



A G.A.T.E.WAYS JOURNEY

For gifted Year 5 and 6

children with a love of science

creative thinking and detective work

'MYSTERY ON JINGLIS ISLAND'

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.

Freddie Fruitarian has been found dead! In fact the whole village has been deserted. What has happened on remote, tropical Jinglis Island, and where have the villagers gone? Your task is to sail there with your team of forensic detectives, survey the 'crime' scene and identify clues to solve the mystery. You will encounter strange and beautiful creatures not found anywhere else, and an ancient tribe who has lived on the island for thousands of years. As scientists, we will investigate the evolution of plants and animals, grow fabulous fungi, and follow a genetic trail to discover what has happened to Freddie and his friends. We will examine a range of cutting-edge forensic science techniques, including DNA profiling, how genetic diseases are inherited, microscopy of living organisms, and forensic entomology (insects!). Muster up your courage and curiosity, and come aboard this magical forensic adventure!

Session 1: Forensic scientists at work: on the genetic trail

Freddie Fruitarian has been found dead in his hut on Jinglis Island, leaving few clues behind. With no one around to answer our questions, it is up to us to solve this mystery. We will carefully collect evidence from Freddie's home, including a DNA sample, the remains of an unusual animal, a potion, and the remains of some food. Using our forensic skills, we will use genetic DNA analysis to understand whether Freddie suffered from any disease and which may have contributed to his demise. How *did* Freddie die? We will learn how detectives systemically examine the scene of a crime, and how to test for genetic diseases.

Session 2: Fabulous fungi and bacteria

How long ago did Freddie die? We will study forensic entomology (insects!) and harness the science of mould and fungi growth to help us determine the exact time of Freddie's death. In our laboratory, we will investigate the optimal conditions for growing bacteria and fungi by setting up our own mouldy experiments!

Session 3: The wonder of evolution

Some animal remains were found in Freddie's hut, and it appears that he may have been trying to make a potion to cure his symptoms. Are these two pieces of evidence connected in any way? In order to find out more about this mysterious animal and whether it was related to Freddie's death, we will investigate how evolution of new animal species has been "fast tracked" on Jinglis Island, and what the potential outcomes of this are. We will study the unique animals living on Jinglis Island, and compare these to the Galapagos Islands as an example of evolution.

Session 4: Quest for a cure

By now we should have solved the mystery of what happened to Freddie, so, we will go on a quest to find the missing villagers. Where did they go, and why? After the villagers have been rescued, we must try to help them to find a cure for a disease that is affecting the local population! We will learn about how antibiotics and blood transfusions can help many people suffering from diseases, and prepare our own microscope slides. We have finally solved the "Mystery on Jinglis Island", and can write up our case studies to distribute to the world.

Requirements:

Writing paper (an exercise book would be ideal); well stocked pencil case which includes coloured pencils or textas, scissors and a glue stick. Also bring a small photo of yourself to Session 1, and a stamped, self-addressed DL envelope for your report. In sessions 2 and 3 you will require an old t-shirt/art smock (ie.lab coat). Come along with a snack each week (no nuts please).

About the presenter

Joanne Davis developed a fascination for science at a young age, getting her first microscope at 6 years old! As a research scientist with a PhD in Immunology and over 15 years' experience in the lab, Joanne is devoted to looking for a cure for cancer, as well as teaching. Joanne taught in the CSIRO Scientist in Schools program, and recently conducted the "It's in the blood" and "Pandemic Alert" G.A.T.E.WAYS Programs. She has a passion for experimenting daily, whether it's in the lab, or in the backyard creating potions!

