Geography Fieldwork Guide

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1 Introduction

1.1 What is fieldwork and why is it an important part of geography?

Fieldwork is going outside the classroom as part of learning geography. 'The field' just means the portion of the outside world that we're going to study, so it encompasses more environments than just fields! We can do fieldwork in the school grounds, in the local high street, local farmland, as a day trip to a contrasting environment in our region, further away within the UK or even overseas. We might go on a fieldtrip to somewhere we already know, but with a new purpose: to find out, or to experience, something about our world to contribute to our ongoing learning in geography.

As we know, geography is the study of our diverse, changing and complex world. We can do a lot to build understanding, and even sense of place, from the geography classroom, but nothing beats getting out into the places we're learning about, to see/smell/hear/taste/touch them, to experience their complexity, to investigate them further. Fieldwork brings our classroom work to life.

England's current National Curriculum for geography carries the expectation that fieldwork should be present at all key stages. For Key Stage 2, it states that pupils should be taught to: 'use fieldwork to observe, measure and record the human and physical features in the local area using a range of methods, including sketch maps, plans and graphs and digital technologies.' Carefully planned fieldwork can reinforce and extend substantive knowledge of places and themes in geography through the application of geographical skills such as the collection, analysis and representation of data.

This guide is designed to help you plan and carry out fieldwork that is purposeful and appropriate to your school's location, annual programme and available resources.

1.2 Approaches to fieldwork in Geography

Fieldwork has been an important part of geography teaching since the early twentieth century.[1] As with other aspects of teaching, the aims and methods of fieldwork have changed over time. David Job distinguishes five different strategies for fieldwork:[2]

1. the traditional field excursion – a guided visit to develop students' knowledge about a landscape;
2. field research based on hypothesis-testing – a 'scientific' approach that involves collecting and analysing quantitative (numerical) data to compare the actual results with what would be expected from theory;
3. geographical enquiry – students ask a geographical question then they answer it by collecting and analysing qualitative (non-numerical) and quantitative data;
4. discovery fieldwork – students explore a place following their own interests and methods;
5. sensory fieldwork – students participate in activities to help them experience the environment with all their senses, engaging with it emotionally and reflecting on their response.

Each approach entails a distinctive role for the teacher and students, engaging them in characteristic activities. Each involves methods of collecting, recording and processing of information, but these happen in different ways. For example:

[1] Walford, R. (2001) *Geography in British Schools 1850-2000*, London: Woburn Press.
[2] Job, D. (2002) Towards deeper fieldwork. In M. Smith (Ed) *Aspects of Teaching Secondary Geography*, London: RoutledgeFalmer.

- the field excursion involves students listening to the teacher, looking at the landscape, making notes, drawing and annotating sketches;
- sensory fieldwork might involve mapping sounds, creating rubbings of textures or writing a short poem.

None of these approaches are intrinsically better or worse than the others; they are tools to accomplish particular aims. So, a field excursion is effective for developing knowledge about a new environment quickly and efficiently, while geographical enquiry promotes independent application of geographical skills. Sensory fieldwork is excellent for developing students' sense of place and selected activities from this approach can be combined with other approaches to ensure that students reflect on what it's like to be in that environment, rather than spending all their time looking at a clipboard!

Most fieldwork activities are carried out in small groups. With younger pupils, direct supervision from an adult will be necessary. Fieldwork is a good opportunity to develop broader skills, beyond geography, such as communication and working with others.

1.3 Planning your fieldwork programme

Fieldwork needs to be neither time-consuming nor expensive. At Key Stage 2, the expectation is that fieldwork will be carried out locally, probably within walking distance of your school gates. Of course, if funding and time permit a day trip, perhaps to a contrasting environment such as a coast or urban area, that is ideal, but we understand this may not be possible in all contexts.

We recommend that children participate in geography fieldwork at least twice during Key Stage 2, and, ideally, every year.

In this guide, we provide ideas for fieldwork that links to *Opening Worlds* geography curriculum units in Years 3 to 5. The Year 6 Summer double unit involves fieldwork as an integral part of the enquiry process. Separate guidance is provided for this unit. Schools should therefore select one or more options from the following list (in addition to the Year 6 enquiry unit):

- Rivers (*Rivers* unit - Year 3 Autumn 1 onwards)
- Settlements (*Settlements* unit - Year 3 Spring 1 onwards)
- Agriculture (*Agriculture* unit - Year 3 Spring 2 onwards)
- Weather (*Climate and Biomes* unit - Year 3 Summer 2 onwards)
- Coasts (*Coastal processes* unit - Year 4 Spring 1 onwards)
- Tourism (*Tourism* unit - Year 4 Spring 2 onwards)
- Ecosystems (*The Amazon* unit - Year 5 Summer 1 onwards)

When selecting and positioning your fieldwork opportunities, you will need to consider:

- The school's location and opportunities available in the local area. If your school is in a rural area, you may be able to access the agriculture, settlement and ecosystems fieldwork without transport. If you are in an urban area, you are likely to be able to use your local area for the settlement fieldwork. Rivers or streams and tourist destinations can be found in rural or urban locations. The weather fieldwork can be carried out on your school site. If your local area is well known for a particular tourist attraction or landscape feature, then you will probably want to include this in your fieldwork programme.
- Availability of funding. While Key Stage 2 fieldwork can be carried out within walking distance of your school, there is value in the children experiencing a contrasting environment if funding

allows. This could be for a morning, or even better, a day trip to a rural, urban or coastal environment that is less familiar to the children. Transport tends to be the largest cost for such a trip.

- Timing of fieldwork. While it is ideal for the fieldwork to be scheduled in the same half term as the relevant unit is taught (preferably towards the end of the lesson sequence), we recognise that some schools may wish to postpone fieldwork until the summer term. If you do need to separate the fieldwork from the unit to which it relates, this does create a hidden benefit: it provides more opportunity for retrieval of the relevant background content, thereby further strengthening it in pupils' memories.
- Balancing human and physical geography fieldwork. Ideally, over time, children would experience fieldwork in both human geography (settlements, agriculture, tourism) and physical geography (rivers, ecosystems, coasts, weather). If you plan to schedule two fieldtrips in Year 3-5, you could include one physical geography topic and one human geography topic. It is also possible to combine topics in one location (e.g. coasts and tourism).
- Balancing the types of activities and skills involved in each fieldtrip. Over Key Stage 2, aim to give children an opportunity to practise a range of skills on their fieldtrips, such as Ordnance Survey map skills, drawing a sketch map, land-use mapping, traffic counts and surveys (see Section 1.4).

The table below summarises the fieldwork options and will help in the selection and positioning process.

Section in this guide	Fieldwork topic	Type of site
2	Rivers	Stream or river (rural or urban)
3	Settlements	Any settlement (rural or urban)
4	Agriculture	Farm (rural) or city farm or allotments (urban)
5	Weather	School grounds or local open space
6	Coasts	Any coastal location
7	Tourism	Any location visited by tourists (rural or urban)
8	Ecosystems	Botanic garden, woodland, nature reserve or pond

Certain fieldwork topics are easy to combine, for example:

- Rivers and agriculture (rural location, Year 3 Spring 2 onwards)
- Settlements and tourism (tourist location in a settlement, Year 4 Spring 2 onwards)
- Coasts and tourism (tourist location on the coast, Year 4 Spring 2 onwards)
- Ecosystems and tourism (a natural space visited by tourists, Year 5 Summer 1 onwards)

See Section 1.4 for an example of a fieldtrip combining two topics.

There is no single 'correct' programme for fieldtrips. Instead, there are various options that balance the factors above in a way that makes sense for your school context. Here are some examples of possible plans:

Plan A: Beckmouth Primary School (a single-form entry school situated in a village where a river meets the coast)

Year group and timing	Fieldwork topic
Y3 Summer term	Rivers and settlement (half day local)
Y4 Summer term	Coasts and tourism (whole day local)
Y5	No geography fieldwork
Y6 Summer term	Enquiry unit

Plan B: Ethel Burgess Primary School (a four-form entry school situated in an inland city)

Year group and timing	Fieldwork topic
Y3 Spring term	Settlement (2 hours to local high street)
Y4 Spring term	Agriculture (half day visit to city farm)
Y5 Summer term	Ecosystems (half day visit to botanic garden)
Y6 Summer term	Enquiry unit

Plan C: Harry Potter Primary School (a two-form entry school situated in a market town)

Year group and timing	Fieldwork topic
Y3 Summer term	Weather fieldwork (2 x one hour in school grounds)
Y4 Summer term	Settlement fieldwork (2 hours to town centre)
Y5	Rivers fieldwork (2 hours to local stream)
Y6 Summer term	Enquiry unit

1.4 Selecting your fieldwork activities

A fieldtrip should never be undertaken without preparatory and follow-up activities in school, so time should also be set aside for these, especially if the fieldtrip is scheduled for a time of the year that is different from the time when the associated unit is being taught. We have included ideas for preparation and follow up in this guide.

The fieldtrip suggestions in this guide each include simple activities inspired by different fieldwork traditions. These can be tailored to the fieldwork site you plan to visit. We also suggest ways that the Year 3 and 4 activities could be adapted for older year groups, if required.

Each section in this booklet centres on a fieldtrip of 1 to 2 hours (excluding travel time). It's important to note that this time is **additional** to the seven lessons of geography teaching per half term (the six lessons of the unit and the synoptic task) scheduled in the *Opening Worlds* curriculum.

Some simple equipment, such as a set of clipboards, is useful, but otherwise the requirement for specialist equipment is minimal.

Fieldwork gives particular opportunities to practise geographical skills such as using Ordnance Survey maps, drawing sketch maps, field sketches and measuring and recording data in a real-life context. In this guide we have suggested a number of activities that fit well with a particular fieldwork topic. You will need to select and combine these to plan a fieldtrip that will be suitable for your class, the place you are visiting and the time available. Aim to include a range of different activities over time. Other opportunities to practise skills may be available at a particular site, so don't be afraid to experiment! You may also wish to combine geography fieldwork with activities that will support science, or other subjects, as appropriate for the site.

The table below summarises the activities detailed in this guide.

Geographical skill	Rivers	Settlements	Agriculture	Weather	Coasts	Tourism	Ecosystems
Drawing a sketch map	●		●		●	●	●
Land-use mapping		●				●	
Drawing a field sketch	●		●		●		●
Measuring and recording	●	●		●	●	●	
Observing and surveying						●	●
Ordnance Survey map skills	●	●	●		●	●	
Sensory activities	●	●	●		●		●

Here are some examples of how the suggested activities could be selected and sequenced:

Example 1: Ethel Burgess Primary School Year 3 Spring Term settlement fieldwork (to local high street)

Timing	Activity
1-1.30pm	Walk to High Street in groups, discussing what children can see on the way
1.30-1.40pm	Orientation talk by teacher
1.40-2.00pm	Land-use mapping in small groups (already practised in classroom)
2.00-2.20pm	Traffic counts in small groups (already practised in school)
2.20-2.30pm	Sensory activity (recording sounds for a minute)
2.30-3.00pm	Walk back to school discussing what children noticed during the afternoon

Example 2: Beckmouth Primary School Year 4 Summer term coasts and tourism fieldwork (local area)

Timing	Activity

9.15-9.30am	Orientation talk by teacher
9.30-10.15am	Field sketch and measuring pebbles on beach (small groups)
10.15-10.35am	Break on beach
10.35-11.30am	Sketch maps and following a route (small groups)
11.30-12.30pm	Return to school for lunch
12.30-1.30pm	Mapping tourist facilities along sea front and pedestrian count (in groups)
1.30-2.30pm	Environmental impact survey and litter pick (in groups)
2.30-3pm	Return to school, collect in work, discuss key learning points

1.5 Using digital technologies in fieldwork

In suggesting activities for the fieldwork in this booklet, we have aimed to use a minimum of specialist equipment to reduce costs. However, there is considerable potential to use digital technologies in fieldwork if you have these available. For example, digital maps or Geographical Information Systems (GIS) can be used to locate sites, to view maps and to record and display data collected. Mobile phone apps can be used to enhance field visits by providing supplementary information about the location, tide times, weather forecast or to identify plants and wildlife.[3]

1.6 Keeping everyone safe on fieldwork

It is vital for the fieldtrip leader to visit the fieldwork site in advance, to check that all planned activities are possible and to undertake a risk assessment as required by their school's policies and procedures. Careful attention should be paid to supervisory ratios and any specific needs of pupils to ensure that the fieldwork experience will be inclusive. Brief any accompanying adults carefully. There are particular hazards regarding rivers, traffic and coasts, so it is important to plan to mitigate risk and to communicate expectations clearly to children, parents/carers and accompanying adults in those contexts. This is especially important when taking pupils to unfamiliar environments, for example when a class from an urban area is visiting the coast.

