Geological Map

Inclined beds

Inclined beds (Dipping layers) they are beds arranged with dip angle ranging between 0^o- 90^o.

Inclined beds will always intersect the topographic contours, whilst vertical layers will always form straight lines on the map.

Inclined beds that are commonly shown include ;

(1) **bedding attitude**

(2) **Apparent thickness**

1) Bedding attitude is defined as the strike and dip of a bed.

- **Strike** is the direction of a line produced by the intersection of an imaginary horizontal plane with an inclined bed. Such beds are inclined relative to the horizontal plan, then its intersection with an imaginary horizontal plane produces one and only one line (Figure 2).

The direction of this line is the strike of the bed.

- **Dip** is the angle between the imaginary horizontal plane and the inclined bed measured in a plane oriented at 90o to the strike line (Figure 3).

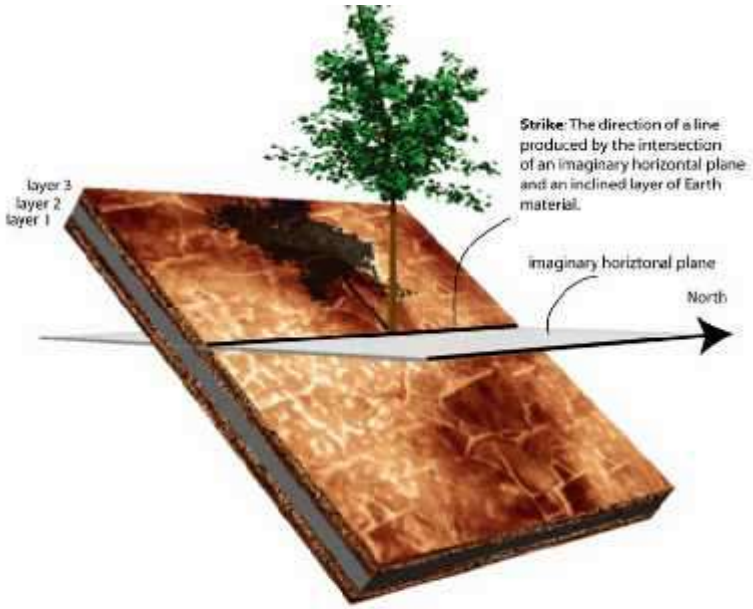


Figure 2. The three layers of sediment shown in Figure 1 are here tilted 40o east. In this orientation each layer intersects the imaginary horizontal plane to form a line. The direction of this line is the strike of each of the three layers.

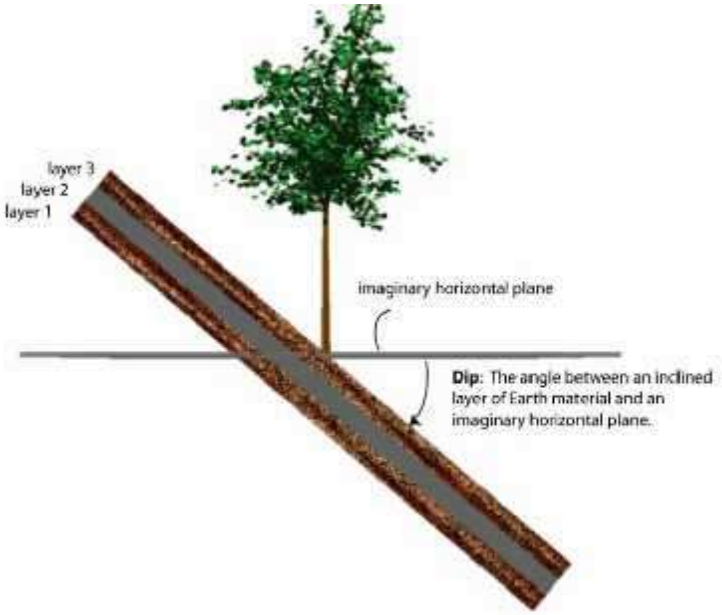
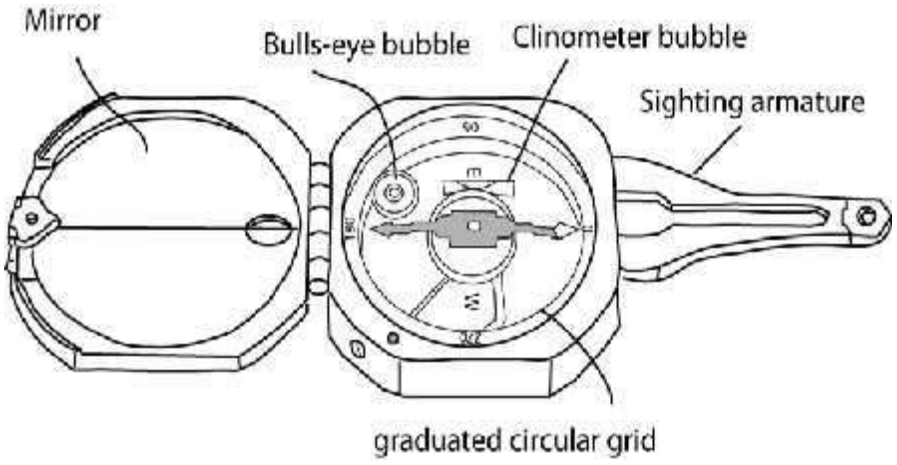
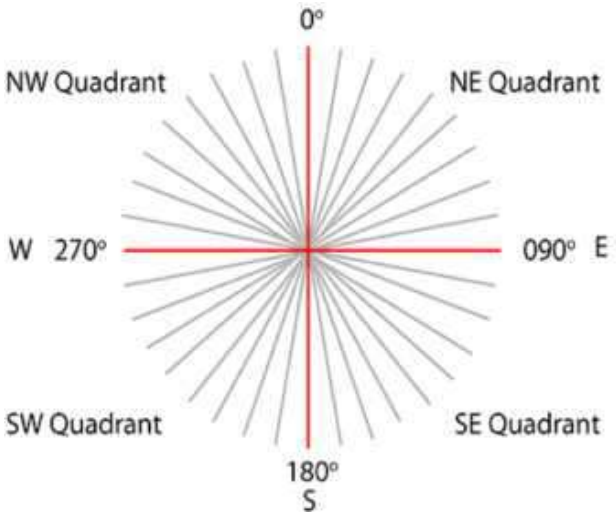


