

# Activity 17

## OBJECTIVE

To verify experimentally that the sum of the angles of a quadrilateral is  $360^\circ$ .

## MATERIAL REQUIRED

Cardboard, white paper, coloured drawing sheet, cutter, adhesive, geometry box, sketch pens, tracing paper.

## METHOD OF CONSTRUCTION

1. Take a rectangular cardboard piece of a convenient size and paste a white paper on it.
2. Cut out a quadrilateral ABCD from a drawing sheet and paste it on the cardboard [see Fig. 1].
3. Make cut-outs of all the four angles of the quadrilateral with the help of a tracing paper [see Fig. 2]

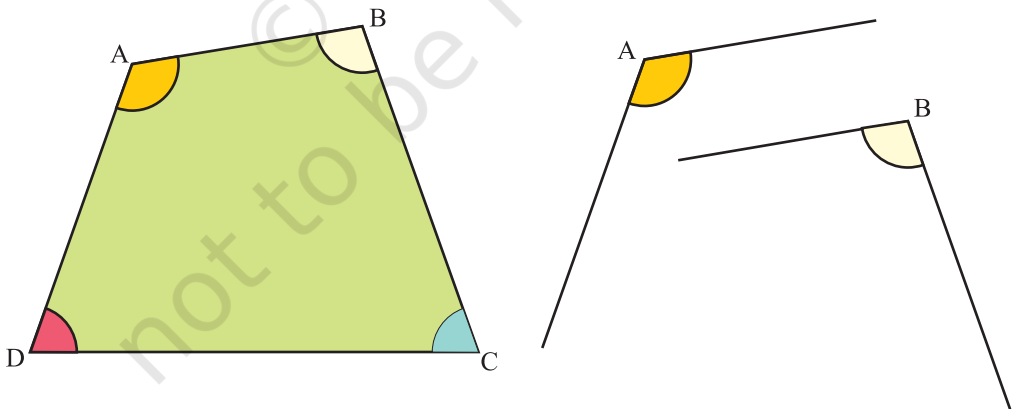


Fig. 1



Fig. 2

4. Arrange the four cut-out angles at a point O as shown in Fig. 3.

**DEMONSTRATION**

1. The vertex of each cut-out angle coincides at the point O.
2. Such arrangement of cut-outs shows that the sum of the angles of a quadrilateral forms a complete angle and hence is equal to  $360^\circ$ .

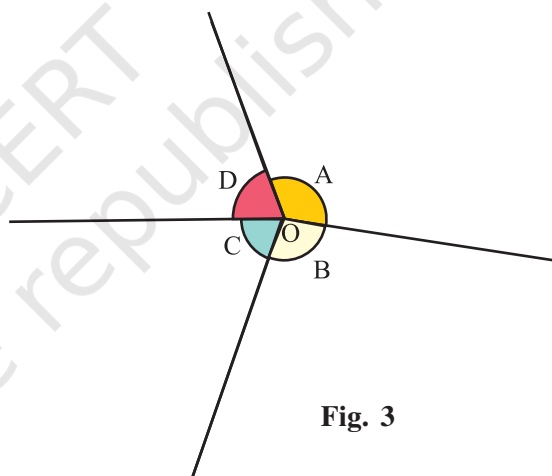


Fig. 3

**OBSERVATION**

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

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

Measure of  $\angle D = \dots\dots\dots$ .

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

Sum [  $\angle A + \angle B + \angle C + \angle D$  ] =  $\dots\dots\dots$ .

**APPLICATION**

This property can be used in solving problems relating to special types of quadrilaterals, such as trapeziums, parallelograms, rhombuses, etc.