

The GATEWAYS BRAINWAVES Club

Term 3 2021: Einsteins – Years 3 and 4

Venue: Bondi Public School

Term Fee: \$285.00

THE INCREDIBLE DAILY EXISTENCE OF SCIENCE

31 July

Meeting 1: Mixing it Up!

Focus: Chemistry

When we go about our daily lives, we often interact with the chemical world. Whether we cook a meal, make a cup of tea or do the washing, there are often physical changes and chemical changes taking place. In this meeting, the Einsteins will investigate how chemical reactions differ from physical reactions. Einsteins will investigate the two ways in which we can alter our chemical surroundings: by inducing chemical reactions and by physically mixing substances. Einsteins will then discover how to experimentally distinguish between these two phenomena and will perform a series of experiments to explore how various types of mixtures can be separated. Warning: this club meeting is going to get messy!

14 August

Meeting 2: Grow A Spine

Focus: Anatomy/Physiology

Our spinal cord plays an essential role in our daily lives. The spinal cord is like an information processor, rapidly integrating nerve signals that allow us to sense, move and respond to our environment. Indeed, without our spinal cord, we would be unable to feel, move or control a large proportion of our body. In this meeting, Einsteins will explore the integral role that the spinal cord plays in our everyday lives. In the process, they will learn how to model the structures of the spinal cord, and how to initiate a wide range of spinal cord reflexes that help us to adapt to our surroundings.

28 August

Meeting 3: Enlighten Me!

Focus: Physics

All around us we are surrounded by matter; the house, the car, the trees in the back yard... the list just goes on and on. Given all of this, it can be very easy to forget that so much of our world is not made of physical matter. In this meeting, Einsteins will explore the properties of a fundamental yet often forgotten component of our world: light. In the process, they will investigate what links and separates the different types of electromagnetic radiation and perform experiments to uncover the myriad of applications that light has in the modern world. Come and be enlightened!

11 September

Meeting 4: So, How's the Weather?

Focus: Meteorology

Let's face it: whether we like it or not, our lives are somewhat dictated by the weather. After all, when was the last time you went to the beach in the rain? Yet, for something so important to our lives, most of us know surprisingly little about what causes the weather around us. In this meeting, Einsteins will learn about the driving forces behind the weather patterns that we see every day. They will then get the opportunity to step into a meteorologist's shoes and report the weather, as they learn how to draw and interpret weather maps and common weather-related diagrams. Finally, they will perform a series of experiments to simulate the processes behind various weather patterns. Can our Einsteins learn how to predict the weather? Weather or not they can, this meeting will be a lot of fun – rain, hail or shine!

What to Bring:

Each week please bring an A4 notebook and a well-stocked pencil case. Please also bring a hat, drink and snack for the break (no nuts please).

About the Club Leader:

Rengen Parlane has a Bachelor of Science (Advanced), and is currently studying the Doctor of Medicine at the University of Sydney. He is passionate about both disciplines, and how they inform the world around us. Rengen has helped to educate young learners at G.A.T.E.WAYS for the past three years, including as a Brainwaves Club Leader, Eureka and Journeys presenter, and loves sharing the inspirational world of science with eager young minds.