Case Study: Plastics in our water ways

Activity Sheet 9. Fieldwork Activity

Introduction

This short Fieldwork Activity requires students to undertake a litter (including plastics) survey and look at the potential impacts that this litter could have on our waterways. The activities below could be added to fieldwork that you may be currently undertaking, especially if it is based in or around a river.

It is also possible to book a time to complete a similar activity with Baykeeper. Look at their website for further details.

The content of this activity sheet relates to the following Geographical Concepts and Skills and Geographical Knowledge.

Geographical Skills

Place, Space and Interconnection

- Explain processes that influence the characteristics of places
- Identify, analyse and explain spatial distributions and patterns and identify and explain their implications

Data and information

- Collect and record relevant geographical data and information, using ethical protocols, from reliable and useful primary and secondary sources
- Select and represent data and information in different forms, including by constructing appropriate maps at different scales, using digital and spatial technologies as appropriate.
- Analyse maps and other geographical data and information using digital and spatial technologies as appropriate, to develop identifications, descriptions, explanations and conclusions that use geographical terminology.

Geographical Knowledge

- Causes of an atmospheric or hydrological hazard and its impacts on places, and human responses to it to minimise harmful effects on places in the future.

Steps

1. Decide on the area that you will survey. This could be part of the school grounds, a nearby park or recreational area, nearby streets or a river. Make sure it is a manageable size for students to survey and that appropriate risk assessments have been completed.

2. Download or create a map of the selected area. (Google My Maps may be a useful tool). On this map indicate the locations that will be surveyed.

3. Devise a litter survey. It is highly recommended that you use the template from Baykeeper. To access this visit their website and then go to Baykeeper Resources. Select the survey sheet for either street or litter depending on your chosen area.

4. Decide on how many occasions and times the class will conduct the litter survey. Allocate groups an area where they are to conduct the litter survey. Explain how to record their findings. Some useful hints are contained in the above resource from Baykeeper. This could be uploaded to Google Sheets for increased collaboration between students.

5. Compile and share the results. Present the results in a graphic format.

6. Assume the litter surveyed was not collected and that it ended up in storm water. Using either Google Earth or Google Maps get students to follow the potential path of the litter until it reaches the ocean.
   Provide students with a map of your area's drainage basin and using the correct geographic conventions get them to mark in the litter's potential path until it reaches the ocean.

7. Complete a formal write up of the collated results. A suggested format could be:

   - Outline of the topic, including a description of the area surveyed and a brief hypothesis with justification
   - A description of the techniques used to collect primary and secondary data
   - Presentation of data collected
   - A description and analysis of the data
   - A conclusion noting whether the hypothesis was proven and points leant from the investigation.
   - An evaluation discussing the strengths and weaknesses of the fieldwork.
   - Appropriate referencing. It can be helpful to use citation websites such as "Cite this for me". There are many more free citation tools available as well.

This criteria is based on that used in VCE Geography and aims to introduce students to what is expected of them in later years. Given the age group the above criteria needs to be explained and simplified so that it is not overwhelming. Page 13 of the Geography Study Design has information about each component of a fieldwork report. It can be found here.

Differentiation for this task can be done by altering how the information is to be presented and by reducing the number of criteria to be included in the write up. The process of writing the report could also be altered to suit the needs of your class. For example, the data could be collated or the hypothesis developed as a class activity.

It is suggested that the teacher provide an exemplar of a fieldwork report or a structured template to help students with this task. An example of a template that provides students with a summary guide of what to include in their fieldwork report is below.

Fieldwork Title

Outline of Topic	What is the topic/research question? What was the location of the litter survey? Describe the characteristics of this location. What is your hypothesis? What are the reasons for your hypothesis?
Techniques used to collect the data	Describe the steps of the litter survey

	What were the locations of the litter survey? Why were they chosen? What were the dates and times of the litter survey? Why were these dates and times chosen? What secondary data was used? Explain why it was used.
Presentation of data	Make a list of the key pieces of data that will be included in your report. For each piece of data state how it will be shown in your report.
Description and analysis of the data	For each of the pieces of data in the above list, briefly describe what it shows and means.

Conclusion	Provide a brief summary of your overall results To what extent did the results support your hypothesis? Briefly explain. What key points did you learn from this fieldwork investigation?

Evaluation	What things worked well during this fieldwork activity? If you were to do this fieldwork activity again what things would you change to improve it? Provide a final concluding statement of your findings.