AG2 - Catchment Walk

Geography Stage 5

5A3 Issues in Australian Environments - Water Management

Background Information

Students gather first hand information about their local waterway and prepare a catchment map. The upper Parramatta River catchment is defined by surrounding hills, such as Prospect Hill in the south-west and Hornsby Plateau in the north east.

See Field Trips for background information about suitable sites.

Pre-walk Activities

Estimated Time 2 hours

Pre – reading

Upper Parramatta River Information Sheet, Sub – Catchment Information Sheets

1. Identify the catchment

Identify the sub-catchment that your school is located in. Identify where the catchment or sub-catchment boundaries are in relation to the landscape. This is best done with the assistance of topographic maps and aerial photographs.
Locate your local catchment within the Parramatta River catchment.

2. Choose a sub-catchment

Use the topographic maps to identify and list the various types of landuse in your sub-catchment. Refer to the UPRCT website for landuse information from the UPRC Stormwater Management Plan www.uprct.nsw.gov.au/water_quality/publications/uprcsmp.pdf

Work out a walk that will take you through a section of the creek, a variety of landscapes, vegetation zones and landuse activities. You may choose to walk along a section the creek line to observe the changes in landuse, habitat and water quality as the creek flows from its source towards the Parramatta River.

3. Plan the walk

What equipment do you need on your catchment walk?
How long will it take?
What permission do you need before you go on the walk?
What are the safety issues that you need to consider?
How will you share the responsibilities for observation and recording information within each class group?

Outcomes

5.1 identifies, gathers and evaluates geographical information

5.2 analyses, organises and synthesises geographical information

5.4 demonstrates a sense of place about Australian environments

Fieldwork task

Develop a research action plan

Catchment Walk Field Trip

Estimated time: Half Day

3. Walking Together

Valuable first hand information can be gathered from a catchment walk by direct observation.

Key features to look for along the walk:

- Make special note of any potential point sources of pollution including drains, sewer overflows, building sites, industrial and residential areas.
- Observe the major plant communities and weeds. Note any relationships you observe between plant communities and soil type.

4. Make a Sketch Map

As you walk the catchment make a rough birds eye view map. Features on the map could include:

- location of your school
- location of catchment boundaries
- flow and path of water course
- general gradients (drainage patterns of surrounding lands)
- native vegetation
- parks and playing fields
- cleared land
- erosion
- landuse zones (residential, industrial, commercial)
- major roads and railways
- potential pollution sources, including stormwater drains entering the waterway and sewerage overflow points.

Decide on a system of symbols for each of these features and use these to map of landuse and catchment information in your sub-catchment. Refer to topographic maps, GIS and aerial photographs, Streamwatch manual page 11 - 16.

Outcomes

5.1 identifies, gathers and evaluates geographical information

5.2 analyses, organises and synthesises geographical information

5.3 selects and uses appropriate written, oral and graphic forms to communicate geographical information

Fieldwork task

Gather and process relevant data

5. Sit Quietly

Sit quietly next to the river for a few minutes. Look around you. Close your eyes for a few moments and listen to the sounds around you.

a. What do you feel as you sit there?
b. What can you see?
c. What sounds do you here? What can you smell?
d. What is the condition of the banks?
e. Describe the vegetation cover.
f. What proportion is native or exotic plants?
g. Are there any drains or sewage overflow points?
h. Describe any visible signs of pollution.
i. Are there any pollution control devices (eg constructed wetlands, gross pollutant traps)?
j. How has the course of the creek been altered? (concrete pipes, channels etc)

Make a note of your thoughts, feelings and impressions. Be creative!

After the Catchment Walk

6. Make a Catchment Map

Back in the classroom, create a large-scale catchment map. Mark in catchment boundaries. (A topographic map and aerial photographs will help). Use coloured pencils or crayons to illustrate major land uses and other information collected during the catchment walk. Each group can report to the entire class about what they found. Some may wish to share their thoughts and feelings about the catchment.

8. Class discussion

a. How would you describe the overall state of stormwater runoff in your catchment?
b. How has the flow or course of the creek/river been altered by human intervention? (eg cement drainage channels, dams)
c. How do you feel about the current state of your catchment?
d. **Brainstorm** a list of threats to the ecological health of your catchment.
e. **Discuss** the relative impacts of these ecological threats.
f. **Develop a Priority List** for the ecological threats.

Outcomes

5.1 identifies, gathers and evaluates geographical information

5.2 analyses, organises and synthesises geographical information

5.3 selects and uses appropriate written, oral and graphic forms to communicate geographical information

Fieldwork task:

Gather and process relevant data

Threats to Catchment Health

Identify the problems that could impact on the environment of the catchment.

What did you see?	Where?	Source of Problem
Litter caught in the reeds in the creek bed	*Domain Creek.*	*People dropping litter on streets and pathways which is washed into creek during rain.*