Questions for discussion

Episode 34
25th November 2014

Free Trade

1. Which two countries have just signed a Free Trade Agreement?
2. What is a tariff?
3. What is a Free Trade Agreement?
4. How long has it taken Australia and China to agree on the deal?
5. What sorts of products does China buy from Australia?
6. What will the Free Trade Agreement mean for Aussie businesses?
7. How will the agreement affect the price of goods coming from China?
8. The deal also talks about foreign investment. What does that mean?
9. Why are some people worried about foreign investment?
10. Do you think Australia's free trade deal with China is a good thing? Discuss as a class and vote in the BtN online poll.

> Vote in the BtN poll. Go to http://www.abc.net.au/btn/polls.htm
> Do the quiz on the BtN website http://www.abc.net.au/btn/quiz.htm

Drowning Report

1. Briefly summarise the *Drowning Report* story.
2. What important skills are kids in Bangladesh learning?
3. What are the kids in India learning?
4. The World Health Organisation (WHO) found that more than _____thousand lives are lost to drowning each year.
5. Which places in the world have the highest rates of drowning?
6. Why are the rates so high in some places?
7. What does the WHO want to do about the problem?
8. What do you do to stay safe when swimming?
9. Working in pairs, think of some ideas to help keep kids safe around the water.
10. What do you understand about water safety since watching this story?

> Check out the BtN *Drowning Report* resource on the Teachers page
> http://www.abc.net.au/btn/teachers.htm

Species List

1. Before you watch this story, make some predictions about what you think it will be about.
2. As a class, discuss the issues raised in the *Species List* story.
3. How many species have become extinct over the past 50 years?
    a. 432
    b. 632

    c. 832
4. What does `the Red List' tell us?
5. What does it mean if an animal is extinct?
6. If an animal is extinct in the wild, it means...
7. About how many species are critically endangered?
8. Give an example of an endangered species.
9. What has caused so many species to be threatened?
10. What can be done to stop more species becoming extinct?

> Write a message about the story and post it in the comments section on the story page.

Student Satellites

1. Describe what the students in the Student Satellites story are doing.
2. How high do the students' satellites go?
3. Which layer of the Earth's atmosphere do the satellites reach?
    a. Troposphere
    b. Stratosphere
    c. Mesosphere
4. Each satellite is fitted with a _____to look down at the planet.
5. Which gas helps the satellites to lift into the air?
6. What information do the satellites collect?
7. Give an example of how satellites are used.
8. How do they get satellites into orbit?
9. What problems did the students have with their satellites?
10. What interesting fact did you learn watching this story?

> Check out the BtN *Student Satellites* resource on the Teachers page http://www.abc.net.au/btn/teachers.htm.

Young Writer

1. Discuss the *Young Writer* story with another student.
2. What is Amber's dream?
3. Where does Amber get inspiration from?
4. Which parts of Amber's body are affected by the medical condition?
5. When Amber was recovering from surgery, what did she do?
6. How does Amber's teacher describe her?
7. Amber is working with a professional editor to improve her work. True or false?
8. What would Amber like to do next year when she goes to high school?
9. When you write a story, where do you get your ideas from?
10. How did you feel watching this story?

> Write a message to Amber and post it in the comments section on the story page.

Activity

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Drowning Report

Key Learning

Students will investigate the risks associated with water play. Students will plan and practise strategies to promote water safety in their community.

The Australian Curriculum

Health and Physical Education / Personal, Social and Community Health / Being healthy, safe and active

Plan and practise strategies to promote health, safety and wellbeing. (ACPPS054) Years *5 & 6*

Investigate and select strategies to promote health, safety and wellbeing. (ACPPS073) Years 7 & 8

Health and Physical Education / Personal, Social and Community Health / Contributing to healthy and active communities

Investigate the role of preventive health in promoting and maintaining health, safety and wellbeing for individuals and their communities. (ACPPS058) *Years 5 & 6*

Plan and use health practices, behaviours and resources to enhance the health, safety and wellbeing of their communities. (ACPPS077) Years 7 & 8

Discussion Questions

1. Briefly summarise the *Drowning Report* story.
2. What important skills are kids in Bangladesh learning?
3. What are the kids in India learning?
4. The World Health Organisation (WHO) found that more than _____thousand lives are lost to drowning each year.
5. Which places in the world have the highest rates of drowning?
6. Why are the rates so high in some places?
7. What does the WHO want to do about the problem?
8. What do you do to stay safe when swimming?
9. Working in pairs, think of some ideas to help keep kids safe around the water.
10. What do you understand about water safety since watching this story?

