GEOGRAPHICAL SKILLS AND FIELDWORK

AQA GCSE (9–1) GEOGRAPHY

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DYNAMIC LEARNING

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Contents

Learning objective

– To study the use of maps in association with photographs and sketches.

Learning outcomes

- To be able to interpret maps and relate them to photographs.
- To be able to interpret maps and relate them to sketches.

Use maps in association with photographs and sketches

Many exam papers have questions which require you to be able to use the OS map with a photograph. The types of questions you could be asked are:

- recognition of certain features which have been identified by a letter on the photograph
- the direction the photograph was taken
- a comparison of features that can be seen on the map and not on the photograph and on the photograph and not on the map
- the location of where the photograph was taken.

In order to be able to use a photograph with a map, you will have to orientate the photograph so that the features on the photograph are in the same position as those on the map. The map always has north at the top, a photograph may not! The way to do this is to look for an important feature on the photograph, such as the shape of the coastline on the Swanage map (page 86) and Figure 20. Then look at the town shown by the brown shading on the map and the houses on the photograph. It is obvious that the photograph is taken from the north of the map facing south. The exact location is worked out by looking at the fine detail of the photograph in relation to the map; in this case it would be the angle of the coastline, the position of the pier and the headland in the distance. Figure 20 has been annotated with the answers to questions that you might be asked when using a map with a photograph.

Other examination questions may require you to use the OS map to complete a sketch. There also could be sketches drawn with features labelled that you then have to identify using the map. There is an example of this on page 21 where there is a sketch of the Looe map. This has been covered in more detail earlier in this chapter.

Figure 20 A photograph of Swanage Bay taken from 040814 facing south

Exam Tip

If you are using a photograph, it is important to orientate it before you start to answer the questions, so that the map and the photograph are facing the same direction with north at the top.

ACTIVITIES

Looe map extract (page 89)

1 Study Figure 21. It is an aerial photograph of Looe.

a In which direction was the camera pointing?

b Copy and complete the table below using the photograph and the OS map of Looe on page 89 to help you.

Letter on photograph	Grid reference	Feature
V	Six figure =	Number of road =
W	Four figure =	Name of woodland =
X	Six figure =	Identify symbol =
Y	Four figure =	Name of river =
Z	Six figure =	Identify symbol =

c State two features that can be seen on the photograph but not on the map.

d State two features that can be seen on the map but not on the photograph.

Figure 21 Aerial photograph of Looe

REVIEW

By the end of this section you should be able to:

- ✔ interpret maps and relate them to photographs
- ✔ interpret maps and relate them to sketches.

Learning objective

– To learn how to draw, label and annotate sketches from photographs and in the field.

Learning outcomes

- To be able to draw sketches from photographs and in the field.
- To be able to label and annotate sketches.

Drawing sketches from photographs

Earlier in this chapter you learnt the difference between a label and an annotation and how to draw sketches from maps. In this section you will learn how to apply your knowledge to sketches. To draw a geographical sketch from a photograph you do not have to be an excellent artist, you just need to follow some basic steps.

How to draw a sketch from a photograph

- Draw a frame to the size you want the sketch to be.
- Lightly draw lines dividing the frame into four quarters. These will help you to draw the rest of the sketch, acting as guidelines. The lines can be erased when the sketch is completed.
- Draw in the most important lines, such as rivers, coastline and the outline of the hills.
- Draw in the less important features, such as woodland, settlements and communication lines. Do not make the sketch too detailed. It is not necessary to draw every feature.
- Add appropriate labels and annotations.
- Rub out the lightly drawn lines that divided the sketch to start off.

The sketch in Figure 22 is a drawing of Warkworth taken from the aerial photograph in Figure 23. It has been given descriptive labels (in blue) and annotations (in red) explaining its site.

