




A globe is the most accurate model of the Earth. It is small but of the same shape as the Earth, like a ball or a sphere slightly flattened at the poles. A globe shows the exact directions, correct shapes and relative sizes of the oceans, continents, islands and seas. It also shows correct location of different places and features in relation to one another. However, globe has limitations as well. A globe can be useful when we want to study the Earth *as a whole*. But, when we want to study only a part of the Earth, as about our country, state, district, town or village, it is of little help. In such a situation, we use a map.

It is difficult to handle large globes in a small space. Small globes cannot represent detailed information. It is difficult to prepare a book of globes representing **various features and themes**. Maps with different themes are more convenient to carry than even folded globes with different themes. **It is easy to handle maps** because they can be rolled or folded, stored or carried around easily.

A **map** is a representation or a drawing of the Earth's surface or a part of it drawn on a flat surface according to a scale. Different features of the world are marked on the map with the the help of certain symbols, words, lines and colours. However, a map is not as accurate as a globe. **Every map has some distortions** because the curved surface of the Earth cannot be shown on a flat surface without distortions. It is impossible to flatten a round shape completely. **Each map projection is a compromise**. It shows some features accurately but distorts the others because the Earth is a spherical body. Even satellite mapping of the Earth has its limitations. Since the map is a flat surface to represent the spherical Earth, the northern and southern portions are stretched out on it. A map is a two dimensional representation of the Earth but globe is a three dimensional model. However, the globe cannot represent landforms in three dimensions.

We find that **maps are useful** to us for various purposes. One map shows a small area and a few facts. Another map may contain as many facts as a big book. Some maps provide more information than a globe. The



information on a map depends on its purpose. The maps are useful to everyone today — navigators and pilots use them to steer their ships and find their locations. Geologists, miners, town planners need maps. The army needs maps for defence.

History of Map Making

The first map was made as early as 2300 B.C. It was drawn on a clay tablet. However, it was Ptolemy, a Greek astronomer who lived in Egypt and first represented the Earth as a sphere. He also showed the directions by drawing a **North-line** on top of the map. Though he made his discoveries in the second century, it was not until 15th century that his discoveries were recognised. It was because the maps in the ancient times were not accurate, since the knowledge of the Earth was limited. Many details included in the map were based on memory and tales rather than on authentic information.

Atlas

When many maps are put together (usually bound) we get an Atlas. Atlases are of various sizes, measurements drawn on different scales. Besides maps of the selected continents and countries, it may include information and diagrams related to geographical features and population data. Maps are usually printed in colour in an atlas. It is difficult to prepare an atlas of globes representing various features and themes.

Types of Maps

Maps are of different types. The commonly used maps are the following :

Physical or Relief Maps : Maps showing natural as well as man-made features of the Earth's surface such as mountain ranges, peaks, plateaus, hills, plains, rivers, seas, oceans, dams, etc. are called physical or relief maps. Different colours or designs are used to show different landforms.

Political Maps : Maps dividing the world into administrative units such as different countries and states, districts, cities, towns and villages showing their boundaries are called political maps.

Thematic Maps : Maps focussing specific information such as road maps, railway maps, aviation charts, nautical charts, weather maps, geological maps (showing types of rock and soil), distribution maps (showing distribution of crops, minerals and forests), tourist maps etc. are known as Thematic maps. Depending on the information given, maps are provided with suitable titles. Thematic maps are made to meet a certain need.