Activities

Water and culture

Water is important for leisure and play and many cultures and religions use water symbolically. As a class or individually, students will think about ways that people use water.

- Make a list of activities that you and your family participate in that involve water.
- Write a response to the following statement '*Participation in water activities is part of Australian identity and culture.*'
- Think about how other cultures around the world may use water in everyday life. List your ideas.

KWLH

Discuss the BtN *Drowning Report* story as a class. What questions were raised in the discussion (what are the gaps in their knowledge)? The following KWLH organiser provides students with a framework to explore their prior knowledge on this topic 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?**

Hold a classroom discussion using some of the following questions.

- Where can drowning occur? Explain to students that wherever there is water there is the threat of drowning. Drowning occurs in bathtubs, buckets, ponds, rivers, ditches and pools, as people go about their daily lives.
- What do you do to be safe around water?
- How can kids learn to be more water safe?
- What surprised you about this story?

Write students responses on the classroom whiteboard. Consider using student's responses to develop an information booklet or website about water safety for your school.

What are the risks?

Drowning happens in many different ways. The World Health Organisation (WHO) has put together a list of the main risk factors. Students will look at the diagrams below and match them to the corresponding risk.

Flood disasters, whether from extreme rainfall, storm surges, tsunamis or cyclones

Travelling on water, especially on overcrowded or poorly maintained vessels

Lack of physical barriers between people and water, particularly close to home

Uncovered or unprotected water supplies and lack of safe water crossings

Lack of water safety awareness and risky behaviour around water, such as swimming alone

Lack of (or inadequate) supervision of young children

Action plan

The World Health Organisation came up with some ways to help prevent drowning, see some of these below.

- Install barriers controlling access to water. Provide safe places for kids
- Teach children basic swimming, water safety and safe rescue skills
- Increase public awareness about drowning and water safety
- Develop a national water safety plan
- Train bystanders in safe rescue and resuscitation

Students will choose one of the actions from the list above or think of one of their own to develop an awareness raising campaign to promote water safety in their community. Students will need to consider the following when developing their campaign:

- What is the campaign's main aim?
- Do you have a slogan or message? What is it?
- Who is your target audience?
- What is the best way to communicate your message?

Discuss with students how they will get their message out there to help raise public awareness. Some possibilities include:

- Short film or animation (using iMovie).
- Clay animation http://www.clayanimator.com/english/menu.html
- Community service announcement (for television or radio).
- Poster or pamphlet to be put up around the school.
- Letter to the producer of your local radio station.

Further activity

Design a series of water safety hazard signs that raise awareness or remind people of the dangers around water. Ensure the pictures or symbols used will be recognised by non-English speaking people.

The Water Smart Award is for primary school children from year 4 to year 6. The award focuses on water safety knowledge, introduction to resuscitation principles and basic reach and throw rescue techniques. http://www.royallifesaving.com.au/schools/in-the-classroom/watersmart/water-smart-award2

Visit the Kids Zone on the Royal Life Saving website for fun games and activities on water safety. http://www.swimandsurvive.com.au/content_common/pg-kids-zone.seo

How much do you know about life saving? Do the *Swim Safe* quiz on the BtN website http://www.abc.net.au/btn/quiz.htm?file=/btn/quiz/js/2013-34swimsafe.js

Related Research Links

Behind the News – Swim Safe
http://www.abc.net.au/btn/story/s3250504.htm

Behind the News – Swim Safe
http://www.abc.net.au/btn/story/s3895056.htm

Behind the News – School Swimming
http://www.abc.net.au/btn/story/s3619584.htm

Behind the News – Drowning Danger
http://www.abc.net.au/btn/story/s2502347.htm

CBBC Newsround – Children around the world must learn to swim
http://www.bbc.co.uk/newsround/30082923

BBC Health – Drowning: `Hidden Childhood Killer'
http://www.bbc.com/news/health-30080768

Royal Life Saving – Water Smart Education Toolkit
http://www.royallifesaving.com.au/schools/in-the-classroom/watersmart/water-smart-education-toolkit

Child and Youth Health – Water safety at home
http://www.cyh.com/HealthTopics/HealthTopicDetailsKids.aspx?p=335&np=288&id=2236

Activity

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Student Satellites

Key Learning

Students will learn about satellites and how they are used to solve problems that directly affect people's lives.

