

CHAPTER- 8

MAP READING

Our Earth is a large heavenly body which is spherical in shape. It is impossible to make a map equal to its size; therefore scale was developed to draw maps. Scale is that method through which whole earth or part of it, as per the requirement, can be exhibited by drawing map. With the help of that map the actual distance between the two points on the surface is calculated. In other words, scale is the process of measurement of proportion of distance between two points shown on the map and the corresponding points on the actual surface.

UTILITY OF SCALE

Geography is also called as the science of Map. The use of scale is essential for drawing map. Without this no map can be drawn, where as map is an essential tool for the student of Geography.

FOLLOWING ARE THE USES OF SCALE IN MAP

1. Scale is the method to exhibit part of the surface correctly on the map.
2. Through scale we can exhibit very large earth surface in small form on the map.
3. Through scale, area of any region can be found.
4. With the help of scale any surface can be exhibited in large or small size.
5. Scale is essential for drawing map of building, factories, railway line etc.
6. Scale is also essential for survey.

METHODS OF EXPRESSING THE SCALE

The scale can be expressed through the following three methods on the map:

1. Statement Method
2. Representative Method
3. Graphical Method

1. Statement Method – In this method scale is expressed through a statement e.g. 1 cm = 5 Kilometer or 1 Inch = 18 miles etc.

1 cm = 5 km. means that a distance of 1 cm on the map expresses a distance of 5 km. on the surface. Similarly, 1 Inch = 18 miles means a distance of 1 inch on the map expresses a distance of 18 Miles on the surface. The first part of this statement expresses the distance between any two places on the map and the second part expresses the distance of those two places on the surface.

2. Representative Fraction: There is no similarity in the use of scale system in every country of the world. The statement method is used only in the concerned countries. To solve such problems Representative Fraction is used. Through this method scale can be made in any country even though, any other system of scale expression is being used in that country. In this method the distance on the map and distance on surface is expressed through a fraction. The numerator of this fraction is always 1 which expresses the distance of the map and the denominator is in same unit and expresses the distance of the surface. Representative Fraction is also called uplakchak and nirupak fraction.

$$\text{Representative Fraction} = \frac{\text{Map Distance}}{\text{Ground Distance}}$$

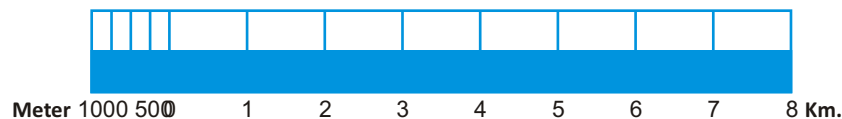
Through this method citizens of any country can study map very easily.

For example –

$$\frac{1}{250,000,000}$$

It means 1 inch on the map expresses 250,000,000 inch of the surface. Similarly 1 cm of the map expresses 250,000,000 cm of the surface. Representative fraction can be understood by changing it according to the scale system of any country. Therefore, it is also called '**International Scale**'.

- 3. GRAPHICAL SCALE:** This method is called plain scale method. The length of the graphical scale is determined on the mathematical base with the help of statement or representative fraction. After this, the line is divided in primary and secondary sections through arithmetic method. On main or primary section, large units like Mile or Kilometer and on secondary or sub – sections smaller units like Furlong or Meter is expressed.

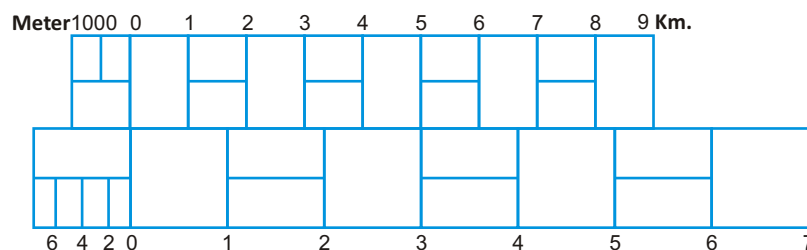


GRAPHICAL SCALE

The evaluation of the divided line is done after leaving first primary part. In other words 0 is fixed after leaving first part from left and 1, 2, 3, km etc. is fixed towards right from 0. Now, a main section of left side is again divided in sub – sections and 500, 1000 meter etc. is fixed from 0 towards left.

