

PiXL Spine - Geography – Geographical Enquiry

Below is a step-by-step guide to creating a geographical enquiry. This structure is widely used when doing fieldwork within geography.

Topic: Choose a geographical topic that you have studied to carry out your enquiry out on.

- a. Which topics are you most confident with?
 - b. Which topics could you do fieldwork on?
- 1. Come up with a key question or a hypothesis that you will be able to answer, prove or disprove with your data collection.**
 - c. This must be a clear and simple question.
 - d. Is it a question or hypothesis that you can find answers to?
 - 2. Research the theory that backs up your key question or hypothesis.**
 - a. Why have you chosen to investigate this topic?
 - b. How does the theory link to the chosen fieldwork?
 - c. What geography will you find out about?
 - 3. Methodology: come up with appropriate data collection methods that will help you come to a clear conclusion at the end of the enquiry.**
 - a. What sampling types will you use?
 - b. How many methods should you carry out?
 - c. Are the methods manageable? Will they give accurate results?
 - d. How long will each method take?
 - e. How many people do you need to carry out the methods?
 - 4. Risk assessment: once you have chosen your topic and area of study, you must assess the risks and hazards involved.**
 - a. How might your safety be affected? Consider traffic risk, stranger danger and any physical risk that could pose a threat or could hurt someone, for instance any enquiry that is carried out close to water.
 - 5. Data presentation: once you have collected your data, how will you present it?**
 - a. Incorporate your geographical skills knowledge here. What type of graph will you use to present your data?

6. Results, analysis and conclusion – what have you found?

- a. Have you manipulated your data – e.g. have you found the average of your results? What do the results show?
- b. Can you come up with a clear conclusion from the data that you have collected?
- c. Have you answered your question or stated whether you can clearly prove or disprove your hypothesis.

7. Evaluation: if you were to do this enquiry again, what would you do differently?

- a. What went well with the enquiry? Consider data methods, data presentation, results, etc.
- b. What would you change if you were to do it again? E.g. a different time of the year?
- c. If you made these changes, would it affect your results? If the results would change, this is fine, but can you justify why?



TASK:

Using a human or physical topic that you have covered, use the structure and questions to come up with your own geographical enquiry. What do you think the outcome of the enquiry would be?

TIP! This doesn't have to be something complicated, try and see if you can create one that relates to your local area.

Physical geography enquiry

Cleveleys coastline is one that is prone to coastal flooding and coastal erosion. This affects many of the homes and businesses that are situated on this coastline.

Where is Cleveleys coastline?

Cleveleys is located on the north-west coast of the UK. It is in the county of Lancashire, near the Irish Sea. The main function of Cleveleys is for its local residents, but it also has some facilities linked to tourism. See map.

<https://www.google.com/maps/place/Cleveleys,+Thornton-Cleveleys/@53.8838302,-3.0528878,14z/data=!3m1!4b1!4m5!3m4!1s0x487b5cac2fb3cf2f:0x260cf99ff4a40f61!8m2!3d53.8808253!4d-3.0389598>

What is the problem?

Over the past 100 years since people started to settle on the coast there have been many instances where the coast has completely flooded. This destroys properties close to the coast and those further behind that are built on low-lying land.

What could we investigate along Cleveleys coastline?

There are many different enquiries that we could carry out at the coastline within Cleveleys:

- What is the rate of erosion at Cleveleys coastline?
- How is coastal erosion/flooding affecting local businesses within Cleveleys?
- How effective are the coastal management strategies at Cleveleys?

In order to choose the most effective enquiry we need to assess the **suitability of the location**.

There are a number of reasons why we can use Cleveleys for this enquiry:

Task A: Use the photograph to identify three possible reasons why this location is good for fieldwork. E.g. It is safe; there are paths and walkways to access the strategies.



Task B: You must now answer the question below using your answers to task A.



Evaluate the effectiveness of the Cleveleys coastline as a suitable location for carrying out a piece of geographical fieldwork.

Evaluate means to make a judgement.

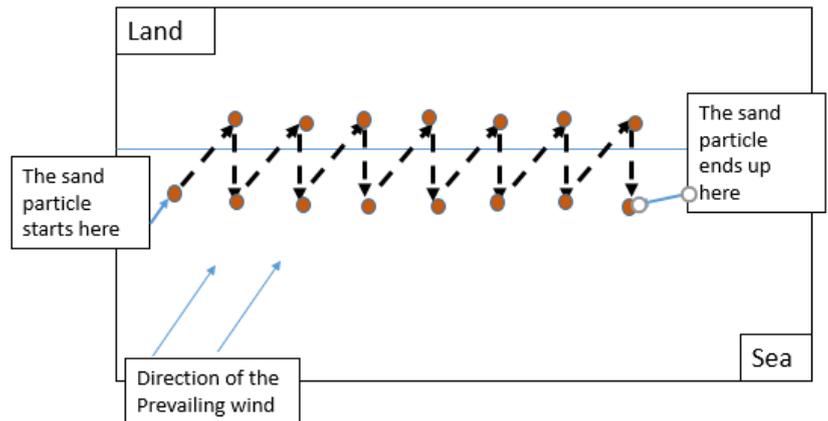
Suitable means how appropriate this location is for carrying out the enquiry.

