LESSON NOTE FOR WEEK 4  
TOPIC: MAP READING

SUB TOPIC: **MEASUREMENTS OF DIRECTION AND BEARING**  
MAIN OBJECTIVES: By the end of this lesson, student should be able to

**(a) The major Cardinal points**

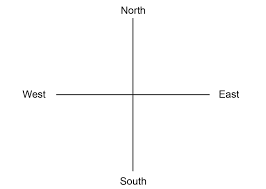
**(b) Measurement of direction**

**(c) Measurement of bearing**

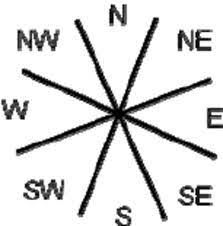
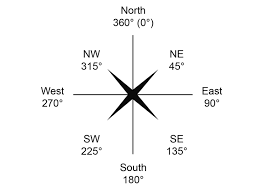
**STEP I**

**Direction**: The direction of one place to another is expressed by the means of compass points or cardinal point

There is four compass or cardinal points which include North, South, East and West. For better accuracy the measurement of directions of eight cardinal points are used. These are North, North-East, North- West, South, South- East, South-West, East and West. There are also 16 cardinal points.

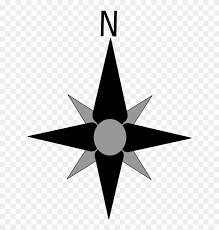


The Four Cardinal Points

The Eight Cardinal Points The Sixteen Cardinal Points

In order to determine the actual direction of one place from the other map, the orientation of the map is given by showing an arrow, pointing the direction of the north



**Methods of Measuring Direction on a Map**

1. Locate the two points or places involved on the map, let’s say, Awka and Enugu
2. Place your cardinal point at Awka because you are looking for the direction of Enugu from Awka
3. Using your ruler, join Awka to Enugu with a straight line and check which of the eight cardinal points that falls on the line.
4. The cardinal point on that line or near it is the direction

**Measurement of Bearing**

Bearing is described as the direction of one place to another. Bearing is expressed in degrees, using the protractor, measured from North in a clock wise direction. The corresponding degrees is in relation to the eight or sixteen cardinal points.

**Methods of Measuring Bearing on a Map**

1. Locate the two places involved on the map let’s say, Awka and Enugu.
2. Place your four cardinal point at Awka because you are looking for the bearing of Enugu from Awka
3. Using your ruler, join Awka to Enugu with a straight line
4. Place your protractor on the side of the line and the degree which falls on that line is represents the bearing.

It is proper to distinguish the three types of Norths in relation to bearing which aids the orientation of a place.

**Variation or Declination**

1. **True North** is derived from a line (meridian) of longitude is the direction of the North Pole
2. **Grid north** is the direction which is shown by North – South grid lines on the map
3. **Magnetic North** is obtained through the use of magnetic compass

The angle between the magnetic North and the true North is called **magnetic variation** or **declination**

**ASSIGNMENT**

1. What is used to measure direction?
2. What are the four cardinal points?
3. What is the measurement of bearing?
4. What is the magnetic variation?