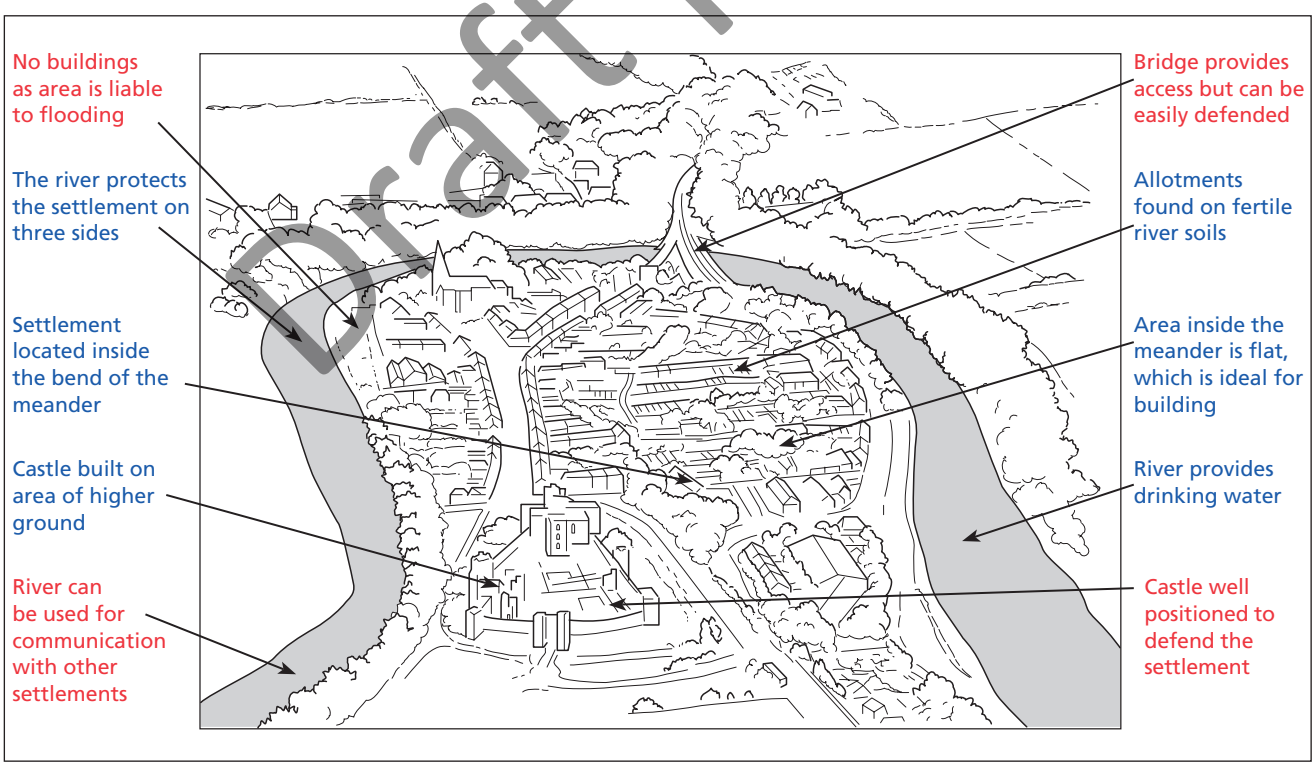


Figure 22 Sketch of Warkworth

Figure 23 Aerial photograph of Warkworth

Figure 24 Photograph of Warkworth from Amble

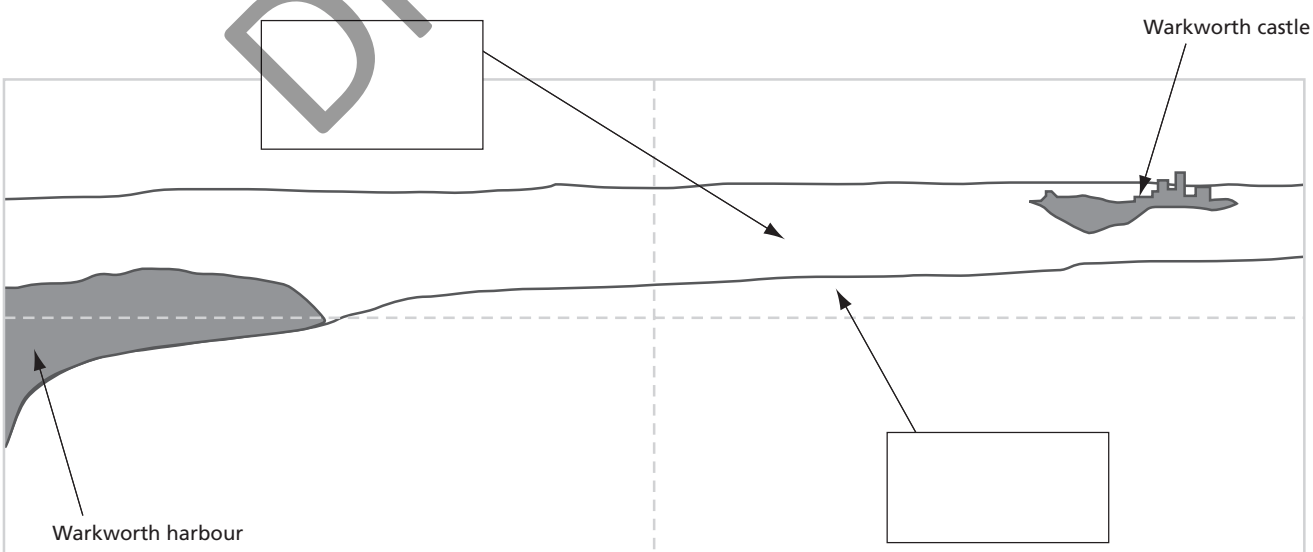


Figure 25 Incomplete sketch of Warkworth from Amble

Figure 26 Photograph of St Bees in Cumbria

ACTIVITIES

1 Study Figure 24. It is a photograph of Warkworth from Amble. Trace Figure 25 – an incomplete sketch of the photograph. Complete the sketch as directed in the 'How to' box on page 28. The boxes give ideas of where you could add labels.
2 Draw a sketch of Figure 26. Label the following on the sketch:
   - **a** A caravan site
   - **b** Types of coastal defence
   - **c** The beach
   - **d** The cliffs
   - **e** The village of St Bees
   - **f** The Lake District hills in the background

STRETCH AND CHALLENGE

On your sketch of Warkworth (from question 1 of the Activities), add some annotations to explain the site of Warkworth.

Exam Tip

In exams, you will be asked to complete sketches rather than draw them from scratch.

REVIEW

By the end of this section you should be able to:

- ✔ draw sketches from photographs and in the field
- ✔ label and annotate sketches.

Learning objective

– To study scattergraphs.

Learning outcomes

- To be able to construct a scattergraph.
- To be able to explain the patterns shown on a scattergraph.
- To be able to suggest appropriate uses of scattergraphs.

Scattergraphs

What is a scattergraph?