Figure 3. Dip is always measured in a vertical plane oriented at 90° to the strike.

In all of the above illustrations strike and dip is defined for an inclined layer such as a bed or lamination or rock stratigraphic unit (e.g., a member or formation). However, the orientation of any planar surface can be expressed by its strike and dip. Geologists use a Brunton or Silva compass to measure strike and dip.

The standard Brunton compass and its most essential parts.





Attitude description:

1) 3 Digit description:

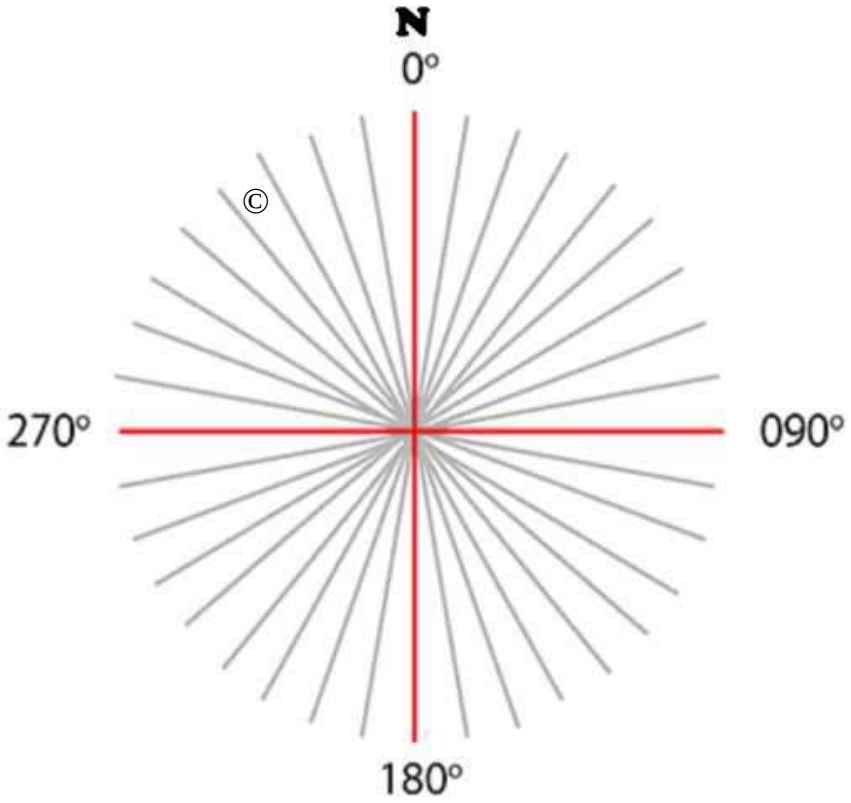
Strike (0-360) / dip angle (0-90), dip direction

2) Quadrant description:

Strike (quadrant) / dip angle (0-90), dip direction

Location 1 : 218°

Location 2 is © :



Assume that the attitude that you measured in field today was collected at two locations 1and 2. Please plot them on the Figure using your protractor.