

Questions for discussion

Episode 12 13th May 2014

Budget Surplus

- 1. In your own words, explain what surplus means.
- 2. Why is the government so keen to get the budget into surplus?
- 3. What does GFC stand for?
- 4. Why did the previous government spend the surplus?
- 5. What is a deficit?
- 6. When paying off a loan to the bank you have to pay interest. What does this mean?
- 7. The government is making cuts to the budget. Discuss.
 8. Do you think the government should raise taxes to bring in more money? Why or why not?
 9. Why do some people argue raising taxes is bad for the economy?
- 10. After watching the BtN story, do you think the government should be trying to achieve surplus or is it ok to stay in deficit? Explain your reasons.

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

Antibiotics

- 1. Discuss the issues raised in the *Antibiotics* story with another student.
- 2. Antibiotics are used to fight bacteria. True or false?
- 3. Finish the following sentence: Antibiotics won't work on...
- 4. What is antibiotic resistance?
- 5. What is the World Health Organisation concerned about?
- 6. No new antibiotics have been discovered for
- 7. How can you slow down antibiotic resistance?
- 8. When taking antibiotics it is important that you.....
- 9. What do you understand more clearly since watching the BtN Antibiotics story?
- 10. How were antibiotics discovered? Share your research with another student.

Do the Antibiotics quiz on the BtN website http://www.abc.net.au/btn/quiz.htm

Bike Licence

- 1. What was the main point of the *Bike Licence* story?
- 2. Do you ride a bike? If so, where do you ride and how often?
- 3. What are the benefits of riding a bike?
- 4. Why does the NSW Roads minister want to introduce licences for bike riders?
- 5. What would cyclists have to do to get a licence?
- 6. Complete a Plus, Minus and Interesting chart about bike riders having licences.
- 7. Do you think bike safety is a big issue? Explain your answer.
- 8. Illustrate an aspect of this story.
- 9. Do you think that cyclists should be licensed? Give reasons for your answer.
- 10. What are some other solutions to the problem?

Vote in the BtN poll. Go to http://www.abc.net.au/btn/polls.htm



Volunteer Week

- 1. Explain to another student what the kids in the BtN story are doing.
- 2. How do the students raise money?
- 3. What do you think they gain from volunteering?
- 4. What are the benefits to the farmers?
- 5. The students think that farmers are important be6. How does volunteering benefit the community? The students think that farmers are important because...
- 7. Think of three adjectives to describe volunteers.
- 8. If you were to work as a volunteer, what would you do? Why?
- 9. What do you understand more clearly about volunteers since watching the BtN story?
- 10. How did this story make you feel?

Check out the BtN Volunteers teacher resource on the Teachers page http://www.abc.net.au/btn/teachers.htm

Robot Girl

- 1. What are the girls in the BtN story studying?
- 2. Why is it a girls-only class?
- 3. What is the name of the program?
- 4. What is the program trying to encourage?
- 5. When it comes to University courses like engineering or I.T. men outnumber women. True or false?
- 6. Describe some of the robots the girls are making.
- 7. Explain how the students program the computers.
- 8. What science and maths knowledge are the girls using?
- 9. How do robots affect our lives?
- 10. What was surprising about this story?

Check out the BtN Robots teacher resource on the Teachers page http://www.abc.net.au/btn/teachers.htm



Activity Episode 12 13th May 2014

Volunteers

Key Learning

Students will develop a deeper understanding of the work of volunteers and why volunteering is a crucial part of the Australian community and its impact on the economy.

The Australian Curriculum

Civics and Citizenship Knowledge and Understanding/Citizenship, diversity and identity

Why people work in groups to achieve their aims, and how they can express their shared beliefs and values and exercise influence.

Year 5

Economics and Business Knowledge and Understanding

Why individuals work, types of work and how people derive an income Year 7

Discussion Questions

- Explain to another student what the kids in the BtN story are doing.
 How do the students raise money?
 What do you think they gain from volunteering?
 What are the benefits to the farmers?

- 5. The students think that farmers are important because...
- 6. How does volunteering benefit the community?
- 7. Think of three adjectives to describe volunteers.
- 8. If you were to work as a volunteer, what would you do? Why?
- 9. What do you understand more clearly about volunteers since watching the BtN story?
- 10. How did this story make you feel?

