve heart and muscle endurance. Download the Jump for the Moon handout.

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.



Useful Websites

- Space industry sets sights on launching Australia's next astronaut with help of \$65 million funding boost – ABC News
- <u>Astronaut Training</u> BTN
- Andy Thomas Australian Museum
- Astronaut Requirements NASA



BTN Transcript: Episode 8- 22/3/2022

Hey, I'm Amelia Moseley and you're watching BTN. Thanks for joining us again, let's jump into it and see what's coming up on today's show. We'll find out about the science behind footy, celebrate the birthday of a famous bridge and learn about the plan to get an Aussie into space.

Petrol Prices

Reporter: Jack Evans

INTRO: All that soon, but first today to petrol prices. You might've noticed they've been pretty high recently. In fact, fuel is more expensive in Australia than it's ever been before, and experts reckon it could get even worse. So, what's going on? Here's Jack to explain.

SAM: Okie dokie, I'm off to worky derky.

DAZZA: Well, I hate to be a Debbie downer but with petrol prices this high you can't take the car.

SAM: Hmm I'm sure I'll figure something out.

Yep, with petrol prices at record highs. Some people are finding an alternative way to get around. Although I'm not sure anyone's using a broom stick. At the moment, right around the country, petrol is well over 2 dollars a litre and in some places over 3 dollars a litre. That's a lot. If you go back 10 years when you guys were little it was around \$1.40. Now it's the most expensive it's ever been in Australia, and it's set to get worse. But why?

Well, there are a few things that add to the cost of petrol, but the biggest factor by far is oil. Oil is that thick black stuff that's pumped out of the ground and then refined to make petrol and while it can be found around the world, most of the oil we use comes from just a handful countries

The price of oil depends a lot on supply and demand. If there are more cars on the road it can go up and it can go down if for some reason no-one's driving, like during a pandemic. On the supply side oil producers can control how much they pump out to make sure it's profitable. During the pandemic a lot of suppliers slowed down production and it hasn't' ramped up everywhere yet, even though we're all back on the road. Then there's Russia, it's one of the world's biggest oil producers. But recently many countries and oil supply companies decided to stop buying oil from Russia because of its invasion of Ukraine. Which means the demand to buy oil from other places is really high.

DR SARAH HUNTER, KPMG SENIOR ECONOMIST: The ongoing conflict in Ukraine is creating significant uncertainty and volatility in global fuel markets. And that's really driven up global fuel prices to near record highs.

Experts say you might start to notice other things going up in price too. You see as the cost of fuel rises so does the cost of making anything that uses a petroleum product, like fertiliser and some plastics. Along with anything that needs to driven, shipped or flown from place to place, which is, well, a lot of things. It means groceries could become more expensive because of the additional costs that comes with transporting them. Many are calling on the federal government to step in and help by cutting the fuel

excise. Basically, that's a tax or amount of money that the government places on top of the price of petrol. At the moment it's set at 44.2 cents per litre, but some would like it temporarily dropped.

STEVEN MARSHALL, FORMER PREMIER OF SOUTH AUSTRALIA: It doesn't need to be permanent but while we're in this elevated fuel price situation, we'd really love to see some relief coming from the federal government.

But not everyone agrees it's the answer, because that tax contributes about 20 billion dollars to the economy. And some reckon in the long run it could cause big problems.

CHRIS RICHARDSON, DELOITTE ACCESS ECONOMICS: You can't solve a problem caused by President Putin in Europe with tax relief in Australia.

But while petrol prices stay high it'll mean, for some people at least getting around will be less of this and more of this. No not that. For the last time people don't fly around broomsticks unless you're a witch.

News Quiz

Do you know the name of this world leader? It's Ukrainian President Volodymyr Zelensky. Last week he spoke directly to the German Parliament and to US Congress asking for help to stop Russia's invasion of Ukraine.

VOLODYMYR ZELENSKY, UKRAINIAN PRESIDENT: President Biden, you are the leader of the nation, your great nation. I wish you would be the leader of the world.

What Aussie state got a new leader on the weekend? It was South Australia. Labor leader Peter Malinauskas was elected as the state's 47th premier after defeating Steven Marshall at the polls.

Can you name the space telescope that just took this photo of a star? It's James Webb. The space telescope arrived at its new home, about 1.5 million kays away from Earth, back in January and now it's ready to go. The pic shows that everything is working really well, and the telescope should be able to fulfill it's 10 billion dollar mission.