The Australian Curriculum

Geography / Geographical Inquiry and Skills / Collecting, recording, evaluating and representing

Collect and record relevant geographical data and information, for example, by observing, by interviewing, conducting surveys and measuring, or from sources such as maps, photographs, satellite images, the media and the internet (ACHGS027) *Year 4*

Collect and record relevant geographical data and information, using ethical protocols, from primary and secondary sources, for example, people, maps, plans, photographs, satellite images, statistical sources and reports (ACHGS034) (ACHGS041) *Years 5 & 6*

Science / Science as Human Endeavour / Use and influence of science

Scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples' lives (ACSHE100) *Year 6*

Scientific knowledge is used to inform personal and community decisions(ACSHE220) *Year 6*

Science / Science Understanding/ Earth and space sciences / Physical sciences

Earth's gravity pulls objects towards the centre of the Earth (ACSSU118) *Year 7*

Discussion Questions

1. Describe what the students in the Student Satellites story are doing.
2. How high do the students' satellites go?
3. Which layer of the Earth's atmosphere do the satellites reach?
    a. Troposphere
    b. Stratosphere
    c. Mesosphere
4. Each satellite is fitted with a _____to look down at the planet.
5. Which gas helps the satellites to lift into the air?
6. What information do the satellites collect?
7. Give an example of how satellites are used.
8. How do they get satellites into orbit?
9. What problems did the students have with their satellites?
10. What interesting fact did you learn watching this story?

Activities

Blooms taxonomy

Negotiate with students how many activities they complete from each section.

Remember and understand

- Download the full transcript from the BtN *Student Satellites* story page. Highlight all the words that relate to satellites and space. Circle any unfamiliar words. Create your own classroom illustrated glossary of words with explanations. Some words to include: stratosphere, propulsion, helium, GPS, orbit.

- What did you learn from this story? What surprised you about this story? Discuss in pairs and then share your responses with the class.

- Fill in the blanks. An artificial satellite is an _____ (*object*) that has been placed into _____ (*orbit*) around the _____ (*Earth*) by humans.

Apply and Analyse

- Define the following terms – natural satellite and artificial satellite. Provide examples.
    - How many natural satellites does Earth have?
    - Approximately how many artificial satellites does Earth have?

- Write a response to the following question – `*how do satellites impact on our daily life*?'
    - Students will identify how satellites have improved our lives. For example: scientific research, weather forecasting, communications, navigation and Earth observation.
    - Students will then conduct in depth research into one of the ways that artificial satellites are used to solve problems.

- Investigate the world's first artificial satellite, Sputnik. Collect some interesting facts about Sputnik and reflect on why it was a significant event in world history.
    - Further research – Investigate Australia's first satellite WRESAT. When and where was it launched? What sort of data did it collect? Draw a sketch of the satellite including technical information. Watch this video to learn more about the construction of WRESAT.

Evaluate and create

- Understand how a satellite stays in orbit by completing the following task.
  Put a tennis ball inside one leg of a pair of stockings. Hold the end of the stocking and whirl the ball over your head. The ball is held in its `orbit' around your head by the stocking, which is similar to the force of gravity that pulls satellites toward the Earth. If the `gravity' of the stocking were not acting on the ball, the ball would continue in one direction.
    - What two things keep the object moving in a circle above your head? (*speed and force*)

- Further research – explain how gravity works? Who discovered gravity? How does the moon influence Earth?

- Students will collect and analyse a range of satellite images using Google Earth.
  - Locate on a map. Include longitude and latitude markings.
  - Describe what you can see in the image. List the geographical features.
  - How is the information and data in these images useful?
  - Compare the data and information you have collected across several images. For example, how does the information vary from the northern hemisphere to the southern hemisphere?
  - Teachers – refer to this website for more support on reading satellite images http://www.discoveryeducation.com/teachers/free-lesson-plans/reading-satellite-images.cfm

