

ACTIVITY -17

TOPIC: VISUALISING SOLID SHAPES

TITLE: ISOMETRIC AND OBLIQUE SKETCHES OF THREE- DIMENSIONAL OBJECTS

1. **What we have to do?**

To draw an isometric and oblique sketch of a cuboid. (7 units $\times$ 4 units $\times$ 2 units)

2. **What is required?**

Squared paper, isometric dot paper, a sketch pen and a ruler.

3. **How much time is required?**

40 minutes

4. **What do you need to know?**

Properties of a cuboid, knowledge about isometric and oblique sketches

5. **How will you proceed?**

I) **An isometric sketch**

- a. Take an isometric dot paper and draw base lines of two front faces of length 7 and 4 units respectively on as shown in Fig. 1

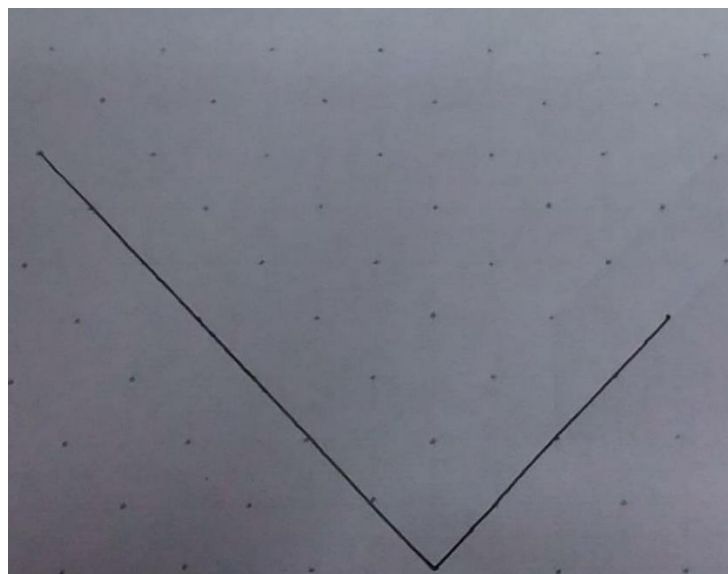


Fig.1

- b. Now, draw three vertical lines of length 2 units each, two on the end points of the lines drawn and one on the vertex. (intersection point) as shown in Fig.2

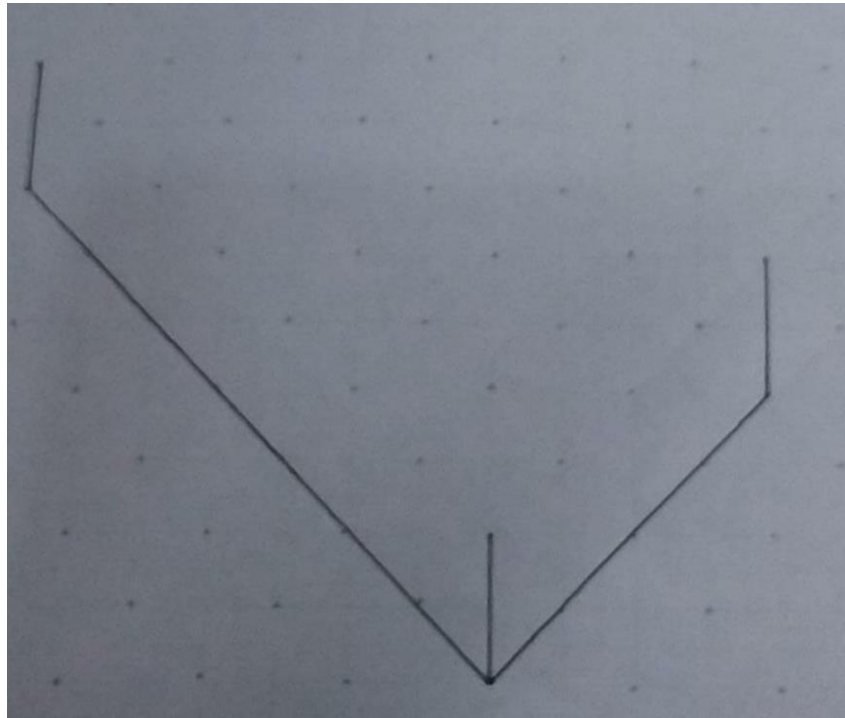


Fig.2

- c. To make a top face, draw a parallelogram of length 7×4 units by joining the top free ends of 3 vertical lines as shown in Fig.3.

