Chapter Three

Maps and Their Use

By the end of this chapter, you should be able to:

a) draw a sketch map of your school and/or local area.
b) use and interpret symbols and identify features on a map using a key.
c) use basic compass points to find directions or features on a map.
d) follow routes on a map.
e) draw a map using a simple scale and using a scale on a map.
f) use letter and number coordinates or bearings and directions to locate places on a map.
g) locate places on an atlas map using latitude and longitude and describe the places from information on the map.
h) understand the difference between a map and a photograph.
i) understand that there are many types of maps on different scales.
j) use a linear scale and representative fraction to estimate distance, area and size of features on a map.

Introduction

In Chapter Two, you learnt how you can use a map to represent an area. Can you think of other ways in which maps are useful to us? In this chapter, you are going to learn the main features of a map and how a map is different from the real world or part of the earth it represents.

Map Scale

In order to represent features and places on a map, we reduce their actual size by a certain amount. To understand this, let us see how scale is used in pictures or photographs.

Activity 3.1: Understanding scale

Figure 3.1: Joel

Look at the picture of Joel in Figure 3.1 and do the following:

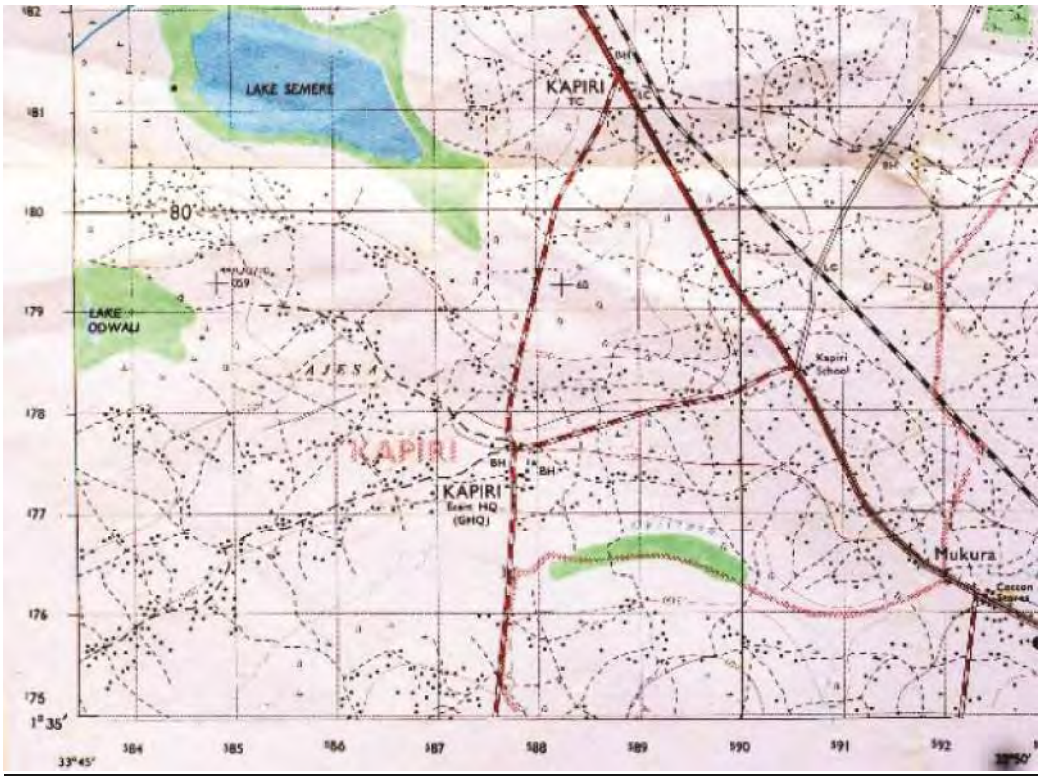
1. Measure the length of his arm and leg in centimetres.
2. Measure his height in centimetres.
3. Do you think that is the real size and height of Joel?
4. If it is not, explain what has happened to Joel's real size.

When a photograph is taken, the size of the object is reduced just as you have seen in the case of Joel above. In reality, Joel is much bigger and taller than his picture. He is about 150 cm tall. In the photograph he is only 5 cm tall. This means that 1cm on the photograph stands for 30 cm on the real person. The photograph is thirty times smaller than his real size. That is to say, every part of Joel's body was reduced 30 times to fit in the photograph. Therefore, the scale of the photograph is 1:30 (1 cm to 30 cm.)

In the same way, when you look at a map of any place, you realise that the features and place represented are much smaller than their actual size. In order to fit real features on a map, we reduce their size by a certain amount. The number of times a real feature is reduced in order to fit on paper is called a **scale**.

Types of Scale

Map scale can be expressed in different ways. Such different ways of expressing the scale are called **types of scale.** Whichever way it is stated the scale can assist you in using the map. In Activity 3.1 above, you have learnt that the scale used to fit Joel in the photograph is 1:30. This means that every part of Joel on the photograph is 1/30 its real length and size. This is called the **representative fraction scale.** You will find this scale on many maps you are going to use in this chapter. It tells you how much the area shown on the map has been reduced. Thus, you can use it to find out how big the place on the map is on the real ground.



Scale 1:50,000

Figure 3.2: Part of the map of Kapiri

On most maps, a scale is usually represented as a straight line divided into several numbered units. This is called a **linear scale** or bar scale. It helps you to find how far one place is from another. It also helps you to measure distance along roads, railways and other linear features on the map.

Figure 3.3: A linear scale

Find this out on the map in Figure 3.2. Measure the length of each unit on the scale. What distance does one centimetre represent? You have probably found out that every 1 cm on the line scale stands for 500 m or half a kilometre on the ground. If you convert kilometres to centimetres, you will find that 1 cm stands for 50,000 cm. Express it as a representative fraction and see what it comes to. This means that on the map, every 2 cm represent 1 km.

