



Local Geography: Fieldwork at School

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In a survey of membership in 2021 a common request was for fieldwork resources. At Northholm Grammar we have developed an approach to build field stations on the school grounds. The approach is shared here – to be adapted, used or modified as appropriate.

The field stations are set up with QR Codes linked to Word documents of key content, skills and activities. After a review of the different NSW Geography syllabuses eight stations were established. The content changes depending on the year group completing the fieldwork. Additional QR codes are also set up to review specific data in the field such as data on flora and fauna, original Darug inhabitants, or videos demonstrating catchment management.

At each station students are guided to explore secondary sources of information and to undertake primary data collection. The balance of these activities will vary for each year cohort and topic under investigation.

The framework involves building an understanding of the local area, in this case Hornsby Shire, and then an in depth examination of the school biophysical and built environment. The eight themes can be used across all Stages of Geography.

Field Station 1 – Location of Northholm Grammar

Field Station 2 – Lithosphere: Geology and Topography

Field Station 3 – Biosphere: Flora and Fauna

Field Station 4 – Hydrosphere: Catchment Management

Field Station 5 – Atmosphere: Weather and Climate

Field Station 6 – Land use of the Built Environment

Field Station 7 – Management of the Natural Environment

Field Station 8 – The Northholm Community

There is a two-fold approach to data collection involving the collection of primary and secondary

data and information at a regional and local scale within the school grounds. The field station approach at Northholm is a project under construction and continually evolving. The locations do change depending on the year group and the weather. The students are taken into the field where as a first step, the secondary resource information is shown and explained.

The data collection methods vary between the stations and this is evident when you look at the resources in the QR Code. The specific activities are still being developed but will be updated over time. For example, Year 11 undertakes an activity based on the principle of tabula rasa, where I take them to the location of the dam and ask them to record and explain what they see. Initially students are not forthcoming but with patience you can coax out observations. Then I ask them to take photos and back in class they are asked to pick six photos and annotate them in detail in a Powerpoint. To aid the process I show them a video of me explaining what I see when I explain the dam location and then they are more confident to make their own observations.



Year 11 also has the Senior Geography Project to complete and I explain to them that they can adopt the same approach for the data collection for their suburb. As I move through the stations with them they can now keep thinking back to their

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suburb and potential SGP topic. Everything we do in the field is a model to approach their own research in their suburb.

Let's unpack the different stations

In relation to Station 1, a Google map search locates Northholm on a map between Arcadia and Fiddletown. A breakdown of the surrounding suburbs and rural communities is outlined with the use of Figure 1. I was able to obtain the exact latitude and longitude of the school using the Red Cross Emergency App on my phone. The review of location information starts with an introduction of the original inhabitants, the Darug, an outline of colonial settlement and an introduction to the geomorphology of the Sydney Basin. Basic demographics of the Shire is established through ABS



Quick Stats. The use of an online terrain map enables the development of a series of skills such as direction, distance, time/speed, aspect etal. Satellite imagery is used to identify key features of the built and the natural environment.

Figure 1: Location of Northholm Grammar



Station 2 examines the lithosphere with focus on the geology and topography of the school and regional area. The geology provides the bedrock of the basin's three catchments: Central Coast, Hawkesbury Nepean and the Sydney Metropolitan Catchments. This provides an opportunity to investigate the details of the Sydney Basin



in which Northholm is a small component on the Hawkesbury Plateau. One avenue of investigation is to outline the formation of the plateau and establish its relevance to the location of Northholm near the highest point on the ridgeline between the valleys. Finally,

