

Magnetic, Grid & True NORTH

We need a way of expressing direction that is accurate, is adaptable to any part of the world, and has a common unit of measure. Directions are expressed as units of angular measure.

Degree. The most common unit of measure is the degree ($^{\circ}$) with its subdivisions of minutes ($'$) and seconds ($''$). A full circle contains 360° .

1 degree = 60 minutes.

1 minute = 60 seconds.

BASE LINES

In order to measure something, there must always be a starting point or zero measurement. To express direction as a unit of angular measure, there must be a starting point or zero measure and a point of reference. These two points designate the base or reference line. There are three base lines— true north, magnetic north, and grid north. The most commonly used are **magnetic** and **grid**.

- a. **True North.** A line from any point on the earth's surface to the north pole. All lines of longitude are true north lines. True north is usually represented by a star (see Picture).
- b. **Magnetic North.** The direction to the north magnetic pole, as indicated by the north-seeking needle of a magnetic instrument. The magnetic north is usually symbolised by a line ending with half of an arrowhead (see Picture). Magnetic readings are obtained with magnetic instruments, (such as magnetic compass or lensatic sighting compass).



- c. **Grid North.** The north that is established by using the vertical grid lines on the map. Grid north may be symbolised by the letters GN.

