

# Activity 26

## OBJECTIVE

To form a cube and find the formula for its surface area experimentally.

## MATERIAL REQUIRED

Cardboard, ruler, cutter, cellotape, sketch pen/pencil.

## METHOD OF CONSTRUCTION

1. Make six identical squares each of side  $a$  units, using cardboard and join them as shown in Fig. 1 using a cellotape.
2. Fold the squares along the dotted markings to form a cube [see Fig. 2].

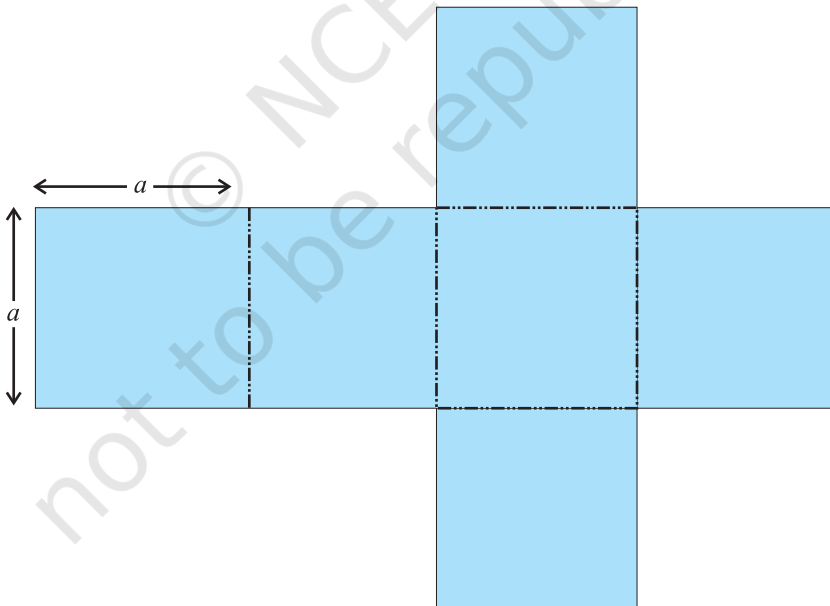
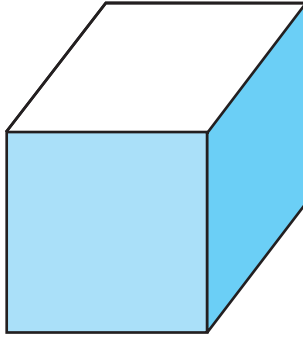


Fig. 1



**Fig. 2**

**DEMONSTRATION**

1. Each face of the cube so obtained is a square of side  $a$  units. Therefore, area of one face of the cube is  $a^2$  square units.
2. Thus, the surface area of the cube with side  $a$  units =  $6a^2$  square units.

**OBSERVATION**

On actual measurement:

Length of side  $a = \dots\dots\dots$

Area of one square / one face =  $a^2 = \dots\dots\dots$

So, sum of the areas of all the squares =  $\dots\dots + \dots\dots + \dots\dots + \dots\dots + \dots\dots + \dots\dots$

Therefore, surface area of the cube =  $6a^2$

**APPLICATION**

This result is useful in estimating materials required for making cubical boxes needed for packing.

**NOTE**

Instead of making six squares separately as done in the activity, a net of a cube be directly prepared on the cardboard itself.