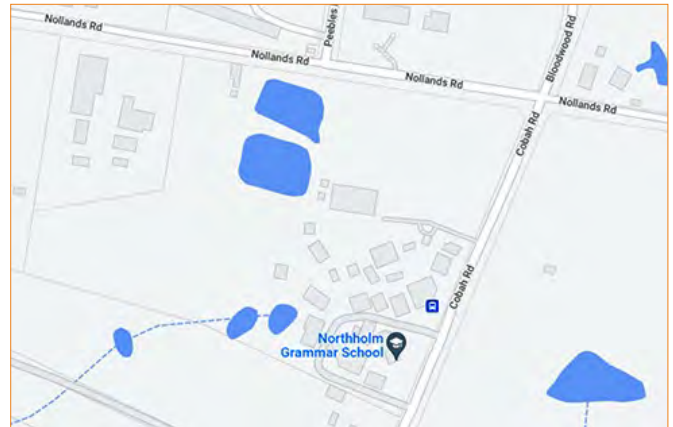
an in depth investigation of the topography in the field of the school grounds examines the types of rocks, sites of weathering and erosion and soil formation. Observations of the surrounding rural properties through online terrain and topographic maps expand student understanding.

The flora and fauna of the biosphere is the focus of Field Station 3. This station provides an opportunity for interdepartmental collaboration with the Science and English faculties. The science staff were able to identify details of the local flora and fauna. From this information more specific geographical focused exercises were developed about adaptations, impact on the natural and built environment on flora and fauna. Plants and animals in their environment provide a tranquil place for



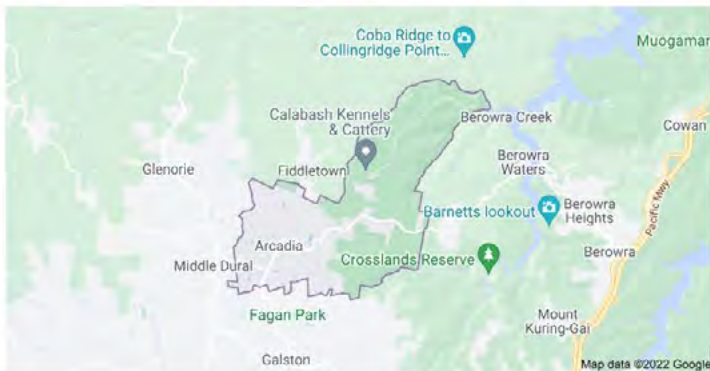
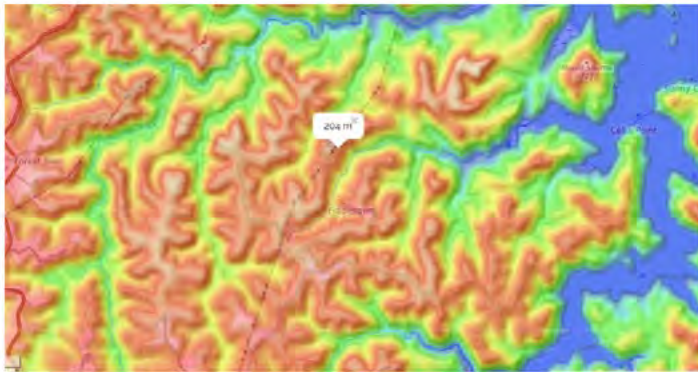
reflection and to this end provides an opportunity to work with English teachers. The school already has an established sensory garden for the primary school and we now have an opportunity to have a creative writing space.

Figure 2: Catchment management at Northholm Grammar



Northholm's grounds make possible detailed hydrosphere/catchment management fieldwork at Station 4 (Figure 2). The school is accessed by ascending Cobah Road on to a ridge between the upper catchment Calabash Creek to the east and Colah Creek to the west both of which flow into the Berowra Creek Catchment. The use of an online terrain map in a tracing activity locates key creeks and tributaries, into which water from Northholm flows. An examination of gully/gorge creek creation, linked to the geology and topography, provides knowledge of creek formation through a plateau. Specifically, in relation to Northholm, there are four dams and a series of drains, sediment traps and overflow grates. Catchment management provides

Location of Northholm Grammar QR Code Poster



From Sydney:

44kms · 46 mins by car ·

Quick Stats:

1,385 population (2016 Census)

Northholm is located in Arcadia/Fiddletown.

Arcadia is located approximately 40 kilometres northwest of Sydney in the Shire of Hornsby.



multiple opportunities to examine water management. The hands-on and visual nature of the fieldwork leads to greater engagement by students.