Physical geography enquiry

Now that we have evaluated the suitability of the location, we have chosen to use the enquiry question: *How effective are the coastal management strategies along Cleveleys coastline?*

Theory: what is longshore drift and how does it affect coastal erosion?

Longshore drift is a process of transportation. This is when material is moved along the coast in a zig-zag motion. Particles come up the beach via swash in the direction of the prevailing wind. Once they reach the beach the particles are then pulled down the beach into the sea via backwash. This process continues and the particles are moved along the coastline.



This impacts on coastal erosion due to the particles being taken from one part of the coast and put somewhere else. If there is more transportation and not much deposition, then this leaves a coastline exposed and prone to erosion. The more beach that is built up, the greater the wave energy absorbed by the beach. The smaller the beach, the less natural protection for the cliffs, which results in faster rates of erosion.

What management strategies are there at Cleveleys coastline?

Management strategies are structures or methods put in place to reduce coastal erosion or flooding. There are a number of management strategies at Cleveleys and we are going to look at groynes (see photograph).



Methodology



In order to collect the data to solve this question, we must decide on appropriate data collection methods to carry out. We are going to concentrate on one main method for carrying out your enquiry.

Measure the height of the beach at the groynes. Standing with our backs to the coastline, and facing out to sea, we are going to walk 3 m from the coastline down the groyne. At both sides of the groyne at this point, we will measure from the top of the groyne down until we meet the sand. This will be measured with a tape measure and in cm.

TASK:

Using the method above consider the questions below:



1. What are the positives and negatives of this method?
2. Do you think doing this at five groynes is enough? Too many? Give reasons for your answers.
3. Are there any other methods that you think would be appropriate to measure longshore drift?
4. **Risk assessment**

Before we carry out the enquiry we must always assess the risks of going to a location. Have another look at the photograph of Cleveleys coastline, what risks might we come across? How will we reduce these risks? We also need to work out the likelihood of the risk occurring, usually on a scale of 1–5 (where 1 is a small likelihood and 5 a high likelihood). If it is very highly likely then the enquiry would not be able to go ahead at this location. These assessments are very important for the safety of all who go on the trip.

TASK: Below is a table which has two risks partially completed for you. Complete the table and add two more risks of your own.

Risk	The likelihood of it occurring	How to reduce the risk
Drowning in the sea	3	Students are to stay away from the sea by at least 5 m at all times.
Tripping hazards		

Data presentation and analysis

In order to show if there is a difference in the depth of side at each side of the groyne we need to create a reverse bar chart. This shows us the depth of material at both sides of each groyne, north and south. We will be able to see if there is a build-up of material on one side of the groyne and if longshore drift is being effectively stopped by the groynes.

Results

Here is the results table which shows the depth of sand from the top of each groyne down to the sand on the north and south side of the groyne.

	North (cm)	South (cm)
Groyne 1	-50	-30
Groyne 2	-37	-29
Groyne 3	-39	-29
Groyne 4	-47	-32
Groyne 5	-51	-15
Total	-224	-135
Average depth	-44.8	-27

Task:

Using the results table, draw your own reverse bar chart.

Here you must use the same rules for drawing a bar chart, however upside down.

REMEMBER: All bar charts must have a title, labelled axis and a key (if needed).



Now we have our results, we can do some data analysis with the data collected. One way we can do this is to measure the average depth of sand on each side of the groyne. We can do this by adding all the depths on the north side up and dividing them by the number of groynes:

- south side = -27
- north side = -44.8

This shows that there is more sand on the south side of the groynes.

Conclusion

From our results we can conclude that longshore drift is happening at Cleveleys coastline. It is happening from south to north. We can see this because there is more sand on the south side of the groyne suggesting it is being trapped by the groyne effectively. **Therefore, we can conclude in response to our key question that the coastal management strategies at Cleveleys coastline are effective.**

Evaluation

After every enquiry is carried out in geography we must make a decision as to how successful it has been. We must decide whether our results are true and valid. The best way to consider this is to think about:

- What went well with the enquiry?
- If we did it all again what would we change to get better results?

Let's have a look at some evaluations of this enquiry.