Activity 3. 2: Exploring scale

In groups, go outside the classroom and do the following:

1. Using a metre rule or a measuring tape, measure the length and width of your classroom block.
2. Draw a map of the classroom block on paper to scale.
3. State the scale you have used to draw the whole block on paper as:
   i) a representative fraction; and
   ii) a linear scale.

A scale can also be expressed in words. Look at Figure 3.2 again. Write its scale, 1: 50,000 in words. You could have written it as "Every one unit on the map represents fifty thousand units on the ground where the map was taken from" or "One centimetre on the map represents fifty thousand centimetres". What you have written is called a **statement scale**.

Using the Linear Scale to Measure Distance on a Map

Whenever we are going on a journey, we need to get prepared. We need to estimate the amount of money and time we shall spend. This is not always easy if we do not know the distance we are going to travel. When we have a map of the area, it is possible to estimate the whole journey by using its linear scale. What we need is to know the scale of the map.

Activity 3.3: Applying scale

In groups:

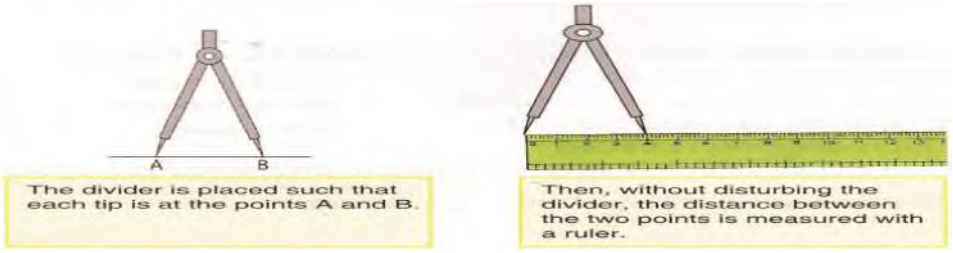
1. Discuss and suggest the tools you need to measure the distance of the walkway or footpath from your classroom to the head teacher's office.
2. Get any one of the tools you have suggested, move outside and measure that distance.
3. Share your results with other groups.
4. Are all your results the same? If not, why do you think they are different?

You could have noted that the walkway or footpath you have measured is not straight. It has bends or corners. Even on maps, there are several linear features with several bends and corners. These are called **winding**

features. We can measure the distances covered by these features using different methods. These include using a pair of dividers, thread or the edge of a piece of paper.

Using a pair of dividers

(a)



(b)

Figure 3.4: How to measure distance using a pair of dividers

Activity 3.4: Using dividers

Figure 3.5: A road with bends

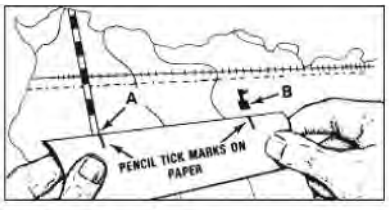
Get a pair of dividers, a foot ruler (scale) and a pencil and do the following:

1. Look at Figure 3.5. From where the road begins, identify a part which is almost straight, mark it off using a pencil and give it a number.
2. Repeat this until you have divided the whole road into fairly straight parts.
3. Using a pair of dividers, measure the length of the first part.
4. Transfer the pair of dividers onto the foot ruler. Place the left hand pointer of the divider at zero cm and read off the length indicated by the right hand pointer.
5. Record the length in your notebook.
6. Repeat steps (iii), (iv) and (v) above until you have measured all parts of the road.
7. Add up all distances measured in order to get the total length of the road.
8. Share your answer with the rest of the class and see whether you all have got the same length.

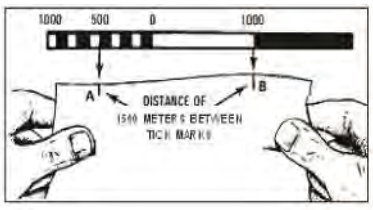
You can use the above method to measure the distance along a road, railway or river. Think of other features which you can measure using the linear scale. Remember that in the case of a map, you read distance against the linear scale instead of a foot ruler. The linear scale on the map is marked with whole numbers from 0 (zero) towards the right, i.e. 1,2,3,4 kilometres and so forth.

We use this side of the scale to measure and read off distances which are in complete whole numbers. To the left of 0, the scale is divided into 10 equal parts. Each of these is 1/10th (one tenth) of a kilometre. We use units to the left of zero to measure distances which are less than a kilometre. Using this method, try to measure the distance of any one road on the map in Figure 3.2.

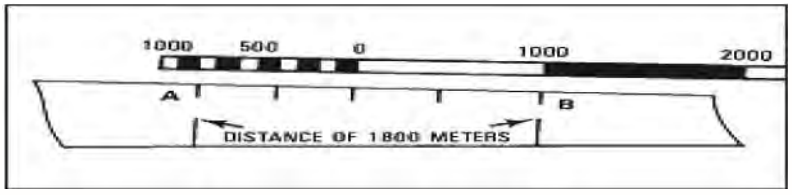
Using a straight edge of paper



Step 1



Step 2



Step 3

Figure 3.6: Using an edge of paper to measure distance

Activity 3.5: Measuring distance with a piece of paper

In pairs, get a pencil, foot ruler and a small but long piece of paper with a straight edge.

Using Figure 3.5 again, do the following:

1. Towards the end of the left hand side of the edge of paper, put a mark to show the starting point of the road and place it along the road with the marked point against the starting point of the road.
2. Hold the paper firmly against the starting point and turn it along the road until part of the road disappears underneath the edge of paper.
3. Put a mark on both the paper and map at the point where the road leaves the edge of paper. When you do this, then you have measured off a fairly straight portion of the road.
4. Starting at the point you have marked, repeat steps (2) and (3) until you reach the end point of the road and mark it on the edge of paper.
5. Transfer the edge of paper onto the foot ruler and read off the length of the road.
6. Compare your result with the one you got in Activity 3.4.

Using a string or thread

We can measure distance on a map using a string or cotton thread. To understand this, try the following activity.