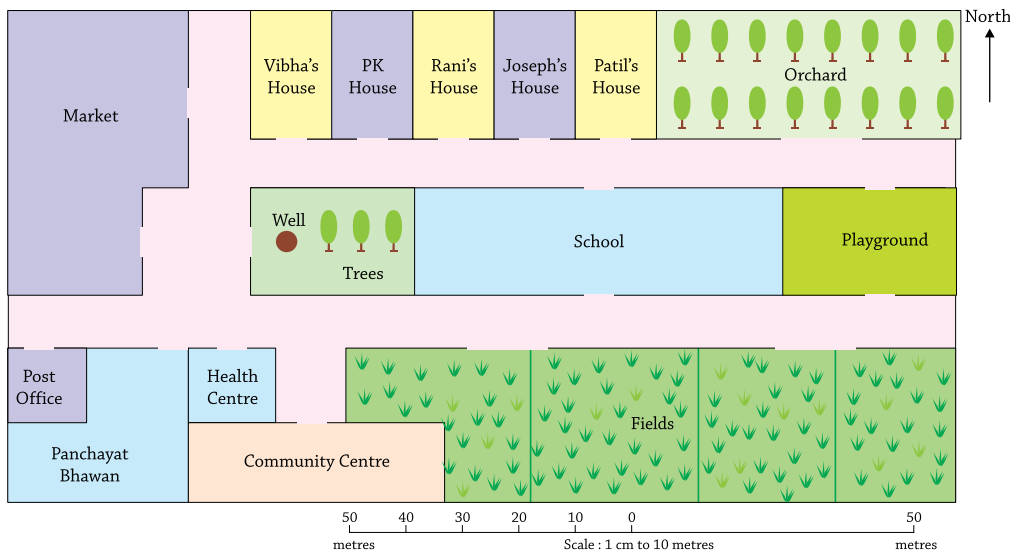
Essential Components of Maps

There are three essential components of maps— distance, direction and symbols. If these components are observed while making a map,

it can be quite accurate. Besides these, the **title** of a map generally explains the main purpose of a map.

Distance

To draw maps, we reduce the actual distances between two places by proportion as we have to fit large area on a sheet of paper. This reduction is done very carefully so that the distance between the places is **real** comparatively to other distances on the map. To make it possible we represent a large distance on the ground as a **definite** small distance on paper. In other words, a scale is chosen for this purpose. **Scale** is the ratio between the actual distance on the ground and the distance shown on the map. If you show the distance of 6 km between the school and your house by 2 cm on a map, it means, 1 cm on the map will show 3 km on the ground. The scale of your drawing will be 1 cm to 3 km or 1 cm : 300000 cm.



Map of village

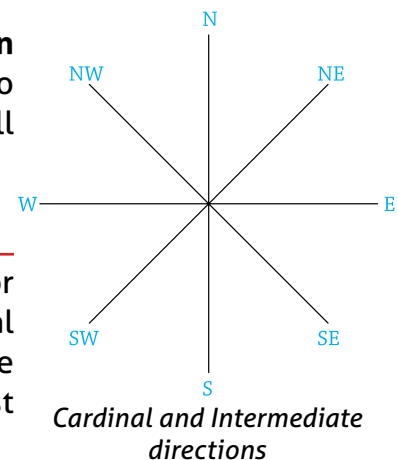
Small scale map : To show large areas like continents or countries, on a map, we use a small scale, for example, 1 cm = 1000 km of the ground.

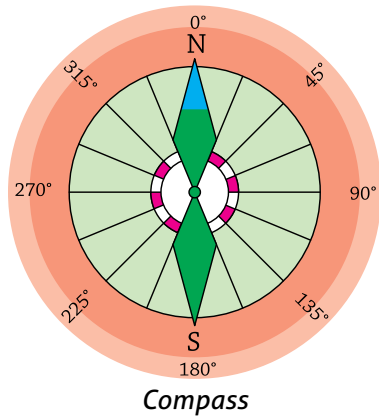
Large scale map : To show small areas like a village, town or suburb on a map, we use a large scale, for example, 1 cm to 100 m of the ground. Large scale maps give more information than small scale maps.

A scale may be used for measuring actual distances from those shown on a map. If the scale is 1 cm to 500 m and the distance between two places on a map is 3 cm, the actual distance between these places will be equal to $3 \times 500 \text{ m} = 1500 \text{ m}$.

Direction

We can locate any place with the help of directions. There are four major directions — North, South, East and West. These are called cardinal points or **cardinal directions**. Other four intermediate directions are north-east (NE), south-east (SE), south-west (SW) and north-west





(NW). We can locate any place more accurately with the help of these intermediate directions.

A **compass** is an instrument to find out directions anywhere anytime. Its magnetic needle always points towards north-south directions.

