Name
Tutor Group
Teacher
Given out: Monday 19 October
Hand in: Monday 2 November

Parent/Carer Comment

Staff Comment

Target
**The Importance of Map Skills**

This booklet is aimed at helping you improve your map skills. These are very important skills that you need to know, especially if you plan to take Geography at GCSE as they count towards 25% of your final mark.

I have included some help pages within the booklet for things you may not have seen before so read the coloured help sheets carefully before you begin the tasks.

**In addition to this I will be available after school at Homework Club Tuesday, Wednesday and Thursday to support you, so if you are finding this difficult please make sure you are there.**

If you require further help with your map skills but cannot attend Homework Club go to the internet and type in this link for further help:

http://mapzone.ordnancesurvey.co.uk/mapzone/PagesHomeworkHelp/mapability/

or Google: “Mapzones, Mapability” and click on the first link that comes up.

**Good Luck with your map skills!**
**Task 1: Using Symbols**

A map cannot show everything that is on the ground. If it named every building, the map would become cluttered with words and impossible to read. Some things could not be shown at all because they would be too small to mark on.

To overcome this problem, symbols are used to save space and make a map easier to read. Symbols may be simple drawings, lines, letters, shortened words or coloured areas. They should be simple, clear and easy to recognise.

![Key to symbols](image)

1. Look at sketch A above and the partly completed map B showing the same area.
   a) Complete the map by adding symbols to the places marked ? Use the symbols shown in the key and give names to the important features.
   b) Add colour to your map to make it more attractive and easier to read.

2. Draw a simple map of some streets which you know well. Use symbols to show the main buildings and other points of interest. Either make up your own symbols or use ones from an Ordnance Survey map. Remember to colour your map and add a key and title.
Here is a help sheet for how to measure distances on a map. Read through it carefully and look at the pictures to help you understand before you attempt tasks 2 and 3.

**How can distance be measured?**

One of the most important uses for a map is to show how far one place is from another. This is best measured using the **scale line**.

**Straight line distances**

Straight line distance is easy to work out using a piece of paper with a straight edge.

1. Lay the strip of paper on the map between the points to be measured (A and F).
2. Mark and label points A and F with a pencil.
3. Lay the paper along the scale line to find the distance from A to F. **It is 9 km.**

**Curved distances**

The distance along a road or river with many bends on it is longer than the straight line distance. This is how to measure it.

1. Look at the length to be measured and break it into straight sections.
2. Lay the strip of paper along the first section A to B. Mark and label points A and B.
3. Pivot the paper at B so that it lies along the next straight section, B to C. Mark and label point C.
4. Now pivot the paper at C until it lies along the next straight section C to D. Mark and label point D.
5. Move along the road in this way, section by section, until you reach F.
6. Lay the paper along the scale line to find the distance A to F. **It is 11.5 km.**
Task 2: Long Distances on National Maps (15 mins)

All to complete

1. Use the scale line on map A to measure the length of these lines.
   a) \[ \text{Distance} \]
   b) \[ \text{Distance} \]

2. Complete matrix B by measuring the straight line distance between each town. For example, London to Birmingham = 170 km.

<table>
<thead>
<tr>
<th>Birmingham</th>
<th>Edinburgh</th>
<th>London</th>
<th>Manchester</th>
<th>Newcastle</th>
<th>Norwich</th>
</tr>
</thead>
<tbody>
<tr>
<td>150</td>
<td>380</td>
<td>170</td>
<td>110</td>
<td>270</td>
<td>200</td>
</tr>
</tbody>
</table>

3. Measure the length of the rivers Trent, Severn, Thames and Clyde. List them in order of length.
Task 3: Short Distances on Local Maps (20 mins)

1. How far is it by boat from:
   a) Lymington to Yarmouth?
   b) Yarmouth to Cowes?
   c) Cowes to Southampton?

2. How far is it by road from:
   a) Lymington to Lyndhurst?
   b) Yarmouth to Cowes?
   c) Fawley to Southampton?

3. How far is it by rail from Ashurst station to Lymington station?

4. John lives in Lyndhurst. To visit his friend he follows this route: Drive down the A337 south for 5 km then turn left. Follow this road for 7 km then turn sharp right. After 4.5 km turn left on to a minor road. Follow this for 2 km. Where does John’s friend live?

5. John’s dad drives to work by this route: Take the B3056 out of Lyndhurst for 5 km. Turn left and follow the minor road to a roundabout. Turn right and drive for 7.5 km down the A326. Turn left at the roundabout and follow the B3053 for 3 km. Where does John’s dad work?
Here is a help sheet for how to tell if the land is high or low, flat or steep on maps. This is called the relief of the land. Read through this carefully and look at the pictures to help you understand before you complete task 4.

**How can we show height and relief on a map?**

The land around us is seldom flat like a piece of paper. There are nearly always differences in height and differences in slope. Sometimes slopes may be gentle and at other times they are steep. There may be hills, mountains and valleys, or areas that are quite level. The word relief is used by geographers to describe the shape of the land.

Map makers have to find ways of showing height and relief on a flat piece of paper. Look at drawing A which shows a hilly island. The land near the sea is flat or gently sloping but becomes quite steep towards the top of the hill. On a map this can be shown in three ways.

First, a surveyor must find the height of a number of places on the island. These are shown in drawing B.

The heights can then be plotted on a map. They are usually shown as a black dot with a number giving the exact height above sea level in metres. They are called **spot heights**.

The map maker can then draw lines to join up the places that have the same height. These are called **contour lines**. They are usually coloured brown and have their height marked on them.