Consider, too, whether you will need to make any adjustments to the fieldwork to cope with adverse weather conditions. Don't forget to check location of toilet facilities and to advise on suitable clothing and footwear! Also ensure that adults and children are aware of how to look after the environment, especially if you are in the countryside.[4]

Careful planning and preparation will enable the fieldtrip to go as smoothly and enjoyably as possible.

[3] For more information, see https://geography.org.uk/ite/initial-teacher-education/geography-support-for-trainees-and-ects/learning-to-teach-secondary-geography/geography-subject-teaching-and-curriculum/geographical-practice/fieldwork-2/fieldwork-and-technology/

[4] See the Countryside Code at https://www.gov.uk/government/publications/the-countryside-code

2 Rivers fieldwork

2.1 Introduction and aims

This piece of fieldwork involves a visit to a local stream or river. It enables children to experience a fluvial environment and to identify some of the river features they have learned about in the *Rivers* unit (Year 3 Autumn 1). The ideal positioning for the fieldwork is towards the end of the *Rivers* unit, but it could also be undertaken later in the year, or even in later years (see Section 2.6) so long as it is supported by appropriate retrieval of the content of the *Rivers* unit.

In the *Rivers* unit, children have seen many photographs of river features exemplified by the River Indus in South Asia and the River Severn in the UK. They have also seen simplified diagrams of river features and processes. Fieldwork supports and enhances the classroom learning as students experience a third, probably contrasting, river environment. Through fieldwork, the case study will be in 3D with its associated sounds, textures and even smells! Children will also learn that river features in the real world are more diverse and messier than the simple diagrams on slides and textbooks. As part of this fieldwork, they will be able to practise geographical skills of drawing and annotating a field sketch, identifying features and measuring characteristics of the river/stream (if appropriate).

To summarise, the aims of this fieldwork on rivers are:

- to experience a river/stream environment, recognising and reflecting on their sense of place;
- to learn about a third (probably contrasting) case study of a river/stream, identifying river features and processes that they have learned about;
- to practise geographical skills, including Ordnance Survey map skills, field sketching, measuring characteristics and recording information (as appropriate).

The ideas in this guide are a starting point – you will need to adapt them to the needs of your class, the opportunities at the site you are visiting and the time and resources available.

2.2 Choosing an appropriate site

This fieldtrip can be to a river or stream of any size and at any point along its course. Ideally it should be set in a field or open space allowing safe access along at least a 100-metre length of the channel and you should be able to get close, in a safe manner, to the water on one bank at least. It would be ideal if you can see some variety in the shape or features of the stream or river over its accessible length, for example if there is a meander, some rapids or a small waterfall.

Unless the site is on public access land, make sure you ask permission from the landowner well in advance of your visit. As with all fieldwork, carry out a site visit and risk assessment beforehand. Be aware of any hazards associated with the site, especially if your visit follows heavy rainfall, which will make any river or stream more hazardous. It is important to ensure that fieldwork is inclusive and activities are accessible to all members of the class.

2.3 Planning and preparation

2.3.1 Equipment and resources

You may need the following equipment and resources, depending on the activities you decide to undertake (see Section 2.4):

- clipboards, plain A4 paper, pencils for field sketches
- partially-completed field sketches may be useful for some children

- metre rules (and possibly wellington boots for the teacher) if it's appropriate to measure stream depth
- dog biscuits[5], a long tape measure and stop watches if it's appropriate to measure the speed of the stream/river
- worksheets or cards with ideas for sensory activities
- phone/camera for taking some photographs (or take these beforehand, laminate and distribute on the day)[6]
- paper and wax crayons if you plan to make rubbings of textures.

2.3.2 Pre-teaching

- Unless you have only just completed the *Rivers* unit, select some slides to enable retrieval of river features (source, mouth, estuary, tributary, meander, river channel) and processes (erosion, transportation, deposition).
- Talk to your children about the stream/river where the fieldwork will take place, telling them about its journey from source to mouth and helping them understand where the visit site is on that journey. Is it part of the upper course? Lower course? What features might they expect to see there? Generate excitement and interest about the river and the place you'll visit.
- It may be appropriate to show children a small excerpt from the Ordnance Survey map of the site, helping them to decode it by teaching relevant symbols and referring to four-point compass directions.
- If you plan to draw a field sketch, use materials from the *Migration* unit (Year 5 Spring 1 Lesson 1) or draw your own example to help establish expectations.
- Make sure you communicate expectations regarding suitable clothing, procedures etc.
- Make sure you are familiar with the site and ready to answer any questions about it (for example what the river is called, what river(s) it runs into, where it reaches the sea, who owns the land you're visiting, what sort of land it is (e.g. park, dairy farm etc).
- You may want to start a 'working wall' or other work in display format centred around the fieldtrip.

2.4 Fieldwork activities on rivers

Select from the following activities and adapt them to the needs of your class, the opportunities at the site you are visiting and the time and resources available.

2.4.1 Introduction to the area

Talk to the children about the area you are visiting, linking back to your preparation in class. Ask them questions about what they see and answer any questions they have. Notice which way the river is flowing and remind them about where it has come from and where it is going. If the site allows, walk along the river, looking at how it changes. Can you see any evidence of erosion, transportation or deposition? If you can see the riverbed, what sort of material is there? Can you see stones, pebbles, sand or sediment? Remember these will have been carried to that place by the river (larger stones are usually moved in times of flood). Is there any vegetation or wildlife around the river? How do people use this river? Encourage children to ask questions about what they see and to talk in their groups.

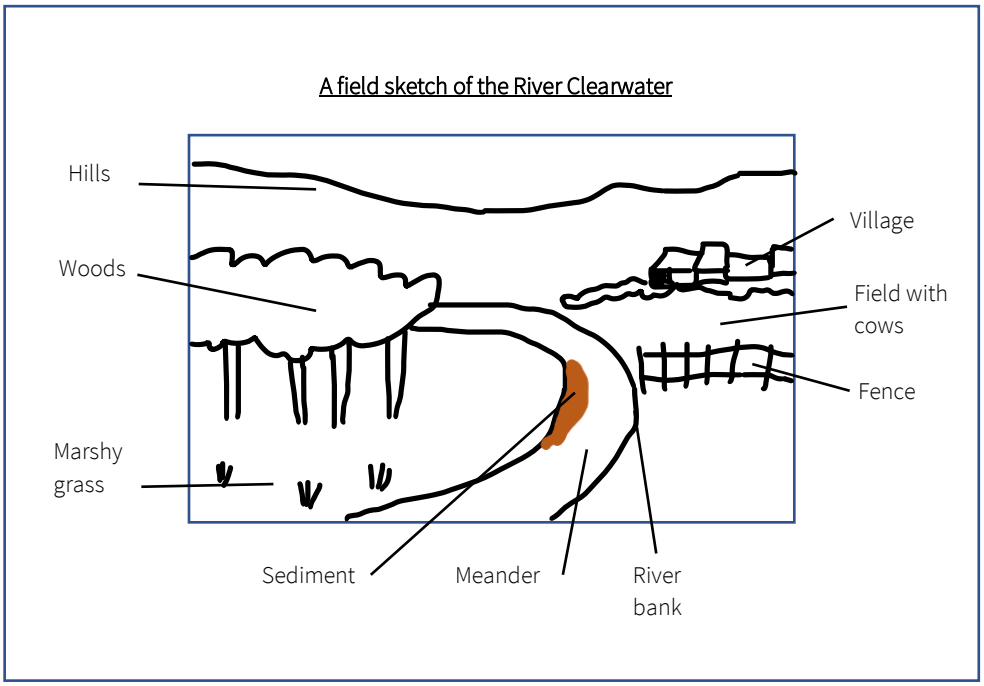
[5] Dog biscuits work well as they are visible, buoyant and biodegradable. Avoid using non-biodegradable floats (e.g. a ball or an orange) as they may pose a risk to livestock if you are unable to retrieve them.

[6] Always follow your school's guidance when taking photographs of children.

2.4.2 Drawing a field sketch

Provide the children with a clipboard, piece of A4 plain paper and a pencil. Choose a suitable view of the river for children to draw or assist them in choosing their own view. If you have access to a long stretch of river, different groups could draw different viewpoints. Encourage them to look carefully and name the features they can see before drawing. The aim of a field sketch in geography is to record key features of a place as accurately as possible. It's not necessary to shade or colour in the same way that we would in art, though it's fine to give some indications of texture, such as a few lines for grass. Encourage children to draw key lines first (e.g. the horizon and the river) then to add detail (e.g. rocks next to the river, vegetation or a fence round the field). Then annotate the sketch to show key features e.g. river channel, meander, river bank, field, woods, houses.

The final sketch might look something like this:



Some children may find it helpful to use a partially completed sketch that you have prepared beforehand, or to label a photograph that you have taken and printed out.

2.4.3 Sensory activities

There are a range of activities you can use to encourage children to experience the fieldwork site more fully. Here are some suggestions (also see Sheet 1, which can be adapted as needed):-

- Ask children to stand with their eyes closed for a minute and listen to all the sounds they can hear. Write some of them down.
- Children look for as many different colours as they can see in the area around them (e.g. green grass, purple flower, blue sky). Can they find the whole rainbow of colours? Make sure you set clear boundaries for the area that children can explore.
- Ask children to stand with their eyes closed and to think about what they can smell (fragrant and not so fragrant!). What adjectives describe the smells?
- Use crayons and paper to make rubbings of textures such as tree bark or rocks.

- What words can the children think of to describe the environment around them? Think of adjectives as well as nouns. How does it make them feel and why?

2.4.4 Taking some measurements

- If the stream is small and safe, use a metre rule to measure its depth in different places. If children are secure with measuring in centimetres, you could ask them to predict its depth and compare that with the actual measurement. If the stream meanders, try measuring the inside and outside of the bend and see if the depth is different (the inside of the bend will normally be shallower).[7]
- Measure the speed of the stream or river by measuring off a 10-metre length, throwing in a dog biscuit (or a small piece of stick) at the start and timing how long it takes to float to the end of the 10-metre stretch. There is no need to retrieve the dog biscuit. Repeat this process three or four times and see if the results vary.

2.5 Follow up work in school

It's important to take some time to reflect on the learning from the fieldtrip. Depending on the time you have available and the needs of the class, you could select from the following activities:-

- Write a short account of the visit
- Print and annotate photographs
- Draw and annotate a 'neat' version of the field sketch
- Create a word cloud for the place you visited
- Use the notes made from sensory activities to write a short poem about the place you visited (individually or as a class). Remember that a poem is good for evoking sense of place and emotional reaction to the place – avoid using it for reinforcing technical vocabulary or key knowledge about rivers.
- Look again at the Ordnance Survey map extracts now that children are more familiar with the area. If you took photos, find where they are located on the map.
- Reflect on what the children learned about rivers during the visit. How was 'your' river similar or different to the River Indus or River Severn?

When appropriate, you can reinforce skills learned in English or Maths.

2.6 Adapting the material for older year groups

Depending on the age of the class, you may like to add to or adapt the ideas above in the following ways:

- As part of the preparation, follow the whole or part of the course of the river/stream on an Ordnance Survey map, paying particular attention to the fieldwork site. Reinforce use of the key and river symbols, four- or eight-point compass and four- or six-figure grid references if these have been taught. Notice river features such as the river channel, meanders, tributaries, waterfalls.
- Increase the level of challenge in measuring river characteristics such as speed or depth by taking three readings in a particular spot then calculating the mean depth/speed when you get

[7] Ideally, measure the depth while standing on the bank. If you need to enter the stream, wear appropriate footwear and look out for mud, sharp rubbish or wet rocks. If children touch the water with their hands, ensure that they clean their hands thoroughly before eating or touching their mouths. Under no circumstances should anyone drink stream or river water.

back to the classroom. Depending on stage in the Maths curriculum, the data could be displayed as a table or graph.

- It may be appropriate for older children to participate in measuring depth or speed, providing that the stream is suitably shallow and they are wearing appropriate footwear. Always be aware that the beds of even small streams can be uneven and contain slippery rocks.
- Write a more extended account of the fieldtrip, including a map showing the location of the field site, annotated photographs and sketches, graphs or other representations of the data collected.

Look all around you. What colours can you see?

Close your eyes for a minute and notice what you can smell. Can you describe the smells?

Our visit to

Close your eyes for a minute and listen hard. What can you hear?

How does this place make you feel? Why?

3 Settlements fieldwork

3.1 Introduction and aims

This piece of fieldwork involves a visit to a settlement. It enables children to look closely at a familiar area or to experience a contrasting settlement to their own. The ideal positioning for the fieldwork is towards the end of the *Settlements* unit (Year 3 Spring 1), but it could also be undertaken later in the year, or even in later years (see Section 3.6) so long as it is supported by appropriate retrieval work.