Activities

Watch the BtN story Volunteers and summarise the story in your own words. Watch the story again and listen carefully. Circle each of the following words/terms as you hear them. Record any unfamiliar words.

Community	Raising funds	Drought
Volunteer week	Rural Connect	Donations
Hay run	Good cause	Lick blocks

Ask students to write what they think is the meaning of each word or term (including unfamiliar words). Swap definitions with a partner and ask them to add to or change the definition. Discuss as a group how these terms relate to this story as an example of volunteering.



K-W-H-L

Working in pairs, ask students to discuss and record what they already know about volunteering. What questions were raised in the discussion (what are the gaps in their knowledge)? The K-W-H-L organiser provides students with a framework to explore their prior knowledge on this topic and consider what they would like to know and learn.

K – what do you know?

W – what do you want to know?

H – how will you find out?

L – what did you learn?

Research questions

- What is a volunteer?
- Why do people volunteer?
- Why are volunteers important to the community?
- Do you volunteer? Who do you know that volunteers?
 Describe what they do.
- How do volunteers demonstrate care and compassion as they help the community?



Economic impact of volunteers

Students research and discuss the impact of volunteering to the economy as a whole. The following questions may help focus the discussion:

- What is the difference between voluntary and paid work?
- How does volunteering benefit
 - o the volunteer
 - o the organisation
- How would the economy be impacted if nobody volunteered?
- There are many different types of work such as full-time, part-time, casual, at home, paid, unpaid and volunteer.
 - o Discuss the differences and how each one contributes to a healthy economy.
 - Encourage students to research some statistics on volunteering. The following website will help students with their research:
 - http://www.abs.gov.au/ausstats/abs@.nsf/Latestproducts/4441.0Main%20Features22010?opendocument&tabname=Summary&prodno=4441.0&issue=2010&num=&view=



Volunteers in your own backyard

- Students may not be aware that most schools have fundraising committees made up of parent/friend volunteers.
 - Ask students to research how much of their school budget is made up of money raised via fundraising.
 - What are some of the ways the volunteers on the fundraising committee raise money ie through what activities?
 - o What are some of the things that have been achieved as a result of the money raised?
- Encourage students to write some questions of their own to ask the Principal/Deputy Principal/parents and other leaders in the school.
- Some ways students can present their research:
 - Information report
 - Infographic
 - Prezi presentation http://prezi.com/index/
 - Oral presentation
 - Glogster http://www.glogster.com/
 - Brochure the Read Write Think website has templates students can use to publish their work http://www.readwritethink.org/files/resources/interactives/Printing_Press/

Raising Awareness

The BtN *Volunteers* story focussed on Year 6 & 7 students of St Mary's in Laidley Queensland, who developed the 'Rural Connect' initiative. Discuss the reasons why these students developed 'Rural Connect'. What have they achieved? What more do they hope to achieve?

Students create a billboard poster to raise awareness about the power of volunteering. Students display their posters in a public space in the school, for example, the Library or Front Office.



Poster art

- What is your message? (is the purpose of your poster to advertise, educate, motivate, change behaviour or attitudes or a combination)
- Who is your target audience? What is the age, demographic etc?
- How will your poster have the most impact? Consider font, images and colour.
- Conduct research to find the latest information/facts.
- Make your poster



Further Investigation

Put Your Hand Up

Students to investigate how they can become a volunteer.

- Talk to the leaders (teachers and students) at school.
- Check your local newspaper
- Contact your local council
- Contact your local neighbourhood house or community centre
- If you play sport or do other activities talk to the leaders of these groups.



Interested in a specific cause?

Students who are passionate about a particular issue might like to search on the internet for organisations that address or respond to issues related to that cause.

They might also like to ask at their local library for information on groups that try to effect change in society such as, human rights or the environment.

