



THE BRAINWAVES CLUB



Semester 1: The Einsteins – Grades 4 and 5

Venue: Brighton Grammar School

A SMORGASBORD OF MATHS AND SCIENCE

Meeting One: It's Chemicool!

At our first meeting we will explore the elements and conduct a range of experiments to identify various substances using chemical change. We will also ask how we could identify and distinguish the various substances using different methods.

Meeting Two: Who Dunit? (focus: forensic science& problem solving)

Club Members will use a variety of methods to solve a mystery. Using forensic science, code cracking and investigation techniques , we will aim to solve the case. Will you identify the right suspect?

Meeting Three: Sports Science (focus: physiology & sports science)

This meeting we will look at the body and its muscular and skeletal structure. We will explore how our body works in various situations and during different sport activities and how this is controlled by our nervous system. We'll also discuss bio-mechanics, reaction time, and agility in relation to sports' performance. You will get the opportunity to conduct a few tests.

Meeting Four: What A Problem! (focus: mathematics and problem solving)

Today club members will be put to the challenge of solving various problems in teams. Mathematics and problem solving will be the focus. Members will then compete in teams against each other to solve a tricky maths puzzle.

Meeting Five: A Trip Back In Time (focus: geology and astronomy)

Travel back in time. What did Melbourne look like around you 3000 years ago? Keep travelling back in time to find out how the Dandenongs formed, what Port Phillip looked like and what Mount Macedon and Hanging rock were like. Watch out for the lava! Take a trip even further back in time until there was no Earth and no Moon. We will have to wait around a bit for the Earth to form. Even once we have an Earth to stand on it's not a very comfortable place.

Meeting Six : Tick Tock (focus: technology of time)

Tick-Tock, Tick-Tock. The first clocks used the sun to tell the time of day. We will make a sundial to take home and take a look at some of the complexities of telling the time at different times of the year. Pendulum clocks have many moving parts, what do they all do? Pendulums just swing back and forth, they look fairly simple, but what is it about pendulums, that makes it possible to build such an accurate clock?

Meeting Seven: Fly Into The Animal Kingdom (focus: animals and flight)

Let's fly into the Animal Kingdom. Buzz-buzz. Tweet-tweet. Some very different kinds of creatures can fly. We'll compare them with the other flying and non-flying creatures. Do birds, bats and insects fly in the same way? It would be great fun to be able to fly like a bird. What are the real advantages of being able to fly? How do flying creatures live differently? Build a model of a flying creature.

Meeting Eight: Aeroplane Maths (focus: mathematics)

Today you'll be problem solving "in" an aeroplane. Maths problems appear in all kinds of places, including the sky! In this session you will solve the kinds of maths problems that might have to be solved by people working at an airline, including the pilots, engineers, flight attendants and ground staff. Can your group pack the luggage, fly the plane, seat the passengers, run the airport and re-fuel the plane all at once? You'll need your maths brain in gear for this one!

What to Bring:

A pencil case with pens, pencils and scissors

A snack and a hat

Something to store your important paperwork, for example a document wallet or display folder

An A4 notebook and some loose paper

A sense of adventure!

About The Presenter:

Justin McKenzie has a passion for Mathematics and Science and a drive to pass this on to his students. Initially an electronic technician Justin now specializes and has presented many well received programs with G.A.T.E.WAYS. His infectious enthusiasm will have his students revelling in the world of science, mathematics and technology.

Emma Carter has Bachelor Degree in Science, majoring in Physics and Electrical Engineering from the University of Melbourne. She has taught secondary school maths, science and physics and worked at Scienceworks. She is currently working as the Outreach Education Officer for the Discovery Science and Technology Museum.