In the *Settlements* unit, children have seen many photographs of settlements of different sizes, from hamlets to conurbations. They will also have experience from daily life of their own settlements, and they may have visited a range of other settlements. It is easy for the home environment to be taken for granted; after a while we can stop looking at the familiar. This fieldwork is an opportunity to look more closely and to consider the types of facilities offered in the local settlement, or to compare and contrast the local area with a less familiar settlement. The children will also develop their skills of collecting and analysing data, which are an important part of geographical enquiry. These can link in, as appropriate, with their work in mathematics.

To summarise, the aims of this fieldwork are:-

- To look carefully at a settlement (or part of a settlement), considering settlement size and facilities (including public transport, shops, healthcare and education);
- To use vocabulary about settlements learned in the *Settlements* unit;
- To learn and practise geographical skills, including land-use mapping and traffic counts (as appropriate).

The ideas in this guide are a starting point – you will need to adapt them to the needs of your class, the opportunities at the site you are visiting and the time and resources available.

3.2 Choosing an appropriate site

This fieldtrip can be to any area of a settlement. It could be the local settlement, or, if you are able to travel further afield, to a contrasting settlement. Ideally, visit more than one location in the settlement, so that you can compare and contrast facilities and transport options. For example, you could walk from your school to a local high street, walk down one side of the high street, back down the other and then back to school. This could be done in 1-2 hours. Alternatively, you could travel to a local seaside town, drive through the town, noting facilities such as the train station, bus station, hospital and schools, then stop on the sea front to conduct a land-use survey and traffic counts. This trip could take half a day, or it could be combined with coastal fieldwork (Year 4 Spring 1) for a full day trip.

Permission is not needed to work in areas of public access, such as a high street, but be aware that shopping centres or malls are often on privately-owned land and you normally need to ask permission before conducting fieldwork inside those. As with all fieldwork, carry out a site visit and risk assessment beforehand. Be aware of any hazards associated with the site, especially exposure to traffic and uneven pavements. It is important to ensure that fieldwork is inclusive and activities are accessible to all members of the class.

3.3 Planning and preparation

3.3.1 Equipment and resources

You may need the following equipment and resources, depending on the activities you decide to undertake (see Section 3.4):-

- Clipboards, plain A4 paper, pencils
- Land-use base maps (partially completed maps or photographs to annotate may be helpful for some children). Draw a simple map of the class will survey for them to fill in the land uses. If the settlement is small, it may be possible to map the land use for the whole settlement, but, most likely the settlement will be larger and you will need to choose a section to survey. Choose a section with a variety of land use (residential, shops, offices, public buildings etc). If there is an obvious high street, half of the class could walk down one side, filling in the land-use map and the other half of the class could fill in the map of the other side. Alternatively, you could cover 2-3 streets in total, with small groups each recording land use for part of a street. Set up a simple key for children to use (e.g. H for housing, S for shop, O for office). Increase or decrease the challenge by changing the number of categories (e.g. sub-categories of shops). Test out your categories first to make sure they work in your chosen settlement. You can colour-code the final map when back in the classroom, but letters are easier to record in the field. Some children may need to use pictures or symbols.
- Blank tables for recording traffic counts. Plan locations for the groups to stand and count the traffic, also decide the level of complexity of the table. A very basic count can just be the number of vehicles going past, a more complex count can separate or group cars/vans, lorries/buses, cycles/motorbikes etc. Make sure you give clear instructions as to whether groups should count traffic going in both directions or just one direction. Children can make tally charts or count in their heads. In a very busy area, or for children who easily lose count, a tally counter[8] can be useful. Some groups of younger children may like to count aloud.
- Phone/camera for taking some photographs (or take these beforehand, laminate and distribute on the day).[9]
- Stopwatches (or phones from accompanying adults) to time traffic counts.

3.3.2 Pre-teaching

- Unless you have only just completed the *Settlements* unit, select some slides to enable pupil retrieval of settlement types (hamlet, village, town, city, conurbation, coastal town, market town) and facilities (hospital, bus station, train station, business, sports facilities, education facilities, places of worship).
- Talk to your children about the settlement where the fieldwork will take place. What type of settlement is it? What do they know about it already (if local)? What facilities would they expect to see?
- Have a look at an online map of the settlement together and notice the different facilities there. Practise the map skills learnt up to this point to describe the location of the settlement in the UK and the facilities within the settlement.

[8] A small digital or mechanical device that counts the number of times its button is pressed. Check it is reset between counts.

[9] Always follow your school's guidance when taking photographs of children.

- Explain the instructions for undertaking a land-use map and/or traffic count. You can practise techniques using photographs from the book or an online video if that would help. Whilst giving instructions at the point of need in the field will make the most sense to children, settlement fieldwork sites can be noisy, so some preparation in advance is helpful.
- Make sure you communicate expectations regarding suitable clothing, procedures etc. You will need to consider safety around traffic and to avoid blocking the pavement if you are in a busy area – splitting the class into smaller, supervised groups will help with this.
- Make sure that you are familiar with the site and ready to answer any questions about it. The local library can be a good source of information about the history of the settlement, for example why its location was chosen (perhaps near a crossing point of a river or a crossroads), its current population and how it has grown over time.
- You may want to start a 'working wall' or other work in display format centred around the fieldtrip.

3.4 Fieldwork activities on settlements

Select from the following activities and adapt them to the needs of your class, the opportunities at the site you are visiting and the time and resources available.

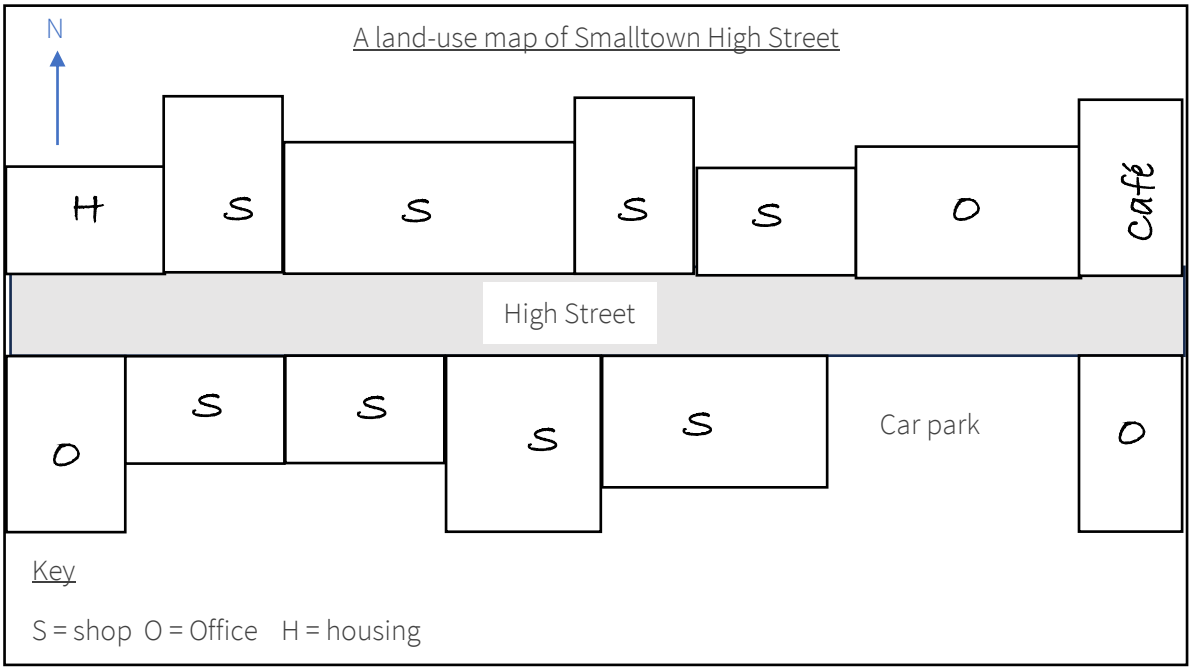
3.4.1 Introduction to the area

Find a quiet location where you have a good view of the fieldwork site. Introduce the location to children, asking them about what they can see and encouraging them to ask questions. What type of settlement is this? What words would they use to describe what they can see? What facilities can they see? How would these be different in a smaller or larger settlement? Give a brief overview of the history and growth of the settlement if appropriate. Recap any arrangements for group work. Encourage children to ask questions about what they see and to talk in their groups.

3.4.2 Making a land-use map

Split the class into supervised groups. Provide the children with a base map showing simple outlines of buildings (a plan view). Include a few key landmarks and road names to help children find where they are. If the settlement or high street is small, all groups can fill in the map for the whole street. If the settlement is large, you may wish to allocate a street, or section of a street, to each group. Younger children may take time to identify each building and record the land-use, so allocate a smaller section for younger groups. Numbers may help with identifying buildings, though check they are visible on shops. Record any important facilities such as a post office, school, bus station, train station. Make sure the accompanying adult understands which section to go to. Each small group then walks down their allocated section, completing the map as they go, using the pre-agreed key. Check the maps before you return to the classroom (and you may like to complete your own version in case of disagreement). An example of a simple land-use map can be found below.

Some children may find it helpful to use a partially completed map that you have prepared beforehand, or to label a photograph that you have prepared beforehand.



3.4.3 Making a traffic survey

- Groups go to their allocated survey point(s).
- Time 5 minutes and count the vehicles (or types of vehicles) going past. If the location is very busy, a one-minute time limit may be preferable.
- Record the tally or total on the recording table (see example below).
- Older children can repeat the count in the same location to give three counts in total and then calculate the average when back in the classroom.
- Count again in a new location if appropriate. If groups decide their own locations, make sure these are marked on a map so the locations are remembered when you return to the classroom.

Type of vehicle	Traffic count in 5 minutes: East end of Rockhill Road (one way)
Cars and vans	𝍸 𝍸 𝍸 𝍸 III
Bicycles and motorbikes	III
Lorries and buses	𝍸 IIII

3.4.4 Sensory activities

There are a range of activities you can use to encourage children to experience the settlement more fully. Here are some suggestions:-

- Ask children to stand with their eyes closed for a minute and listen to all the sounds they can hear. Write some of them down. You may like to use the recording sheet from the *Rivers* fieldwork (Section 2).
- Children look for as many different colours as they can see in the area around them (e.g. green awning, orange fruit, red car). Can they see the whole rainbow of colours?
- Ask children to stand with their eyes closed and to think about what they can smell (fragrant and not so fragrant!). What adjectives describe the smells?
- What words can the children think of to describe the environment around them? Think of adjectives as well as nouns. How does it make them feel and why?

3.5 Follow up work in school

It's important to take some time to reflect on the learning from the fieldtrip. Depending on the time you have available and the needs of the class, you could select from the following activities:

- Write a short account of the visit.
- Print and annotate photographs.
- Create a final version of the land-use map, using an agreed set of colours and key. If different groups surveyed different streets or sections of streets, stick these together to make a whole-class map. What patterns of land use can you see? (Often, shops and other facilities will be near the centre of a settlement, while housing is nearer the edge, but secondary schools are also often on the edge. Why might that be?)
- Collect and process the traffic count data as appropriate for the class. For younger children, a pictogram showing the different types of vehicles would be appropriate. If various sites were surveyed, the pictograms could be located on a base map, so you can compare and contrast traffic conditions in different parts of the settlement. Which locations were most busy and why? Was traffic controlled or banned in any areas? Why was that?
- Reflect on what the children learned about settlements during the visit. How was 'your' settlement similar or different to those in the *Settlements* booklet (Fitton End, Bisley, Crowborough, London, Cardiff)?

As appropriate, you can reinforce skills learned in English or Maths.

3.6 Adapting the material for older year groups

Depending on the age of the class, you may like to add to or adapt the ideas above in the following ways:-

- As part of the preparation, look at the settlement on an Ordnance Survey map (1:50,000 or 1:25,000 scale), paying particular attention to the fieldwork site(s). Reinforce use of the key and settlement symbols, four- or eight-point compass and four- or six-figure grid references if these have been taught. Notice symbols for different types of roads, stations, houses and facilities such as places of worship and post offices.
- The land-use mapping activity can be made more challenging by a more complex classification system, for example different types of shops (food, newsagents, furniture,

clothing etc). In an urban area, children could look for different land use on the ground and higher storeys (e.g. shop on ground floor, office or residential land use on first floor). These can be recorded by dividing the building outline in half diagonally and recording one land use in one half, the other land use in the other half.

- Older children can look out for clustering of shops in urban areas. For example, shoe shops often locate near other shoe shops, clothes shops near other clothes shops. They do this because their customers tend to compare goods before buying them, so they hope to benefit from passing trade. Newsagents tend to locate away from other newsagents as they expect their customers to visit the closest store.
- Older children can calculate averages from repeated traffic surveys at the same location and display the results on a bar chart. If there are multiple counts at different locations, a located bar chart map works well. Older children may like to undertake pedestrian counts as well as traffic counts.
- Groups of supervised older children can walk transects (lines) from the edge of a settlement to the centre (as appropriate for distance), taking notes and photographs about facilities and how the land use changes as they go.
- Transects taken in the fieldwork settlement can be compared and contrasted with 'urban walks' videos available online e.g. https://danravenellison.com/portfolio/urban-earth/
- Older children can write a more extended account of the fieldtrip, including a map showing the location of the field site, land-use maps and located bar graphs for traffic count data.
- Work together with older children to decide on the locations for surveys and the key for the land-use survey. They could also ask and answer a simple enquiry question, for example: Which road in Smalltown has the most traffic? or How is land use on the High Street similar to and different from Windmill Road?
- Use a spreadsheet to record figures for the traffic counts and to create bar charts of the results, plus a pie chart for different types of vehicles.