Do you know why this 12-year-old British school girl was invited to the BAFTA Film Awards last week? She was the star of a prize-winning film, she campaigned for more Disney characters with glasses, or she wrote a prize-winning script. It's B. Lowri wrote a letter to Disney in 2019 asking for more bespectacled princesses, not knowing her wish was about to come true. The director of Encanto, who shared her dream, was so impressed with the letter he asked Lowri to come to the awards.

This enormous vegetable, nicknamed Dug the potato, was unearthed by New Zealand gardeners last year. Dug was thought to easily be the biggest potato in the world weighing in at a whopping 7.8 kilograms. But the claim's now been officially rejected. Do you know why? Well, Dug's not actually a potato. DNA testing found it's actually a gourd tuber. Sorry Dug.

Harbour Bridge Birthday

Reporter: Amal Wehbe

INTRO: On the weekend we celebrated the 90th birthday of one of Australia's most famous man-made landmarks, the Sydney Harbour Bridge. Amal paid it a visit on its special day. Take a look.

Oh, the Sydney Harbour Bridge. What an Aussie icon. You've inspired us, helped us celebrate and hosted a whole bunch of visitors over the years. Wait, is that me? And who could forget when you saw aliens. OK well that part wasn't actually real.

AMAL: And now you're celebrating your 90th birthday. So, how does it feel?

Yeah, it's pretty hard to imagine Australia without the iconic Sydney Harbour Bridge. But getting the Sydney Harbour Bridge built was quite the journey, with a fair bit of drama along the way. But we'll cross that bridge when we come to it.

The idea of building a bridge here actually goes back to as early as 1815. People wanted a more convenient way to get across the harbour because for years, they'd had to rely on ferries and boats. But it wasn't until about 100 years later that things actually got moving. In 1900, the New South Wales government committed to building the bridge. And they ran a worldwide design competition. But the winning design didn't actually get used, in fact none of these early designs ended up being the bridge we see today. Changes in government, the economy, and Australia's involvement in the First World War all led to delays and disagreements over the bridge. But eventually a design by Sir Ralph Freeman was chosen and on the 28th of July 1923 work began overseen by engineer John Bradfield known as the father of the Harbour Bridge.

The bridge created thousands of jobs which is why it was known as the 'Iron Lung'. It kept workers employed in the Great Depression in the 1930s at a time when many Aussies were struggling. But building it was dangerous and 16 people died in the construction of the bridge. The Sydney Harbour Bridge is big. It was a huge project using 53,000 tonnes of steel, 30,000 litres of a special coloured 'Bridge Grey' paint for just one coat. And used 6 million hand-driven rivets. All up it cost 1.5 billion dollars in today's money. And in 1930 all that hard work led to this special moment when the two halves met. Over 9 years these guys managed to build, what was at the time, the world's widest and tallest steel arch bridge. It was nearly the longest too but during construction the builders of the Bayonne Bridge in New York added 7 metres just to beat out the Sydney Bridge.

AMAL: Are you still bitter about that?

Bridge one-upping aside, Aussies came out in droves for the big opening on the 19th of March 1932. There were parades, songs and even a 9-year-old boy who rode his pony 1,000 kilometres on his own, just to see the bridge. But the celebrations took an unexpected turn when the ribbon cutting ceremony got interrupted by Captain Francis de Groot storming in on his horse. He was upset that no members of the royal family were invited. But the premier Jack Lang still got his moment.

The year it opened, 11,000 vehicles crossed the bridge each day, now it's about 160,000. And over time the bridge has become well a lot more than just a way to get around. In 1993 the New Year's Eve bridge fireworks tradition began. In 1998 it was opened up for people to climb. And 2000 saw the walk for reconciliation. The bridge has been a part of some of Australia's biggest moments so, here's to you bridge.

AMAL: You don't talk much do you? Anyways, cupcake? I got it for your birthday.

Women's History Month: Nancy Bird Walton

Rookie Reporter: Anastasia

Meet Nancy Bird Walton. Nancy was born in Kew New South Wales in 1915. And just like a bird, she always wanted to fly. In fact, when she was little, she'd climb on fences and pretend to be a plane. When she was 13 Nancy left school to help out in her dad's shop but a trip to the fair changed everything. She took a joy ride in a Gipsy Moth aeroplane and her future was set. When she was 17, she convinced world famous pilot

Charles Kingsford Smith to take her on as a student. At 19 Nancy made history as the youngest women in the Commonwealth to get her commercial pilot's licence which meant she could carry passengers and make a living from flying. Her first plane, a Gipsy Moth, just like the one she'd flown in the air at the fair. Except now she was the pilot.