The Related Research Links

ABC Rural - St Mary's students meet with drought affected farmers and hear their story http://www.abc.net.au/news/2014-04-30/laidley-fodder-drop/5421168

Behind the News – Volunteer Week http://www.abc.net.au/btn/story/s3208633.htm

Behind the News – Fred's Van

http://www.abc.net.au/btn/story/s3038374.htm

Children's BBC - Guides: Voluntary work

http://news.bbc.co.uk/cbbcnews/hi/newsid 3250000/newsid 3250100/3250193.stm

Volunteering Australia – Volunteer Week

http://www.volunteeringaustralia.org/

Go Volunteer - Volunteering Guidelines

http://govolunteer.com.au/about-volunteering/volunteering-guidelines.aspx

Australian Bureau of Statistics - Volunteering Rates

http://www.abs.gov.au/ausstats/abs@.nsf/Latestproducts/4441.0Main%20Features22010?opendocument&tabname=Summary&prodno=4441.0&issue=2010&num=&view=

Activity Episode 12
13th May 2014

Robots

Key Learning

Students will investigate what robots are, how they work and the impact they have on people's lives.

The Australian Curriculum

Technologies/Digital Technologies processes and production skills

Define simple problems and describe and follow a sequence of steps and decisions (algorithms) needed to solve them Year3 and 4

Design, modify and follow simple algorithms represented diagrammatically and in English involving sequence of steps, branching, and iteration (repetition) *Year 5 and 6*

Use and influence of science

Scientific understandings, discoveries and inventions are used to solve problems that directly affect peoples' lives (ACSHE083) Year 5 (ACSHE100) Year 6

Discussion Questions

- 11. What are the girls in the BtN story studying?
- 12. Why is it a girls-only class?
- 13. What is the name of the program?
- 14. What is the program trying to encourage?
- 15. When it comes to University courses like engineering or I.T. men outnumber women. True or false?
- 16. Describe some of the robots the girls are making.
- 17. Explain how the students program the computers.
- 18. What science and maths knowledge are the girls using?
- 19. How do robots affect our lives?
- 20. What was surprising about this story?

Activities

Classroom Discussion

After watching the BtN *Robot* story invite students to participate in a class discussion. Find out what your students know about robots, what they learnt from the story and what questions they have about the topic. Here are some discussion starters:

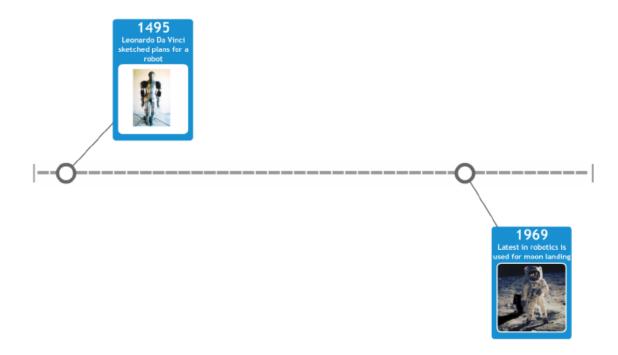


Discussion/Research questions

- What is a robot?
- What sorts of things can robots do?
- What situations would a robot be necessary? (for example, a dangerous environment)
- What are the components of robots?
- How do they work?
- How are they constructed?
- How do robots impact on our lives?
- What does artificial intelligence mean?
- What is the future of robots?

A history of robots

Students make a timeline of key events in the history of robots. They need to include the date, event, a brief description of what happened and an image (if available). Students can create their timeline in any way they choose. An interactive timeline creator is available at the *Read Write Think* website http://www.readwritethink.org/classroom-resources/student-interactives/timeline-30007.html



Robots in space

Ask students to discuss with a partner how and why robots are used in space exploration.

- What can robots in space do that humans can't?
- Why was a robot sent to Mars? (think about the environment)



Mars rover

Students find out more about how NASA's robotic spacecraft, Curiosity, is exploring the surface of Mars.

Briefly describe what Curiosity's mission is then find out more about the components.

Go to

http://marsprogram.jpl.nasa.gov/msl/multimedia/interactives/learncuriosity/index-2.html

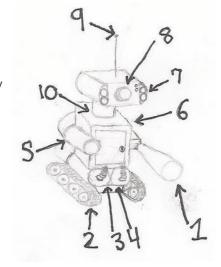
and choose 3 components and describe their function and how the information collected helps scientists.



