

Pre-Content/content Post-Content	Learning outcomes/Objectives	
	General	Specific
<u>Pre-Content</u> Review basics of Trigonometry	Students will be able to recall the basic concepts of Trigonometry	Students will be able to • recall the basic concepts of Trigonometry.
<u>Content</u> Terminology related to application of Trigonometry	understand the terms related to application of trigonometry	• understand the terms viz. line of sight, angle of elevation, angle of depression and apply the same to solve problems given in the exercise
Application of T-Ratio to solve word problems	draw the figure as per the problem and solve the same	• comprehend and draw the figure as per the question and apply their knowledge of Trigonometry to solve the same
<u>Post-content</u> To work out extra practice questions	apply the knowledge learnt related to trigonometry	• apply the concept learnt to solve various problems • acquire <u>Problem solving</u> skills based on the given conditions

Home Work /Assignments

NCERT exercise/solved examples given as home task.

Questions from sample papers to solve.

Selected questions from NCERT Exemplar.

Teacher's Activity	Student's Activity	Teacher's observation and Remedial
Teacher will give them some questions to revise and recall their basic knowledge related to trigonometry explain the terminology related to application of trigonometry with the help of an activity (Annexure 9) discuss the questions given in the exercise and help the students to draw figures as per the word problem give them extra similar questions to solve	Students will answer the questions as per their previous knowledge note down the new terminology related to trigonometry and perform the activity as per the instructions (Annexure 9) read out the word problems and draw figures and solve apply the knowledge of trigonometry and solve the practice questions given	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, Interactive, Lecturing, Note giving, Questioning, Discussion

Interdisciplinary Links: Architecture

HOD

Coordinator

Vice- Principal

Principal

ACTIVITY NO. - 9

Subject	Mathematics
Class	X
Chapter/Unit	Applications of Trigonometry
Topic	Height of a building
Time	40 minutes
Nature of Activity	Group

What will I learn (Learning Outcome)?

Finding the Height of school building.

Skills: Applying, Analyzing and Creativity

What I have to do?

To find the Height of school building using Clinometer.

What do I require?

A clinometer, thread, measuring tape, geometry box, glue stick

What do I need to know?

Properties of right angled triangle.

➤ **Teacher's Activity**

Teacher will ask students about their knowledge on the T-ratios.

How will I proceed?

➤ **Student's Activity**

- 1) First measure the distance of the school building from you using a thread/ measuring tape. Let the distance be 'd'.
- 2) Fix the Clinometer at the point of observation and look through the straw or pipe of the Clinometer at the top of the building. Make sure you can clearly see the top of the building.

- 3) Hold the clinometer steady and let your partner record the angle the string makes on the scale of the clinometer. Let this angle be θ .

Using trigonometric ratio: $\tan \theta = \frac{\text{height}}{\text{distance}} = \frac{h}{d} \therefore h = d \tan \theta$

- 4) Add the height at which the clinometer is kept to h obtained above to get the height of the building.

What have I observed?

It is observed that on changing the distance of the object d (by either moving the object or by changing the position), angle of elevation θ will vary but the product $h = d \tan \theta$ will be _____ (constant/ varying).

What have I learnt?

From the above activity, the height of the school building is _____

What am I curious to learn?

Using clinometer measure the height of a tree in the nearby park.

Let me evaluate myself

- 1) The shadow of a tower standing on a level ground is found to be 40 m longer when sun's altitude is 30° than when it is 60° . Find the height of the tower.

- 2) The angles of depression of the top and bottom of an 8 m tall building from the top of a multi-storeyed building are 30° and 45° respectively. Find the height of the multi-storeyed building and the distance between the two buildings. (use $\sqrt{3} = 1.732$)

- 3) A moving boat is observed from the top of a 150 m high cliff moving away from the cliff. The angle of depression of the boat changes from 60° to 45° in 2 minutes. Find the speed of the boat in m/hr.
