

meet an in2science mentor

Read about
Mentor Derrick,
who is studying
Physics,
interviewed by
students from
partner school
South Oakleigh SC



Why do you like physics?

I guess I was originally drawn to it because physics explains everything behind what you see. Often you learn things in school that you might not ever really use or experience outside the classroom. But you need only throw a ball through the air to see physics in action. So basically I like that it explains everything and that it has so many applications.

What can you use physics for?

A quicker question to answer would be 'what don't you use it for?' Practically everything you see in your classroom, including the building, needed some knowledge of physics to build. Think about when you turn on a light globe. It's not just magic that makes it glow, it's a massive amount of work that has enabled humans to take energy from a variety of sources, and transform it into light.

Where do you see yourself when you finish university?

One day I would love to see myself managing a power plant. It's sometimes hard to say why you want to do something; I think

it has something to do with wanting to oversee all the processes involved, rather than just being concerned with only one field.

Is what you're doing in university hard?

All through your life it is one step at a time, so you shouldn't be disheartened when you can't understand something now, or if you think that what you are learning right now is super tough and that you can't do it. So I wouldn't say that I necessarily have a harder time now than I did in year 12 or something like that, just a bigger workload is all.

Why do you mentor if you don't want to be a teacher?

Because I felt like it was time to put my hand up and do something new. I had gone through high school without doing anything but studying really, and felt like I had missed out. So I was looking for something to do and I figured I would like doing this.

www.in2science.org.au



Build a Hovercraft

a physics activity
for y8-10

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



Build a Hovercraft

aim

Learn about forces while making a balloon hovercraft

what you need

Balloon

Glue

Old CD/DVD (that you don't mind scratching)

Pop-top lid from a drink bottle

time involved?

20 minutes plus time for the glue to dry

what's happening?

When you blow up a balloon you force air particles into the balloon so they are more squashed together than normal. This makes the air pressure in the balloon high. When you open the lid, the air particles rush out to the lower pressure air outside where they are less compressed. The air lifts the CD up and reduces the friction between the CD and the surface it was on so if you push it, it glides easily along. This is the same science that lets you play air-hockey. An air-hockey table has holes in it that air is pumped through. This reduces the friction between the puck and the table so you can slam goals at high speed.

Friction is a force between objects that are moving against each other. Although a surface may look smooth to the naked eye on a microscopic level it is jagged. The rough edges snag as the surfaces move over each other. How is this reduced in car engine parts or in the joints in the human body?

further investigation

What happens to the hovercraft if you...

Change the surface it is gliding on?

Use a vinyl record, Frisbee, or something else instead of a CD?

Use a different balloon?

instructions

- Glue the pop-top lid to the CD/DVD so it completely covers the central hole
- Wait for it to dry
- Push the lid down so it is 'closed'
- Blow up the balloon and hold it so you don't let any air out
- Carefully put the lip of the balloon over the bottle top
- Lift/open the bottle top, push the hovercraft and watch it go!