- Students will generate, develop, communicate and document design ideas and processes for their own satellite. Students can work individually or in pairs.
  - Watch these videos for ideas.
    ABC Splash '*Getting satellite design right*' '*And now to build the satellite*'
    http://splash.abc.net.au/media/-/m/1575255/getting-satellite-design-right.
    http://splash.abc.net.au/media/-/m/1575299/and-now-to-build-the-satellite-
    Launch Box Space *vimeo* http://www.launchboxspace.com/
  - Students will use prior knowledge, skills and internet research to help develop their design ideas. Students will need to draw a plan of their satellite and identify appropriate materials, tools and equipment needed to construct the new product.
  - Things to consider – what is the purpose of your satellite? What basic elements will your satellite need?
  - Visit NASA's website for tips on how to build your own satellite.
    http://spaceplace.nasa.gov/build-a-spacecraft/en/

Related Research Links

Behind the News – Satellites
http://www.abc.net.au/btn/story/s3138473.htm

NASA – What is a satellite?
http://www.nasa.gov/audience/forstudents/5-8/features/what-is-a-satellite-58.html#.VGrWmPmUd8E

National Geographic – History of Satellites
http://www.nationalgeographic.com/eye/satellites.html

Discovery Education – Reading Satellite Images
http://www.discoveryeducation.com/teachers/free-lesson-plans/reading-satellite-images.cfm

BtN: Episode 34 Transcript 25/11/14

Coming up.

- A big new report reveals some scary stats about kids and the water.
- Find out about a special list that no animal or plant wants to find itself on.
- And explore the upper reaches of the atmosphere right from your own school.

Hey I'm Nathan welcome to the show! All that stuff will be up soon. But first.

Free Trade

Reporter: Emma Davis

INTRO: It's been called one of the most important economic deals in the history of this country. Australia and China have hammered out a free trade deal that's expected to earn us an extra 18 billion dollars over the next decade. And we've just been told that the government is working on a similar one with India too. But what are free trade deals, and how do they benefit us? Here's Emma to explain.

EMMA DAVIS, REPORTER: Meet Bob. He's a genius! Well, sort of. Bob's spent a really long time making a brand new product and it's really good! It's called Magic Milk! Bob's doing pretty well in Australia selling his product but he wants to sell more. So where better to sell Magic Milk than China! China has a population of one point three billion people. That's a whole lot of potential new customers! But Bob's discovered a problem. His product is more expensive in China because he has to pay tariffs. A tariff is a tax that many countries put on goods that come from overseas. It makes those products a bit more expensive, which encourages people to buy local ones instead.

But Bob's just got some good news! Australia and China have signed a Free Trade Agreement. That's basically a deal between countries to make it easier and cheaper to do business together. And a big part of that is getting rid of tariffs. It's taken 10 years for Australia and China to agree on everything and now that they have it's a really big deal. China is the second largest economy in the world. They make heaps of the stuff we buy and in return, China buys a lot of stuff from us too like meat, cheese, wool and minerals.

Australia makes more than 100 billion dollars a year from doing business with China and thanks to this new agreement, Aussie workers like Bob stand to do even better! Here's why.

Firstly, Bob won't have to pay tariffs when he sends his Magic Milk to China anymore so he can make his Milk cheaper and hopefully sell more or he can keep the extra profit. The cut in tariffs will help a lot of Aussie farmers in the same way. We sell a lot of dairy, beef, wool and other products to China so a small change in price will make a big difference. Another bonus is that a lot of the stuff we get from China will now be cheaper because there won't be any extra tariffs added by our government! So Bob can clear out his old stuff and can get a brand new computer, work phone and even new uniforms made in China for a lower price! The agreement also allows for more Chinese investment in Australian businesses. So because Magic milk is selling like hotcakes in China, Bob's now taking calls from Chinese companies wanting to help him expand.

But there are people worried about the free trade deal. Some say it makes it too easy for Chinese people to set up businesses here which will mean more competition. They also say it makes it too easy for Chinese people to buy Australian property like farms or factories and that could push local people out of the market. Other people say it's unfair for the industries that aren't included in the deal like rice, wheat, cotton and sugar.

The deal has only just been signed and some of the new conditions will take years to be introduced. So while Bob is pretty happy with how the deal's turned out for him, it will take longer to work out if the rest of the country will benefit, too.

Presenter: Okay. We want to know what you think about that deal in our poll this week.

Online Poll

The question. Do you think Australia's free trade deal with China is a good thing?

To vote, just head to our website. While we're on the subject of polls, let's take a look back at last week's. It was all based on a story which revealed you'll work an average of 13 different jobs over your lifetime.

