

# Activity 15

## OBJECTIVE

To verify that the sum of the angles of a triangle is  $180^\circ$ .

## MATERIAL REQUIRED

Hardboard sheet, glazed papers, sketch pens/pencils, adhesive, cutter, tracing paper, drawing sheet, geometry box.

## METHOD OF CONSTRUCTION

1. Take a hardboard sheet of a convenient size and paste a white paper on it.
2. Cut out a triangle from a drawing sheet, and paste it on the hardboard and name it as  $\triangle ABC$ .
3. Mark its three angles as shown in Fig. 1
4. Cut out the angles respectively equal to  $\angle A$ ,  $\angle B$  and  $\angle C$  from a drawing sheet using tracing paper [see Fig. 2].

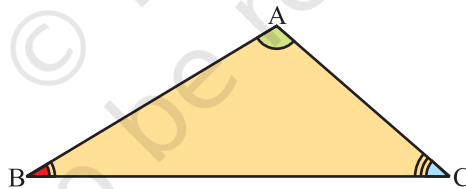


Fig. 1

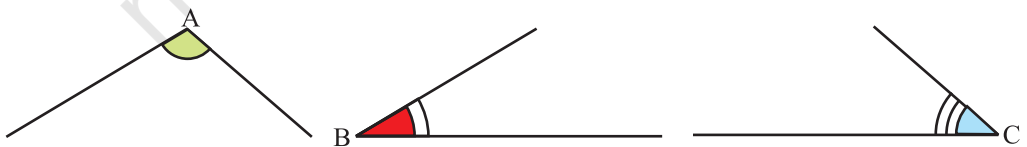


Fig. 2

5. Draw a line on the hardboard and arrange the cut-outs of three angles at a point O as shown in Fig. 3.

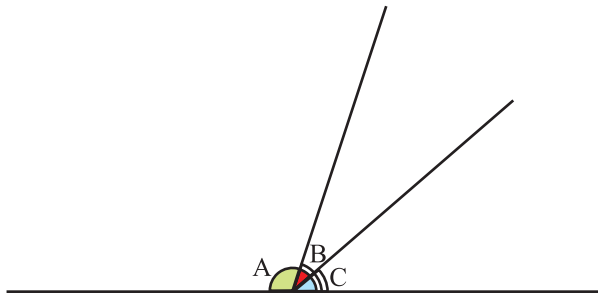


Fig. 3

### DEMONSTRATION

The three cut-outs of the three angles A, B and C placed adjacent to each other at a point form a line forming a straight angle =  $180^\circ$ . It shows that sum of the three angles of a triangle is  $180^\circ$ . Therefore,  $\angle A + \angle B + \angle C = 180^\circ$ .

### OBSERVATION

Measure of  $\angle A =$  .....

Measure of  $\angle B =$  .....

Measure of  $\angle C =$  .....

Sum ( $\angle A + \angle B + \angle C$ ) = .....

### APPLICATION

This result may be used in a number of geometrical problems such as to find the sum of the angles of a quadrilateral, pentagon, etc.