4 Agriculture Fieldwork

4.1 Introduction and aims

This fieldwork involves a visit to a local farm or city farm/allotments. It enables children to experience an environment where food is grown and to identify some of the features they have learned about in the *Agriculture* unit (Year 3 Spring 2). The ideal positioning for the fieldwork is towards the end of the *Agriculture* unit, but it could also be undertaken later in the year, or even in later years (see Section 4.6) so long as it is supported by appropriate retrieval of the content of the *Agriculture* unit.

In the *Agriculture* unit, children have seen many photographs of pastoral, arable and mixed farms across England and Wales. They have also considered where food comes from, how it is processed and how consumer choice and supermarkets influence agriculture. Fieldwork supports and enhances the classroom learning as students experience for themselves a place where food is produced. Through fieldwork, the case study will be in 3D with its associated sounds, textures and even smells! As part of this fieldwork, children will be able to practise geographical skills of drawing and annotating a field sketch, drawing a sketch map and using an Ordnance Survey map to identify symbols. They will also be able to practise key vocabulary in context and to write or speak about what they have experienced.

To summarise, the aims of this fieldwork on agriculture are:

- to experience an environment where food is produced, recognising and reflecting on their experience;
- to learn about a case study of a farm or other place where food is produced, identifying features that they have learned about in class;
- to practise geographical skills, including Ordnance Survey map skills, field sketching and drawing a sketch map.

The ideas in this guide are a starting point – you will need to adapt them to the needs of your class, the opportunities at the site you are visiting and the time and resources available.

4.2 Choosing an appropriate site

The ideal site for this fieldwork is a farm (pastoral, arable or mixed) where you have made contact with the farmer beforehand and they are willing to show your group around the farm and to talk to them and answer questions.[10] If it is not possible for your school to visit a rural area, you may have access to a city farm. Alternatively, a visit to local allotments may be possible and will give children an insight into the small-scale production of fruit and vegetables for home consumption.[11] A further option, which is not fieldwork but is still valuable, would be to invite a farmer to visit your class to talk about their work and show photographs of their farm.[12]

When planning a farm visit, it is very important to contact the farmer well in advance to discuss your aims for the fieldwork and to see if these fit with what the farmer is able to offer. Although you could

[10] This contact may be through a personal connection with someone in your school, or you could look for farms that occasionally open to the public (see https://farmsunday.org/) or contact the National Farmers' Union for advice https://www.nfuonline.com/updates-and-information/nfu-farmers-for-schools-programme/

[11] Note that allotments are not usually public land and you will need to ask permission for the visit from the local Allotments Society.

[12] You may also like to consider various virtual tours of farms available online.

visit a farm at any time of year, there will be more to see at an arable farm in the summer. Certain times of year are very busy for farmers and it may be best to avoid those. As with all fieldwork, it is important to carry out a site visit and risk assessment beforehand. A farm is a hazardous environment, and it is important that you fully comply with any safety guidance from the farmer. Bio-security is important for farms that raise birds or animals and you may be asked to stay away from certain areas or to sanitise footwear before visiting parts of the farm. Ensure that the children are aware of, and follow, the Countryside Code.[13] They should also be very careful to clean their hands on leaving the farm and before eating. If you are arriving by coach, check carefully that roads near the farm are suitable and that there is somewhere to park. It is important to ensure that fieldwork is inclusive and activities are accessible to all members of the class.

4.3 Planning and preparation

4.3.1 Equipment and resources

You may need the following equipment and resources, depending on the activities you decide to undertake (see Section 4.4):-

- clipboards, plain A4 paper, pencils for field sketches and sketch maps
- partially-completed field sketches and sketch maps may be useful for some children
- worksheets or cards with ideas for sensory activities
- phone/camera for taking some photographs (or take these beforehand, laminate and distribute on the day)[14]
- prompt cards with questions if you plan to interview a farmer
- paper and wax crayons if you plan to make rubbings of textures.

4.3.2 Pre-teaching

- Unless you have only just completed the *Agriculture* unit, select some slides to enable retrieval of types of agriculture (arable, pastoral, mixed, organic), key features the children may see on a farm (e.g. hedges, fences, crops, types of animals, combine harvesters) and the journey of food from farm to consumer.
- Talk to your children about the farm where the fieldwork will take place, telling them about its location, size, crops and what happens to the food grown there. Show some photographs if possible. What features might they expect to see? What might the farmer be doing at this time of year? Generate excitement and interest about the farm.
- If you are able to interview a farmer, prepare questions to ask them, for example: How long have you worked on this farm? How many people work here? What types of crops do you grow? What types of animals do you raise? What happens to the food you produce? What do you do each day? How is your work different at different times of year? Do you use fertilisers or pesticides? Make sure the farmer is aware of the age of your children, the level of explanation that will be helpful to them and how long the Q&A session should be. It may be helpful for the farmer to see the questions in advance.
- If appropriate, show children a small excerpt from an Ordnance Survey map of the site, helping them to decode it by teaching relevant symbols and referring to four-point compass directions.

[13] https://www.gov.uk/government/publications/the-countryside-code

[14] Always follow your school's guidance when taking photographs of children.

- If you plan to draw a field sketch, use materials from the *Migration* unit (Year 5 Spring 1 Lesson 1) or draw your own example to help establish expectations.
- If you plan to draw a sketch map, you might like to practise this by drawing a map of the classroom or part of the school grounds. Some children may need support to imagine a plan view (sometimes called a 'bird's-eye view') rather than drawing objects from the side.
- Make sure you communicate expectations regarding suitable clothing, footwear, procedures etc.
- Ensure you are familiar with the site and ready to answer any questions about it.
- You may want to start a 'working wall' or other work in display format centred around the fieldtrip.

4.4 Fieldwork activities on agriculture

Select from the following activities and adapt them to the needs of your class, the opportunities at the site you are visiting and the time and resources available.

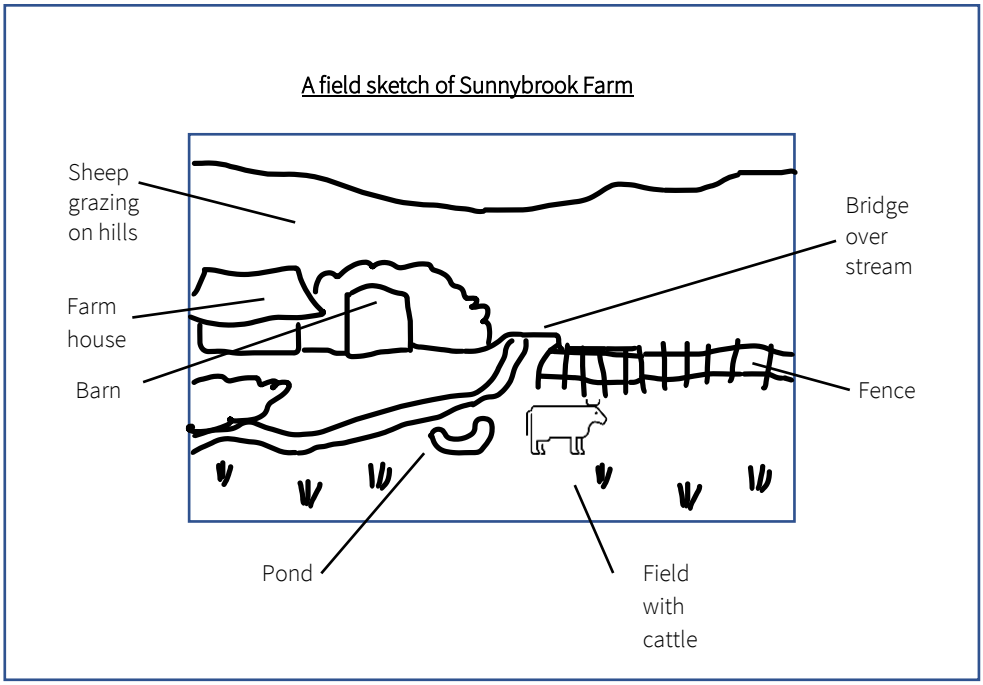
4.4.1 Introduction to the farm

Ideally, you will be met by the farmer or their representative on arrival. They will show you around the area of the farm that you are able to visit and answer any questions about the farm (see Section 4.3.2). They will also brief the class on how to stay safe during the visit. Encourage children to ask questions about what they see and to talk in their groups.

4.4.2 Drawing a field sketch

Provide the children with a clipboard, piece of A4 plain paper and a pencil. Choose a suitable view of the farm for children to draw or assist them in choosing their own view. If you have access to more than one location, different groups could draw different viewpoints. Encourage them to look carefully and name the features they can see before drawing. The aim of a field sketch in geography is to record key features of a place as accurately as possible. It's not necessary to shade or colour in the same way that we would in art, though it's fine to give some indications of texture, such as a few lines for grass. Encourage children to draw key lines first (e.g. the horizon, fields and key buildings) then to add detail (e.g. animals, details of buildings and trees). Then annotate the sketch to show key features e.g. field, hedge, sheep, barn, farmhouse, gate, stream.

The sketch might look something like this:



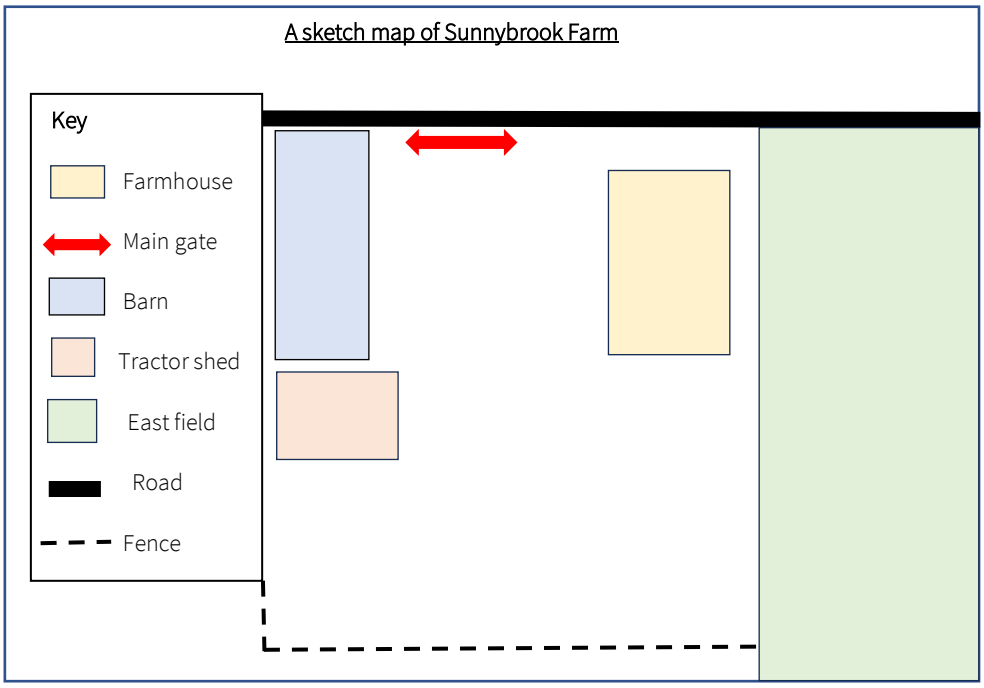
Some children may find it helpful to use a partially completed sketch that you have prepared beforehand, or to label a photograph that you have taken and printed out.

4.4.3 Drawing a sketch map

Drawing maps is an important geographical skill. A sketch map is not expected to be fully accurate with regard to scale, but key features should be shown and it should be possible for someone to follow a route using the map (for example to walk from one building to another).

- Choose a suitable location for the sketch map (e.g. the farmyard and key farm buildings or a field with stream and barn).
- Discuss with the group which features they will include on their map. Which features wouldn't they include? (They wouldn't include anything too small, or that will move e.g. a sheep!).
- Discuss how will they show the features on their map (e.g. a rectangle for a building, a zig-zag line for a hedge).
- Draw a rough copy of the map. Some children may need help to imagine features from above (a plan view or bird's eye view) rather than drawing a picture of what they look like from the side. A neat copy can be drawn back at school.

