

6th Standard Maths

Practical Geometry

We use the following tools in drawing geometrical shapes:

- A graduated ruler
- The compasses
- The divider
- Set-squares, and
- The protractor.

In this chapter, we shall consider only “Ruler-and-compass constructions”.

Circle

Every point on the boundary of a circle is at an equal distance from its center.

Construction of a circle when the length of its radius is known

We need to use compasses here.

A Line Segment

We need a ruler here.

Construction of a line segment of a given length

We have to use a ruler for this construction.

Constructing a copy of a given line segment

We may use a ruler or trace paper here. But it is better than we would use ruler and compasses for making, the construction.

Perpendiculars

Two lines or rays or line segments are said to be perpendicular if they intersect such that the angle formed between them is 90° .

Perpendicular to a line through a point on it

It may be drawn in three ways:

- by paper folding,
- using a ruler and a set-square, and
- using a ruler and the compasses.

Perpendicular to a line through a point not on it

Either of the three methods given below may be adopted:

- by paper folding,
- using a ruler and a set-square, and
- using a ruler and the compasses.

The perpendicular bisector of a line segment

There are three methods as given below:

- by paper folding,
- by using transparent tapes, and
- by using ruler and compasses.

Angles

Constructing an angle of a given measure

We use a ruler and a protractor here.

Constructing a copy of an angle of unknown measure

We use a ruler (or a straight edge) and the compasses.

Bisector of an angle

Two methods are possible:

- by paper folding
- by using ruler and compasses

Angles of special measures

There are some elegant and accurate methods to construct some angles of special sizes without using the protractor.

Some of such constructions are:

- Constructing a 60° angle
- Constructing a 30° angle
- Constructing a 120° angle
- Constructing a 150° angle
- Constructing a 90° angle
- Constructing a 45° angle