Design a robot

Students will design a robot that performs a specific task. When thinking about their design, ask them to consider:

- What problem or challenge does the robot solve?
- What are some of the functions your program will carry out?
- Is it a function that a human could perform?
- Does the robot need any special features? If so, what are they
- What will your robot look like?
- How will your robot function? Consider the following:
 - o How will it be controlled?
 - o How does it move?
 - o How will it detect the environment around it?
 - How will it be powered? (energy source)



Students draw a design of their robot and present it to the class. They can present their design in one of the following ways:

- Prezi presentation http://prezi.com/index/
- Glogster http://www.glogster.com/
- Brochure the *Read Write Think* website has templates students can use to publish their work http://www.readwritethink.org/files/resources/interactives/Printing Press/

Behind the News would love to see your robot designs. Submit your designs to BtN btn-education@your.abc.net.au

If students have access to robot making products like Lego Mindstorms, they can design and build a robot that performs a specific task. How are the instructions for the robot written so that it will perform the task?



Mini debate

Debate topic: Robots make our life, better, easier and safer.

Preparing for your mini debate

- Working in pairs, students will prepare a 1-2 minute speech for a mini debate on whether the robots make our life better, easier and safer. One person will speak for the affirmative and the other will speak for the negative.
- Before students begin to construct their argument, ask them to record what they already know about the
 topic and what they would like to find out. Students then research the topic to gain a greater
 understanding of the issue.
- Ask students to list their arguments in point form on paper (without their partner seeing them). When they have done this, ask them to choose the five best points that will form the basis for their debate.
- Students will write in point form, their debate on cards that fit into the palm of their hand. Their debate
 needs to have an introduction (introducing the topic), middle (three main points) and a conclusion
 (restating their position). Students practise their speech and then present the mini debate to other
 students.

Guide for giving feedback

- Was the information clear and accurate?
- Were the arguments logical?
- Were the counter arguments accurate and relevant?
- Comments about the presentation style (tone of voice, body language, enthusiastic, convincing).

Reflection

- How difficult was it to think of points to support one side of the argument?
- Do you think you would have done a better job supporting the other side of the argument?
- Was I able to convince others of my opinion?
- Did my opinion change?
- What did you learn from this activity?

Related Research Links

Behind the News – Robot Boy http://www.abc.net.au/btn/story/s3624418.htm

Robogals – About Robogals http://www.robogals.org/about

NASA - What is robotics?

http://www.nasa.gov/audience/foreducators/robotics/home/what_is_robotics_58.html#.U2mCiPmSx8F

Galileo Education Network – Robotics http://www.galileo.org/robotics/index.html



BtN: Episode 12 Transcript 13/5/14

Coming up

- Should you need one of these to ride one of these?
- Meet the kids giving farmers a truckload of hay.
- And find out why some germs are turning into supervillians.

Hey it's Nathan here you're watching BtN.

All of those stories are just a few minutes away but first let's jump into the big news.

Surplus

Reporter: Matthew Holbrook

INTRO: It's budget week! This week will be all about sifting through the details of the budget working out the winner and losers. And the federal government has said there will unfortunately be quite a few losers as they look to make big savings. But why? Well they say they're after a surplus. Matt finds out what that is.

GIRL: Look at that we're still ages away from surplus.

BOY: I really thought we'd be there by now.

Getting to surplus is a real life journey Australia's been on for a few years now.

WAYNE SWAN, FORMER DEPUTY PRIME MINISTER: Now makes it unlikely that there will be a surplus in 2013.

TONY ABBOTT, PRIME MINISTER: They never delivered surplus.

But it's been a bumpy ride. So what is a surplus, and why is it so important that we arrive at one? Well, a surplus is when you've got more of something than you need. In this case, money. So for the government, a surplus means having money left over after paying for everything in the budget. And many politicians say that's a pretty good place to be.

Australia actually used to have a surplus of cash, but during the GFC, or Global Financial Crisis, the government in charge spent it in the hope it would stimulate the country's economy and protect us.



Once the spare money was all gone, though, Australia went into deficit. That's when you have less money than you need to spend. And the only way to keep paying your bills while in deficit is to borrow it.

GIRL: Oh no, a detour. This is gonna take forever!

BOY: It says we have to go via the bank.

The problem with borrowing the cash you need is that you have to pay it back at some point, and with interest. So the more you go into debt, the longer it'll take to get to surplus.

GIRL: Why are we slowing down?

BOY: I think it's road works.

One way for the government to get there is to spend less money by making cuts in the budget. But that could mean less money goes towards roads, hospitals, education, defence or welfare. And for some, that could make life a little bumpy.

As well as cutting back, the government could bring in more money by raising taxes.