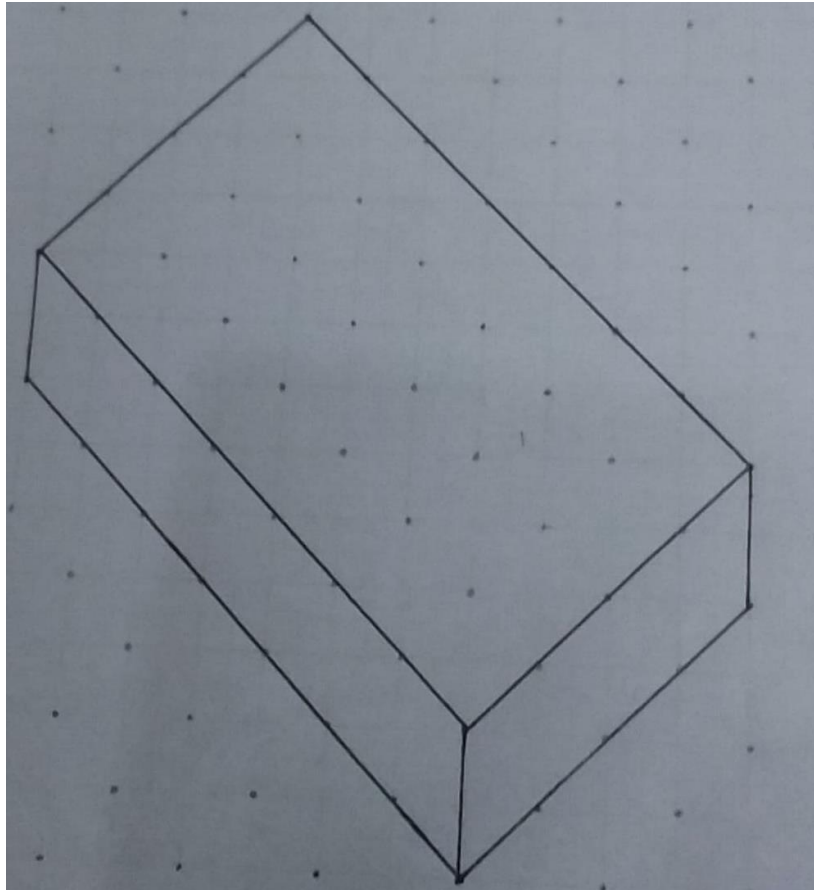


Fig.3

II) An oblique sketch

- a. On a squared paper draw a rectangle to represent the front face of dimension $7\text{cm} \times 2\text{cm}$ as shown in Fig.4

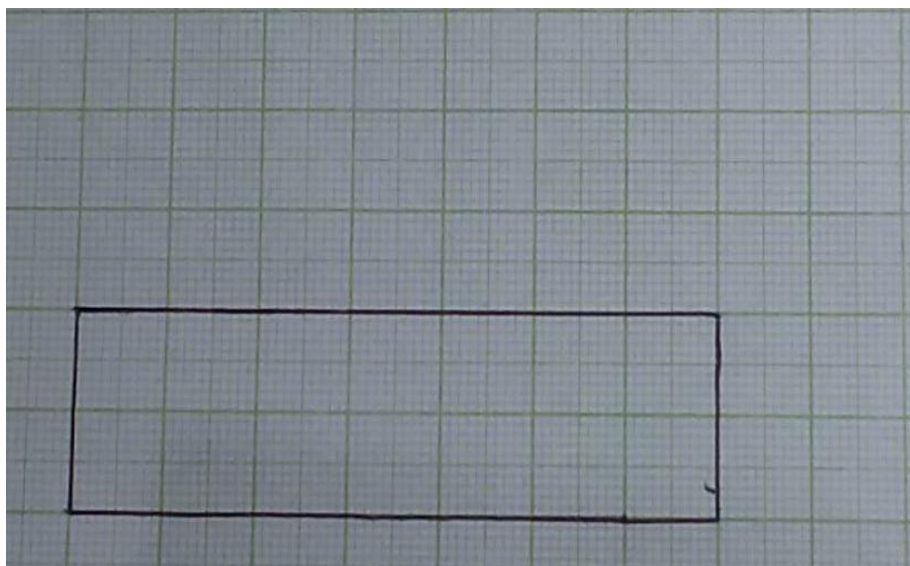


Fig.4

- b. To make the second face, draw a rectangle of dimension $7\text{cm} \times 2\text{cm}$, two squares to the right and two squares up from the first rectangle as shown in Fig.5

