

meet an in2science mentor

Read about
Mentor Rebecca
who is studying
Pharmacy,
interviewed by
students from
partner school
Bendigo South East SC



Hughie: What is the most complicated disease or illness to treat?

Every disease comes with its complications, making them more difficult or complex to treat. Things like diabetes or heart failure are often very difficult because so many areas and functions of the body are affected. HIV/AIDS is another one, because we don't have many drugs that we can use, and we don't know very much about the virus. However, with medicine we are making huge advances in these areas to try and help those diagnosed with them.

Mia: What made you want to become a scientist?

I have always loved science, all through school and even more now. It fascinates me to see the things that we can do with science today, and how far we have moved as a society with it. We wouldn't be able to harness natural energies, such as solar power or wind energy, treat as many diseases or build as structurally solid buildings and bridges as we can now without the scientific advances that led us to this point.

Caleb: Are there different cures for different types of cancer?

Yes, because there are different drugs and therapies that will target different areas of the body. Many bits are common to a lot of cancer types, but there are also differences.

Caleb: Are there any alternatives to getting needles?*

No, I'm afraid not! You can choose not to get the needle, but vaccinations are an excellent guard against disease – they provide your body with antibodies, which your immune system can use to fight off the disease. I know needles suck, but they're a lot better than getting really sick with the disease!

Matt: How hard is it to get a degree in science?

Where there's a will there's a way! Anything you put your mind to you can achieve, and it's the same for getting a science degree. I studied hard at school and got good marks, and then applied for a degree in Pharmacy.

* research is being done on nanotechnology transdermal patches which are like a band-aid, they deliver vaccines etc using nano-scale structures which move between the skin cells and deliver the medicine

www.in2science.org.au



Penguin Parents

a biology activity
for y5-7



Hello,
This activity is for you to try at home with your child and we hope it is both a fun and rewarding experience. Also included is an interview with one of our Peer Mentors undertaken by students at one of our partner schools.
Have fun!
- The In2science Team

Who are we?

The In2science Peer Mentoring in Schools program places volunteer university students as scientists and mathematicians in the classroom. Their role is to help inspire the next generation by being a role model to them of the importance of science, maths and learning.

In2science proudly funded by



Penguin Parents

aim

Can you keep your penguin egg on your feet to stop it freezing?



instructions

- Stand facing your partner about a metre apart
- Put the ball on your feet
- Walk towards each other without letting the ball roll off – it is harder than you think!
- Move the ball from your feet to your partner without it touching the floor or using your hands
- If it falls off your chick will not survive - try again!

How did you do?

what you need

Two people
A small ball (e.g. tennis ball)
or soft toy

time involved?

Less than 30 minutes

what's happening?

Emperor penguins live in Antarctica where the temperature can be as low as -40°C ! They raise their young 90km from the sea but have to travel back to the sea to get their food as they eat fish.

Female penguins lay just one egg. It takes a lot of energy to lay an egg so she needs food afterwards. Once laid, the female gives the egg to the male to keep warm so she can return to the sea to feed. The female transfers the egg by rolling it from between her warm underbelly and the top of her feet to the top of the male's feet. If the egg touches the icy ground, the embryo (chick) inside will freeze and die.

Did you know that penguin pairs practice the move with rocks beforehand to get it right?

further investigation

Penguins huddle together for warmth in large groups and swap who is in the middle of the huddle and who is on the outside so every bird has a chance to be in the warm on the inside. You can have a go at this yourself by using mugs of hot water grouped together and having one on its own.

 Make sure you have an adult with you to pour the hot water.

Can you find out how much faster a single penguin would lose heat compared to one in a group?
What else can you do to stop the hot mugs cooling down?