GIRL: I think we have to make a stop here, it's like a toll or something.

BOY: What?

That means some people, or businesses, would have to pay more to the government.

GIRL: I'm starting to think getting to surplus isn't even worth the effort!

And that's an argument, too. Some experts reckon cutting spending and raising taxes might do more harm than good. See, while it might seem like the best idea to save as much money as possible, making big cuts to spending could slow down the whole economy.

People might not be willing to spend as much, and if they're not spending like they usually would, people who rely on that income could lose their jobs. And then the whole country starts hurting.

Which is why some people say we should take the long road to surplus instead. So that's everything you need to know about how to get to surplus. How long it takes to get there is a much harder question to answer.

OK, There was some non-budget related news this week as well, let's catch up on it now.

The Wire

First to an update on what's been happening in Ukraine. People in eastern Ukraine have taken part in an important vote. Rebels in the area say most people voted for independence and to become closer to Russia. But Ukraine's government says everyone should ignore that because according to them the vote doesn't count anyway.



Meanwhile there's still tension and fighting between the government of Ukraine and those who support Russia.

This week more than a million Aussie schoolkids will sit the NAPLAN tests. There's four parts to the whole program, Reading, Writing, Numeracy and Language. But it's not about passing or failing. The tests are there to work out how students are going with their learning overall and whether some teaching programs need a change.

And it's known for its wacky outfits and performances. It's the Eurovision song contest and this year Austria's Conchita Wurst took out the event, wowing audiences with a ballad called Rise Like a Phoenix.

It was a big year for Australia, too, our own Jessica Mauboy became the very first Aussie act to perform in the song contest when she took to the stage in the second semi final.

About 180 million people from 45 countries tuned in to hear the final result.

Antibiotics

Reporters: Emma Davis

INTRO: The World Health Organisation has released a scary warning about superbugs. These bacteria are getting stronger every day and it says we're running out of ways to fight them. Here's Emma to explain what it all means.

Antibiotic captain: Right team, it's time to get out there and fight this bacteria!

Antibiotics: YES SIR!

Antibiotic captain: CHARGE!

EMMA DAVIS, REPORTER: They help get rid of the bad bacteria in your body so you can get better quickly! But the World Health Organisation's now worried we're using antibiotics too often and they say it's going to cause some big problems down the line. Here's how.

Antibiotics are designed to get rid of dodgy bacteria but sometimes, one bacterium can change a little and find itself with a defence against the antibiotics trying to stop it. Because it's now protected, the new bacterium is free to multiply and because antibiotics can't stop it, the bacterium and all of its copies can grow out of control, leaving you really sick.

Over time this fight happens again and again in lots of people's bodies and each time those people take antibiotics it gives the fighting bacteria another chance at becoming resistant



to them. That's called antibiotic resistance and the World Health Organisation say antibiotic resistant super bacteria are a big concern because eventually we won't have any way to stop them.

So why can't we just come up with some new antibiotics that do work? Well they're trying but no new antibiotics have been discovered for 30 years. So while the bacteria are getting stronger, our treatments aren't!

So what can you do to slow this resistance down? Well there's a couple of things. First, only use antibiotics when your doctor prescribes them for you. They'll know when you actually need them and when it's best to let your body fight the infection on its own. Secondly, make sure you finish the full treatment. You might feel better halfway through the packet but there could still be bad bacteria lurking around inside you, so take all your medicine to finish them off properly! And finally, don't share antibiotics with other people, or take them later for different sicknesses. Antibiotics only work on bacterial infections like tonsillitis or an ear infection. They don't have any effect on viruses like some colds or the flu! Take them at the wrong time and they could make you feel even worse!

So those are the best ways you can give these awesome fighters their best chance and at the same time give us our best chance of stopping super bacteria in their tracks.

Antibiotics: Great work team, we had our work cut out for us that time!

Presenter: Good tips there.

Quiz 1

Now for a bacteria test without even needing to go to the doctor.

How far can bacteria travel when you cough?

30cm

1m

or 3m

The answer: 3m

Presenter: Yep, so cover your mouth when you cough!

Up next, should cyclists have to have a licence?



Bike Licences

Reporter: James Bartold

INTRO: The idea's been put forward recently after a couple of really bad crashes. But that'd have a big impact on kids, who rely on their bikes to get to and from school. James caught up with two of them to see how they feel about it.

