



Term 1 2021: Einsteins – Years 3 and 4

Venue: Alphington Grammar School

Term Fee: \$285.00

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Legendary science fiction writer, Arthur C. Clarke, once said 'Magic is just science that we don't understand yet'. Uncover the marvelously 'mystical' principles behind engineering feats, chemical reactions, collisions of the elements and algebraic equations this term as we put on our truth-seeking lab coats and fact-finding goggles to unveil the science and maths behind some of the world's most mysterious occurrences.

Meeting 1: Easy Win Tug of War – Powerful Pulleys

Focus: Physical Science and Mathematics

Want to improve your chances at winning a tug of war? A famous mathematician and inventor from ancient Greece once said, 'Give me a place to stand, and I shall move the world'. Archimedes was actually referring to the conservation of energy and the relationship between force, distance and effort (work done). Einsteins, in this session you will undertake activities to investigate this principle and learn how simple machines make work easier. You will then create your own pulley system with which to take on the 'tug of war challenge' - and win!

Meeting 2: Guest Club Leader

Meeting 3: Liquid Rainbow

Focus: Chemical Science and Mathematics

You may already know that objects placed in a liquid will either float or sink, but did you know that liquids themselves can also float or sink? Proving that he had many strings to his bow, the great Archimedes discovered the physical law of buoyancy, otherwise known as the Archimedes principle. The principle states that a submerged object experiences a buoyant force equal to the weight of the liquid it displaces. In this session we will undertake a quest to learn how the density of an object can affect its ability to float or sink... then, be prepared to amaze as you showcase all that you have learnt by 'casting' a liquid rainbow.

Meeting 4: The Magic with Matter

Focus: Chemical Science

Matter is everywhere around us - from the air that we breathe to the clothes that we wear. You may not be able to pull a bunny out of a hat, but did you know that you can turn steam into water, and then ice, and then back again? How can matter move from one state (solid, liquid or gas) to another? And how do non-Newtonian liquids such as Oobleck, act as both a liquid and a solid? Get ready to discover the properties, states and interactions of matter as we create kinetic sand and a fizz inflator.

What to bring

For every session, students will need to bring an exercise book and a well-stocked pencil case that includes: writing materials, textas, scissors, sticky tape and a glue stick.

About the club leader: Phuong Choo

Phuong holds both a Bachelor Degree in Education (Honours) and a Master Degree in Education from the University of Melbourne. She has been teaching for over 10 years and is experienced with designing and implementing gifted programs in the independent school sector. Phuong is highly passionate about immersing her students in a rich culture of thinking where thinking processes are not only made visible and valued, but are embraced for life-long learning. Phuong is fortunate to have worked closely under the guidance of Ron Ritchhart, a senior research associate from the Harvard Graduate School of Education.