

Pre-Content/content Post-Content	Learning outcomes/Objectives	
	General	Specific
<u>Pre-Content</u> Surface area and volume of cube, cuboid, cone, cylinder , sphere and hemisphere <u>Content</u> Surface area of combination of solids Volume of combination of solids Conversion of solid from one shape to another Frustum of a cone <u>Post-content</u> To work out extra practice questions	Students will be able to recall the formulas of solid shapes calculate total surface area of a combined solid calculate volume of a combined solid calculate volume when one shape is converted to another recognise the new shape and thus calculate its volume and surface area apply the knowledge learnt related to surface area and volume	Students will be able to • recall and make use of formula of solid shapes and thus calculate the surface area and volume • combine and calculate total surface area of a solid which is a combination of two or more solids • combine and calculate volume of a solid which is a combination of two or more solids • transform one solid shape to another and calculate volume • identify the new shape formed out of cone and thus calculate its volume and surface area • apply the concept learnt to solve various problems • acquire <u>Problem solving</u> skills based on the given equations and 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 ask the students various questions related to surface area and volume which they had already learnt in class IX and reiterate the same with the help of an activity (Annexure 13) give them various problems to solve related to combination of solids give them various problems to solve related to combination of solids explain the concept and give related problems to solve explain the concept and give related problems to solve give them extra similar questions to solve	Students will be able to solve problems given to them related to their previous knowledge and perform the activity as per the instructions(Annexure 13) visualise various solids as combination of basic solid shapes and calculate the surface area(Annexure 13) visualise various solids as combination of basic solid shapes and calculate the volume of solid thus formed solve problems related to conversion of solid solve the related problems given in the exercise use the concepts and formulas learnt to solve different problems	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, Fashion Industry

HOD

Coordinator

Vice- Principal

Principal

ACTIVITY NO. - 13

Subject	Mathematics
Class	X
Chapter/Unit	Surface Areas and Volumes
Topic	Surface area of a cone
Time	20 minutes
Nature of Activity	Individual

What will I learn (Learning Outcome)?

Making a cone from the sector of a circle of radius ' r ' and calculating its curved surface area.

Skills: Applying, Analyzing and Creativity

What I have to do?

To make a cone of base radius ' r ' and slant height ' s ' and find its curved surface area.

What do I require?

Coloured paper, geometry box, colour pens, pair of scissors, glue stick

What do I need to know?

Formula for the circumference of a circle, sector of a circle, Pythagoras theorem.

➤ **Teacher's Activity**

Teacher will revise the concept of circumference of a circle and curved surface area of a cone with the students.

How will I proceed?

➤ **Student's Activity**

- 1) Draw a circle and cut a sector out of it.
- 2) Mark a sector CAB such that arc length AB equals the given base circumference of the cone.
- 3) Cut the sector ACB and gently fold, bringing the 2 radii CA and CB together.

What have I observed?

It is observed that when the radii of the sector are joined, a _____ is formed.

The arc length becomes the _____ of the cone.

What have I learnt?

From the above activity, _____ is the curved surface area of the cone.

What am I curious to learn?

Using the above determine the radius and the height of the cone formed, using the formula for the circumference of a circle and Pythagoras theorem.

Let me evaluate myself

- 1) The circumference of the base of a cone is 44 cm and slant height is 25 cm, find the curved surface area of the cone.

- 2) A cone of height 16 cm and radius 2 cm is made up of modelling clay. A child reshapes it in the form of a sphere. Find the diameter of the sphere.

- 3) A vessel is in the form of an inverted cone open at the top of height 11 cm and radius of the top as 2.5 cm is full of water. Metallic spherical balls each of diameter 0.5 cm are put in the vessel due to which $\frac{2}{5}$ th of the water in the vessel flows out. Find how many balls were put in the vessel.