A scatter graph can be used to show whether there is a relationship (link) between two sets of data. The pattern of the points describes the relationship. After plotting the points, a line known as a best-fit line should be drawn on the graph. This line will indicate the strength of the relationship (correlation) between the two variables (data sets). The pattern will show a positive or negative correlation or no correlation at all. Study the graphs in Figure 16 which show scatter graphs with different correlations.

How to draw a scattergraph to show whether there is a graphical correlation between the width and depth of a river as it moves from its source (site 1) towards its mouth (site 10)

- Decide which is the independent variable and which is the dependent variable. For these two sets of data, there is no independent or dependent variables. However, if you were plotting how depth changes with distance from the source, the distance from the source would be the independent variable and the depth would be the dependent variable.
- Decide on an appropriate scale on the x-axis for the width measurements. Remember, the scale should be spaced out evenly and allow for the highest value in the data set. In this case, ten squares on the graph paper equals 1 metre.
- Decide on an appropriate scale on the y-axis for the depth measurements. Remember, the scale should be spaced out evenly and allow for the highest value in the data set. In this case, five squares on the graph paper equals 10 cm.
- Plot the measurements for each of the sites on to the graph, labelling each site with the correct number.
- Draw a line of best-fit. This is a straight line through the middle of the points that you have plotted.
- Compare the pattern with the standard patterns for the different types of correlations shown in Figure 16.
- What type of correlation have you plotted?
- Explain what this means.