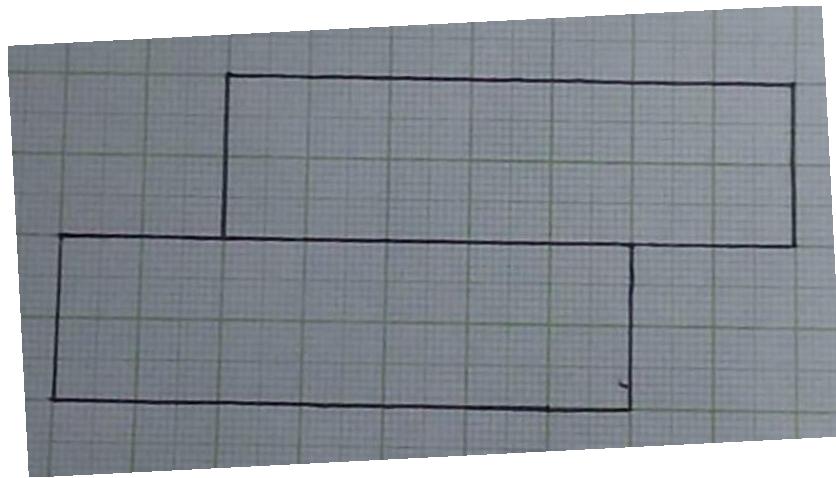


Fig.5

- c. Now, Join the corresponding vertices of the rectangles by slanting lines to get a cuboid as shown in Fig.6

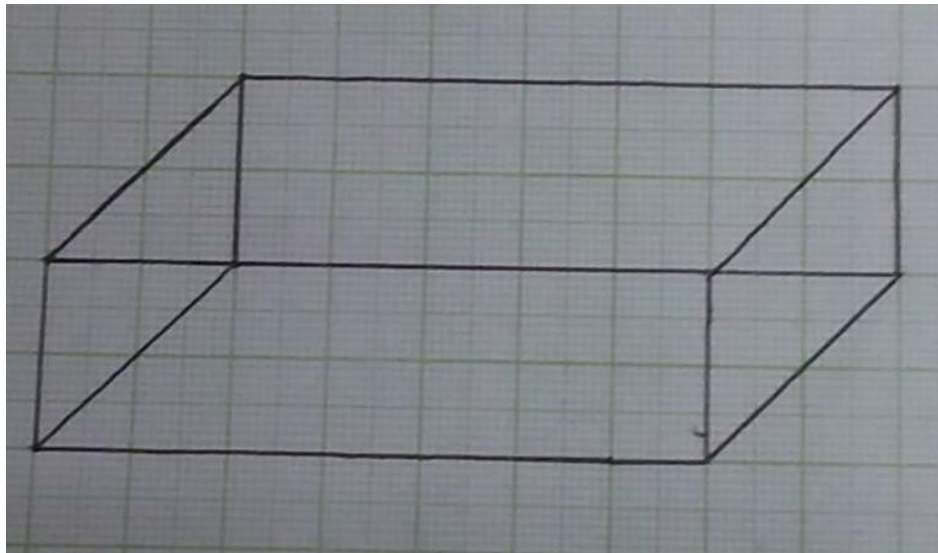


Fig.6

- d. With the help of an eraser, redraw the hidden edges as dotted lines to obtain the final oblique sketch of cuboid of dimensions $7\text{ cm} \times 4\text{ cm} \times 2\text{ cm}$ as shown in Fig.7

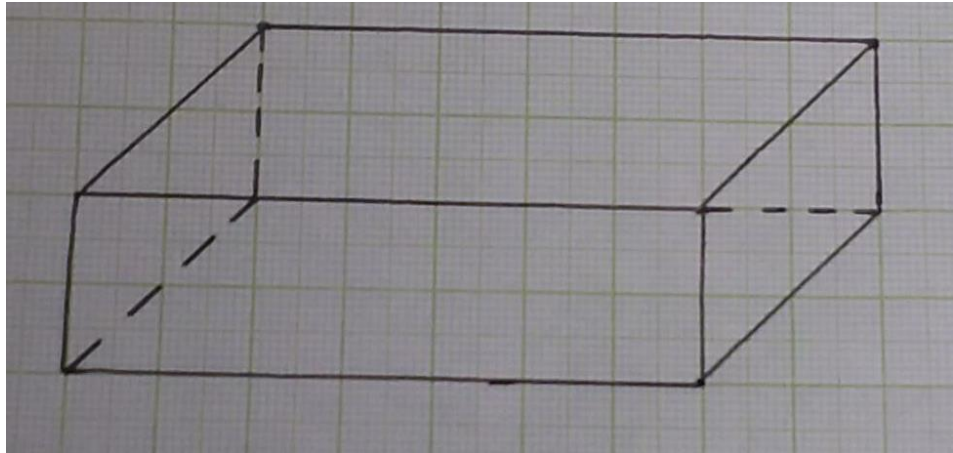


Fig.7

6. **What have you observed?**

- No. of Faces of a cuboid = _____.
- No. of edges of a cuboid = _____.
- No. of vertices/corners of a cuboid = _____.

7. **What have you learnt?**

8. **Extended Activity**

Draw an isometric sketch and oblique sketch of a cube of side 4 units.

Real life Application:

The above concept is used in our day-to-day life incident viz. for product designing.