Activity 3.6: Measuring with a thread

1. Carry out library research on how we can use a string or thread to measure distance on a map.
2. Make notes pointing out all the steps involved.

3. Share your notes with the rest of the class.
4. Why do you think it is advisable to use cotton thread when measuring distance?
5. Use the string or thread method to measure the distance along any one road on the map in Figure 3.5 above.

Using the linear scale to calculate area on a map

When using a map, we may be interested in knowing how big certain features are, e.g. a farm, forest, swamp, township or an airfield. Some of these features have shapes which are similar to those of polygons, which you have learnt about in mathematics. These are called features with **regular shapes**. Other features have shapes which do not resemble any polygon. These are called **irregular shapes**. Look at the map of Uganda and find out the kind of shape lakes Victoria and Kyoga have. Whatever shape a feature may have, we can estimate its size or area.

Using a mathematical formula

In Mathematics, you learnt how to calculate the area of different shapes, e.g. a square, rectangle, triangle, circle and others, using certain formulae. Now, you are going to use the same formulae to estimate the area of different features on a map.

Activity 3.7: Applying formulae

In small groups, get a metre rule or any other measuring tool and do the following:

1. Look around your classroom. What kind of shape is it?
2. Draw its outline in your notebook.
3. Calculate the area of the classroom.
4. Explain how you have got the area.

You have noted that your classroom resembles a certain shape. So you have used the formula for calculating the area of that shape to get the area of the classroom. In the same way, we use mathematical formulae to calculate areas of features with regular shapes. Remember to use the linear scale in order to get the measurements or dimensions of the features.

Activity 3.8: Using a formula on a map

In pairs, study Figure 3.7 and do the following:

1. Calculate the:
   i) area of the aerodrome
   ii) area of the railway quarters.

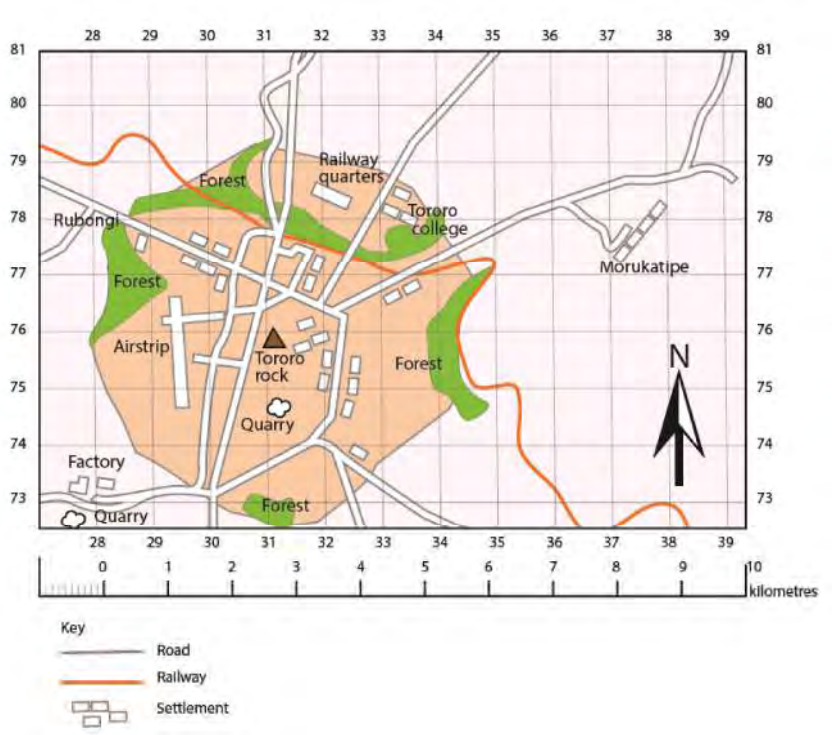


Figure 3.7: Sketch map of Tororo

Using the map grid

Think of physical and human features in the area around your school or home area with irregular shapes. Make a list of those features. If we want to find out the area of such features on a map, we can use the **map grid** or graph paper method. On most topographic maps, each grid square is usually 1 km^2. So the total number of squares covered by the feature is equal to the area of the feature.

Activity 3.9: Estimating area

Individually, look at Figure 3.8 and:

1. identify the area covered by the lake.
2. count all grid squares which are fully covered by the lake (assume that each square has an area of 1 square kilometre). Write the number in your notebook.
3. count all squares which are touched but not fully covered by the lake and divide their number by 2. Write the result in your book. Why do you think we divide these by 2?
4. add the values you have got in steps (2) and (3) above. Your final result is the area of the lake.
5. state the formula you have used to get the area of the lake.
6. swap your results with your friend, and then discuss them with your teacher.

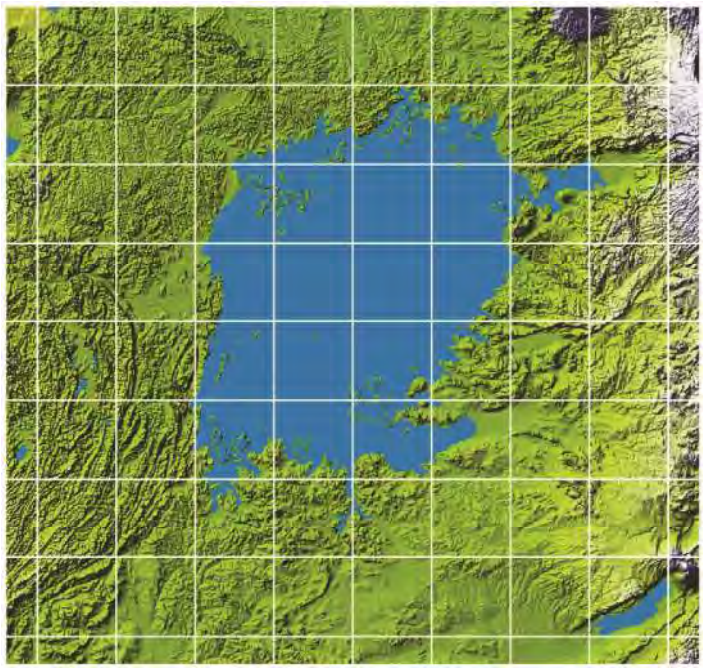


Figure 3.8: Map of Lake Victoria

You could have found out that you all got much the same answer for the area of the lake. Any minor differences have resulted from the way you have counted the grid squares covered by the map. You can follow the

same steps and also use the same formula you have used above to estimate the area of any feature on a map with an irregular shape.