So in our poll, we asked you if you liked the sound of that. And you came back with a definite no. Thanks for taking part!

The Wire

Okay, there were heaps of other big moments in the news last week. Here's a selection.

Palmer United Senator Jacqui Lambie has quit her party. For the past few weeks she's been fighting with the party's leader Clive Palmer after they had a disagreement over pay cuts

for people in the defence forces. But while she's announced she's leaving the party. She says she'll stay on in the Senate as an independent.

*****

Around 400 ABC staff or about 10 per-cent of those working at the organisation will lose their jobs after the government announced cuts of around 200 million over the next 4 years.

TV production in Adelaide, which made shows like Poh's Kitchen, Dream Build and a bunch of different documentaries will also close because of the cuts. And there'll be changes to radio and no weekly local current affairs show anymore.

ABC 2 and 3 will survive and the Managing Director has said he wants to keep making digital content like shows just for iView.

*****

Researchers reckon they've got good news for Tasmanian Devils! For almost 10 years researchers have been breeding them in zoos and wildlife parks across the country because a deadly facial tumour disease has wiped out devil numbers in the wild.

And now they say they have about 600 healthy devils in captivity!

“It's not on the brink of extinction. There are risks if things get worse or something new happens but that's not the case at the moment.”

These ones aren't infected with the facial tumour disease. So researchers want to release them back into the wild to try to throw Tasmanian devils off the threatened species list.

*****

In Melbourne pedestrians are being asked to stick to the right side of the footpath which is the left side. There aren't actually any rules but lots of people reckon it's polite to stick to one side of the footpath. And seeing as Australians drive on the left many think we should walk on the left too.

The Melbourne City Council's been looking into how to make the city more pedestrian-friendly. And a few people have asked it to start a Keep-Left campaign.

*****

And some bad news for chocolate fans. Two of the world's largest chocolate makers say our cocoa supplies are rapidly melting away! They say people are eating more cocoa, the main ingredient in chocolate, than farmers can make.

Droughts and plant diseases have also affected supplies over the last few years. Chocolate makers say all that combined could lead to a global shortage by 20-20. So they're warning that could push chocolate prices up or even mean there won't be enough for everyone to buy!

But no need to worry just yet, scientists and farmers are looking for better ways to grow cocoa to keep more of it on our shelves.

Drowning Report

Reporter: Natasha Thiele

INTRO: The World Health Organisation has revealed that drowning is one of the biggest causes of death among kids worldwide. And they say that's a tragedy because it's a much easier problem to fix than most of the other main causes. So Tash has taken a look at what can be done to reduce drownings both here and overseas.

NATASHA THIELE, REPORTER: These kids in Bangladesh are learning an important skill that most kids here wouldn't ever get the chance to learn. They're learning how to swim. These Aussies came over to teach them the kind of lessons that most kids in Australia take for granted. And they hope it'll save lives. That's the aim of this program in India too. Australians came here to teach kids how to rescue others at the beach.

GIRL, PARTICIPANT: We want to save one life, that's all.

These kinds of lessons are important in countries like India and Bangladesh because in many countries drowning is a bigger danger to kids than you might realise.

A new report by the World Health Organisation has found more than 372-thousand lives are lost to drowning each year, mostly in parts of South-East Asia and Africa. That's about 42 deaths every hour of every day. And half of those are people are under 25, making drowning one of the biggest causes of death for young people across the world. But why?

Well, in some parts of the world. It's normal to see kids playing around ponds, dams and beaches without adults watching them. And despite being surrounded by a lot of water, many grow up not really knowing how to swim. They might not be able to afford lessons or there might not be experienced people who can teach them how.

Drowning has become such a worldwide problem the World Health Organisation wants something done about it. So they're asking all governments and local communities worldwide to work together to come up with ways to teach all kids basic swimming and water safety skills and to train people on how to rescue and resuscitate in an emergency.

In Australia things are better. But many kids still drown here each year, despite the availability of swimming lessons and places to swim. So some people say we should go further and make school swimming lessons compulsory for all kids. They say it would save lives and set a good example for other countries to follow.

It's hoped with more planning and education, the number of drownings across the world will go down and all kids can not only enjoy the water, but stay safe too.

Presenter: Time for our first quiz now, let's go swimming for it.

Quiz 1

How deep is the deepest swimming pool in the world?

