The BRAINWAVES Club

Term 4 2021 |Neutrinos |Years 5 and 6
Venue: Brighton Grammar School
Term Fee: $285
60 SECOND SCIENCE
A TECHNOLOGICAL TIMEWARP

Did you know that if you condensed the history of Earth into 60 seconds, humans would have existed for less than the equivalent of a second! Scale over time *and* space is important, but often difficult to comprehend. Therefore, it is a perfect challenge for our highly-able Neutrinos. On our time-travel expedition, we will trace chronicles of chronology from the dawn of the universe and through the technological advancements of the '*Anthropocene*', before finishing with what the future holds. Each meeting we will ***discover*** new and exciting information, ***apply*** it in hands-on activities and ***create*** something to further our scientific skills. This program is sure to make time stand still!

Meeting 5: **Medieval Disease Detectives**
Focus: **Epidemiology & Pharmacology**
Hear ye, hear ye! Ye olde alchemist has come down with a cold and it's up to you to find a cure. Back in the Middle Ages, cures for diseases were anything but. Thankfully, medicine has come a long way since medieval times and treatments are only a short trip to the pharmacy away. Thinking about epidemiology, we will explore how germs spread across a population, and how pharmacology can be used to beat bacteria.

Meeting 6: **The Evolution of a Revolution**
Focus: **Engineering & Technology**
During the industrial revolution, inventors came into their element. Edison, Bell, and the Wright brothers are a few famous names that spring to mind; although one you may not have heard of is LaMarcus Adna Thompson, inventor of the roller coaster. In Melbourne, we have the oldest operating coaster on the planet! Today, we will construct our own coasters and investigate how these ingenious inventors changed the world one invention at a time.

Meeting 7: **Buenos Dias El Niño y La Niña**
Focus: **Atmospheric Science**
Welcome to a new era, the '*Anthropocene*', named so for human influence on the planet. The climate is changing; there is no doubt about that. Although, what does this mean for us? Scientists point to longer stays for our friends El Niño and La Niña, opposite phases of the El Niño Southern Oscillation (ENSO). In this workshop, we replicate the ENSO, and explore whether we have entered a dawn of natural disasters that science can solve.

Meeting 8: **The Final Frontier**
Focus: **Rocket Science & Physics**
Figuring out how to get from one planet to another, it's not rocket science… or is it? Our time tale finishes where it all began, outer space. Will you go where no Einstein has boldly gone before? In this last session, we look to the skies and wonder if there are planets beyond Earth that can sustain life? Newton's laws apply on Earth, what about in space? To answer these questions and more, we will create mini-rockets and experiment with non-Newtonian fluids.

What to bring:
Please bring a notebook and a well-stocked and labelled pencil case (containing writing pencils, sharpener, eraser, coloured pencils, textas, scissors and a glue stick.

About the presenter
Jesse Chambers is a STEM educator with a double degree in science and education with honours from Monash University and a Master of Science Communication Outreach from the Australian National University. He is passionate about creating learning experiences that excite students and teachers about science, having developed workshops for UNESCO and Science Circus International, as well as many exciting programs for G.A.T.E.WAYS.