Colours may be used to show areas of land that are at different heights. Brown is usually used for high ground and green for low ground. There must always be a key.
Task 4: Height on Maps

There are three main methods of showing height on a map. These are **spot heights**, **contours** and **layer shading**. Look at the map below. It shows an area where spot heights have been plotted. Some of the contours have also been drawn in.

1. **Spot heights** are numbers which show the exact height of a place.
2. **Contours** are lines which join up places with the same height.
3. **Layer shading** uses colours to show areas of land that are at different heights.

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1. Complete the contour map as follows.
   a) Complete the 100 metre contour line by joining the spot heights for 100 metres.
   b) Draw the 200 metre contour line in the same way.
   c) Draw in all the other contour lines.
   d) Label each contour with its height value.

2. Complete the layer shading as follows.
   a) Colour the key as shown.
   b) Colour the land less than 100 metres in dark green.
   c) Colour the land between 100 and 200 metres in light green.
   d) Complete the layer shading using the colours in the key.

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**Key**

<table>
<thead>
<tr>
<th>Height in metres above sea level</th>
<th>Colour</th>
</tr>
</thead>
<tbody>
<tr>
<td>More than 400</td>
<td>Dark brown</td>
</tr>
<tr>
<td>300–400</td>
<td>Light brown</td>
</tr>
<tr>
<td>200–300</td>
<td>Yellow</td>
</tr>
<tr>
<td>100–200</td>
<td>Light green</td>
</tr>
<tr>
<td>Less than 100</td>
<td>Dark green</td>
</tr>
</tbody>
</table>
This is a help sheet for drawing cross sections. Cross sections are extremely useful because they allow us to use the contours on a map to draw a side-on view of the hill so we know what it looks like from the ground. Read this sheet very carefully before you attempt task 5.

How can we draw a cross-section?

When you look at a map it can be quite difficult to imagine what the landscape actually looks like. By using the contours, however, it is possible to draw a **cross-section** which shows an area in a more realistic way. A cross-section gives a cut-away or side view of the landscape. It shows the landscape as it would appear if it were sliced open, rather like cutting a large piece of cake in half. The diagrams below show how to draw an accurate cross-section from map B.

1. Decide on the line of your section. It is shown on map B.
2. Place the edge of a piece of paper along the line of the section.
3. Mark on the paper the start (A) and the finish (B).
4. Carefully mark the points where each contour crosses the paper. Label their heights and mark other features such as rivers or roads.
5. Decide on a scale for your section. Choose one that shows the features of the landscape clearly but is not too exaggerated.
6. Mark the graph paper with small dots to show the height of the contours and positions of other features.
7. Join the dots with a smooth, freehand curve. Do not use a ruler. Notice the smooth curve for hilltops and valley floors.
8. Use arrows to help label any features, and add a title. Colour the section either brown or green.
Task 5: Drawing cross sections (20 mins)

Look at map A showing part of the Lake District. The area is very rugged with high mountains and steep-sided, narrow valleys. Look carefully at the contours drawn on the map and try to identify the hills and valleys. A cross-section is a good way of showing the relief of an area like this.

1 Draw a cross-section from point A on Ullswater to point B near Gowk Hill.
   a) Use the cross-section outline in drawing B.
   b) Mark and name the features along the cross-section.
   c) Colour the section either brown or green.

2 Look at your completed cross-section.
   a) What is the highest point on the section?
   b) What is the lowest point on the section?
   c) Where is the steepest slope?
   d) Which feature is a rounded hill?
   e) Which feature is a steep-sided ridge?
Task 6: Six Figure Grid References (30 mins)

We can find or locate exact points on a map by using six numbers or figures.

- The first three numbers tell us how far to go along the bottom or top of the map. The third number tells us the number of tenths of a grid square.
- The last three numbers tell us how far to go up the sides of the map. The sixth number tells us the number of tenths of a grid square.

On a map you will have to estimate the tenths of each grid square.

In this activity the tenths have been marked on for you.

Activities

1. Use the following six figure grid references to plot points 1 to 37 on the grid below. Join them up as you go to show a mystery creature.

2. Give the creature a triangular-shaped eye. Write down the six figure grid references of the three corners of the eye.

Recap: Six figure grid references help us to find exact p...
Task 7: Using aerial photographs and maps (1 hour)

Use the map and photograph on the following 2 pages to help you answer these questions.

1) The aerial photograph is taken from the south west corner of the map looking towards Castleton. Which direction is the photo looking? ________________

2) What is the name of the ruined castle at R in the photograph?
   _________________________________________________________________

3) Why do you think the castle was built on this bit of land?
   __________________________________________________________________

4) What is the name of the steep sided valley in the photograph?
   _________________________________________________________________

5) Find the church labelled S on the photograph and the map. What symbol is used on the map to show this building? ____________________________

6) Locate V on the map and the photograph. What is the land here used for?
   __________________________________________________________________

7) Why do you think the land at V has not had houses built on it?
   __________________________________________________________________

8) What is the name of the road labelled T? ____________________________
9) What type of farming do you think the land around the village is used for? Explain your answer. ________________________________________________________________
______________________________________________________________________

10) What is the name of the road at W? ________________________________
Now just using the map answer these questions.

1) What is the name of the ancient ditch that marks the edge of Castleton?

________________________________________________________________________

2) Give two street names to suggest that Castleton had an industrial past.

________________________________________________________________________

3) If you walk along Back Street from north to south, would you be going uphill or downhill? What map evidence did you use to answer this question?

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

4) We have already seen that Castleton has a church. Use the map to make a list of any other shops, services and other things that are available in the village for people to use.

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________________________________________________________________________
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All to complete
Self Evaluation of my Homework

I am a R____________________ learner.

I know this because:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

I believe that my **effort and attitude to learning** for this booklet is a:

1 2 3 4

I know this because:

________________________________________________________________________
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