Usually the maps show the directions. Most maps contain an arrow marked with the letter 'N' at the upper right hand corner. This arrow shows the north direction. It is called the **north line**. When you know the north, you can find out other directions, east, west and south. However, if no sign has been made, we take the directions on a map as follows :

North is always towards the top (↑)

South is always towards the bottom (↓)

East is always towards the right (←)

West is always towards the left (→)

Symbols

Usually there is not enough space on the map to show the actual shape of the features like bridges, roads, trees, buildings, etc. So they are shown by using the certain simple pictures, different kinds of lines, letters, colours and shades. These symbols give a lot of information in a limited space. With the use of these symbols, maps can be drawn easily and are simple to read. Even if a foreign tourist who do not know the local language and, therefore, cannot ask someone for directions, can collect information from maps with the help of these symbols.

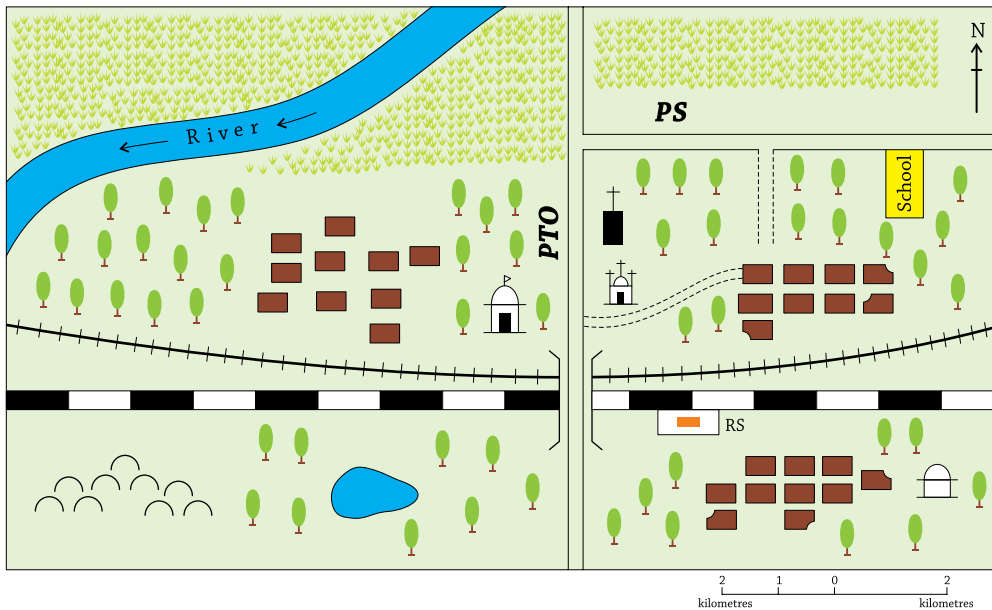
In order to make easy for tourists and others to understand the local map of any country there is an international agreement among countries to use same sets of symbols on maps. These same sets of symbols are called **conventional symbols**. Thus, maps have a universal language that can be understood by all.

Railway Line : Broad gauge, Metre gauge, Railway station	
Roads : Metalled, Unmetalled	
Boundray : International, State, District	
River, Well, Tank, Canal, Bridge	
Temple, Church, Mosque, Chhatri	
Post Office, Post & Telegraph Office, Police Station	PO , PTO , PS
Settlement, Graveyard	
Trees, Grass	

Conventional Symbols

A list or a table of symbols is shown with the map. It is called **Key** or **Index**. You can read a map by using the index. Some of the important conventional symbols are shown in the figure.

Colours are also used to depict certain physical features. A water body is shown in blue colour, mountain in brown colour, plateau or upland in yellow colour and plains in green colour.



Map of Anandpur village using conventional symbols

Plan

A plan is a **detailed** diagram of a small area drawn on a very large scale. Plans also use symbols. A large scale map gives lot of information. Plan shows certain things which are important to know but which cannot be shown in a map, for example, the length and breadth of a room. The **plan of a colony** can be seen at convenient points for the benefit of visitors. Engineering plans are called **blue prints** prepared for the construction of buildings, roads, bridges, dams, etc.

The **basic difference** between a map and a plan is that a map covers a larger area on a small scale without minor details. A plan shows minor details of a smaller area on a large scale. The scale of a map can depict 1 cm for many kilometres, say 10 km, 100 km... while in a plan 1 cm can depict only 1 m or 10 m.