JAMES BARTOLD, REPORTER: Jackson and Alex are off to school and like most days they're making the trek on their bikes.

Jackson: "It's quite fun to get on your bike, get out there"

Alex: "It wakes you up"

It sounds really nice but the road can actually be a dangerous place for a cyclist. Over the past few years more than a hundred cyclists have been injured or killed on Australian roads. No one knows exactly why but it's got a lot of people arguing about what could be done to make the roads safer.

One of them is this guy, Duncan Gay, the New South Wales Roads Minister. He reckons he might have a good solution bike licences. He says you need a licence to drive a car, and ride a motorbike, so why not a bicycle? Much like motorists bike riders would have to pass a test and pay a fee to get their licence. He thinks by doing this it could make it easier for police to stop them doing silly things and that would help keep them safe.

Both Jackson and Alex spend a lot of time on their bikes. So what do they think about this idea? Jackson can see some definite positives. He thinks if we license cyclists we'll know they can ride.

Jackson: "They'd have to prove that they could ride on their bike, and not make silly mistakes on the road"

Reporter: And then if they do the wrong thing the police could take action.

Jackson: "Police can take licences away, and they can take silly people on bikes off the road."

Reporter: And why should only motorists pay to use the roads?

Jackson: "I guess they should have to pay, but there are some reasons against that"

Reporter: But on the other side Alex can see quite a few faults in the plan. He thinks bringing licences in might stop people riding their bikes.

Alex: "Cycling should be encouraged it's a great way to stay fit and healthy."

Reporter: He also reckons it could be bad for the environment and increase traffic.



Alex: "If we didn't have licences for bikes more people would ride so that's less pollution from the cars and less traffic jams."

Reporter: And Alex worries about the cost especially for kids

Alex: "I don't think we could be afford everybody having a licence."

Reporter: Both guys agree bike safety is a big issue. Bike lanes and helmets have made a difference. And some people have suggested other things too like reducing speed limits and installing special bike traffic lights.

But like Jackson and Alex there's a fair bit of disagreement about whether licences would help or be a step too far.

Online Poll

Okay that's both sides of the debate. Which side do you agree with?

Do you think cyclists should be licensed?

Our website is the place to vote.

Last week we polled you about our Everest story.

We asked if after watching it you would still consider climbing Everest.

We had a big response and it was pretty close to a dead heat.

More than 2200 votes cast and 52 % of them said no, they wouldn't want to climb Everest.

Thanks for taking part.

Volunteer Week

Reporters: Matthew Holbrook

INTRO: This week is volunteer week when we're encouraged to pay tribute to those who give up their time for others. And we only had to look back to last week's show to find a great example. A school from the Lockyer Valley in Queensland briefly appeared in the Wire last week. But we wanted to know more about their idea to donate hay to drought affected farmers. So here's their full story.



KIDS: Let's milk it for what it's worth. And don't be a chicken. Get on board and help a farmer.

TOM: I'm Tom

GABBY: I'm Gabby

SAM: And I'm Sam.

TOM: We're from St Mary's Laidley

GABBY: In Year 6 and 7 class

SAM: And we're here to tell you about Rural Connect

We live in Queensland, in the Lockyer Valley. And at the moment, a lot of farmers are struggling with drought. But without water, our farmers can't grow crops, or look after their animals. So we decided to do something to help.

SAM: It started when we were just thinking about helping people in our local community. But then we heard the story of the farmers and we decided to help them, because in 2013 we were really badly affected by the flood.

We came up with the idea to raise money to buy bales of hay and other stuff farmers really need. We called it Rural Connect.

BOYS: So we approached people from around the local area to help us with rural connect and some farmers are working for free. We had local farmers actually helping because they know what they're going through.

And pretty soon, other schools wanted to help, too.

BOYS: They've been inspired by our project, they wanted to get in and help all the farmers with drought.

In the first twenty four hours, we raised ten thousand dollars, which helped buy all this.

GIRLS: And we've unloaded lots of hay, and we've put lots of lick blocks and dog food on a trailer, and we're just waiting for the farmers. It's not just the farmers that are struggling, it's their families and they don't have enough money to get shampoo and toiletries and all that stuff.

But while the donations have been really amazing so far, we want more Australians to get involved.