Using a mathematical formula

Alternatively, we can divide the irregular feature into several shapes whose areas can be calculated using known mathematical formulae. Do Activity 3.10 in order to understand this.

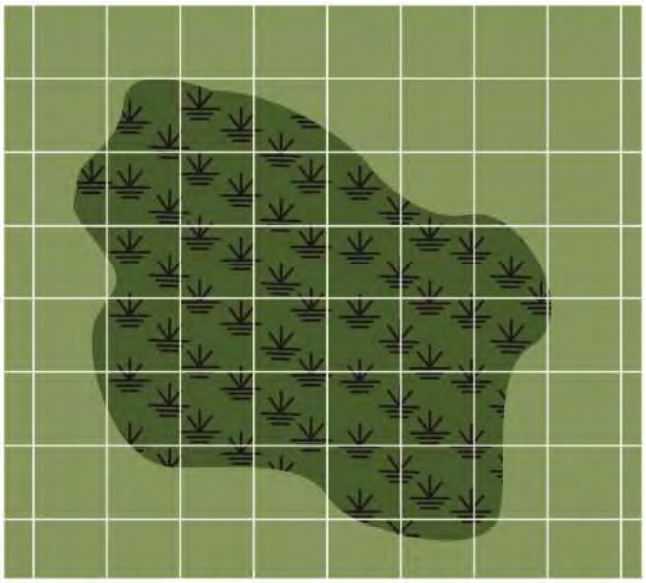


Figure 3.9: Map of a swamp

Activity 3.10: Applying formula to irregular features

Look at Figure 3.9 and do the following:

1. Divide the swamp into figures with regular shapes e.g. rectangles, squares, triangles, semi-circles and give each figure or polygon a number.
2. Measure the dimensions of each polygon in centimetres.
3. Using a suitable formula, calculate the area of each polygon.
4. Add the areas of all polygons to get the total area of the swamp.

On a map we use the linear scale to measure the dimensions of the polygons we create from the area covered by the feature with an irregular shape.

How to Find Places and Features on a Map

On the surface of the earth and on maps, different features are found in different places. To be able to use the map, you need to describe where features are found. Now you are going to learn how you can do this.

Activity 3.11: Identifying features on a map

Look at Figure 3.2 again and do the following:

1. Identify:
   i) any three rivers shown on the map.
   ii) one permanent swamp on the map.
   iii) one place where a school is found.
2. Explain how you have been able to find those features.

You have noted that certain features can be found using words written against or close to them. These are the **names** or labels of such features.

Grid and Grid References

Topographic maps have a network of lines drawn all over them. These are called grid lines. They cross one another at right angles and form a grid of squares. These lines can also help you to find features anywhere on the map. The vertical lines are called **'eastings'**, as they increase in value as you move east on the map. The horizontal lines are called **'northings'** as they increase in value as you move north on the map (see Figure 3.10).

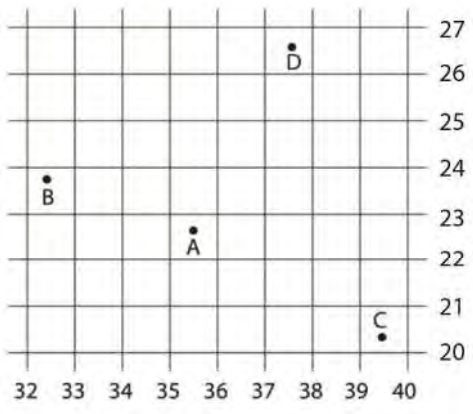


Figure 3.10: Map grid

Each line is identified by a two-figure number, which appears in ascending order. Eastings are always read before northings when stating a location. To remember this order, say… *along the corridor, THEN up the stairs*. The number formed by eastings and northings is called a **grid reference**. It consists of an even number of digits. It is similar to a coordinate in mathematics.

Grid references are of two types, i.e. four-figure and six-figure references. A grid reference is got by stating how far east and north the feature extends. For instance, in Figure 3.10, point **A** lies 36 east and 22 north. The four-figure grid reference for point A is **3522**.

You can also find and state the position of a feature using a six-figure grid reference. You can get this by adding a figure to the easting and a figure to the northing of the four-figure grid reference. The third figure of each reading is one-tenth of a whole number. To get this, divide the grid square into ten equal small squares along the eastings and ten squares along the northings.

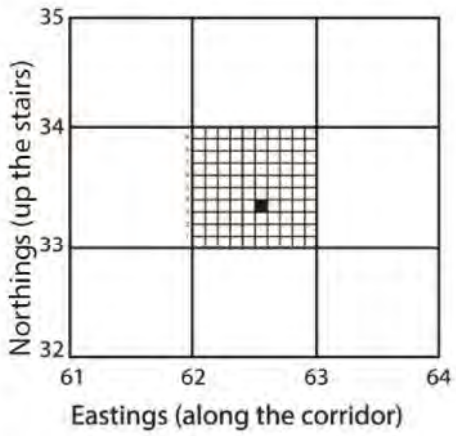


Figure 3.11: Six-figure grid reference

The feature you are trying to locate will lie in one of these tiny squares. Still remembering to go along the corridor and up the stairs, work out the extra numbers you need and put them into your four-figure grid reference, like **626 334** for the feature shown in Figure 3.11 above.