In carrying out this enquiry we were able to collect:

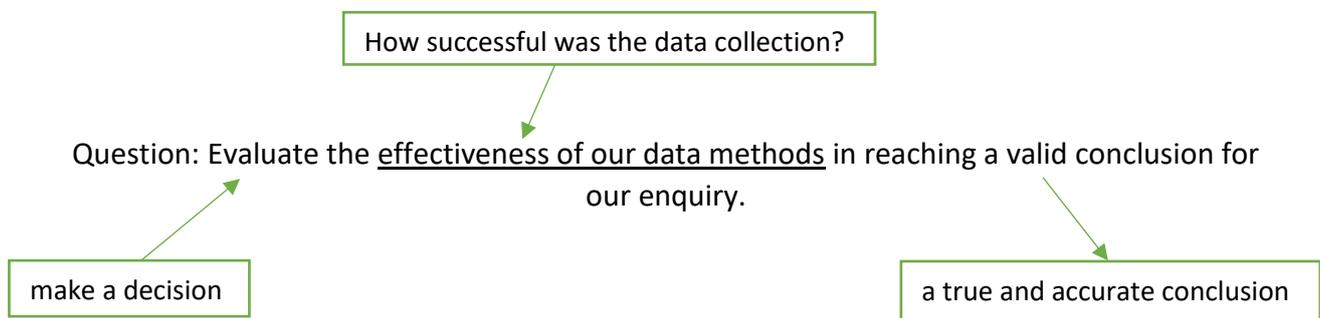
- an appropriate amount of data in order to reach a conclusion accurately
- data typical of what we would expect to see at this coastline.

If we did this enquiry again we would:

- measure more groynes to get a wider range of data
- go over a few days to get an average of longshore drift along the coastline.
- check the weather before we visit – have there been any anomalous weather events (e.g. storms) that may affect our data?

TASK:

Now that we have gone through the whole enquiry, have a go at the GCSE style question below:



Homework Task:

There are many different types of **management strategies** that protect the coastline. Using the internet, you are going to research at least three different types of management strategy – e.g. sea walls, rock armour, sand dune regeneration, or any others!

For each type of management strategy find out:

- how it works
- the cost
- the advantages
- the disadvantages.

Then answer the question below in as much detail as you can.

Question: Which management strategy do you think is the most effective in protecting the coastline and why?

Human geography enquiry

1. Key Question: Do tourist functions decrease with distance from the coastline?

Blackpool is a town located in the north-west of the UK. It is in the county of Lancashire, near the Irish sea. Founded in the 1800s, Blackpool has developed primarily as a tourist town, with people coming from all over the country to visit the beach and amusement attractions, and this has seen the resort grow (see map).

https://www.google.co.uk/maps?q=blackpool&rlz=1C1GGRV_enGB757GB757&um=1&ie=UTF-8&sa=X&ved=0ahUKEwi94p67j-zcAhVKAcAKHWnKAJ4Q_AUICygC

Suitability of location: Why choose this location?

There are a number of reasons as to why we can use Blackpool for this enquiry:

- The area is easily accessible by all types of transport, and there is accessibility via public transport, trains and buses to the centre. There are plenty of places to park.
- The area is safe for students to carry out their own research. There are plenty of shops and services in case students need help.
- It is a typical tourist town.

Your task:

Blackpool has a number of activities for tourists. Using the internet, research what you can do there. Create a 3 minute radio advert promoting Blackpool as a place to visit on holiday.

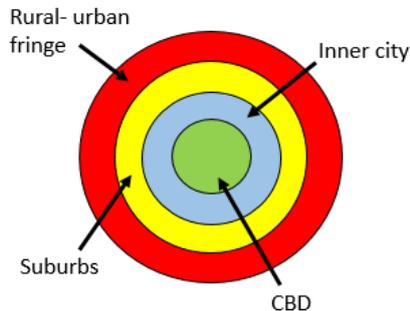


2. Theory

When towns and cities were first built, they tended to follow the same structure of land use. Land use means the purpose of what is built on that land – e.g. residential, tourist, commercial, etc. A typical town or city follows the Burgess Model. This layout shows clear areas within a town or city, with the main business/function hub being located in the centre – the central business district (CBD). As you move out you would then find:

- the inner city, lower quality housing, terraced or tower blocks
- suburbs, houses built post-war, often semi-detached with a front and back garden and a driveway
- rural-urban fringe – more modern, with newer built houses, often detached with gardens and driveways.

The Burgess Model



Blackpool is famous for its tourism. We want to investigate whether it follows the same pattern as the Burgess Model, with its main function in the centre being tourist facilities.

NOTE: Blackpool is on the coastline, therefore it represents half of the Burgess land use model, the other half would be in the Irish Sea!

Challenge activity:

Since the Burgess Model was created, towns and cities have taken on different patterns as they have developed over time: research the Hoyt Model.

- How does this differ from the Burgess Model?
- Which model do you think most suits Blackpool and why?