COMPARATIVE SCALE: In comparative scale distances are expressed in one or more than one scale system, e.g. Mile, Furlong, Meter and Gaj etc. are used in only one scale. At times two different facts are expressed in it e.g. distance and time is shown. The greatest quality of this scale is commencement of its secondary and primary scale is from one reference line or from zero value.

DIAGONAL SCALE: In plain scale tenth part of any unit or second section of unit is expressed. If hundredth part of any unit or third section of this unit is to be expressed then we take the help of Diagonal



DIAGONAL SCALE

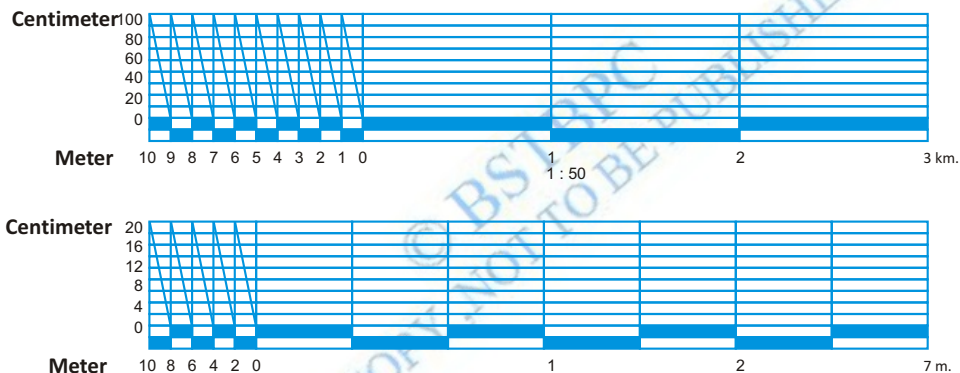
scale. Thus, hundredth part of any unit or the scale that expresses micro distances is called Diagonal Scale.

In this type of scale a scale similar to plain scale is made and on the sub – sections of the scale parallel lines are drawn at a fixed distance and then diagonals placed. This enables the reading of distances on the parts of diagonal. On this scale Kilometer, Hectometer, Decameter or Meter, Decimeter, Centimeter etc. are expressed.

TYPES OF SCALE: Scale is of following two types –

(1) SMALL SCALES: Small scale is also called micro scale. In this the expression of one centimeter is equal to several kilometers e.g. 1

$$\text{cm} = 5 \text{ km. or } \frac{1}{50,000,00}$$



Large Scale

It means that 1 km distance of the map expresses 500, 000 cm or 5 km on the surface. On small scale long distances are expressed. Most of the wall maps are based on small scale.

(2) LARGE SCALES: Large scales are also called big scales. In this scale, 1 km is expressed in several cm e.g. 5 cm = 1 km or $\frac{1}{20,000}$

It means that 5 cm distance of map expresses 1 km on the earth or 1 cm = 20, 000 cm. On large scale small distances are expressed. The maps of Indian villages and cities are made on large scale. The roadways and railways can easily be expressed on large scale. It is convenient to express small distances with full details on large scale. Town planning and land use maps are made on large scale.

EXERCISE QUESTIONS

OBJECTIVE TYPE QUESTIONS

1. Which scale method is most accepted?
(a) Statement (b) Representative
(c) Graphical (d) None of these
2. How does the scale find out the distance of the map?
(a) Numerator (b) Denominator
(c) Statement of scale (d) None of these
3. Denominator in scale expresses -
(a) Distance of the surface (b) Distance on the map
(c) Both distances (d) none of these
4. Which of the following scale is of Representative fraction?
(a) Meter (b) Centimeter
(c) Inch (d) None of these
5. Through which of the following scales distances of both the Kilometer and Mile can be expressed?
(a) Line scale (b) Graphical scale
(c) Representative fraction (d) Comparative scale

SHORT ANSWER TYPE QUESTION

1. What is scale? What is the importance of scale? Illustrate.
2. Describe the methods to express scale?
3. What is Representative fraction?
4. How many types of scale are there?
5. What are the two different systems of scale?
6. Why is representative fraction method called universal method?
7. What are the important uses of Graphical method?
8. What are the specialties of comparative scale?

LONG ANSWER TYPE QUESTION

1. What is scale? What is its importance for map? Describe in detail the different methods used to express scale.
2. Write short notes on the following –
 - (i) Representative fraction
 - (ii) Graphical scale
 - (iii) Statement scale

PROJECT WORK

1. Find out the distance from your home to school and convert them in Centimeter and Meter.



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