Activity 3.12: Using grid reference

In pairs, look at Figure 3.10 and:

1. state the four-figure grid reference of points B, C and D.
2. state the six-figure grid reference of points A, B and C.
3. write at least two sentences explaining the advantages of using four-figure and six-figure grid references to locate features on a map.

Compass Directions

How would you describe to a friend the route from your home to the nearest trading centre?

You would probably describe it using words like at a certain point "turn left or right". However, you could do this in a better way by describing the route map. When using a map, we use compass directions.

Activity 3.13: Revising a compass

Using your knowledge from Primary school:

1. explain what you understand by a compass.
2. draw a diagram of a compass showing the cardinal points.

The line diagram you have drawn in Activity 3.13 is not the actual compass. It is called a **compass rose** or a direction finder. To be able to use the compass to find directions more accurately, we further subdivided the cardinal directions into four other directions. These are called **intermediate directions** or inter-cardinal points. They are northeast (NE), southeast (SE), southwest (SW) and northwest (NW).

Note: Inter-cardinal points combine two directions, e.g. northeast, meaning that you move east, then north at the same time. In other words, northeast lies north of east.

Activity 3.14: Subdividing a compass

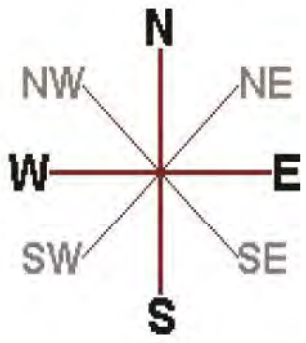


Figure 3.12: An eight-point compass rose

Copy the compass rose in Figure 3.12 into your notebook.

1. Using a protractor, measure and state:
   i) the angles between nearby cardinal directions.
   ii) the angles between cardinal directions and intermediate directions.
2. Divide the angles between cardinal directions and intermediate directions halfway using straight lines and measure the angle of each.
3. Name the new directions created by subdividing the intermediate directions.

In Activity 3.14, you have come up with a compass rose with 16 points. This is called a **sixteen-point compass rose**. The new directions you have got combine three directions. These enable you to find and describe the directions of all places and features accurately.

To determine the direction of one feature or place from another, draw a compass rose at the point from which you want to describe direction. Then draw a straight pencil line connecting the two points. Read off the direction corresponding or closest to the point whose direction you want to find.

Bearing

You can also describe the position of a feature or place from another using their distance apart in the form of an angle. The angle is measured clockwise from the north line. This angular distance is called a **bearing**. It is stated with three figures. For angles less than 100° we write a zero before the measured angle, for example, **045°** instead of **45°**. To understand this better, follow the steps below.

To determine the bearing of one point from another, draw a compass rose at the centre of the point from which you want to determine the bearing. Then draw a line joining the two points. Using a protractor, measure clockwise the angle between the north and the line you have drawn joining the two points. Look at Figure 3.13 and state the bearing of A from B and of B from A.

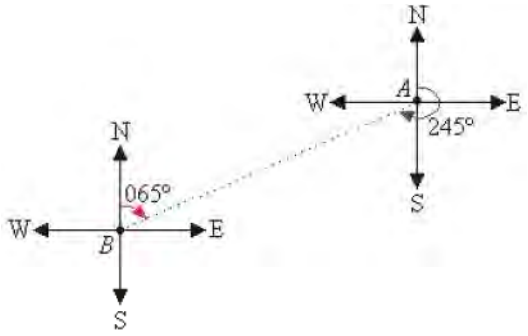


Figure 3.13: How to determine bearing

Activity 3.15: Finding bearing

Study the sketch map of Tororo in Figure 3.7 and do the following:

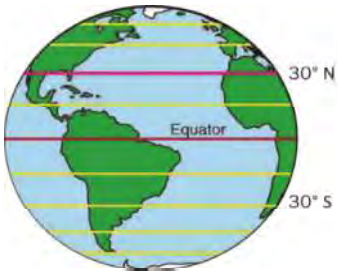
Determine:

1. The bearing of the cement factory from the quarry in Tororo Municipality.
2. The bearing of Tororo College from the ginnery near Mudodo River.
3. The bearing of the ginnery near Mudodo River from Tororo College.

Latitude and Longitude

The maps you have used above all show small areas with great detail. These are called **large scale** maps. On the other hand, a map showing your country, East Africa or the whole world shows a very large area but with little detail. These are called **small scale** maps. When we want to describe the exact positions of features or places on small scale maps, we use latitude and longitude.

Lines of latitude



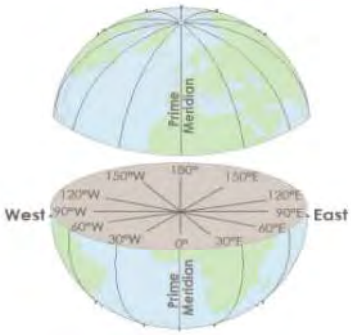


Figure 3.14: (a) Lines of latitude ***(b) How the equator divides the world***

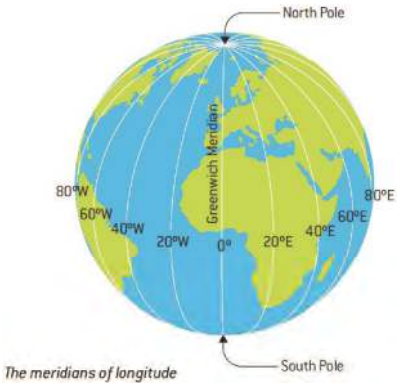
Activity 3.16: Understanding latitude

In pairs, look at Figure 3.14 and do the following:

1. Discuss what you understand by latitude.
2. In your notebook, write at least two sentences explaining latitude.
3. Suggest how lines of latitude are determined and marked on maps.
4. Share what you have written with the class.

Latitude measures how far north or south of the equator a place is located. The equator is the starting point for measuring latitude. For this reason, it is marked as the 0 (zero) degree latitude. It divides the world into two equal parts – north and south, as shown in Figure 3.17 (b). What do we call these parts? The number of latitude degrees increase as we move further away from the equator, all the way up to the 90 degrees latitude at the poles.