The final sketch map might look something like this:-



4.4.4 Sensory activities

There are a range of activities you can use to encourage children to experience the fieldwork site more fully. Here are some suggestions (also see Sheet 1 in the *Rivers* fieldwork, which can be adapted as needed):-

- Ask children to stand with their eyes closed for a minute and listen to all the sounds they can hear. Write some of them down.
- Children look for as many different colours as they can see in the area around them (e.g. green grass, purple flower, blue sky). Can they find the whole rainbow of colours? Make sure you set clear boundaries for the area that children can explore.
- Ask children to stand with their eyes closed and to think about what they can smell (fragrant and not so fragrant!). What adjectives describe the smells?
- Use crayons and paper to make rubbings of textures such as tree bark or stone walls.
- What words can the children think of to describe the environment around them? Think of adjectives as well as nouns. How does it make them feel and why?

4.5 Follow up work in school

It's important to take some time to reflect on the learning from the fieldtrip. Depending on the time you have available and the needs of the class, you could select from the following activities:-

- Write a short account of the visit.
- Write a description of the farm or record a verbal description.
- Print and annotate photographs.
- Draw and annotate a neat version of the field sketch.
- Draw a neat version of the sketch map with a title, symbols and key.

- Use the notes made from sensory activities to write a short poem about the farm you visited (individually or as a class). Remember that a poem is good for evoking sense of place and emotional reaction to the place – avoid using it for reinforcing technical vocabulary or key knowledge about agriculture.
- Look again at the Ordnance Survey map extracts now that children are more familiar with the area. If you took photos, find where they are located on the map.
- Reflect on what the children learned about agriculture during the visit. How was the farm you visited similar or different to the sheep farm in Wales (Chapter 6 in the booklet), Wilfred's pastoral farm (Chapter 3) or the Passmores' mixed farm (Chapter 3)?

When appropriate, you can reinforce skills learned in English or Maths.

4.6 Adapting the material for older year groups

Depending on the age of the class, you may like to add to or adapt the ideas above in the following ways:

- As part of the preparation, look at the site and wider situation of the farm on an Ordnance Survey map (ideally 1:25,000 scale). Reinforce use of the key and symbols, four- or eight-point compass and four- or six-figure grid references if these have been taught. Notice features such as houses, woodland, field boundaries, footpaths, roads etc.
- Write a more extended account of the fieldtrip, including a map showing the location of the field site, annotated photographs, maps and sketches and a report of the conversation with the farmer.
- Extend the sketch map activity to include a route around the farmyard or field. Children swap maps with another group and try to follow the route shown on the sketch map. Did it work? Was anything not clear? How could any uncertainty be resolved? (e.g. amending the key)
- If the necessary information is available, describe the route of the food from farm to consumer, considering transport, processing in a factory or elsewhere, packaging, distribution to shops and so on.
- When interviewing the farmer with an older group, you can consider some of the issues in farming covered in later years e.g. changes in crop prices (link to supply and demand learned in Summer Year 5), climate change (Summer Year 5 into Year 6) and sustainability (Year 4 Spring 2 onwards). Has the farmer considered organic farming? Do they think people should buy locally-grown food? How do they think their farm will change in the future?

5 Weather fieldwork

5.1 Introduction and aims

This piece of fieldwork complements the Year 3 Summer 2 unit, *Climate and Biomes*. It enables children to observe the weather in their school grounds. The ideal positioning for the fieldwork is towards the end of the *Climate and Biomes* unit, but it could also be undertaken in later years (see Section 5.6) so long as it is supported by appropriate retrieval of the content of the *Climate and Biomes* unit.

In the *Climate and Biomes* unit, children have learned about major climate zones around the world, in particular the Mediterranean and temperate zones. This fieldwork supports their learning through recapping their understanding of the weather (the day-to-day condition of the air around us) and the seasons from Key Stage 1. The fieldwork then builds on children's new learning about the temperate climate in the UK by providing a case study of weather in one location in the temperate zone. As part of this fieldwork, children will be able to practise geographical skills of measuring, recording and representing data.

To summarise, the aims of this fieldwork on weather are:

- to review understanding of types of weather and seasons from KS1;
- to learn about weather in one location in the temperate zone;
- to practise geographical skills of measuring, recording and representing data.

The ideas in this guide are a starting point – you will need to adapt them to the needs of your class, the opportunities on your school site and the time and resources available.

5.2 Choosing an appropriate site

This fieldwork can be undertaken in the school grounds, though it could also be undertaken in a nearby park or other area of open space, as convenient.

If leaving the school grounds, carry out a site visit and risk assessment beforehand. Be aware of any hazards associated with the site, especially if it contains a road or car park. It is important to ensure that fieldwork is inclusive and activities are accessible to all members of the class.

5.3 Planning and preparation

5.3.1 Equipment and resources

You may need the following equipment and resources, depending on the activities you decide to undertake (see Section 5.4):-

- clipboards and recording sheets
- weather instruments (digital thermometers and other instruments, such as a rain gauge, if available)

5.3.2 Pre-teaching

- Recap weather vocabulary from Key Stage 1, adding to it as appropriate (e.g. rain, drizzle, fog, mist, thunderstorm, sunny, cloudy, temperature, snow, sleet, hail, ice, frost). Recap seasons.
- Unless you have only just completed the *Weather and climate* unit, select some slides to enable retrieval of climate zones and characteristics of the temperate climate. What type of weather would we expect given the temperate climate zone and season?

- Talk to your children about the recent weather, perhaps showing them the day's weather forecast. Discuss how we measure the weather. Be selective about what aspects of the weather you focus on, depending on the age of your class. For a Year 3 class, you might like to focus on temperature, windspeed (use the Beaufort Scale to describe this, see) https://education.nationalgeographic.org/resource/beaufort-scale/ and describing types of weather (e.g. sunny, rainy, mist etc). Background information: https://www.metoffice.gov.uk/weather/learn-about/met-office-for-schools/other-content/other-resources/how-to-measure-the-weather
- You may want to start a 'working wall' or other work in display format centred around the fieldtrip.

5.4 Fieldwork activities for weather

- Choose a suitable location in your school grounds, away from buildings and trees.
- Use your instruments and observation to record data about the weather. A simple recording sheet is shown below:

Location:	
Date:	
Time:	
Temperature (°C):	
Wind speed (Beaufort Scale):	
Description of weather:	

- You may like to record the weather at different sites around your school grounds (see Section 5.6) or on multiple occasions (see Section 5.6). You can also add more aspects of the weather to record (see Section 5.6). Adapt the recording sheet as appropriate.
- You could also take photographs at the same time as recording data.

5.5 Follow up work in class

When the data has been collected,

- Write a short account of the method of collecting data and the results.
- Print and annotate photographs.
- Represent data as appropriate, for example using weather symbols (see Section 5.6 for more advanced methods of representation).

When appropriate, you can reinforce skills learned in English or Maths.

5.6 Adapting the material for older year groups

Depending on the age of the class, you may like to add to or adapt the ideas above in the following ways:

- Ask children if there are some parts of the school grounds that are usually warmer than others. Where would they go for shelter on a windy day? Where is it often cold? Introduce the term 'microclimate' (a small-scale climate). Record the temperature at 10 or more different sites around your school grounds. Choose sites on every side of the building, some that are close to the building, some that are far from the building, some in sun (if out) and some in shade. Back in the classroom, ask children to devise symbols to show the data on a map of the school. What patterns can they see? (For example, it is likely to be warmer on the south side of the school.) How might they use this information to decide on the site for some new picnic tables? Background information for teachers on microclimates: https://www.metoffice.gov.uk/binaries/content/assets/metofficegovuk/pdf/research/library-and-archive/library/publications/factsheets/factsheet_14-microclimates.pdf
- Ask children to record the weather at the same time every day for a week and compare the results with the weather forecast for your location. Present the data in an appropriate way (e.g. a bar graph with two different coloured bars per day showing forecast and actual temperatures). How accurate was the forecast? Was it more accurate on some days than others? Why might that be? Note to teachers: forecasts tend to be more accurate in periods of high pressure, as these tend to bring settled conditions. The rain and wind associated with periods of low pressure is harder to predict. Further information for teachers: https://www.metoffice.gov.uk/weather/guides/about-forecasts
- Older children may like to experiment with additional weather instruments such as an anemometer for measuring wind speed. You may be able to borrow equipment from a local secondary school. Alternatively, you could make weather instruments as part of your design and technology curriculum https://www.metoffice.gov.uk/weather/learn-about/met-office-for-schools/other-content/other-resources/weather-station/index
- Record the proportion of the sky covered in cloud (this can practise fractions or percentages as appropriate) and identify the types of cloud, see https://www.metoffice.gov.uk/weather/learn-about/met-office-for-schools/other-content/other-resources/how-to-measure-the-weather
- If the class have collected data at multiple locations or time points, children can calculate averages. Older children can also draw bar graphs for rainfall over time and line graphs for temperature over time. If the class split into groups and each group collected data, the data can be collated and children can use a spreadsheet to produce graphs and calculate averages. If children collected data at multiple sites around the school grounds, use symbols to plot the data on a map (e.g. different coloured circles for warmer and cooler temperatures). Discuss how symbols can communicate meaning clearly (e.g. people expect blue to indicate colder temperatures and red to indicate warmer temperatures).

6 Coasts Fieldwork

6.1 Introduction and aims

This fieldwork involves a visit to a coastal location, perhaps a shingle bay, a fishing village, a seaside town, a port or an area of sand dunes. This may be the local area if your school is in a coastal location, or it may involve travel to a contrasting environment for your children. The fieldwork will enable children to observe some of the coastal features and processes they learned about in the *Coastal Processes* unit (Year 4 Spring 1).

The ideal positioning for the fieldwork is towards the end of the *Coastal Processes* unit, but it could also be undertaken later in the year, or even in later years (see Section 6.6) so long as it is supported by appropriate retrieval of the content of the *Coastal Processes* unit.

In the *Coastal Processes* unit, children have seen many photographs of coastal landforms (such as bay, beach, headland, sand dunes, arch, stack) across England and Wales. They have also learned about the key processes of erosion, transportation and deposition, which occur in any physical environment (rivers, coasts, hot desert, cold desert). Fieldwork supports and enhances the classroom learning as students experience a coastal environment through their own senses. As part of the Coasts fieldwork, children will be able to practise geographical skills of drawing and annotating a field sketch, drawing a sketch map and using an Ordnance Survey map to identify symbols. They will also be able to practise key vocabulary in context and to write or speak about what they have experienced.

To summarise, the aims of this fieldwork on coasts are:

- to experience a coastal environment, recording and reflecting on their experience;
- to learn about a case study of a coastal location, identifying features and processes that they have learned about in class;
- to practise geographical skills, including Ordnance Survey map skills, field sketching and drawing a sketch map.

The ideas in this guide are a starting point – you will need to adapt them to the needs of your class, the opportunities at the site you are visiting and the time and resources available. It is important to ensure that fieldwork is inclusive and activities are accessible to all members of the class.

6.2 Choosing an appropriate site

This fieldwork can be undertaken in any accessible coastal area, but the ideal would be a sand or shingle bay with low cliffs and a nearby settlement with some suitable facilities (e.g. car park, toilets). Some coastal settlements have a small museum with displays about fossils found locally, the impact of coastal erosion, or how past inhabitants used the coast and sea. Some coastal areas have measures to reduce erosion, such as groynes, which children have learned about in the *Coastal Processes* unit. The fieldwork activities could easily be adapted to a fishing harbour, a port, an area of sand dunes or any other type of coast, though areas with high cliffs and no beach should probably be avoided. It will be helpful if children can access the shoreline, though they will not need to enter the sea. Bear in mind that access will be restricted in certain areas of a harbour or port for safety or customs reasons.

When planning a coastal visit, it is vital to visit the area well beforehand to check access, facilities, and to undertake a risk assessment. If you are arriving by coach, check carefully that roads near the coast are suitable and that there is somewhere to park. Check tide times and any other risks (e.g. jellyfish,

falling rocks or soft sand) just before the visit. Be aware that in the winter months, some facilities, including toilets, may be closed. In summer months, facilities such as car parks may be busy. In spring, some open areas may be closed to protect ground-nesting birds. Coastal areas contain particular hazards,[15] so ensure that you are fully briefed, and that children follow suitable rules. Always avoid walking immediately under cliffs (rocks may fall), digging into sandy cliffs (holes can cave in), walking on wet rocks or rocks covered in seaweed (often slippery) and treat the sea with caution, particularly if children are not familiar with a coastal environment.

