

Pre-Content/content Post-Content	Learning outcomes/Objectives	
	General	Specific
<u>Pre-Content</u> Recall Congruent Triangles <u>Content</u> Similar Figures Similar Polygons Similar Triangles Basic Proportionality theorem (Thales theorem) Criteria for Similarity of Triangles: ➤ AAA ➤ SSS ➤ SAS Areas of Similar Triangles Pythagoras Theorem <u>Post-content</u> • To work out extra practice questions	Students will be able to <u>recall</u> Congruent <u>figures</u> <u>cite</u> examples of Congruent figures <u>define</u> similar figures <u>define</u> similar polygons <u>define</u> similar Triangles <u>state</u> Basic Proportionality theorem <u>state</u> the different Criterion of Similarity of Triangles <u>state</u> theorem on area of Similar triangles <u>state</u> Pythagoras Theorem <u>apply</u> the knowledge learnt related to find HCF & LCM of given numbers and solve HOTS questions	Students will be able to • <u>recall</u> Congruent triangles • <u>state</u> different criterion of Congruence of triangles • <u>define</u> similar figures & similar polygons • <u>apply</u> the concept to check for similarity of polygons • <u>identify</u> similar Triangles • <u>quote & validate</u> BPT & Converse of BPT • <u>apply</u> BPT the Converse of BPT to solve questions • <u>predict</u> the appropriate Criterion to find the value of unknown • <u>establish</u> the similarity of given triangles using appropriate criterion • <u>state & prove</u> the theorem • <u>link</u> it to find the area/measure of side of given similar triangles • <u>quote & validate</u> Pythagoras Theorem & the Converse of Pythagoras Theorem • <u>apply</u> the theorem & its converse to solve questions • acquire <u>Problem solving</u> skills based on the given concepts/theorems.

Home Work /Assignments

NCERT exercise is given as home task

Assignment sheet is also given

Questions taken in the class were also asked to solve.

Teacher's Activity	Student's Activity	Teacher's observation and Remedial
Teacher will ask few questions and help students to recall the concept of Congruence which they have already studied in the class IX define Similar figures, Similar polygons and hence similar triangles via different figures prove BPT theorem & its application demonstrate the different criterion of similarity of triangles with examples elaborate on the concept of areas of Similar triangles via examples discuss the proof of Pythagoras Theorem and explain the activity (Annexure 6) give them extra similar questions to solve	Students will answer the questions and cite some examples for the same from their day to day life answer the questions asked during the introduction of the topic apply the theorem to prove/find the value of unknown apply it to solve the problems given in the exercise on the same topic solve the problems given in the exercise. perform the activity as instructed by the teacher & solve the problems given in the exercise. (Annexure 6) apply the concept and solve the given practice questions	Teacher will write his/her observations after the completion of the topic.

Teaching Aids: Smart board, Text book, Graph paper, Worksheets, Internet

Methodology/Innovative methods: Digital Technology, Lecturing, Note giving, Questioning, Discussion

Interdisciplinary Links: Architecture, Physics, Astronomy, Archeology

Relation with Art: Monuments, Designing of floor, Tessellations

HOD**Coordinator****Vice- Principal****Principal**

ACTIVITY NO - 6

Subject	Mathematics
Class	X
Chapter/Unit	Triangles
Topic	Pythagoras Theorem
Time	20 minutes
Nature of Activity	Individual

What will I learn (Learning Outcome)?

Verification of Pythagoras Theorem by paper cutting and pasting.

Skills: Applying, Analyzing and Creating

What I have to do?

To verify Pythagoras Theorem by paper cutting and pasting.

What do I require?

Coloured paper, a cardboard, white sheet of paper, a pair of scissors, geometry box

What do I need to know?

Area of Square, Construction of parallel and perpendicular lines

➤ **Teacher's Activity**

Teacher will ask the students about the formula for area of Square, difference between the parallel lines, perpendicular lines and intersecting lines.

How will I proceed?

➤ **Student's Activity**

- 1) Paste a white sheet of paper on a cardboard.
- 2) Draw a right triangle ACB of sides $a = 4$ cm, $b = 3$ cm and $c = 5$ cm on a coloured paper and paste it on the white sheet of paper pasted on the cardboard.
- 3) Make an exact replica of the triangle.
- 4) Construct three squares each of side $a = 4$ cm, $b = 3$ cm and $c = 5$ cm along the sides of $\triangle ACB$.
- 5) Label the squares as ABPQ, BCRS and ACXY (as shown in the fig below).
- 6) Produce the side QA of the square ABPQ to meet the side CX at M.

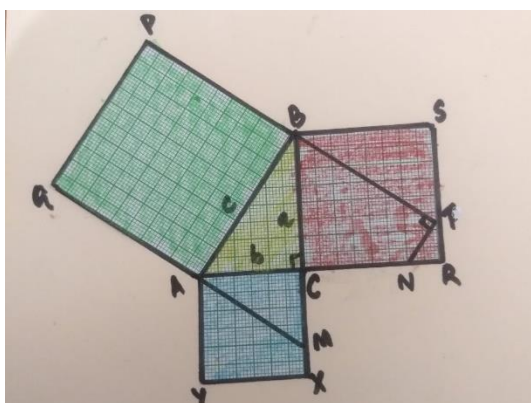
- 7) Similarly, produce PB of the square ABPQ to meet SR of the square BCRS at T. At T, draw $TN \perp CR$ such that N lies on the side CR.
- 8) Cut the squares ABPQ, BCRS and ACXY. Also cut $\triangle ACM$, $\triangle BST$, $\triangle TRN$, quadrilaterals BCNT and AYXM.
- 9) Arrange the three quadrilaterals and two triangles on the square ABPQ as shown below.

What have I observed?

- 1) Area of ABPQ = _____ + _____.
- 2) $c^2 = \text{_____} + \text{_____}$.

What have I learnt?

From the above activity it is verified that in a right triangle, the square of the hypotenuse is equal to _____.



What am I curious to learn?

Repeat the above activity to show that area of an Equilateral triangle described on the hypotenuse (= 13 cm) of a right angles triangle is equal to the sum of the areas of equilateral triangles described on the other two sides (= 5 cm & 12 cm).

Let me evaluate myself

- 1) D and E are the points on the sides CA and CB respectively of $\triangle ABC$ right angled at C. Prove that $AE^2 + BD^2 = AB^2 + DE^2$.

2) Prove that in $\triangle ABC$, if AD is perpendicular to BC , then $AB^2 + CD^2 = AC^2 + BD^2$.

3) A perpendicular from A on the side BC of a $\triangle ABC$ intersects BC at D such that

$DB = 3CD$. Prove that $2AB^2 = 2AC^2 + BC^2$.
