

CHAPTER 16

Fieldwork inquiry: What is the water quality of my local catchment?

16.1 Overview

16.1.1 Scenario and task

Task: Produce a report and presentation about the water quality of a local catchment or waterway.

Water is our most valuable resource, and the management of this vital resource should be a priority at a local, regional and global scale. Everybody lives near a catchment — there is usually a river, creek, drain or other waterway close to your home, school or neighborhood. If you live in an urban area, the creek may have been highly modified and may look like a concrete drain. Water quality in these waterways will vary from place to place and is influenced by many factors.

Water quality can affect health in many ways. Rivers and streams act as drainage systems. When it rains, water transports rubbish, chemicals and other waste into drains and, eventually, rivers.

Your task

Your team has been selected to research the water quality of a local catchment or waterway and produce a report and presentation on your findings. Be sure to measure water quality at different locations along the river, creek or stream, and try to determine the causes of different water quality.



16.2 Inquiry process

16.2.1 Process

- Open the ProjectsPLUS application for this chapter located in your eBookPLUS. Watch the introductory video lesson and then click the 'Start Project' button and set up your project group. You can complete this project individually or invite members of your class to form a group. Save your settings and the project will be launched.
- **Planning:** Navigate to your Research Forum. You will need to research the characteristics of your local catchment area. In order to complete sufficient research, you will need to visit a number of sites within the catchment, comparing different locations upstream and downstream of one creek or river. Research topics have been loaded in the system to provide a framework for your research:
 - **What** sort of data and information will you need to study water quality at your fieldwork sites?
 - **How** will you collect and record this information?
 - **Where** would be the best locations to obtain data? You can determine this once you know which waterway(s) you are visiting.
 - **How** will you record the information you are collecting? Consider using GPS, video recorders, cameras and mobile devices (laptop computer, tablet, mobile phone).

16.2.2 Collecting and recording data

It is important that you have some knowledge of the fieldwork location before you visit the site. Access to topographic maps and Google Earth will help you become familiar with the location. Using these tools, complete a sketch map of the waterway(s) and label the sites you are going to visit. You can then scan your sketch map and have it available electronically on the field trip. Alternatively, use Google Maps to record all the sites you visit. Ensure that you bring all the equipment and resources you will need to collect the data with you to each site. It would be useful to work in groups to collect the data, with each group collecting different data at each site. Use the supplied data collection templates electronically on your mobile device, or print copies.



16.2.3 Processing and analysing your information and data

- Once you have collected, collated and shared your data, you will need to decide what information to include in your report and the most appropriate way to show your findings. If using spreadsheet data, make total and percentage calculations. Some measurements are best presented in a table, others in graphs or on maps. If you have used a spreadsheet, you may like to produce your graphs electronically. Use photographs as map annotations (either scanned and attached to your electronic map or attached to your hand-drawn map) to show features recorded at each site. You may also like to annotate each photograph to show the geographical features you observed. Describing and interpreting your data is important. There are broad descriptions that can also be made of your findings, which might include:

- Where is water quality highest (best) in the waterway studied?
- Is water quality better in the upper reaches of the river or creek?
- Does an urban waterway have better water quality than a rural waterway?
- Does surrounding land use have an impact on water quality?
- Do large waterways have better water quality than smaller waterways?
- What were the main contributors to poor and good water quality?
- How does surrounding vegetation impact on water quality?
- Visit your Media Centre and download the report template and the presentation planning template to help you complete this project. Your Media Centre also includes images, videos and audio files to help bring your presentation to life. Use the report template to create your report. Use the presentation template to create an engaging presentation that showcases all of your important findings.

16.2.4 Communicating your findings

You will now produce a fieldwork report and presentation to present your findings. Your report and presentation should include all of the research that you completed and all evidence to support your findings. Ensure that your report includes a title, an aim, a hypothesis (what you think you will find, which is written before you go into the field), your findings and a conclusion. You will also need to recommend some type of action that needs to be taken to improve water quality in the creek or river you visited.

16.3 Review

16.3.1 Reflecting on your work

- Think back over how well you worked with your group on the various tasks for this inquiry. Determine strengths and weaknesses and recommend changes if you were to repeat the exercise. Identify one area where you were pleased with your performance, and an area where you would like to improve. Write two sentences outlining how you might be able to do this.
- Print out your Research Report from ProjectsPLUS and hand it in with your fieldwork report and presentation, and reflection notes.

Your ProjectsPLUS application is available in this chapter's Resources tab on your eBookPLUS. Visit www.jacplus.com.au to locate your digital resources.

Suggested software

- ProjectsPLUS
- Microsoft Word or any other word processing tool
- PowerPoint or any other presentation tool

Media centre

Your Media Centre contains:

- fieldwork data recording templates
- a report template
- a presentation template
- a selection of images and audio and video files to add richness to your presentation
- weblinks to sites to assist in your catchment research and to provide sample presentations
- an assessment rubric.

