On Thursday September 15 the St Catherine of Siena learning community spent the day exploring various fields of science in our Personal Elective Program (PEP). Students nominated a scientific area that they wanted to learn about and spent the day in cross-age, interest based learning groups. It was a fantastic day of rich learning, new experiences and hands on exploration. This newsletter shares some of the great learning undertaken on the day.

**Physics**

PEP physics saw lots of budding aircraft engineers designing, drafting, creating and testing flying machines. Not only did they make hot air balloons, rockets, gliders and planes but they learned about and experimented with all the different areas of physics such as sound, friction and force. It was a great day of learning, experimentation and creativity.

**Chemistry**

In the Chemistry PEP group, students learnt about atoms and what they are made of—protons, neutrons and electrons. They conducted a lot of experiments, such as making bouncy balls, representing atoms of the periodic table using marshmallows and m&ms, observing the flames of candles, making ice cream and examining pop rocks.

Students enjoyed seeing how party food can be composed of different molecular structures and chemical reactions.

**Forensic Science**

In PEP Forensic Science we investigated what a Forensic Scientist has to do to help in solving crimes. We started our day with an incursion where we were able to examine crime scenes to search for evidence. We found fingerprints, shoe prints and DNA which led us to find whodunnit.

After snack we got fingerprinted and found whether our prints were whorls, arches or loops. Did you know that every person’s fingerprints are unique to them? We then used our knowledge from the incursion to analyse a piece of handwriting to find a (fake) criminal in our group!

We reflected that in our PEP we were all engaged in our learning through hearing interested voices and seeing reflective work.
Oceanography

Oceanography had a busy day based around a field trip to Williamstown. We started the day in the classroom learning about the effects of pollution on our waterways. We were excited to be going on a bus to Williamstown to have a park ranger talk to us about the diverse wildlife that lives in the Point Cook Coastal Reserve. She talked about the why the park was established, threats to local wildlife and a lot of other interesting facts. We also did a beach clean up to remove rubbish from the ocean. Back at school we used the rubbish in posters as a reminder to others to not litter.

Meteorology & Astronomy

Our PEP day started with a bang as we became astronomers and began to explore the universe. We made mobiles of the planets in the solar system - My Very Energetic Mother Just Served Us Noodles was the mnemonic that we used to remember the order of the planets from the sun. The rest of the day was filled with looking at rockets blasting off from Earth and seeing what they need to have to travel into space. We then got into groups and made our own rockets out of recycled boxes. We all learnt so much and cannot wait to see what PEP brings us next year!

Biology

PEP Biology student reflections:

Today in PEP I got to dissect an ox heart.

Today in PEP me and my partner got to cut open a sheep’s eye ball.

We got to dissect a liver and it felt squishy.

I learnt that a baby bee is called a larvae.

I had never heard of an umbrella bird before.

In PEP we had many fun biology activities.

In Biology today, I dissected a lung and learnt some new animal names.

In the heart there are little tubes that make the blood travel through the heart.

Food Science

In the Food Science group we learnt how to use everyday ingredients that can be found in our pantry to do fun and interesting experiments. We also had Ben the Scientist from Fizzics Education visit us with all his science equipment and show us all the fun things scientists do. Here are some of the things the children in the Food Science group learnt:

I learnt that you can make a big ball of flame with flour, oxygen and a blow torch. – By Abby Yr 4N

I learnt that you can make an egg float in water by adding salt. – By Ariel Yr 1H

I learnt that you can use different atoms to change the colour of fire. By Cameron Yr 5H

I learnt that when you put food dye in water and put a piece of cabbage leaf in it, the cabbage will soak up the coloured water and it will change colour. By Tyler Yr 3L
**Zoology**

At the Werribee Zoo, everybody that was in Zoology got to have a look at the animals and I got to see the cute Meerkats. We also saw the muscly Gorillas. We learnt that there are different kinds of Zoologists Including Mammalogists who Study Mammals, Entomologists who study Insects and Ornithologists who study Birds.

I liked the Werribee Zoo. Ryder 2K

The first thing we saw at the Werribee Zoo was the Meerkats and they put on a show for us. They told us what Meerkats eat and how one of the Meerkats had a shorter tail because it was born like that. Next we went on the Safari bus and we saw lots of cool animals like Camels. We learnt about habitats. I really liked the excursion. Keira 2K

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Computer Coding

Using the inspiration of Steve Jobs (Microsoft) and Mark Zuckerberg (Facebook) students learnt about the world of possibilities in employment around the area of computer coding. Students used 2 different websites that began with step by step instructions graduating to far more advanced coding. In addition students were exposed to a unique device which enables interactive coding called the Makey Makey.

Student Accounts

My PEP group was computer coding. We learnt about what goes on the computer and we used the websites Scratch and Tynker. I have used these websites to code since the day- Isaac 6U

It was fun and I learnt about coding, it was great because I haven’t done any coding for games before- Bill 5Q

I learnt some things about coding, it was fun. I did codes to complete levels- Jack 4P

Palaeontology

The Palaeontology group learnt that palaeontologists are scientists who study the past, by looking at fossils of plants and animals that are more than 10,000 years old. In the morning students investigated dinosaurs through activities, such as researching online and in books, completing match-up games and colour in sheets. Later in the day students had an incursion and explored many real life fossils of dinosaurs which roamed our Earth over 60-100 million years ago, such as eggs, footprints, bones and claw prints of many dinosaurs, like the Tyrannosaurus-rex, Triceratops and Stegosaurus. Then we discussed how diet (herbivore, carnivore, and omnivore) and predator and anti-predator features all work together to help dinosaurs to survive in their habitat and students made their own dinosaur from clay. The students had a great time and learnt lots of new things about dinosaurs!

Engineering—Construction

In PEP I went to engineering, and we did a lot of things like constructing things, watching a construction slide show and we had a incursion. When we were constructing things we used Lego, construction block tubes and connectors and we used other things, like connecting flowers. The slide show we watched was about different kinds of engineers and what kind of things engineers make and repair, such as bridges, roads and machinery.

Then we had the incursion which was about how machines work and what is used to make them,. First we had a discussion about what was in one of the tractor type machines with big shovels that people use for construction, yeah those thingys! We talked about what engineers used for the wheels, the seats and the steering wheel and other parts. Then we looked at water pressure and air pressure, Jackie (the lady doing the incursion) showed us a cardboard claw powered by the power of air pressure. Then we did a little experiment, about which is stronger: water pressure vs air pressure. We got a tube, and at the ends there were those things doctors use for injections, but the plastic ones, and one filled with water and the other filled with air. So we experimented and played around with the tube.