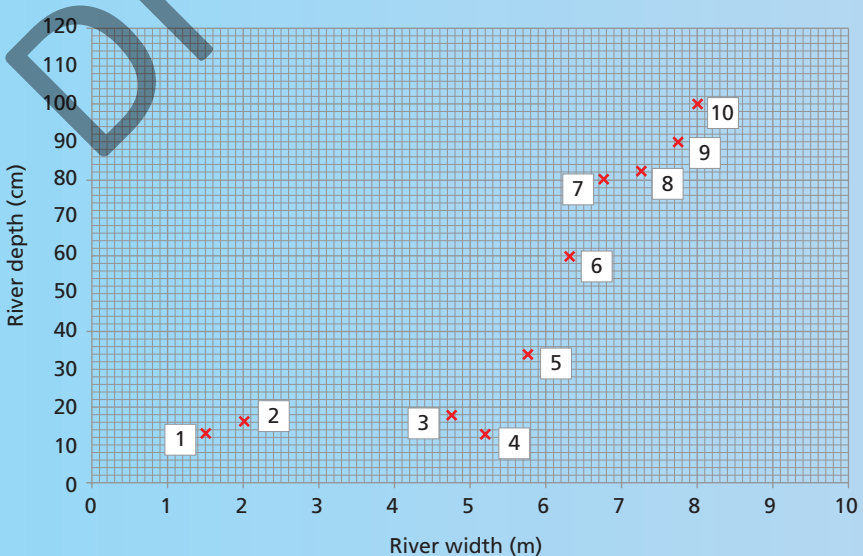


Figure 15 A scattergraph of river width and river depth

ACTIVITIES

1 Draw a scatter graph for the data below. Use the 'how to' box opposite to help you.

Country	Domestic water usage (%)	GDP ($)
China	12	5,000
Australia	15	29,000
Japan	20	30,000
Thailand	9	7,400
Korea	14	17,700
India	6	2,900
Indonesia	8	3,200
Russia	19	9,000
Turkey	15	6,700
New Zealand	48	21,600
Uzbekistan	5	1,700
Malaysia	17	8,500
Sri Lanka	4	3,700
Algeria	25	5,900
Aghanistan	3	700
Sierra Leone	2	500
USA	17	37,800

2 Is there a correlation? What is its nature?

3 Points that are well away from the line of best-fit are known as residuals or anomalies. Are there any residuals or anomalies? If so, circle them on your graph.

4 Describe and give reasons for the pattern that is shown by the graph.

STRETCH AND CHALLENGE

Another way to test for a relationship between sets of data is to use a statistical technique such as Spearman's rank correlation coefficient. Test the statistical correlation between the data given in question 1 using Spearman's test. Information on how to complete this statistical technique can be found in the Stretch and Challenge section in Chapter 3 on page 65.

Exam Tip

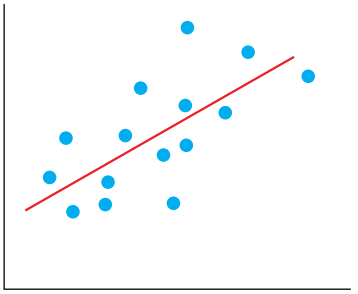
Remember to always state the type of correlation and explain what it means.

REVIEW

By the end of this section you should be able to:

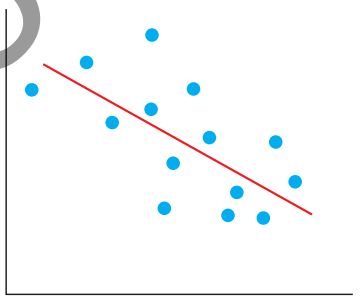
- ✔ construct a scatter graph
- ✔ explain the patterns shown on a scatter graph
- ✔ suggest appropriate uses of scatter graphs.

Positive correlation



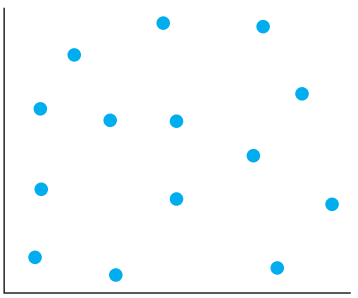
The line of best-fit stretches from the bottom left to the top right of the graph. This indicates a positive correlation; as one variable increases so does the other variable.

Negative correlation



The line of best-fit stretches from the top left to the bottom right of the graph. This indicates a negative correlation; as one variable increases the other variable decreases.

No correlation



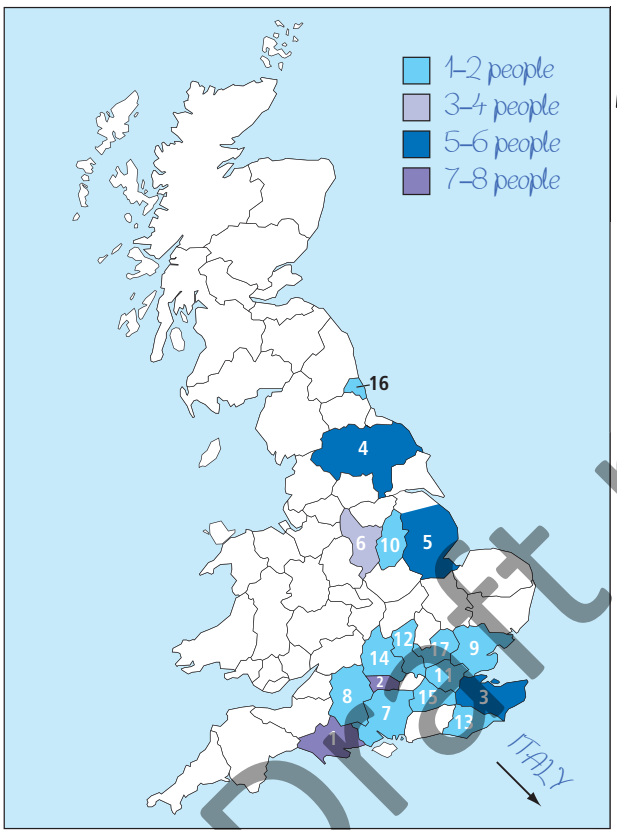
The points are distributed all over the graph. This shows that there is no relationship between the variables.