Lines of longitude



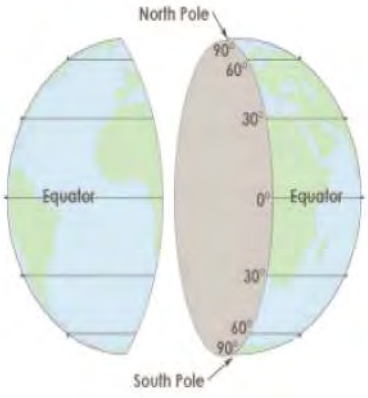


Figure 3.15 (a): Lines of longitude ***(b) How the Prime Meridian divides the earth***

Activity 3.17: Understanding longitude

In pairs or individually, look at Figure 3.15 and do the following:

1. In your notebook, write at least two sentences explaining what you understand by longitude.
2. Suggest how longitudes are determined and marked on maps.
3. How are longitudes different from latitudes?
4. Share what you have written with the class.

Longitude measures how far a place is east or west of the major vertical line called the **Prime Meridian**. The Prime Meridian runs through Greenwich in England. Because of this, it is also called the **Greenwich Meridian**. It is the starting point for measuring longitude. It is marked as the 0 (zero) degree longitude. It divides the earth into two equal parts – west and east, as shown in Figure 3.15 (b).

Using latitude and longitude

Lines of latitude and longitude also form a grid system on the map. To find a location on the grid system, simply read the latitude along which a place or feature lies in degrees. Then read the longitude.

At the point where the two lines meet, state the two numbers. These give the coordinates of the feature. For example, in Figure 3.16, Kampala City lies at latitude 0.2 degrees north of the equator and at longitude 32.35

degrees east of the Greenwich Meridian. So the position of Kampala can be stated as 0.2°N 32.35° E.

Figure 3.16: Map of Uganda with latitude and longitude

Activity 3.18

1. Study Figure 3.16 and do the following:
   Using latitude and longitude, find the position of:

   (i) Arua, (ii) Lira, (iii) Mbarara, (iv) Soroti, (v) Moroto and

   (vi)Jinja

2. Now open your atlas and look for the world map showing political units or countries. Using the map:
   i) Find out the lines of latitude and longitude between which the following countries lie: Angola, Chad, Australia, Ecuador, Uganda, Egypt, India and Iran.
   ii) Find the cities lying at the following locations:
   5.19°N 4.01°W; 33.56°S 18.28°E; 38.45°S 62.15°W; 0.19°N 32.35°E; 1.20°N 103.45°E; 41.50°N 87.45°W; and 15.20°S 28.14°E

Activity of Integration

Ask your teacher to provide you with a topographic map (scale 1:50000) of the area where your school is found. Study the map and find out places that you would wish to visit if given a chance to go on a geography tour towards the end of the school term.

1. Choose a route that you would follow in order to see a good number of interesting features. Draw a simple map with marked stopover points. Write at least two sentences describing the activities you would do at each stopover point.
2. Determine the distance (in kilometres) your journey would cover from the school to the furthest place you would wish to visit.
3. Estimate the total amount of money you would spend on transport, including the return journey, if the transporter charges 100,000 shillings per kilometre.

Chapter Summary

In this chapter, you have learnt:

1. that all human beings, including you, move around places using mental and drawn maps.
2. that a map is drawn in plan as if one is looking at features on earth directly from above.
3. that objects or features are represented on a map using symbols.
4. that all features on a map are smaller than their real size because they are reduced using scale.
5. how to draw a map of a local area using symbols and a scale.
6. how to use the linear or bar scale of a map to measure distance and estimate the area or features on the real ground. You can do these using different methods.
7. the difference between small scale and large scale maps.
8. how to find places and the positions of features on maps of different scale.

Chapter Four

Ways of Studying Geography

Govt urged to boost tourism using lakes

Investment. South African Airways observes that Uganda is not effectively utilising its water bodies to attract tourists unlike other countries.

BY STEPHEN OTAGE
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KAMPALA. South African Airways has advised the government to copy from prominent global tourism destinations and popularise tourism investments around and on the country's water bodies.

Speaking in an interview on Monday, Ms Yogi Biriggwa, the South African Airways country manager, said prominent destinations such as Mauritius, Rio-de-Jenairo in Brazil, Southern France, Durban in South Africa, and Mombasa in Kenya are popular globally because of their locations and investments on and around the water bodies.

She said this makes them attractive and easy to market internationally.

"We do not have water sport, no cruises, no weddings, no speed boats, no beaches, no floating restaurants, and this is what people always ask for immediately they arrive here," she said, adding: "You can make a lot of money. Ugandans are doing nothing about it yet they are sitting on a gold mine," Ms Biriggwa said.

She said if someone invested in speed boats between Entebbe and Port Bell of Ggaba beach, the visitors' unforgettable experiences would market Uganda abroad.

"Apart from mountain gorillas, Uganda has a lot to offer. If Ssese Islands were in another country, they would be filled with water sports. Southern France, Mombasa and Durban in South Africa are beautifully built around the ocean," YOGI BIRIGGWA, SOUTH AFRICAN AIRWAYS COUNTRY MANAGER

"When they [visitors] return home, these are the positive stories they will be narrating to their relatives and friends who will, in turn, pick interest in visiting the country," Ms Biriggwa said.

Yesterday, Tourism South Africa, the national body which rebranded South Africa to erase the dark image that had been created by Apartheid, sponsored 10 successful women from Uganda to visit South Africa's prominent tourism attractions. This was aimed at turning them into ambassadors who will influence similar investments to come to Uganda or mentor indigenous Ugandans to set up similar businesses.

The one-week tour is a package will see them experience the balloon safari, visit the Malaria-free Pilansberg National Park, five star accommodation at Saxon Hotel, Intercontinental, Oliver Reginald Tambo Hotel, the Palace Hotel Sun City and 12 Apostles, among other destinations.

