



## A G.A.T.E.WAYS JOURNEY

for gifted Year 1 and 2 children

with a love of science

*'Into the Mystical, Mesmerising*

*Land of Lumina'*

**G.A.T.E.WAYS** is an independent organization offering challenging and enriching activities and experiences to develop and extend highly able children.

This SCIENCE JOURNEY, who are curious and love to investigate, will run over four mornings. Come join us on an enlightening Journey to the magical land of **Lumina**. Each week you will meet a marvellous expert master, who will help us unravel the mysteries of how and what we see. There will be activities galore as we explore the nature and behaviour of light, conduct experiments with mirrors and lenses and have heaps of fun with optical illusions. By the end of the Journey, having completed your apprenticeship, you will have earned your credentials and become a Master of Light yourself!

### **Session 1: The Maker of Lumina**

On our arrival in Lumina we meet **The Maker**, the Source of Light, who is excitedly waiting to show us where light comes from. We discover how light is produced by the sun, candles, chemical reactions and electrical circuits. Do you know why you can't see in the dark, why objects make shadows, what makes objects different colours and why some people are colour blind? No? Then you'll find out from **The Maker** today!! Not only that, but you'll make electricity flow through a circuit, globes light up with a battery, sunlight split into a burst of colours and even make some pictures turn upside down. Lumina is *such* a cool place that you won't be able to wait to come back!

### **Session 2: The Mirror of Lumina**

Meet **The Mirror**, the Master of Reflection, whose path in life is not always straight but often takes many twists and turns. Today in Lumina we'll have so much fun as we learn from **The Mirror** and become reflection experts ourselves. We'll investigate mirrors to work out how they reflect light and we'll even make a mirror of our own. I wonder how clear an image yours will make! You will test your skill at mirror writing and try to negotiate a way through a printed maze while looking into a mirror. You will also use mirrors to see around corners and to make beautiful patterns. What MAGIC!

### **Session 3: The Magnifier of Lumina**

Introducing **The Magnifier**, who makes a big deal out of everything and leaves no detail uncovered!! This session we'll explore the magnifying power of water, lenses, magnifying glasses and microscopes and we'll use them to reveal and record unexpected and extraordinary details on the surface of everyday things. This session will also challenge you to identify mysterious objects which have been magnified many times over. How many will you guess correctly?

### **Session 4: The Mirage of Lumina**

In our final Journey session we will meet **The Mirage**, The Mastermind of Deception, who is up to all kinds of optical tricks. We'll be bamboozled by a range of optical illusions and be amazed to see how lines, colours and patterns can be used to create images that trick our brains into seeing things that may or may not be real. Crazy!! Have you ever wondered why the road appears to be wet on a sunny day? Wonder no more as we find out the science behind this illusion. Today you'll also learn how to draw an impossible shape and make an optical illusion to take home. By the end of this session you will be fully qualified and, as a result, you will receive your **Lumina Master of Light Diploma** at our graduation ceremony!

## **Homework Requirements & Assessment**

Homework may be set after each session to give students extra time to explore the new concepts. At the end of the program a short, written report will be completed on each student and forwarded home to parents. A copy should be made and forwarded to the school.

**What to bring:** Please bring a snack (no nuts please), a hat (Terms 1 and 4), writing materials, and a notebook.

### ***About the Presenter***

Maureen Frith has a Bachelor of Arts Degree, a Diploma of Teaching and a Graduate Certificate in Gifted and Talented Education. She has taught for 45 years in both Primary and Secondary schools and has performed the role of Coordinator in Science and Technology, presenting enrichment and extension programs for students and professional development for teachers. She has helped to develop curricula, including VELS Science and Thinking Skills documents. She is an active member of the Science Teachers Association and the Science Talent Search Committee. For many years she has been a club leader for the G.A.T.E.WAYS Brainwaves Club, specialising in Science, Technology and Mathematics. As part of her Bachelor of Arts degree Maureen has studied Pure Mathematics, which she is qualified to teach to Year 12. Since then she has maintained a keen interest in Mathematics, extending her own skills and knowledge, as well as providing extension activities in Mathematics for gifted and talented students in her school. She encourages students to be active enquirers, develop higher order thinking skills and to share their knowledge and appreciation of the amazing universe in which we live.