10m

20m

40m

Answer: 40m

To give you a better idea that's over 12 storeys deep! But it's not for normal swimming it's a special pool in Italy designed for divers. Now.

Species List

Reporter: Carl Smith

INTRO: Each year an important environmental group releases a list of plants and animals that have recently become endangered and extinct. It's called the red list and this year's list revealed a lot of new species that are in trouble. But how do they work out how a species is doing in the wild? Carl looked into it.

The world's oldest and largest environmental organisation has released its latest list of how animals and plants are doing. It's the 50th year the International Union for Conservation of Nature has released its 'red list', and unfortunately they say lots of species are in trouble.

But how do they figure that out? And what can you do to help endangered species? These are snails, they're pretty gross.

KID 1: Ughh that's disgusting, they're really slimy.

These earwigs aren't much better. But they're both a part of this world, or at least most of them still are. This year one Malaysian species of snail and the world's largest earwig, found only on a small Atlantic island, have been declared extinct.

You might not think that's a big deal but every species plays an important role in its environment. Every time one is lost it can get harder for other critters in that ecosystem to survive.

Unfortunately it's not just those two species that have been lost. Over the past 50 years 832 species have gone extinct. So how do we know when a species is completely extinct? Or if it's getting close?

Well, that's what the 'red list' is for. The International Union for Conservation of nature has been monitoring plants and animals for 50 years. They look at how many individuals

are left, whether the population is growing or declining, and whether the species has enough of its native habitat to live in. If there's enough information that species gets put into a category.

If the plant or animal hasn't been seen for years they classify it as extinct, like the Tasmanian Tiger. If they're only found in zoos it's labelled extinct in the wild, like the Barbary Lion that used to fight Roman gladiators. The hairy nosed wombat is one of 4,500 species that are critically endangered, meaning they're very close to becoming extinct.

Thousands more that are a little better off are labelled 'endangered species', including the Tasmanian Wedge-tailed eagle. And finally there's vulnerable species, like the whale shark, that we just need to keep an eye on.

Unfortunately humans are a big part of why so many species are under threat. We've cleared a lot of natural habitat for resources or to make space for ourselves. We've also killed off some species for raw materials or food.

But environmental groups say we can do more to stop other species being lost. So what can you do? Well one easy way is to help improve native environments. And there are plenty of kids around the country like these guys doing just that.

KID VOXIE 1 *Well for the plants we usually water them each day, when they need it.*

KID 2 VOXIE *We've got some bird boxes up in the trees over there. We put buckets of water at the bottom of trees for koalas and birds*

KID 3 VOXIE *We also check the water in the creek behind me, and we test if it's clean or not, and we also pick up rubbish around our area.*

They say with a little bit of work your school or house can be a home for other creatures too.

KID VOXIE 4 *We can hear a lot of kookaburras, see rainbow lorikeets, the occasional koala, and when we go down to the creek we see a lot of micro-invertebrates*

So there's a few simple ways to help those species living right next door.

Quiz 2

About how many of the world's species have we identified and described?

Is it 14%

54%

Or 94%

Answer: 14%

Yep it's a big world out there.

Now.

Student Satellites

Reporter: Carl Smith

INTRO: Launching a satellite is a huge deal it costs millions of dollars and years of hard work. But now some primary schools are launching satellites of their own. They may not have quite the same features. But they do give kids a look at what it's like in the upper reaches of the atmosphere. Here's Carl with more.

It's not rocket science. Well, actually, it is. Primary and secondary students near Adelaide have launched satellites 40 kilometres into the stratosphere. They're the first schools involved in a new program that's getting kids to explore Australian space. So what was it like? And what did their satellites do?

These pictures were taken by a satellite launched 40 kilometres into the stratosphere. But it wasn't put there by rocket scientists. It was put there by Australian students, and it's giving them a firsthand look at the edge of space.

It's all part of a new program that's helping kids put more satellites into Australian space.

KID 1 T*hey're the mini-cube satellites, and in this case they were used to take photos and videos*

KID 2 *We could just basically see the ground and the curvature of the earth and the clouds.*

The first step is figuring out how they work. Each one has a camera in a lightweight box. There's also a parachute and GPS to help track it. For propulsion they've got a balloon filled with helium. They don't quite get into orbit but they make it far enough to do a lot of the same things as real satellites.