Some of the boats at Ggaba Landing Site in Kampala. PHOTO BY STEPHEN OTAGE

Key Words	By the end of this chapter, you should be able to:
• Fieldwork • Observation • Questionnaire • Aerial photograph • Ground photograph • Horizon • Oblique photograph	a) understand how to use and apply different techniques used in fieldwork and apply these to studying a local area. b) use maps, aerial images, photographs, graphs and charts to communicate data. c) analyse and present statistics gathered in fieldwork. d) write conclusions to summarise fieldwork. e) know the three different angles from which photographs can be taken and the terms used to describe the different parts of a photograph. f) appreciate the effect of perspective on oblique photographs. g) understand the difference between photographs and maps. h) recognise features on a photograph and make a sketch of an area from a photograph. i) appreciate that fieldwork and photographs are important because geography is the study of the real world. j) use fieldwork to study a local area

Introduction

In this chapter, you are going to learn how and where you can find geographical information. After reading about and using the different sources of geographical information, you will be able to suggest which source is most important and why.

Activity 4.1: Finding out information

In pairs, study Figure 4.1 and do the activities that follow:

(a)

Year	Amount of crop produced in tonnes		
	Paddy rice	Maize	Wheat
2010	25,070	23,000	16,670
2012	23,040	25,000	14,290
2014	24,950	25,040	15,710
2015	24,880	23,530	16,000
2016	25,280	23,180	16,830

(b)

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Some of the boats at Ggaba Landing Site in Kampala. PHOTO BY STEPHEN OTAGE

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(c)

Figure 4.1: Some sources of geographical information

1. Summarise the information presented in the table, newspaper extract and photograph.
2. Using the information provided in the table, draw a graph to show the production of any **one** crop from 2010 to 2016.
3. Discuss the advantages and disadvantages of each source of information.
4. In your opinion, which source is most effective in giving geographical information? Give reasons why you think it is the most effective.

Studying Geography through Fieldwork

Activity 4.2: Finding out from the field

In groups, go outside the school and:

1. ask people in the local area about the different activities they do.
2. look around and write down the different things you see in the area.
3. write a report about the area studied.
4. through discussion, share your findings with other groups.

You have probably found out from field information about the activities carried out by people in the area around your school. You have also seen the natural features found in the area. The information you collected from the field is the geography of the area around your school. So, the field is one of the sources of geographical information. Visiting an area and collecting information about it is called **fieldwork** study.

How can we Study Geography through Fieldwork?

To be able to understand the steps and methods involved in carrying out fieldwork, do the following activity.

Activity 4.3: Exploring steps in fieldwork

In a group or as an individual:

1. Choose a topic to be studied in the area outside the classroom.
2. Decide the reasons (objectives) for doing the fieldwork.
3. Decide how you are going to collect information while in the field.
4. Go out to the field and collect the information, emphasising how the natural environment and human features are related.
5. Draw a map showing how physical and human features are distributed in the area.
6. If possible, you may carry out measurements of particular things in the field or you may ask people how much land is used for each activity, how many buildings of a certain kind are in the area, etc.
7. After collecting all the information needed, write a report about the area studied. Through discussion, compare group reports.

While in the field, you collected some information such as that about the relief of the area, vegetation types, and crops grown or how people use their land, type of buildings and so forth, by looking around and seeing things by yourself. This is called **observation**.

Your teacher could also have given you a number of questions to ask people in the field in order to get information from them. This list of questions is called a **questionnaire.**

Activity 4.4: Understanding methods

In pairs, discuss and suggest possible names for the following methods you could have used to get some information while in the field. Through discussion, share the names you have suggested with the rest of the class.

1. Talking to the local people and asking them questions about the things they do.
2. Measuring the size of gardens, market stalls, buildings and other features in the field.
3. Drawing sketch maps, field transects and panoramas.

Writing a Report about Fieldwork

You collected information about the area you studied during fieldwork. How do you think one can know what the geography of the area you studied is like? Possibly you have thought of telling and explaining to the person what you found out. Since it is not possible to tell everybody what we have got from the field, we write it down so that others can read for themselves. The information we write about the area studied is called a **fieldwork report**. To be able to write a report about your study, do Activity 4.5 below.

Activity 4.5

Using the information you collected during the field study you did in Activity 4.2 above, follow the steps below and prepare a fieldwork report. Present the report to your teacher for any assistance you may need.

1. Remember the topic and objectives of your study.
2. State the topic and summarise your objectives at the beginning.
3. Briefly describe the area studied, possibly with a map.
4. Write down the information you got about every objective in words.
5. Analyse the statistics you got, if any, and present them in tables, charts or graphs.
6. Include photographs or other maps, if any.
7. Summarise what you found out from the fieldwork, including the relationships between the people of the area and their physical and human environment.

Learning Geography through Photographs

If we cannot reach a place very easily, we can learn about it by looking at its **photographs.** These can tell us a lot about the geography of even those areas we have never been to. To understand this, do the following activity.

Activity 4.6

Study Figure 4.2 and do the activities that follow.

Figure 4.2: Photograph as a source of geographical information

1. In your notebook, write down the natural and human features you see in the photograph.
2. Explain how any two human features are influenced by the natural environment.
3. In what ways do you think human activities might affect the natural environment shown in the photograph?

All that you have written about Figure 4.1 is the geography of the area where the picture was taken. So studying photographs is another way in which we can get geographical information.

Types of photographs

Photographs are of different types. These depend on the angle at which the photographer looks at the features on the ground through the camera. Which types do you know? Those taken while the photographer is standing on the ground or on another feature connected to the ground are called **ground** photographs. Photographs can also be taken from the air, i.e. when the photographer is not directly connected to the ground. Such photographs can be taken from an aeroplane, a very tall building or a flight balloon. These are called **aerial** photographs. To understand this further, do Activity 4.7.

