

# A G.A.T.E.WAYS JOURNEYS PROGRAM

for gifted Year 5 and 6 children

with a love of science

## 'Superhero Science'



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

This *JOURNEY* for both girls and boys will run over four sessions. Superheroes may be fictional but the science behind our beloved caped, lycra wearing, identity hiding, crusaders is quite often real. Through this journey we explore the scientific principles behind our superheroes and their actions by conducting experiments, testing hypotheses and exploring what makes a superhero so super. Each week we'll discover the why and how of various superhero scientific phenomena, putting together clues left behind at the crime scene, solving the crime and catching the super villain; using our super science knowledge and deductive reasoning no villain is safe.

### Session 1: Superman

Faster than a speeding bullet, faster than a locomotive, and able to leap tall buildings in a single bound ... Exactly just how strong is Superman? And is it possible to stop him with anything other than Kryptonite? In answering these questions we explore gravity, speed, acceleration and the strength of steel and its alloys. We take a look at Superman's ears to see how supersonic his hearing is and explore what the deal is with Superman's eyes that enables him to have x-ray vision.

### Session 2: Wonder Woman

Under the microscope this week is none other than the female fighting machine, Wonder Woman. She's an Amazonian warrior with amazing strength and an ultra cool stealth aeroplane. We examine what materials make her cuffs bullet proof and how muscles work to make WW so strong. WW is also famous for her lasso of truth, so we're going to investigate lie detectors and the physics principles that make a lasso work. To finish off we're going to conduct an experiment to see whether a superhero costume can really conceal someone's true identity.

### Session 3: Spiderman

People wouldn't be scared of spiders if being bitten by one meant ending up with super cool spider powers. What exactly happened to Peter Parker when he was bitten? We explore how spider venom and genetic mutations work. We also conduct some experiments to see how Spiderman does whatever a spider can: spider-strength, spider-webs, spider-grip, and tingling Spidery-senses.

### Session 4: Batman

Batman is by far the coolest of all superheroes because he doesn't actually have any superpowers. Instead, Batman relies on the power of science and deductive reasoning to catch his crooks. We'll examine how all the gadgets and gizmos of Batman's utility belt work - how the batarang flies and how much weight the grapple gun can bear. We also take a look at some lesser-known bat tools: shark repellent and the ultrasonic bat beacon.

### About The Presenter

Narelle Wood has completed her Bachelor of Science, with Honours in Genetics, as well as studying Chemistry and English. Having an unusual combination of subjects has enabled her to work creatively in the classroom, including science as part of integrated programs. She completed her Masters of Education in 2004 and has taught in a variety of Government schools throughout Melbourne, most recently as the Head of English and Literacy at an all girls' school.

At the moment she has been working with schools across Victoria in the area of designing curriculum to engage students in their learning.

**Requirements:** Bring writing materials, a notebook/paper; a ruler; a calculator; a labelled, small photograph of yourself; a snack (no nuts please); Also bring a stamped, self-addressed DL envelope for your report.

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