

ACTIVITY -7

TOPIC: TRIANGLE AND ITS PROPERTIES

TITLE: EXTERIOR ANGLE PROPERTY OF A TRIANGLE

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

To demonstrate that the exterior angle of a triangle is equal to the sum of the interior opposite angles.

2. **What is required?**

White sheets, a pair of scissors, geometry box and adhesive.

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

30 -40 minutes

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

Knowledge about Triangles, Interior angles and exterior angles of a triangle.

5. **How will you proceed?**

- a. Draw two identical triangles ABC and colour the angles as shown in Fig.1.

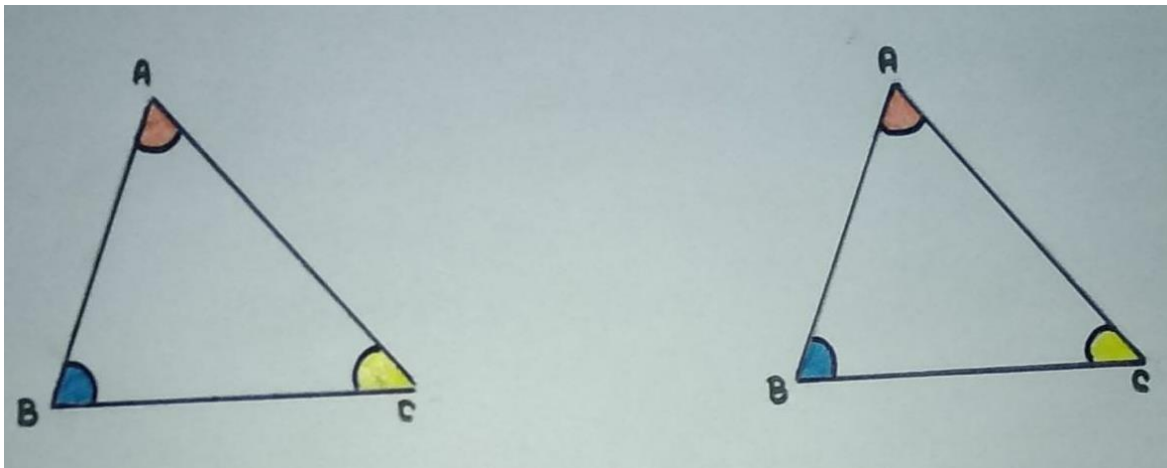


Fig.1

- b. Take one of the triangles and produce one of its sides, say BC to D such that $\angle ACD$ is the exterior angle as shown in Fig.2.

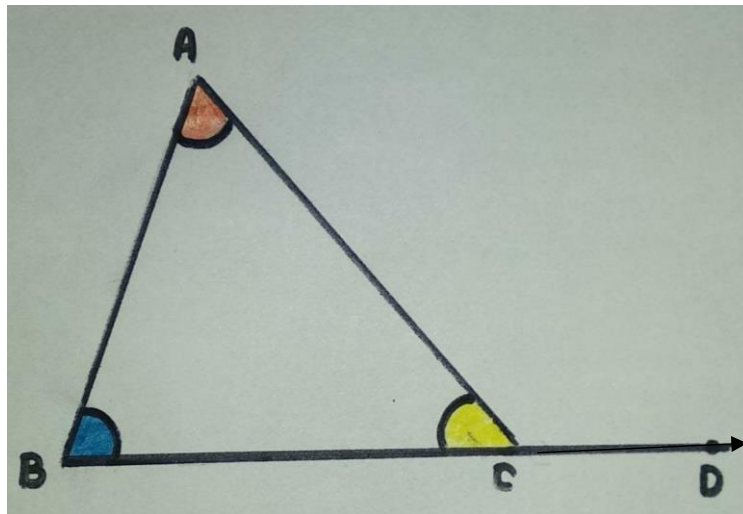


Fig.2

- c. Now, cut $\angle A$ and $\angle B$ from the other triangle as shown in Fig.3



Fig.3

- d. Place the cut outs of $\angle A$ and $\angle B$ adjacent to each other over $\angle ACD$ to obtain a final shape as shown in Fig.4.

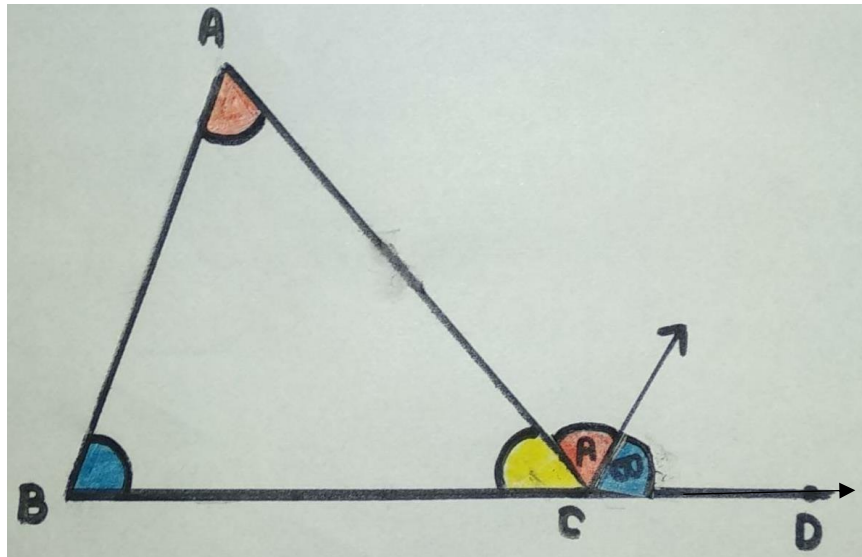


Fig.4

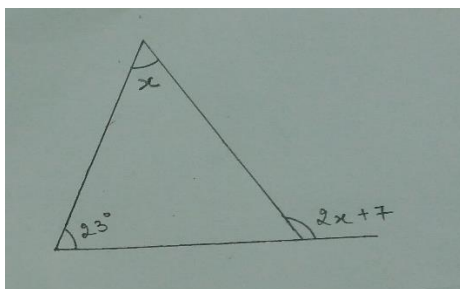
6. **What have you observed?**

- $\angle ACD = \text{_____} + \text{_____}$.
- Exterior angle of a triangle is the _____ of its two _____ angles.

7. **What have you learnt?**

8. **Extended Activity**

- a) Find the value of x in the following figure using exterior angle property of a triangle:



- b) Draw a right-angled triangle whose sides other than hypotenuse are 5 cm and 12 cm. Show that the exterior angle formed by extending the hypotenuse is equal to the sum of the interior opposite angles.

Real life Applications:

The above concept is used in our day-to-day life incidents viz. construction, making domes, sports, making pyramids etc....