6.3 Planning and preparation

6.3.1 Equipment and resources

You may need the following equipment and resources, depending on the activities you decide to undertake (see Section 5.4):-

- clipboards, plain A4 paper, pencils for field sketches and sketch maps[16]
- partially-completed field sketches and sketch maps may be useful for some children
- worksheets or cards with ideas for sensory activities
- phone/camera for taking some photographs (or take these beforehand, laminate and distribute on the day)[17]
- rulers and a table to record results if you plan to measure pebble size

6.3.2 Pre-teaching

- Unless you have only just completed the *Coastal Processes* unit, select some slides to enable retrieval of coastal features (bay, cliff, arch, stack, cave, sand dunes) and processes (erosion, transportation, deposition) and ways of reducing erosion (the unit focuses on groynes).
- Talk to your children about the coast where the fieldwork will take place, telling them about its location, features and how it is used by people. Show some photographs if possible. What will it be like to visit? How might the experience be different in different weather conditions? Generate excitement and interest about the coast.
- If appropriate, show children a small excerpt from an Ordnance Survey map of the site, helping them to decode it by teaching relevant symbols and referring to four-point compass directions.
- If you plan to draw a field sketch, use materials from the *Migration* unit (Year 5 Spring 1 Lesson 1) or draw your own example to help establish expectations.
- If you plan to draw a sketch map, you might like to practise this by drawing a map of the classroom or part of the school grounds. Some children may need support to imagine a plan view (sometimes called a 'bird's-eye view') rather than drawing objects from the side.
- Make sure you communicate expectations regarding suitable clothing, footwear, safety, procedures etc.
- Ensure you are familiar with the site and ready to answer any questions about it.
- You may want to start a 'working wall' or other work in display format centred around the fieldtrip.

[15] See https://rnli.org/safety/beach-safety

[16] Bear in mind that coastal environments can sometimes be very windy. A second clip on the clipboard can be helpful to keep paper flat. In rainy weather, it can be helpful to hold the clipboard inside a clear plastic bag.

[17] Always follow your school's guidance when taking photographs of children.

6.4 Fieldwork activities on coasts

Select from the following activities and adapt them to the needs of your class, the opportunities at the site you are visiting and the time and resources available.

6.4.1 Introduction to the coastal location

On arrival, find a sheltered site from where you can see the coast. Talk with the children about what they can see, recalling key vocabulary as appropriate. Encourage children to ask questions about what they see and to talk in their groups.

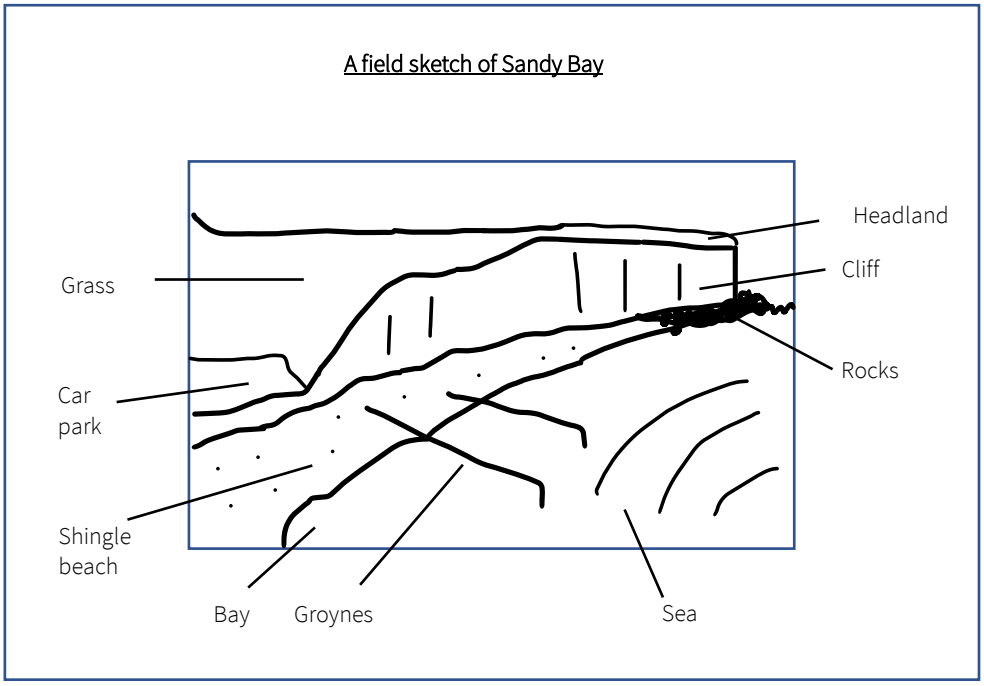
If weather and access allow, spend time walking as a class or small groups along the beach or edge of the sea (maintaining a safe distance from the water, especially in windy weather) and look around, up and down. What can you see in the distance? What is close by? Are any boats or ships visible? What might they be used for? Are there other people on the beach? What are they doing? Can you see any ways that people are trying to protect the coastline from erosion (e.g. by building groynes)?

Look out for any evidence of erosion, transportation or deposition. Evidence of erosion might be a hollow at the base of a cliff where the sea has eroded it, rocks on the beach which have fallen from the cliffs or a flat section of rocks at beach level where the sea has eroded the coast. Look for evidence of the sea transporting material in the sea itself (maintaining a safe distance depending on conditions) – look for a brown tone to the waves which shows they are carrying sediment, or you may even be able to see sand being carried along. Evidence of deposition might be sand piled up against one side or a groyne, or even carried on to a nearby road by a recent storm.

6.4.2 Drawing a field sketch

Provide the children with a clipboard, piece of A4 plain paper and a pencil. Choose a suitable view of the coast for children to draw or assist them in choosing their own view. If you have access to more than one location, different groups could draw different viewpoints. Encourage them to look carefully and name the features they can see before drawing. The aim of a field sketch in geography is to record key features of a place as accurately as possible. It's not necessary to shade or colour in the same way that we would in art, though it's fine to give some indications of texture, such as a few lines for grass. Encourage children to draw key lines first (e.g. the horizon, sea, cliffs and beach) then to add detail (e.g. settlement, groynes). Then annotate the sketch to show key features e.g. houses, car park, cave, boats.

The sketch might look something like this:



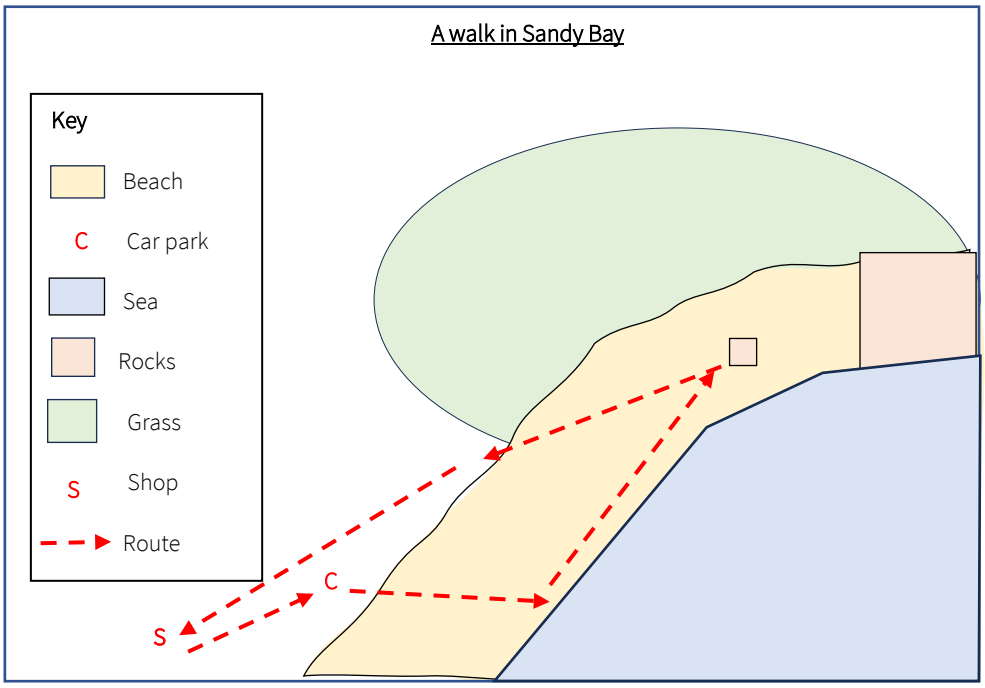
Some children may find it helpful to use a partially completed sketch that you have prepared beforehand, or to label a photograph that you have taken and printed out.

6.4.3 Drawing a sketch map

Drawing maps is an important geographical skill. A sketch map is not expected to be fully accurate with regard to scale, but key features should be shown and it should be possible for someone to follow a route using the map (for example to walk from the car park to the headland).

- Choose a suitable location or route for the sketch map (e.g. harbour or a walk along the beach).
- Discuss with the group which features they will include on their map. Which features wouldn't they include? (They wouldn't include anything too small, or that will move e.g. a fishing boat).
- Discuss how will they show the features on their map (e.g. a rectangle for a building, thick line for the cliff).
- Draw a rough copy of the map. Some children may need help to imagine features from above (a plan view or bird's eye view) rather than drawing a picture of what they look like from the side. A neat copy can be drawn back at school.

The final sketch map might look something like this:-



6.4.4 Sensory activities

There are a range of activities you can use to encourage children to experience the fieldwork site more fully. Here are some suggestions (also see Sheet 1 in the *Rivers* fieldwork, which can be adapted as needed):-

- Ask children to stand with their eyes closed for a minute and listen to all the sounds they can hear. Write some of them down.
- Children look for as many different colours as they can see in the area around them (e.g. green grass, purple shell, blue sky). Can they find the whole rainbow of colours? Make sure you set clear boundaries for the area that children can explore.
- Ask children to stand with their eyes closed and to think about what they can smell (fragrant and not so fragrant!). What adjectives describe the smells?
- Use crayons and paper to make rubbings of textures such as stones, shells or dried seaweed.
- What words can the children think of to describe the environment around them? Think of adjectives as well as nouns. How does it make them feel and why?

6.4.5 Measuring pebble size

This is a good activity to practise measuring and recording measurements with your class.

- Measure the long axis (longest dimension) of 5 or 10 pebbles near the sea (even if the beach is mostly sand, you will normally find a few pebbles. Don't include rocks that are fixed in place or too heavy to lift safely.) Record each result.
- Measure the long axis (longest dimension) of 5 to 10 pebbles further up the beach, away from the sea (avoiding getting too close to cliffs). Record each result (see example of recording table below).

Pebble size at site 1 (near the sea)	Pebble size at site 2 (near the cliffs)
2 cm	8 cm
5 cm	3 cm
4 cm	5 cm
1 cm	9 cm
7 cm	11 cm

- Back in the classroom compare the results. Were the largest pebbles near the sea or further up the beach? Normally we would expect the larger pebbles to be further up the beach as they are heavier and can only be transported by the larger waves in stormy conditions. However, beaches are always changing and they don't always look as we'd expect, so don't worry if your results are different to this.

6.5 Follow up work in school

It's important to take some time to reflect on the learning from the fieldtrip. Depending on the time you have available and the needs of the class, you could select from the following activities:-

- Write a short account of the visit
- Write a description of the coastal location or record a verbal description
- Print and annotate photographs
- Draw and annotate a neat version of the field sketch
- Draw a neat version of the sketch map with a title, symbols and key.
- Use the notes made from sensory activities to write a short poem about the coast you visited (individually or as a class). Remember that a poem is good for evoking sense of place and emotional reaction to the place – avoid using this activity for reinforcing technical vocabulary or explaining coastal processes.
- Look again at the Ordnance Survey map extracts now that children are more familiar with the area. If you took photos, find where they are located on the map.
- Reflect on what the children learned about coasts during the visit. How was the coastal location you visited similar or different to the Jurassic Coast (*Coastal Processes* booklet Ch 4), the Holkham Dunes (Ch 5) or West Wales (Ch 6)?

When appropriate, you can reinforce skills learned in English or Maths.

6.6 Adapting the material for older year groups

Depending on the age of the class, you may like to add to or adapt the ideas above in the following ways:

- As part of the preparation, look at the site and wider situation of the coastal location on an Ordnance Survey map. Reinforce use of the key and symbols, four- or eight-point compass and four- or six-figure grid references if these have been taught. Notice features such as beaches, rocks, cliffs, buildings etc.
- Write a more extended account of the fieldtrip, including a map showing the location of the field site, annotated photographs, maps and sketches and pebble size data.
- Extend the sketch map activity so that children draw a route, swap maps with another group and try to follow the route shown on the sketch map. Did it work? Was anything not clear? How could any uncertainty be resolved? (e.g. amending the key)

- Year 5 and 6 groups have learned about caring for the environment, so you could consider the issue of plastic pollution on beaches and undertake a litter count (use a table to record different types of litter), join in an organised beach litter clean or run your own litter collection.[18]
- Older groups can consider how best to collect samples of pebbles on the beach, perhaps taking a sample near the sea, halfway up the beach and, finally, near the cliffs (keeping a safe distance). They can also use decimals in their measurements (e.g. 5.7 cm long). Back in the classroom, calculate averages from each sample site and draw a graph of the results. You could also share the data from the different groups with the whole class and use a spreadsheet to calculate overall averages for the three types of site. Children could construct a hypothesis before starting the fieldwork (such as 'Pebbles are bigger nearer the sea') and decide whether it is proven or disproven from their data. This activity can link to learning in science and mathematics.
- In the field, or back in the classroom, consider how the coastal location is changing as erosion, transportation and deposition take place. What might the coast be like in 100 years' time? Have people put in place any measures to reduce erosion (e.g. groynes)? How well are these working?