Sketch

A sketch is usually a rough drawing or diagram made from one's imagination without measuring the actual distances. A sketch may show correct direction, have a title and sometimes even a symbol or key, but it is **not drawn to scale**. Important landmarks such as markets, post office, police station, bridges, etc. can be marked on it. A sketch does not show distances and directions accurately. It shows only those details that are necessary. Suppose you want to go to your friend's house. Your friend may draw a rough sketch to show the way to his house. Or you have a plot and want to construct a house on it. You show your idea roughly on a paper and show it to an architect.

A sketch **differs** from a map or a plan in the matter that it has no scale, it does not need any skill nor does it represent correctly any features.



Key Words

- » Map : a drawing of Earth or a part of it on a flat surface.
- » Atlas : a collection of maps bound together in a book.
- » Scale : the ratio between actual distance on the ground and the distance shown on the map.
- » Cardinal Directions : the four original directions — North, South, East and West.
- » Intermediate Directions : directions in between cardinal directions.
- » Key/Index : a table of symbols on a map.
- » Thematic Map : a map with a certain purpose.
- » Plan : an accurate detailed diagram of a small area drawn on a very large scale.
- » Sketch : a rough diagram of an area without scale.
- » Conventional Symbols : same sets of symbols on maps under international agreement among countries.

SUMMARY

- ▶ A globe can be useful when we want to study the Earth as a whole.
- ▶ A map is a representation or a drawing of the Earth's surface or a part of it drawn on a flat surface according to a scale.
- ▶ Since map is a flat surface to represent the spherical Earth, the northern and southern portions are stretched out on it.
- ▶ When many maps are bound together we get an atlas.
- ▶ Maps are of different types – Physical maps, Political maps and Thematic maps.
- ▶ There are three components of maps — distance, direction and symbols.
- ▶ Scale is the ratio between the actual distance on the ground and the distance shown on the map.
- ▶ There are four major/cardinal directions — North, South, East and West.
- ▶ In order to make easy for tourists and others to understand the local map of any country there is an international agreement among countries to use same sets of symbols on maps.
- ▶ A plan is a detailed diagram of a small area drawn on very large scale to show lot of information.
- ▶ A sketch is usually a rough drawing or diagram made from one's imagination without measuring the actual distances.

Exercise Time

A. Tick (✓) the only correct choice amongst the following :

1. Maps are _____ dimensional.
a. One b. Two c. Three d. Four
2. Which of the following maps will have the largest scale on same sheet ?
a. Uttar Pradesh b. Delhi c. Asia d. India
3. Which colour is generally used to indicate plains on a map ?
a. Blue b. Yellow c. Green d. Brown
4. Which of the following is not made to scale ?
a. Globe b. Map c. Plan d. Sketch



B. Fill in the blanks :

1. A compass is used to find the main _____.
2. A _____ is a rough drawing of an area.
3. A _____ map is made to meet a certain need.
4. The signs and symbols of a map are given in a _____ or _____.
5. A plan is a drawing of a small area on a _____ scale.

C. Write true (T) or False (F) against the following statements in given brackets :

1. A big globe can also be handled and carried easily.
2. A compass is used to show symbols.
3. Yellow colour is used to show plateaus.
4. Large scale maps give more information than small scale maps.

D. Match the following :

- | | |
|--------------------------------|----------------------------|
| 1. A detailed drawing | a. Political map |
| 2. States, districts, villages | b. Intermediate directions |
| 3. South-West, North-East | c. Sketc |
| 4. Mountains, plateaus, plains | d. Plan |
| 5. A rough drawing | e. Physical map |

E. Answer in one word or one pharse :

1. What are the four directions called ?
2. What is the rough diagram of an area known as ?
3. What is the arrow pointing upward on a map called ?
4. In which direction does Mumbai lie on the map of India ?
5. Which map provides detailed information ? Small scale map or large scale map ?

F. Answer these questions briefly :

1. How is distance shown on a map ?
2. What is the importance of directions in a map ?
3. What does the title of a map tell ?
4. What are the different types of maps ?
5. Why are conventional symbols used on maps ?

G. Answer these questions in detail :

1. What are the limitations of a globe ? How are maps more helpful than a globe ?
2. What do you understand by the essential components of a map ?
3. Why does every map have some distortion ?
4. Mention three advantages of maps.

PROJECT WORK

1. Make a sketch of the way from your house to your school.
2. Make a plan of your classroom–house showing location of various furnitures, windows, doors, etc.