Nancy travelled around with her co-pilot, Peggy McKillop, offering joy rides for 10 shillings. The two were often called Big Bird and Little Bird. While on tour she met Reverend Stanley Drummond, who asked her to help set up an air ambulance service in far western New South Wales. And that's exactly what she did, flying out nurses to take care of people a long way from hospitals. Nancy was known as the 'angel of the sky' saving lives across the country. During the Second World War she trained women to assist men in the Royal Australian Airforce. And in 1950 she started the Australian Women's Pilot Association to encourage more women to get involved in aviation and give female pilots a community. Nancy kept her pilot's licence until three years before her death at the age of 93. She taught girls and women that you should chase after your dreams because the sky's the limit.

NANCY BIRD WALTON: It doesn't matter how black the sky is or how bad the storm clouds may be the sun is always shining up top.

Aussie Astronauts

Reporter: Cale Matthews

INTRO: Now, have you ever dreamed of being an astronaut? Well, I know I have but turns out, it's not that easy. In the past the only way for Aussies to get up there was to join an overseas space agency. But Australia's government wants to change that and recently it gave our space agency more money to work on getting an Aussie into space. Cale found out what it takes.

ASTRONAUT: That's one small step for man, one giant leap for mankind.

CALE: G'day mate. Welcome to the moon. Wanna snag?

ASTRONAUT: Huh, who are you?

BRUCE THE AUSSIE ASTRONAUT: Me? I'm Bruce the Aussie Astronaut, but me mates just call me Brucey.

OK, I'll admit, this isn't what Aussie astronauts look or sound like. They're a bit more like this.

ANDY THOMAS, AUSTRALIAN ASTRONAUT: We flew over south Australia about 20 minutes ago, and it was really an amazing sight to fly over.

Meet our cosmic trio. Australia's only bona fide astronauts. This guy, Phillip K Chapman was our first one. In 1967 he did all the training to go into space, but eventually stayed on Earth and worked as Apollo 14's chief scientist. In 1984 Paul Scully-Power went one better becoming the first Aussie in space. He was an oceanographer and spent 8 days aboard the space shuttle Challenger snapping pics of the Earth's ocean currents. Then there's the last Aussie to go to space, Andy Thomas. He ended up going on 4 missions and tallied a total of 177 days in space. All of these guys had to become US citizens and fly with NASA in order to get to space, but that could be about to change.

ENRICO PALERMO: There isn't any aspect of Australian modern day life that doesn't rely on space technology.

That's Enrico Palermo and he's head of the Australian Space Agency, which means he's kind of in charge of

all things deep space down under, like clearing up space junk, sending Aussie made rovers to Mars and getting Aussie astronauts back in space.

SCOTT MORRISON, PRIME MINISTER OF AUSTRALIA: We are a space nation, and we are an astronaut nation.

This month the PM announced \$65 million dollars' worth of funding for the ASA. Half of that will be used to set up 3 new space ports or rocket launching sites across the country. Right now, we only have 4. There they are.

BRUCE THE ASTRONAUT: The other half will be used to send up our next Aussie astronaut into space. Can I get down now?

ENRICO PALERMO: Space has an incredible capacity to inspire. I mean, there isn't many children, including myself that didn't want to be an astronaut when they grew up.

He says private space companies like Space X and Blue Origin have made it way easier and cheaper to get people up and out of Earth and while it might be a few years away, there's no reason why you guys couldn't be our next Aussie astronaut.

ENRICO PALERMO: It takes a lot of focus and dedication. Study hard, you know, the disciplines of science and math and engineering are particularly important but also the life sciences, medicine and art, and really follow your passions.

So for all you budding space cowboys and cowgirls out there, it's time to brush up on your engineering or physics, or art or whatever you choose and maybe one day you can be like Bruce.

BRUCE THE ASTRONAUT: Do you reckon the moon is made of lamington?

CALE: What?

BRUCE THE ASTRONAUT: Yeah, nah, nah, me neither. Me neither mate.

Sport

The AFLW Finals series has finally arrived, and it was up to the Kangaroos and the Dockers to kick things off. The Roo's went into the game as favourites but were absolutely crushed by a dominant Freo 69 to 31. Freo's next game will be a much bigger challenge against the table toppers the Adelaide Crows.

