

ACTIVITY -8

TOPIC: TRIANGLE AND ITS PROPERTIES

TITLE: PYTHAGORAS PROPERTY

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

To demonstrate the Pythagoras theorem (i.e., in any right-angled triangle $\text{hypotenuse}^2 = \text{base}^2 + \text{perpendicular}^2$) by activity method.

2. **What is required?**

Coloured sheets, Squared papers or graph sheet, a pair of scissors, geometry box, and adhesive.

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

30- 40 minutes

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

Concept of right- angled triangle, square of a number and Area of square.

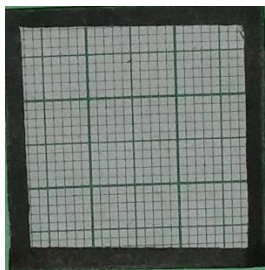
5. **How will you proceed?**

- a. Draw a right-angled triangle ABC of sides BC = 3, AB = 4 and AC = 5 units.



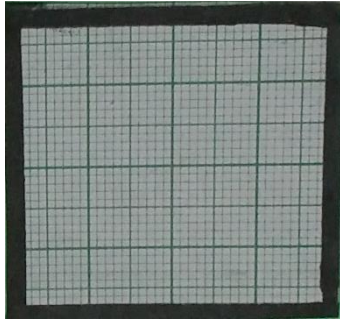
Fig.1

- b. Make three squares of each side 3 units, 4 units and 5 units on a graph sheet.

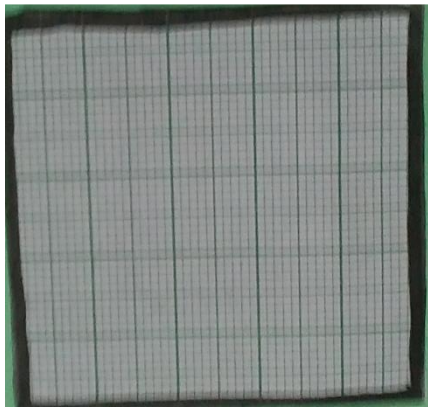


3 units

Fig.2



4 units
Fig.3



5 Units
Fig.4

- c. Place the above three cut outs of squares of 3,4 and 5 units along the sides BC, AB and AC of a triangle as shown in the Fig.5.

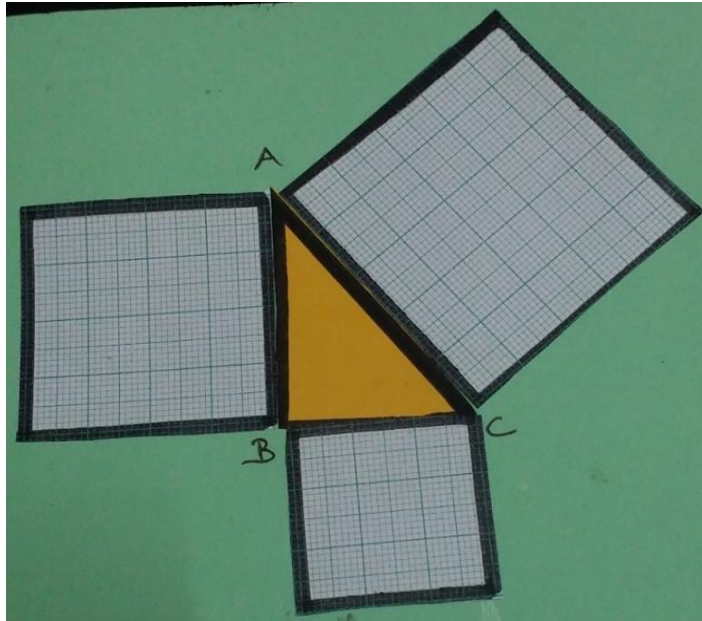


Fig.5

- d. Count the number of unit squares in each of these three squares on sides AB, BC and AC.

6. **What have you observed?**

- Area of square on side AB (perpendicular) = _____ square units.
- Area of square on side BC (base) = _____ square units.
- Area of square on side AC (hypotenuse) = _____ square units.
- Area of square on side AC = Area of square on side _____ + Area of square on side _____.

7. **What have you learnt?**

8. **Extended Activity**

Draw a right-angled triangle. Construct squares on its three sides and colour them differently. Cut these squares and paste one of the smaller squares inside the square formed by the hypotenuse as shown below and by cutting the third square with the help of scissors try and fill the remaining space of the largest square.



Real life Applications:

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