Weather and climate, as features of the atmosphere, are examined through Station 5. Weather

and climate can be observed in a quantitative and qualitative manner. The characteristics of the climate of the region are easily identifiable with online weather data which breaks down the elements of weather. There is a plan in place for the collection of live field weather data. Opportunities to construct and analyse climate graphs is supplemented with a breakdown of relevant factors which contribute to the climate such as topography, distance for the sea valley and plateau breezes and the southerlies.

The land use of the built environment of the Arcadia Northholm regional area is reflective of a rural community. An aerial, verbal and written walk through

the region is the focus of Field Station 6. This involves a review of key facts and activities to complete on the communities of Galston, Glenorie and Berowra Waters. (There is a detailed examination of the communities in Field Station 8.) Firstly, in relation to the immediate land use a satellite map is used to identify land use. Secondly, a similar process of comparing Google Maps and satellite imagery, is applied to an analyse and activities from Glenorie to Berowra Waters. Thirdly, a systematic



review of the land use on school grounds includes at least land use related to the dams, agricultural plots, parking, ovals, natural bushland, school facilities, gardens, bus bays and pathways for the movement of people (Figure 3).

Northholm is located in a rural setting with environmental management the focus of Field Station 7. Using the framework provided by Hornsby Council publications and discussions with Council Officers,

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students are appraised of the bushland management strategies and the principles of Bushcare. In addition, students report on how to manage and prepare for bushfires through a three step program – discuss, prepare and

know. In my case the breakthrough, in relation to locating school maps and data, came in discussions with the Campus Director. Once I started asking the right questions I got more detailed plans and maps of the topography which were used for the different building projects over the years. This enabled current analysis of the terrain and environmental management. Furthermore, access to past documents enables students to examine change over time.



These field stations provide content and activities for the classroom and where relevant in locations around the school grounds. Their use is a perfect opportunity to develop hybrid online and actual fieldwork activities.

There are locations in the school which are suited to fieldwork in collecting data about flora and fauna , weather and climate, the movement and management of water, modification to topography due to building work, evolving land use patterns, and quiet places for reflection and yarning circles

The use of QR Codes enables a flexible approach to worksheets and instructions. They are presented on Posters with additional material (Figure 4). Depending on the year group and topic we customise the content and the activities. The QR Codes are linked to fixed documents. The QR Codes provided in this article are linked to current documents. Please note the content may vary throughout the year as updates require. The nature of the updates include links to key syllabus content and skills as well as a mixture of primary and secondary data collection modes such as videos, podcasts, photos, sketches, surveys questionnaires, statistics, reports and interviews. The QR Codes linked to these documents are provided for you to use and adapt as you wish for your school should you wish to adopt a similar approach for your geography students.

Increasingly with pressure from within schools to localise fieldwork, reduce costs, recent issues with organisation and time factors for suitable external fieldwork, the number of out of field subject teachers of geography with little or no training in fieldwork, the development of school based field stations are a worthy exercise. It will fall to the experienced geography teacher to set up but also provides a valuable opportunity for geography in your school. Firstly, it provides help transitioning students from good geography students to geographers. Secondly, it is a project in which all the faculty can work together, as well as providing an opportunity for inter-faculty cooperation. Thirdly, with the promotion of the field station approach across in the school and the wider school community, it builds the profile of geography in the school which will assist in building geography student numbers.

If you would like to discuss any of these ideas or work together please let me know.

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Figure 3: Satellite image of Northholm Grammar



There are a number of communities which have direct and indirect interactions with Northholm. Field Station 8 enables an understanding of the communities within and beyond the Northholm Community. The starting point is the original inhabitants of the land, the Darug people. There are community newspapers like the Dooral Round Up, Galston, Glenorie, Hills Community Rural News, local community progress associations and community groups who are regular in their attendance of Hornsby Council Meetings. In 2021 the latter was an example of active citizenship where the community of teachers and parents wrote letters and spoke at a council meeting to improve the quality of narrow rural roads up the climb and on the ridge of Cobah Road.