Figure 16 Scatter graphs with different correlations

This is a descriptive comment about the map which contains data about the counties that people came from.

The choropleth map shows where people who were interviewed came from. The people were visiting Lulworth Cove on Sunday 10th May. According to the map, 7–8 people of the ones interviewed came from Dorset and Berkshire. 1–2 people came from 10 of the counties.

Choropleth to show which county most people came from



1. Dorset. 2. Berkshire. 3. Kent. 4. Yorkshire.
5. Lincolnshire. 6. Derbyshire. 7. Hampshire.
8. Wiltshire. 9. Essex. 10. Nottinghamshire.
11. Greater London. 12. Buckinghamshire.
13. East Sussex. 14. Oxfordshire. 15. Surrey.
16 Tyne and Wear. 17 Hertfordshire.

The choropleth map shows where people who were interviewed came from. The people were visiting Lulworth Cove on Sunday 10th May. According to the map 7–8 people of the ones interviewed came from Dorset and Berkshire. A large number of people came from Dorset because Lulworth Cove is in Dorset and therefore they did not have far to travel.

A large number of people interviewed also came from Berkshire, this is because we interviewed a lot of people who came on the trip with us.

This comment about the map contains data about the counties that people came from and analytical comments to explain the data.

Figure 6 An example of a student's work on obtaining data and interpreting a choropleth map

You could be asked questions that are based on the use of databases containing statistical and numerical information such as census and population data. Census data could be given and you could be asked to interpret it or to compare one ward within an urban area with another. You could also be asked to complete choropleth maps with information from the census.

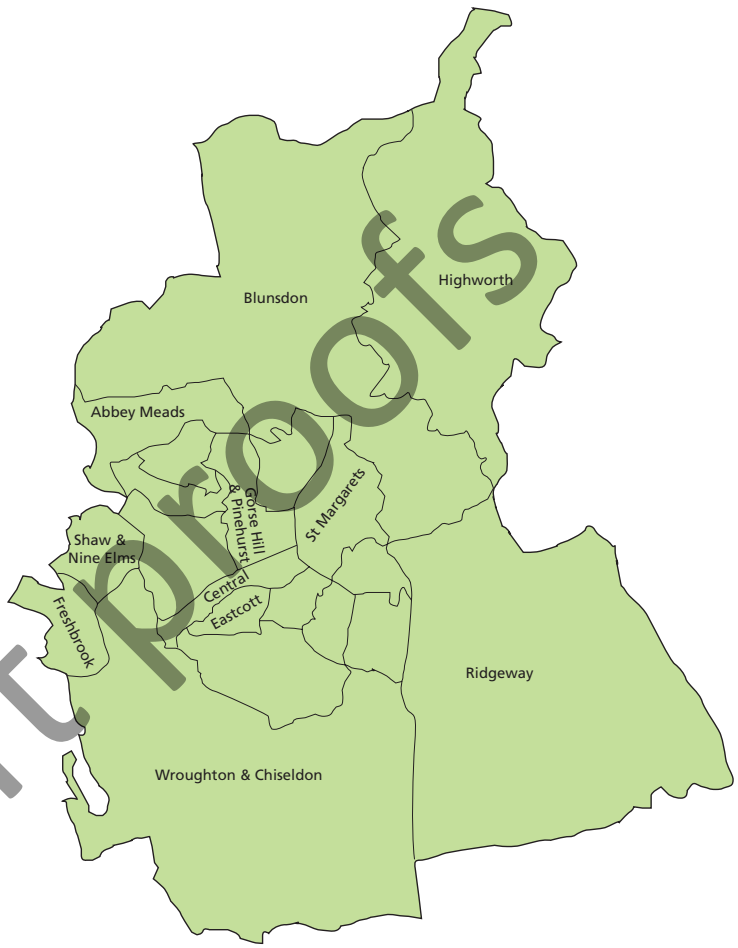


Figure 7 Map of some of Swindon's electoral wards

ACTIVITIES

1 a Trace a copy of the incomplete map of Swindon's wards, Figure 7.
b Use the data in table to map the percentage of white people who live in the selected wards of Swindon.
c Use tracing paper to overlay the information on the percentage of people of working age.
2 Describe the age structure of the different wards.
3 Comment on the age structure of the wards in relation to their geographical position.

STRETCH AND CHALLENGE

Suggest reasons for the patterns shown by the data for the selected wards of Swindon.