Meanwhile the AFL men's season is well and truly underway. Last week Melbourne took on the Western Bulldogs in a grand final rematch. And although it was a new season it was the same result. After being down by 4 goals in the 2nd quarter Melbourne stormed home to a 26 point victory. But the game of the round was between the Adelaide Crows and the Fremantle Dockers. With 10 seconds left Docker's defender Heath Chapman spoiled this kick with only centimetres to spare giving Fremantle a 1 point win.

And finally, Dutchman Kjeld Nuis has shattered his own speed skating world record by 10 kilometres per hour by breaking the 100 kilometres per hour barrier.

KJELD NUIS: I hit 103 kilometres an hour. I literally flew over the ice.

AFL Science

Reporter: Cale Matthews

INTRO: Let's stick with the sports theme now, but also get a little science-y. Cale caught up with a sports scientist who works with the Adelaide Crows to find out how technology's used to help AFL players get ready for the season. Check it out.

I think we can all agree that since the 1930s, Aussie Rules has come a long way. I mean I haven't worn my suit and top hat to a game in ages. These days the players jump higher, they're a little bit faster, and kick a whole lot better. And a big part of that is in how today's players prepare, train, and look after themselves, and that involves a lot of help from people you won't see on the field.

CALE: G'day Jarryd, here we are at the Adelaide Footy Club. Can you tell me what you do here?

JARRYD WALLACE, SPORTS SCIENTIST: Yeah, Hi Cale, I'm the sports scientist here at the Crows.

Sports scientists like Jarryd have an important job. They often study areas like biomechanics, which can help athletes improve specific techniques, diet, which help athletes put the right food in their body for their sport, and strength and conditioning so they can get into and stay in tip top shape.

CALE: When we think of science and technology often you think of gadgets, are there any gadgets sports scientists use?

JARRYD WALLACE, SPORTS SCIENTIST: It's funny you asked that, I've got one right here. This is called a GPS tracker, and the players wear that for all their training sessions and all their games.

Yep tucked into the top of every AFL players guernseys are these fancy trackers which use satellites to collect data on almost everything.

JARRYD WALLACE, SPORTS SCIENTIST: We can measure how fast people run, how far they run, how many times they change direction, how many times they jump, their top speed, yeah it's becoming pretty endless with what we can measure with this.

CALE: Now, does that mean if I wear one of these GPS trackers, I could be an AFL athlete?

JARRYD WALLACE, SPORTS SCIENTIST: Well it's funny you say that, I reckon there's only one way to find out. Let's get this one on you and we'll head out to AAMI stadium to find out.

CALE: This is a boyhood dream let's do it.

CALE: Alright, I've got the oval to myself I'm gonna have a bit of a run around and we'll check my stats, check my data, but first I'm going to kick a goal. Watch this. Did you get that? I'm a bit puffed.

CALE: Now Jarryd, I know it looks like I've been running out in the rain, but this is pure sweat and hard work, can you run me through some of my stats here.

JARRYD WALLACE, SPORTS SCIENTIST: Yeah, absolutely Cale, so look you're right it was a tough session today, almost two kilometres covered. You've sped up 15 times, accelerating is a really hard thing to do, so you've done a great job there, and your max speed, 7.7 metres per second, so you're pushing up to 30 kilometres per hour.

CALE: Some of the blokes in the AFL, what are you looking at your max velocity? What's their max speed?

JARRYD WALLACE, SPORTS SCIENTIST: Ooh that's a good one, I reckon most of the AFL guys are somewhere around that 34 to 35 kilometres per hour, so hey with a bit of training you never know what we could make of you.

CALE: Come on.

After all of the Crows games Jarryd goes through the data from the players and looks at ways, he can improve their training or things they could be doing better on game day.

JARRYD WALLACE, SPORTS SCIENTIST: We really want to know how much high speed they've done, accelerating, decelerating, running, jumping, changing direction. They're all the things that we are concerned about to help them get better and prepare for next week.

Teams are always searching for ways to get an edge over their opponents and it's people like Jarryd who help to separate the best from well, the rest.

Closer

Well, that's all for this week but don't worry, we'll be back with more soon. As always you can jump online to check out more stories and specials in the meantime, oh, and there are also resources there for your teachers too, so make sure you let them know. And don't forget Newsbreak will be right here every weeknight with all the big stories. Have an awesome week and I'll see you soon. Bye.