KID 3 *They have cameras attached to all four sides of them so basically when they went up in the air we had a 360 degree view of their lift and then what they could see from there.*

KID 4 *You could add weather kits so it could measure temperature as it's going higher into the air.*

With a bit of practice they could do much more.

All of us rely on satellites every day.

At some point they helped to bring you this program, because they redirect TV and radio broadcasts. They also let us communicate using phones. They're used for G-P-S navigation, figuring out exactly where we are or where we're going.

They can monitor weather patterns, helping us predict sunshine or rain. Spies and the military need them, and they're even used to monitor natural disasters.

There are more than 600 satellites orbiting the Earth to do all that work, but only a handful are Australian.

We were actually one of the first countries to launch a satellite in 1967, but things slowed down pretty quickly after that.

These days we often borrow or rent other countries' satellites, but some people want Australia to build and launch more satellites of our own.

That's easier said than done. They're tricky to make, and to get into space. And you need absolute precision to manoeuvre them into place, so they sit in the right orbit.

While this experiment is a long way off the real thing, it's still good practice that might inspire kids to launch a real satellite one day. And it lets these guys iron out a few problems.

KID 5 *So one of them broke, so that's not so successful. But the other one was fine, and it landed ok, and we had to follow it with the GPS.*

KID 6 *Obviously one of the parachutes failed, so we know to adjust that to try and avoid future failures.*

But, despite the setbacks, this team is already planning their next mission.

Presenter: Sport time now. Here's some of the best moments from the past week.

The Score

Australia's back at the top of the world one-day cricket rankings after beating South Africa by 2 wickets in Sydney. The win helped the Aussies wrap up the series 4-1.

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Australia grabbed another win on the weekend too. This time in an International Rules Test against Ireland. They took out the match 56 to 46. The game happens once a year and pits the AFL's best against Ireland's top Gaelic football players in a match that is a mix of both sports. It borrows the tackling and points from Aussie rules and a round ball and goal net and goalies from Gaelic footy.

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Lewis Hamilton has been crowned the world champion of Formula One for the second time!

Commentator: "Lewis Hamilton, champion of the world!"

The 29-year won the Abu Dhabi Grand Prix - his 11th win of the season. The win means he's the first British double champion since Sir Jackie Stewart in 1971.

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And ever seen Big Wave surfing? Well 20-year old Hawaiian Tyler Larronde caught this massive wave in Maui. The powerful swell was caused by a typhoon in the North Pacific. And although it got the better of him, Tyler's effort is now in the running for best Wipeout of the Year.

Young Writer

Reporter: Natasha Thiele

INTRO: Finally today, meet Amber. She's a young writer who has dreams of publishing her farmyard-themed short stories for kids all over the world to enjoy. That's now pretty close to happening. But what makes her story even more special, are the challenges she's had to overcome to get here. Here is Amber with her story.

AMBER: Hi, my name's Amber. I love writing and my dream is to become an author. Some of the stories I've written are Short Chicken Stories, Poultry Passion and Stories from Highshire Farm. I get inspiration from all of the animals I live with.

But writing isn't always easy. I have a medical condition called Dejerine-Sottas. It affects my nerves and parts of my body like my lungs, back, hands and legs. So my hands are curled as you can see and they can't straighten them and they get fatigued really easily. Last year I had big surgery on my spine and I ended up with a collapsed lung. But I used my recovery time to write and it helped me get through it. It's been pretty good on the whole, much better since the operation but yeah some days it's there, some days it's not.

SHELLEY, MUM: And that's interesting 'cause she barely tells me that she's in pain so she's sucks it up a little bit and gets on with it.

My teacher Ms Ballantyne is helping me to become an author too. She's been awesome.

KATE BALLANTYNE, TEACHER: She is very strong, she's a very resilient person. Her surgery last year was huge and she was in a lot of pain but she still had a smile every time you met up with her

She's put me in touch with a professional editor, who's helping me improve my work.

LYNDEL CAFFREY, WRITER: The first thing about Amber's work is the voice comes across very, very strongly so immediately you start reading Amber's stories, you're in her world.

Next year I'm off to high school and my goal is to publish my own book. So one day you'll be able to read all about Gus and his animal friends for yourself.

Closer

And that's it for this week. But before we go, please remember to jump online right after the show to tell us how you feel about Australia's new trade deal in our poll. And share your thoughts with us about the rest of today's stories in the comments section.

We'll be back next week for our last show of the year so don't miss it! Until then, have a great week! Bye for now.