G.A.T.E.WAYS is an independent organisation offering challenging and enriching activities and experiences to develop and extend highly able children. Established in 1994, G.A.T.E.WAYS runs a range of stimulating school programs as well as the Saturday Brainwaves Club. This journey for both girls and boys will run over four sessions. It’s the year 2035. You walk down the aisle of your local supermarket. You see Taylor Swift and Gary Ablett Jr both reaching for the chocolate-flavoured brussel spouts! Hang on – what are Taylor Swift and Gary Ablett Jr doing in your supermarket? It’s not them – they’ve been cloned! How much of this is fact and how much is fiction? Find out all about genes, inheritance, DNA and genetic technologies - what’s currently possible and what’s in the future... totally awesome!

Requirements:
- Bring A4 ring binder with paper; plastic sheet protectors; coloured pencils or Textas; morning tea (no nuts please); a small photograph of yourself to the first day – to be returned with your report; a stamped, self-addressed envelope for your report. Students will bring a small vial of DNA home with them in Week 1

Session One  Introduction
What are genes? Where are they found? Where do we get them from? Can I eat them? In this session we’ll answer these questions and investigate the units and patterns of inheritance that are found in all living organisms, including humans. We’ll look at cells and chromosomes then ‘make’ some DNA!

Session 2  Hairy Knuckles and Heredity
Why do some people have hair on their knuckles while others don’t? How can two brown-eyed parents have a child with blue eyes? Come with us to unravel these genetic secrets, learning about inheritance and your own special genes. Discover how genetic traits can be traced in family trees. We’ll also experience a hypothetical ‘SchoolScreen’ program, where a genetic test decides which type of high school a student will go to: will yours be sporty, arty or studious?

Session 3  Guess what’s coming to dinner?
Can you imagine eating a steak with plant genes that provide vitamins from vegetables without you actually having to eat them? This is certainly in the realm of science fiction now but may not be in the future. You’ll find out how genetic engineers can combine DNA from different species. What tools do they use? And, more importantly, WHY do they want to do this? We’ll look at some examples of GMOs and come up with our own fantasy foods before debating – is it a good idea or not?

Session 4:  A stack of the clones
Have you heard of ‘Dolly’ the sheep, the world’s first and most famous clone? Find out about cloning in animals and plants then journey into the future to create your own ‘designer person’ using a chromosome code. Learn all about ‘bioethics’ and take part in the ‘GenEthics’ debate. The journey ends with a special GeneMagic quiz covering all four sessions.

Homework Requirements & Assessment
Between sessions students may be asked to do some homework. 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

ABOUT THE PRESENTER

Bobbie O’Brien completed her undergraduate Bachelor of Arts/ Bachelor of Science degrees at the University of Melbourne in 2006. She completed her Bachelor of Science (Degree with Honours) in the Developmental Epigenetics Laboratory at Murdoch Children’s Research Institute in 2007, and completed a Master of Philosophy in the same group in 2010. Bobbie is also a qualified primary school teacher. Bobbie is passionate about science and education and enjoys combining these passions with G.A.T.E.WAYS.