

ACTIVITY 11

Subject	MATHEMATICS
Class	VIII
Chapter/Unit	MENSURATION
Topic	SURFACE AREA OF A CUBE
Time	30 minutes
Nature of Activity	Individual

What will I learn(Learning outcome)?

To derive the formula for the surface area of a cube

Skills:- Visualizing, Creating , Accuracy, Precision

What I have to do?

To derive the formula for the surface area of a cube using paper cut outs.

What do I require?

Cardboard, ruler, cutter, cellotape, sketch pen, pencil, white paper, chart paper.

What do I need to know?

Area of a square= $l \times b$

➤ Teacher's Activity

Teacher will discuss the steps to the activity.

How will I proceed?

➤ Students Activity

- Take a cardboard of convenient size and paste a white paper on it.
- Make a shape involving six identical squares each of side a unit, using a thick chart paper as shown in fig. 1.
- Fold the all six squares(along the lines) in such a way to form a solid cube as shown in fig.2.

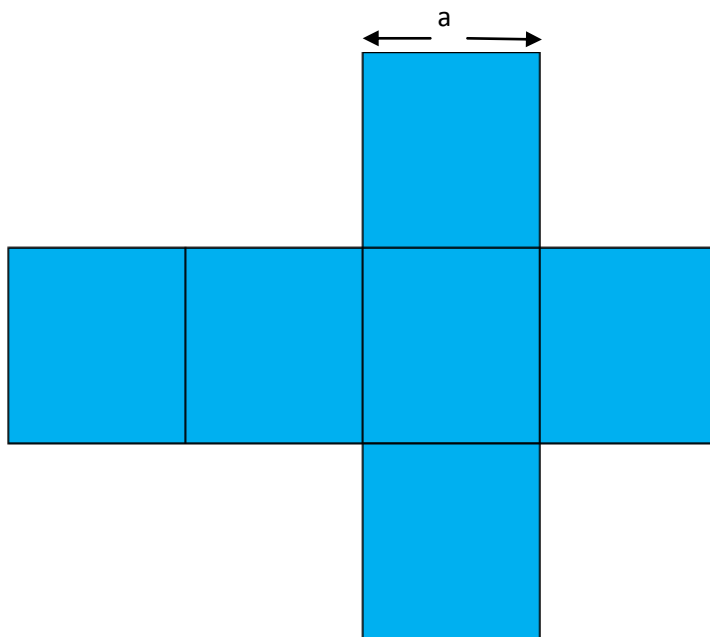


Fig 1

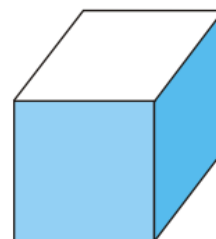


Fig. 2

What have I observed?

On actual measurement:

So, area of one face = a^2 = _____.

The sum of the areas of all the faces = _____ + _____ + _____
+ _____ + _____ + _____.

Therefore, the surface area of the cube = _____.

What have I learnt?

The surface area of a cube is _____.

What am I curious to know?

To derive the formula for the surface area of a cuboid.

Let me evaluate myself

1. : If the area of a face of a cube is 10 cm^2 , then find the total surface area of the cube .

2. Three cubes of metal whose edges are 6 cm, 8 cm and 10 cm respectively are melted to form a single cube. Find the edge of the new cube .

3. Two cubes have volumes in the ratio 1:64. The ratio of the area of a face of first cube to that of the other is _____.

4. A cube of side 5 cm is cut into as many 1 cm cubes as possible. What is the ratio of the surface area of the original cube to that of the sum of the surface areas of the smaller cubes?

5. Three cubes each of side 10 cm are joined end to end. Find the surface area of the resultant figure.