3. Methods

There are many methods that we could carry out to find the land use function of Blackpool. The one we will use includes the use of an Ordnance Survey (OS) map. Using a digi-map we can get an OS map 1:50,000 of three sites in Blackpool.

- Site 1: Blackpool town centre, the Tower
- Site 2: inner city, a few streets away from the seafront
- Site 3: Church Street, the furthest site from the seafront.

Before we leave to conduct the fieldwork we must create a key that gives a colour for each type of land use that we might come across in Blackpool. For instance, tourist attractions, tourist facilities such as hotels, etc. Then when we are out in Blackpool we shade in the different functions at each site on a blank map. This method is repeatable at each of the three sites. Land use must be recorded accurately.

4. Risk Assessment

Before we carry out the enquiry we must consider the risks posed to us whilst out in the field. Consider the risk at the three locations. How will we reduce these risks? We also need to work out the likelihood of the risk occurring, usually on a scale of 1-5 (where 1 is a small likelihood and 5 a high likelihood).

Risk	The likelihood of it occurring	How to reduce the risk
Stranger danger	4	Students are to stay in groups of four at all times. Students must carry a mobile phone with an emergency contact number on. Students are not to approach any people that they do not know.
Traffic risk		

5. Results and data presentation

The results of our land use map are noted in the table below:

	Site 1	Site 2	Site 3
Tourist attraction	15	9	0
Tourist facility	6	6	0
Restaurant	9	3	0
Bar	6	0	0
Retail / shop	12	12	3
Hotel	0	18	0
B&B	0	6	0
Residents	0	0	15
Convenience store	0	3	3

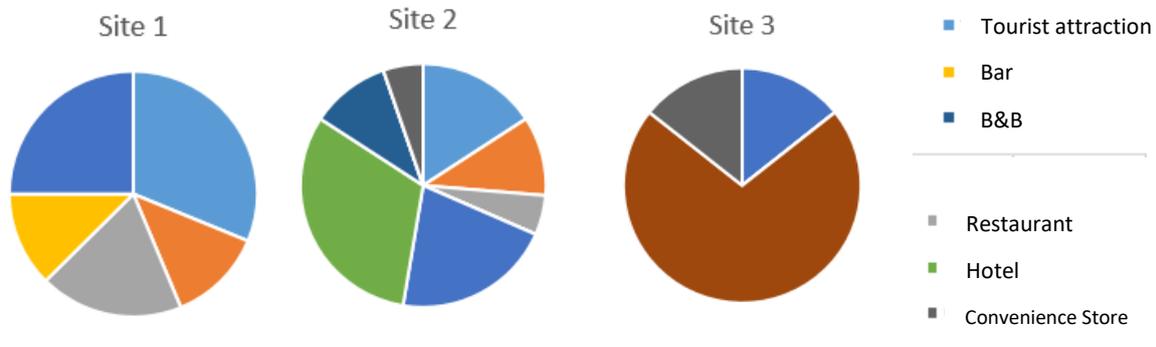
Task: Data analysis

Consider the following questions:

1. What is the most common building type for each of the three sites?
2. For site 1, what is the percentage of buildings that are tourist attractions?
3. For site 3, what percentage of the buildings are residential?
4. Over all three sites, what is the range of buildings that are retail shops?
5. **Challenge question:** Calculate the % change from site 1 to site 3 of at least three types of building function.



One of the best ways to represent this data is using pie charts. These will show clearly the change of land use from site 1 to site 3. Think about the advantages and disadvantages of using a pie chart to represent your data.



TASK: Using the pie charts above, analyse the results from the investigation:

1. Describe the results.
2. Give reasons for the results. 3. Link these results to the overall question.



8. Conclusion

The results show clearly that tourist functions do decrease with distance from the coastline and that Blackpool does follow the Burgess Model.

From site 1 to site 3 the number of tourist functions decreases, and the amount of residential land use increases. This follows the typical Burgess Model pattern.

In conclusion we can confidently answer that:

*Tourist functions **DO** decrease with distance from the coastline at Blackpool.*

9. Evaluation

Let's have a look at whether we would change anything in this enquiry.

What went well in carrying out the enquiry?

- The data matches clearly what we saw when out in Blackpool at the three sites, so was representative of our theory, showing our results are valid.
- We collected enough data such that it is all comparable and helps solve the enquiry.

If we carried out this enquiry again, what would we change?

- We could measure larger areas of land to get a higher average of building functions at each site.
- We could have gone at different times of the week, or at different times of the year.

TASK: Have a go at answering the questions below, thinking about the enquiry.

1. How accurate were your results?
2. Would the results alter if you made the changes above?
3. How would these changes affect the validity of your results?
4. **Challenge question:** To what extent does the town of Blackpool fit the Burgess Model of land use?



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