[18] Follow suitable health and safety guidelines when collecting and disposing of rubbish, see https://www.wildlifetrusts.org/actions/do-litter-pick-or-beach-clean You might like to join an organised beach clean, see https://www.mcsuk.org/what-you-can-do/join-a-beach-clean/schools-and-groups/

7 Tourism fieldwork

7.1 Introduction and aims

This is a fieldtrip to a place that tourists visit. It might be the area around your school, or you might have the opportunity to travel to a local tourist destination such as a beauty spot, seaside town or theme park. It enables children to consider how tourists use the location, the facilities provided for them and the positive and negative effects of tourism on the location. The ideal positioning for the fieldwork is towards the end of the *Tourism* unit (Year 4 Spring 2), but it could also be undertaken later in the year, or even in later years (see Section 7.6) so long as it is supported by appropriate retrieval work. The fieldtrip can be to a rural or urban area.

In the *Tourism* unit, children have learned about seaside towns, different types of tourism, skiing and sunshine holidays and the positive and negative effects of tourism. They were also introduced to the idea of sustainability, though ecotourism. This fieldwork is an opportunity to look more closely and to consider the provision for tourists and how tourists affect the place. The children will also develop their skills in collecting and analysing data, which are an important part of geographical enquiry. These can link in, as appropriate, with their work in mathematics.

To summarise, the aims of this fieldwork are:

- to look carefully at a place that tourists visit, considering the facilities for tourists, the activities they undertake and how tourists affect the place;
- to use vocabulary about tourism learned in the *Tourism* unit;
- to learn and practise geographical skills, including surveys, land-use mapping and traffic counts (as appropriate).

The ideas in this guide are a starting point – you will need to adapt them to the needs of your class, the opportunities at the site you are visiting and the time and resources available.

7.2 Choosing an appropriate site

This fieldtrip can be to any place that tourists visit. It could be your local area, or, if you are able to travel further afield, to a contrasting location such as a seaside town, theme park or a rural beauty spot. For example, you could walk from your school to a nearby tourist attraction, walk round it, each group carrying out one type of survey, and walk back to school. This could be completed in 1-2 hours. Alternatively, you could travel to a local seaside town or rural attraction, drive into it, noting any facilities that tourists might use (e.g. leisure centre or train station) then spend time at the location itself, each group undertaking two or three activities. This trip could take half a day, or it could be combined with coasts or settlement fieldwork for a full day trip. Ideally, visit more than one part of the location, so that you can compare and contrast facilities and tourist activities across the site.

Permission is not needed to work in areas of public access, such as a seaside promenade or area of public open space, but note that piers, shopping centres and theme parks are usually on privately-owned land and you will need to ask permission in advance to take groups there. Many tourist facilities offer a reduced admission charge to school groups and they may have an education officer who can help with planning your fieldtrip. As with all fieldwork, carry out a site visit and risk assessment beforehand. Be aware of any hazards associated with the site, especially exposure to traffic, water, animals or steep slopes. It is important to ensure that fieldwork is inclusive and activities are accessible to all members of the class.

7.3 Planning and preparation

7.3.1 Equipment and resources

You may need the following equipment and resources, depending on the activities you decide to undertake (see Section 7.4):-

- clipboards, plain A4 paper, pencils
- tourist facility base maps (partially completed maps or photographs to annotate may be helpful for some children). Draw a simple map of the area the class will survey for them to fill in the tourist facilities (such as ice cream stands, car park). If the area is large, you may need to allocate different parts to different groups
- blank tables for recording pedestrian counts. Plan locations for the groups to stand and count the people going past. In busy areas, children may need to count people just going in one direction. Children can make tally charts or count in their heads. In a very busy area, or for children who easily lose count, a tally counter[19] can be useful
- blank tables for recording tourist activities and/or environmental impact survey (see guidance in Sections 7.4.5 and 7.4.6)
- phone/camera for taking some photographs (or take these beforehand, laminate and distribute on the day)[20]
- stopwatches (or phones from accompanying adults) to time pedestrian counts and surveys.

7.3.2 Pre-teaching

- Unless you have only just completed the *Tourism* unit, select some slides to enable pupil retrieval of types of tourism, seaside towns (if relevant) and positive and negative impacts of tourism.
- Talk to your children about the tourist location where the fieldwork will take place. What type of tourism would they expect to see? What do they know about it already (if local)? What facilities would they expect to see? What positive and negative impacts of tourism might there be in that place?
- Have a look at an online map or Ordnance Survey map of the location together and notice the different facilities there. Practise the map skills learnt up to this point to describe the location.
- Explain the instructions for mapping tourist facilities and/or pedestrian counts or other surveys that you have selected. You can practise techniques on the school site in advance if that would be helpful.
- Make sure you communicate expectations regarding suitable clothing, procedures etc. You may need to consider safety around traffic and to avoid blocking the routes if you are in a busy area – splitting the class into small, supervised groups will help with this.
- Make sure that you are familiar with the site and ready to answer any questions about it.
- You may want to start a 'working wall' or other work in display format centred around the fieldtrip.

[19] A small digital or mechanical device that counts the number of times its button is pressed. Check it is reset between counts.

[20] Always follow your school's guidance when taking photographs of children.

7.4 Fieldwork activities on tourism

Select from the following activities and adapt them to the needs of your class, the opportunities at the site you are visiting and the time and resources available.

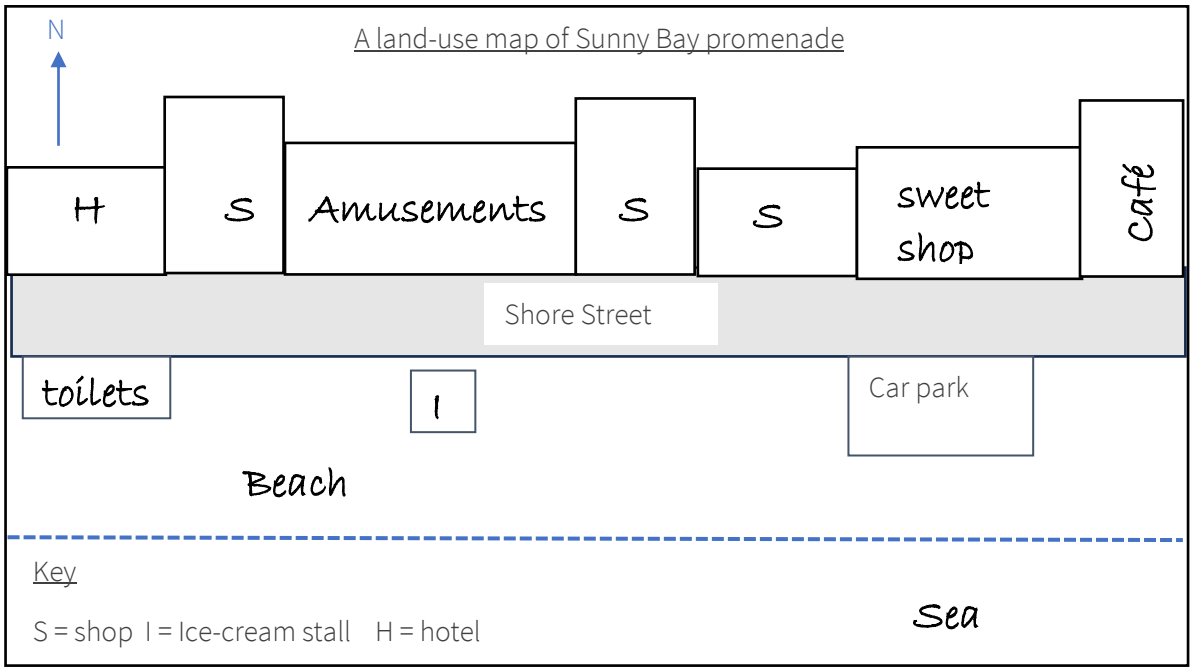
7.4.1 Introduction to the area

Find a quiet location where you have a good view of the fieldwork site. Introduce the location to children, asking them about what they can see and encouraging them to ask questions. What type of tourist destination is this? What words would they use to describe what they can see? What facilities can they see? How do they think the weather will affect tourism here? How do they think tourists might affect this place? Give a brief overview of the history and growth of the tourism in this place if appropriate. Recap any arrangements for group work. Encourage children to ask questions about what they see and to talk in their groups.

7.4.2 Mapping tourist facilities

Split the class into supervised groups. Provide the children with a base map showing simple outlines of buildings or key parts of the tourist site (a plan view). Include a few key landmarks and road names to help children find where they are. If the tourist destination is small, all groups can fill in the map for the whole place. If the tourist destination is large, you may wish to allocate a section to each group. Younger children may take time to identify and record each facility so allocate a smaller section for younger groups. Make sure the accompanying adult understands which section to go to. Each small group then walks down their allocated section, completing the map as they go, using the pre-agreed key. Check the maps before you return to the classroom (and you may like to complete your own version in case of disagreement). An example of a simple land-use map can be found below.

Some children may find it helpful to use a partially completed map that you have prepared beforehand, or to label a photograph that you have prepared beforehand.



7.4.3 Drawing a sketch map

This activity is an alternative to mapping tourist facilities (7.4.2). Children draw their own sketch map of part of the tourist site (or part of the tourist site or a route through the site), drawing the map themselves and using their own symbols and key rather than mapping land use onto a prepared base map (see further guidance in Section 6.4.3).

7.4.4 Making a pedestrian count

- Groups go to their allocated survey point(s). When choosing points, include some places that are likely to be busy (next to main gates, near ice cream stand) and places that are quieter.
- Time 5 minutes and count the number of people going past. If the location is very busy, a one-minute time limit may be preferable, or count the people going in just one direction. You may also wish to count different groups of people (e.g. adults, children, cyclists).
- Record the tally or total on the recording table (see example below).
- Older children can repeat the count in the same location to give three counts in total and then calculate the average when back in the classroom.
- Count again in a new location if appropriate. If groups decide their own locations, make sure these are marked on a map so the locations are remembered when you return to the classroom.

Type of vehicle	Pedestrian count in 5 minutes at Park gateway
Number of adults	𝍸 𝍸 III
Number of children	𝍸 𝍸 III
People on bicycles	𝍸 IIII

7.4.5 Surveying tourist activities

- Predict the types of activities children are likely to see tourists undertaking at the fieldwork location (such as buying an ice cream, visiting a souvenir shop, cycling, flying a kite, building a sandcastle).
- Devise a simple tally chart with these activities listed (leave some blank lines for additional activities the children may want to add).
- Children spend 15 minutes in a small group walking around the site and recording the activities they see (one mark on the tally chart for each person engaged in that activity).

7.4.6 Environmental impact survey

- Predict the types of negative impacts of tourism children are likely to see at the site (such as litter, plastic pollution on a beach, cars parked outside permitted parking areas, footpath erosion)
- Devise a simple tally chart with these impacts listed (leave some blank lines for additional impacts the children may notice)
- Children spend 15 minutes in a small group walking around the site and recording what they see (one line on the tally chart for each instance of that negative impact).

7.5 Follow up work in school

It's important to take some time to reflect on the learning from the fieldtrip. Depending on the time you have available and the needs of the class, you could select from the following activities:-

- Write a short account of the visit

- Print and annotate photographs
- Create a final version of the map of tourist facilities, using an agreed set of symbols and key. If different groups surveyed different sections of the site, stick these together to make a whole-class map. Are there more tourist facilities in some areas than others? Why might that be?
- Collect and process the pedestrian count, tourist activities and/or environmental impact survey data as appropriate for the class (e.g. pictograms, bar chats). If various sites were surveyed, the graphs could be located on a base map, so you can compare and contrast findings from different parts of the site. Which locations were most busy and why? Which activities were most frequently observed and why? Which negative impacts of tourism were most common? Were any parts of the site affected in particular?
- Reflect on what the children learned about tourism during the visit. How was the tourist location visited similar or different to those in the *Tourism* booklet (Llandudno, Zermatt, Majorca)?
- What negative impacts of tourism were observed and how could these be reduced? Are there any ways that people could be encouraged to be more responsible as tourists in that place?

As appropriate, you can reinforce skills learned in English or Maths.