(a)

(b)

Figure 4.3: The Rift Valley in Uganda

(a)

(b)

Figure 4.4: Kampala City

Activity 4.7

Look at Figures 4.3 and 4.4 and:

1. identify and write in your notebook the buildings and vegetation in each photograph.
2. explain the differences between the photographs shown in each figure.
3. suggest what type of photograph each one is. Give reasons to support your opinion.

You could have realised that aerial photographs are not the same. This is because while in the air, the photographer can look at features on the ground at different angles. Photographs taken when looking at features vertically, i.e. at an angle of 90°, are called **vertical aerial** photographs. These show only the top views of the features on the ground, with all features appearing as flat objects. Those photographs taken looking at features at an angle less than 90° are called **aerial oblique** photographs. These show both the top and side views of objects.

Describing where things are on a photograph

In Chapter Three, you learnt the different ways in which you can find things on maps of different scale. Which one of these can you remember? However, with a photograph we do not usually know which direction the camera was pointing when the person took the photograph. So we cannot use compass points.

When describing features on the ground and aerial oblique photographs, you divide the photograph into regions depending on how far away from the observer the features are. These are foreground, middle ground and background. The part of the photograph which shows the sky is called the horizon. We do not divide this into regions. Can you suggest why this is so?

Figure 4.5: Divisions of a photograph

If you want to give the exact positions of features, you subdivide the above three grounds into other regions. These are left foreground, right

foreground; left middle ground, right middle ground; left back ground and right back ground.

Activity 4.8

Look at photograph (a) in Figure 4.1 again and do the following:

1. Using a straight edge, draw in your notebook, the outline of the photograph and divide it into the first three regions.
2. Subdivide it further into six regions.
3. Identify the features found in each region and write them down.
4. Subdivide it further into nine regions and suggest which names you can give to the new regions.
5. Swap your work with one of your neighbours and comment on each other's work.

When you look at photograph (b) in Figure 4.4, you realise that it does not have any foreground or background. What type of photograph is it? You have probably suggested that it is a vertical aerial photograph. So, when interpreting such a photograph, you use terms like **bottom**, **top**, **left, centre** and **right** to describe where things are.

Activity 4.9

Using these words: bottom, top, left, centre and right, describe the area shown on the photograph in Figure 4.4 (b)

Note: On photographs we can describe activities which are taking place as well as what the place looks like.

Drawing a sketch from a photograph

Sometimes it is useful to draw a sketch based on a photograph to show the **most important** features of the photograph. You do not need to show everything on the photograph but simply what kinds of things are found in each area. For instance, areas of buildings, main roads, types of vegetation, areas of farming, swamps, rivers or lakes, flat land or hills. Try to divide the photo into just three or four kinds of areas. To understand this better, see Figure 4.6.

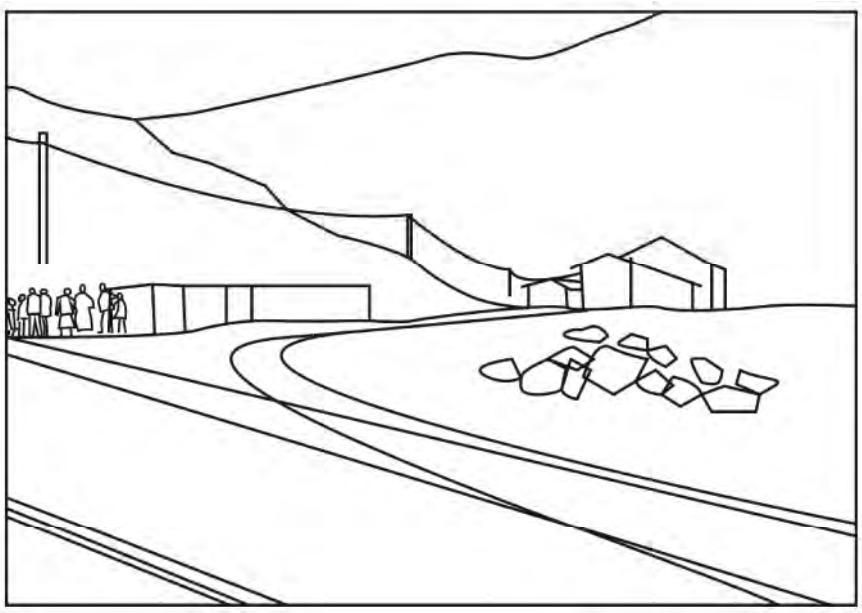

Figure 4.6 is a sketch of the area shown in Figure 4.2.

Activity 4.10

Study Figure 4.7 and do the tasks that follow.

Figure 4.7: Photograph showing Rukiga Hills, Kabale

1. Draw a sketch of Figure 4.7 to show the main features on the photograph.
2. Divide the sketch you have drawn into appropriate divisions.
3. Name the features on the sketch.
4. Describe the area shown in the photograph.

Research Task

Individually:

1. Conduct a library or internet search about the sources of geographical information and write a report of your findings.
2. In your opinion, which source is most important? Give reasons why you think it is the most important.
3. Present your report to the class through discussion.

Activity of Integration

1. Abu Saidi, a student of Ife High School in Nigeria, wants to study the geography of Tanzania. He has visited your school looking for assistance on how he can find out the information he wants.
2. Using the knowledge and skills you have learnt under this topic, write an advice note of about one page to help him get the information about the geography of Tanzania. Suggest to him which method/methods would be the most useful and why.

Chapter Summary

In this chapter, you have learnt:

1. that we can get geographical information from various sources including maps, statistics, graphs, charts, newspapers and other mass media.
2. the advantages and problems associated with each source of information.
3. that photographs are of different types depending on the angle at which they are taken.
4. how to conduct a fieldwork study and record the geography of an area.
5. that fieldwork and reading photographs are very important because they tell us what exactly a place looks like.
6. how to communicate geographical information using tables of statistics, graphs, charts and maps.