CLASS: Hey everybody, how important is Rural Connect? This important!

Another reason it's so important is because farmers have done a lot for us in the past. When our school was flooded, they were fantastic.



BOY 1: We know what it's like to be through rough times and we just like to pay people back for what they've done to help us.

BOY 2: I like being in Rural Connect because we want to help the farmers. And without the farmers, we have no produce, food or stuff like that. It's good to help farmers and pay back from the floods.

We also want people to think about where their food comes from, and why farmers are important to Australia. For us, making videos and raising money, is our way of doing that.

And it'll hopefully help our community make it through this tough time.

Presenter: Thanks for that story guys. Now let's find out more about Australia's volunteers.

Quiz 2

Which gender volunteers the most in Australia?

Men

Women

Or neither, it's equal.

The answer: Women

About 38% of women volunteer although men aren't far behind at 34%

Next up, sport!

The Score

Here's a quick roundup of what you need to know.

Manchester City are this year's English Premier League Champions. The Sky Blues needed a win to seal the title and they got it in style beating West Ham 2-nil. It's the second time in three seasons they've been crowned English champions.



Aussie driver Daniel Riccardo has finished third in the Spanish Grand Prix. It was the young Aussies' first podium finish of his Formula One career. He finished behind Mercedes Lewis Hamilton and Nico Rosberg.

To the AFL and West Coast's Josh Kennedy has kicked an amazing 11 goals in a game. The massive goal haul helped his side beat Greater Western Sydney by 111 points.

The Australian Commonwealth Games Netball squad has been named. And the side includes 7 players who will compete in their first games. Laura Geitz will captain.

And finally more than a hundred thousand people have hit the streets across Australia for the Mother's Day Classic fun run. The 8 k run or 4 k walk helps raise money for breast cancer research. And plenty of kids took part with who else, but their mum.

Robot Girls

Reporter: Emma Davis

INTRO: Robots, we all wish we had one to do things for us and to play with. Well the girls in our next story are learning how to make one for themselves. And even better they're doing it as part of their classes at school. Emma's a robot fan so she went to check it out.

REPORTER, EMMA DAVIS: Here on BtN, we love a good robot story. From thirsty robots, to robots that look eerily lifelike! Robots that could star in movies and even animal robots that make people feel better. So when we heard some kids were making robots as part of their school studies we just had to check it out!

These girls are all engineers in training and these are their creations! They've been making their robots for a while now and as you can see, they do some pretty cool things.

CHLOE: "If it detects the white light, it will shift this way so it will stay on the black line, but if it detects black, it will shift that way so it still keeps on the line and it moves with a sideways movement."

REPORTER: Robots are a pretty fun subject, so you'd think this would be a pretty popular class to be in. But where are all the boys? Well they're not allowed! This is a girls-only class. In fact it's even called Robo Gals! But it's not because they don't like boys, of course! The whole thing is designed to get girls involved in science and maths so they'll be more likely to go on to study them after high school.



Overall, women outnumber men at Aussie universities. But when it comes to courses like engineering or I-T, men outnumber women easily, and that's something Robogals is trying to change! The program started in Melbourne back in 2008. And now it's spread all over the world.

To start with, everyone gets their own kit and they have to put it all together!

CHLOE: "I built the ultrasonic sensor and the light sensor. It took me about a session and a half which is about 150 minutes to complete it."

REPORTER: Then they have to program their robot to do what they want.

KAITLIN: "It's just starting off with the turning, backwards, forwards, you want to keep it at a basic speed."

REPORTER: So you put all the special details into the computer, download it onto the robot, and give it a go!

REPORTER AND KAITLIN: "Ok so we programmed it on the computer, and now it's time to test it out! And fingers crossed it all goes ok. Yeah. And that's it!"

REPORTER: And while all this looks like good fun, there is some serious science and maths knowledge needed to make it happen. For example, the robots have to be able to judge how far away objects are and react the right way. Because they don't want their robots to end up in a crash! That uses a bit of science and a bit of maths. Then, when they're programming the robots, they have to calculate the speed and power of each movement. That uses a bit of science and maths too!

REPORTER: This course has given these girls a look at how fun both subjects can be! So hopefully one day we'll see some of them step up to robots more like this.

Closer

And that bring us to the end of another show!

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