7.6 Adapting the material for older year groups

Depending on the age of the class, you may like to add to or adapt the ideas above in the following ways:-

- As part of the preparation, look at the location on an Ordnance Survey map (1:50,000 or 1:25,000 scale), paying particular attention to the fieldwork site(s). Reinforce use of the key and settlement symbols, four- or eight-point compass and four- or six-figure grid references if these have been taught. Notice symbols for different types of open space and facilities.
- Older children can calculate averages from repeated pedestrian counts at the same location and display the results on a bar chart. If there are multiple counts at different locations, a located bar chart map works well.
- Older children can write a more extended account of the fieldtrip, including a map showing the location of the field site, land-use maps and located bar graphs for pedestrian count and survey data.
- Work together with older children to decide on the locations for surveys and the symbols for mapping. They could also ask and answer an enquiry question, for example: ‘What positive and negative effects does tourism have on Sunny Bay?’ or ‘Is tourism sustainable in Sunny Bay?’
- Use a spreadsheet to record figures for the pedestrian counts and surveys and to create bar charts of the results, plus a pie chart for different groups of pedestrians or types of negative impact.

8 Ecosystems Fieldwork

8.1 Introduction and aims

This fieldwork involves a visit to a location in which you can explore the links and processes in an ecosystem. It links to *The Amazon* and *Interconnected Amazon* units (Year 5 Summer), so the ideal would be to visit a botanic garden which has a humid tropical glasshouse where children can explore the rainforest ecosystem. However, this may not be possible for many schools, so a good alternative would be to visit an area of temperate woodland, a local nature reserve, local park or even a nearby pond. In these places, children can consider food chains, food webs and the nutrient cycle. If possible, it will be helpful to have input from someone who is knowledgeable about the ecosystem visited, for example a member of the local wildlife trust,[21] a wildlife charity[22] or an education officer from the botanic garden.

The ideal positioning for the fieldwork is during *The Amazon* or *Interconnected Amazon* units. In *The Amazon* unit, children have explored the different parts of an ecosystem (living and non-living). They have learned about food chains and food webs, the role of decomposers, the nutrient and carbon cycles, as well as revisiting the water cycle. They have learned what happens when the natural cycles break down, often because of changes people make to the environment. If you plan to visit a tropical glasshouse, these characteristics and processes can be explored for the rainforest ecosystem. If not, they can easily be transferred to the context of temperate woodland (including a park), a pond or another type of ecosystem.

As part of the Ecosystems fieldwork, children will be able to practise geographical skills of drawing and annotating a field sketch, drawing a sketch map and drawing a food chain, food web or flow diagram. They will also be able to practise key vocabulary in context and to write or speak about what they have experienced.

To summarise, the aims of this fieldwork on ecosystems are:

- to experience an ecosystem, recording and reflecting on their experience;
- to learn about a case study of an ecosystem, identifying characteristics and processes that they have learned about in class;
- to practise geographical skills, including field sketching, drawing a sketch map and drawing diagrams.

This fieldwork can also easily be combined with work in science, particularly identifying plants and insects. The ideas in this guide are a starting point – you will need to adapt them to the needs of your class, the opportunities at the site you are visiting and the time and resources available. It is important to ensure that fieldwork is inclusive and activities are accessible to all members of the class.

8.2 Choosing an appropriate site

This fieldwork can be undertaken in any ecosystem, but the ideal would be a tropical glasshouse in a botanic garden, or a small area of temperate woodland, parkland or a pond. Some nature reserves

[21] Find local wildlife trusts at https://www.wildlifetrusts.org/

[22] For example Buglife https://www.buglife.org.uk/ , Plantlife https://www.plantlife.org.uk/ or the RSPB https://www.rspb.org.uk/

have a display board about the site and plants and animals which can be seen there. It will be a great help to have a specialist in the ecosystem with you for this fieldtrip.

When planning a visit to a natural environment, it is vital to visit the area well beforehand to check access, facilities, and to undertake a risk assessment. Areas of trees can be dangerous in windy or stormy weather. Ponds and other areas of water bring particular hazards and we recommend that a visit that includes pond dipping is undertaken only with a local specialist to guide the group. Certain plants and fungi are poisonous and suitable precautions should be taken. Some children may be allergic to insect stings. Children should always clean their hands carefully before eating food.

8.3 Planning and preparation

8.3.1 Equipment and resources

You may need the following equipment and resources, depending on the activities you decide to undertake (see Section 8.4):-

- clipboards, plain A4 paper, pencils for field sketches and sketch maps[23]
- partially-completed field sketches and sketch maps may be useful for some children
- worksheets or cards with ideas for sensory activities
- identification charts or phone apps[24] for plants, insects or birds
- magnifying glasses if you plan to look for insects (minibeasts)
- phone/camera for taking some photographs (or take these beforehand, laminate and distribute on the day)[25]

8.3.2 Pre-teaching

- It is likely that this fieldtrip will be positioned during *The Amazon* or *Interconnected Amazon* units, but it would still be useful to recap the parts of an ecosystem (living and non-living), the nutrient cycle, adaptation to the environment and food chains and webs (slides from *The Amazon* lessons 3 and 4 are most relevant). If you plan to visit a tropical glasshouse, focus on the rainforest ecosystem, but if you are visiting a temperate environment, then recap the general characteristics and processes that can then be applied to the specific ecosystem you will visit.
- Talk to your children about the ecosystem where the fieldwork will take place, telling them about its location, characteristics and how it is used by people. Show some photographs if possible. What plants and animals might they see? What impacts of people might there be? Generate enthusiasm and interest about the ecosystem.
- If you plan to draw a field sketch for the first time, use materials from the *Migration* unit (Year 5 Spring 1 Lesson 1) or draw your own example to help establish expectations.
- If you plan to draw a sketch map for the first time, you might like to practise this by drawing a map of the classroom or part of the school grounds.
- Make sure you communicate expectations regarding suitable clothing, footwear, safety, procedures etc.
- Ensure you are familiar with the site and ready to answer any questions about it.

[23] Bear in mind that coastal environments can sometimes be very windy. A second clip on the clipboard can be helpful to keep paper flat. In rainy weather, it can be helpful to hold the clipboard inside a clear plastic bag.
[24] For example inaturalist https://www.inaturalist.org/
[25] Always follow your school's guidance when taking photographs of children.

- You may want to start a 'working wall' or other work in display format centred around the fieldtrip.

8.4 Fieldwork activities on ecosystems

Select from the following activities and adapt them to the needs of your class, the opportunities at the site you are visiting and the time and resources available.

8.4.1 Introduction to the ecosystem

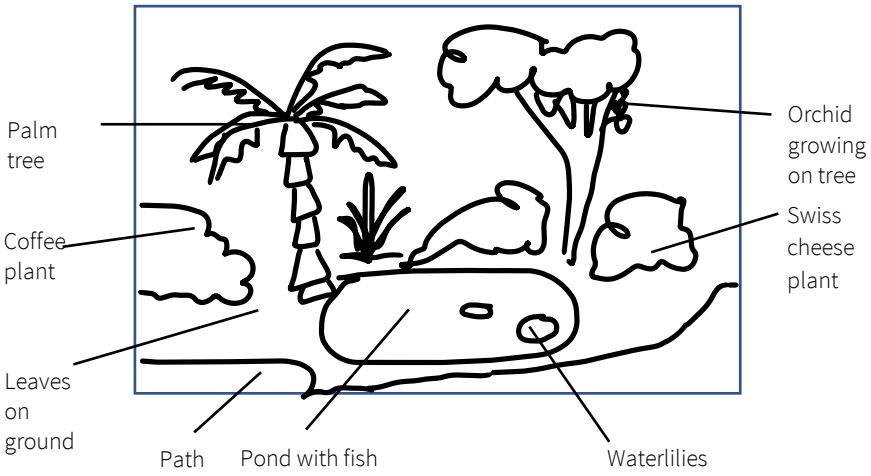
On arrival, find a sheltered site from where you can see the site you are visiting. Talk with the children about what they can see, recalling key vocabulary as appropriate. If possible, ask an expert to talk about the types of plants and animals that live in this area, how they are adapted to the ecosystem and their typical food. What is the climate like at the site? How does this affect the ecosystem? Also ask about how people use the ecosystem and whether there are any negative impacts from this use. Encourage the children to ask questions and to experience the environment through their senses (excluding taste!). What can they see/smell/hear? What does the bark of the trees or the ground beneath the trees feel like?

8.4.2 Drawing a field sketch

Provide the children with a clipboard, piece of A4 plain paper and a pencil. Choose a suitable view of the site for children to draw or assist them in choosing their own view. If you have access to more than one location, different groups could draw different viewpoints. If you are visiting a glasshouse, there may be a walkway or viewing gallery where you can see across the trees. The aim of a field sketch in geography is to record key features of a place as accurately as possible. It's not necessary to shade or colour in the same way that we would in art, though it's fine to give some indications of texture, such as a few lines for leaves. Encourage children to draw key lines first (e.g. the horizon, large trees, pond) then to add detail (e.g. smaller plants). Then annotate the sketch to show key features such as types of tree.

The sketch might look something like this:

A field sketch of the tropical glasshouse



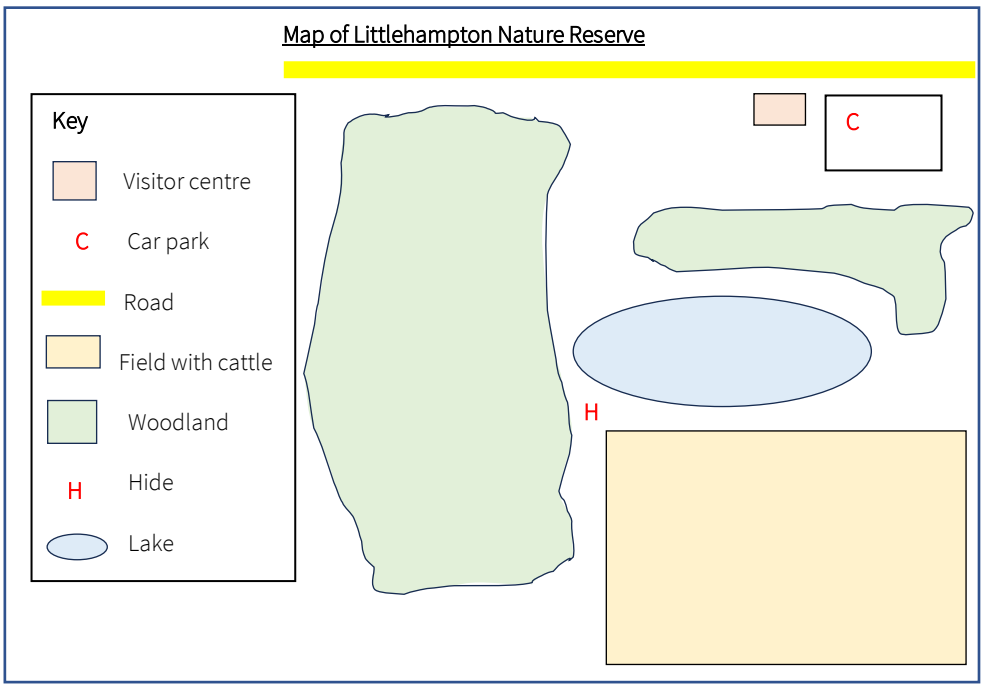
Some children may find it helpful to use a partially completed sketch that you have prepared beforehand, or to label a photograph that you have taken and printed out.

8.4.3 Drawing a sketch map

Drawing maps is an important geographical skill. A sketch map is not expected to be fully accurate with regard to scale, but key features should be shown and it should be possible for someone to follow a route using the map.

- Choose a suitable location or route for the sketch map (this could be the whole site, if it is small, or part of the site).
- Discuss with the group which features they will include on their map. Which features wouldn't they include? (They wouldn't include anything too small, or that will move).
- Discuss how will they show the features on their map.
- Draw a rough copy of the map. A neat copy can be drawn back at school.

The final sketch map might look something like this:-



8.4.4 Identifying plants and animals

- Guided by your expert, identification charts or phone apps, children identify a small number of trees, plants, insects, animals and/or birds as appropriate for the site. Children can note down the names of species identified and try drawing some.
- Spend time watching insects,[26] animals or birds. What are they doing?
- Collect information to help you draw a food chain or web when back in the classroom. You may even see some food chains at work! (e.g. sheep eating grass, squirrel eating a beech nut.) Don't forget the role of decomposers such as worms, snails and fungi. Can the children see

[26] For guidance on a minibeast hunt, see https://www.woodlandtrust.org.uk/blog/2023/05/minibeast-hunt/

dead leaves that are being broken down and taken into the soil? Are there any predators in the ecosystem? (You are less likely to see these, but the expert can tell you about them.)

8.5 Follow up work in school

It's important to take some time to reflect on the learning from the fieldtrip. Depending on the time you have available and the needs of the class, you could select from the following activities:-

- Write a short account of the visit
- Write a description of the site or record a verbal description
- Print and annotate photographs
- Draw and annotate a neat version of the field sketch
- Draw a neat version of the sketch map with a title, symbols and key.
- Draw a neat version of food chains or food webs including the plants, insects, animals and birds that children learned about. How did the nutrient cycle work at that site? What would happen if the trees were cut down or all the insects moved away?
- Reflect on what the children learned about ecosystems during the visit. How was the ecosystem you visited similar or different to the Amazon rainforest?