

An aerial photograph of a residential area with a large body of water. The water is a deep blue color, and there are many houses and buildings along the shoreline. A bridge is visible in the upper left, crossing the water. The text "Grime Scene Investigation" and "Georges River Estuary" is overlaid in white, bold, sans-serif font. Below it, the text "Celebrating World Environment Week" is also overlaid in white, sans-serif font.

# Grime Scene Investigation Georges River Estuary

Celebrating World Environment Week

# Grime Scene Investigation (GSI)

Grime Scene Investigation is a science project to find out about the health of the Georges River estuary environment. The project involves you working as an environmental consultancy team to investigate different aspects of the Georges River estuary.

Your consultancy team has three tasks:

- to research information about estuaries before the field study
- carry out the field study and gather first hand information
- report your findings.

After the study day, you will prepare a scientific report on the investigation that you carried out using your field study notes, photographs and other sources of information. (Remember to you will need to bring a camera)

# Background to your investigation

Congratulations, you have just started your own environmental consultancy company and have landed a contract with the Bay City council!

You will be part of a team of scientists whose role is to submit information for the ***State of the Environment Report*** required by the Bay City Council. You are eager to do a good job on your first case.

You will need to use all your scientific skills to gather accurate scientific information to let the council know what is happening in the Georges River.

Before you carry out your investigation, you need to understand what a healthy estuary in this area should look like so that you can document the difference.

# Georges River pre 1788



# Georges River Estuary today



# Roles

Each team consists of five different types of scientists:

- **Ecologist**
- **Biologist**
- **Water quality chemist**
- **Environmental scientist**
- **Microbiologist**



A scientific team testing water

Give as scientific role to each team member. Each member will research specialised information before the fieldwork day, but you will be working as a team on the day. After learning about your role, tell the other team members what your scientist does. Information about your role and your pre-fieldwork task, can be found on the GSI website.

# Activities on the GSI day



## Fieldwork Activities

On the GSI day you will: Listen to an expert commentary on the Georges River estuary and catchment and the issues effecting water quality



Activity Name – Cruise around the study site  
Scientific specialisation – Environmental Scientist

Grime Scene Investigation - Observatory  
Hill EEC



## Study and identify plankton samples under a microscope projection



Activity Name – Study of plankton

Scientific specialisation – Microbiologist EEC will present this role

Grime Scene Investigation - Observatory  
Hill EEC

# Investigate adaptations and relationships of estuarine organisms in a typical food chain



Activity Name – Biotic Study  
Scientific specialisation - Ecologist

## Classify estuarine species found on the rocky shore



Activity Name – Biotic Study  
Scientific specialisation - Biologist

Grime Scene Investigation - Observatory  
Hill EEC

## Test and analyse water quality samples taken from the River



Activity Name – Water quality analysis  
Scientific specialisation – Water quality chemist

Grime Scene Investigation - Observatory  
Hill EEC

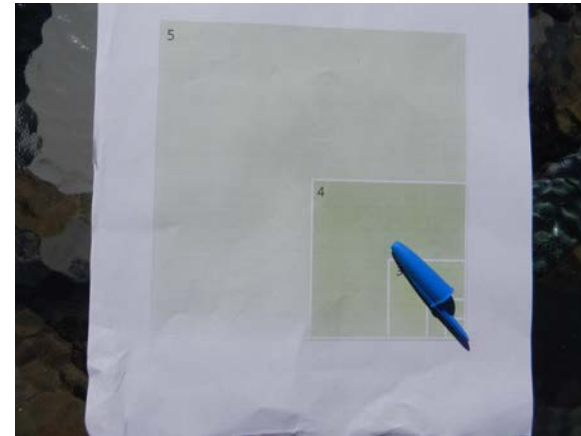
Conduct a survey using a transect and quadrat to identify, record, analyse and the types of marine debris , including the impact of rubbish found on the beach



Transect line starts on back dune and goes to high water mark

Activity Name – Beach patrol

Scientific specialisation – Environmental Scientist



Method of estimating litter size – use the size chart a pen top would be a No.3



Quadrat positioned across high water mark to identify and record plant and animal flotsam

# What to bring?

- All weather gear – raincoat / umbrella / hat  
sunscreen, medications
- Closed in shoes
- Lunch and recess – including water/drink
- Camera
- Clip board – spare paper
- GSI worksheet for each student and spares

# Meeting place

## St George Sailing Club

# Follow up activity

You will use the information gathered from your investigations to prepare your consultancy team's State of the Environment presentation.

More information on marine life in the Georges River estuary/Botany Bay can be found at

<http://www.underwatersydney.org/>