

Pre-Content/content Post-Content	Learning outcomes/Objectives	
<u>Pre-Content</u> Recall 2-D shapes and 3-D shapes <u>Content</u> - Surface area of a Cuboids and a Cube - Surface Area of a Right Circular Cylinder - Surface Area of a Right Circular Cone - Surface Area of a Sphere	Students will be able to ✓ recall 2 dimensional and 3 dimensional shapes ✓ explore the surface area of cuboids and cubes and solve problems based on it. ✓ explore the surface area of right circular cylinder and solve problems based on it. ✓ explore the surface area of right circular one and solve problems based on it. ✓ explore the surface area of sphere and solve problems based on it.	Students will be able to ✓ recall various shapes and observe them in surroundings. ✓ explore the surface area of cuboids and cube. ✓ develop problem solving skill ✓ explore the surface area of right circular cylinder ✓ develop problem solving skill ✓ explore the surface area of right circular cone. ✓ develop problem solving skill ✓ explore the surface area of sphere ✓ develop problem solving skill

Teacher's Activity	Student's Activity	Teacher's observation and Remedial
Teacher will Ask oral questions based on different 2 –D and 3-D shapes based on their previous knowledge. explain the concept and in maths lab using unit cubes and ask them to prepare the nets of Cuboids and Cube explain the concept and give instructions to perform activity and give them questions based on this concept <u>ANNEXURE-1</u> explain the concept show ICR content for derivation of formula of surface area of Sphere	Students will get involved in thinking process and will share their ideas based on their previous knowledge assimilate the concept and further solve the problems based on it. discuss the questions given in the exercise and present before the class and follow the instructions to perform the activity, Derive the formula for calculation of surface area of right circular cylinder and further solve problems based on it. <u>ANNEXURE-1</u> apply the formula and complete the exercise given in NCERT solve the problems based on the concept	Teacher will write her/his observations after completion of the topic

SUBJECT: MATHEMATICS

CLASS: IX

TOPIC: SURFACE AREA AND VOLUME

Pre-Content/content Post-Content	Learning outcomes/Objectives	
<u>Content</u> - Volume of a Cuboids - Volume of a Cylinder - Volume of a Right Circular Cone - Volume of a sphere	Students will be able to ✓ explore the volume of cuboids and solve problems based on it. ✓ explore the volume of a cylinder and solve problems based on it. ✓ explore the volume of right circular cone ✓ explore the volume of a sphere and solve problems based on it.	Students will be able to ✓ explore the volume of cuboids and cube. ✓ develop problem solving skill ✓ explore the volume of a cylinder. ✓ develop problem solving skill ✓ explore volume of a right circular cone. ✓ develop problem solving skill ✓ explore the volume of a sphere. ✓ develop problem solving skill
<u>Post Content</u> Extra practice assignment based on HOTs	✓ develop higher order thinking skills	✓ acquire problem solving skills by performing calculations to solve various problems

Home Work /Assignments

1. NCERT Exercise /solved examples given as home task
2. Questions from sample papers to solve
3. Selected questions from NCERT Exemplar

Teacher's Activity	Student's Activity	Teacher's observation and Remedial
Teacher will	Students will	
explain the concept	in groups discuss the questions given in the exercise and present before the class	
explain the concept	make use of formula and solve exercise based on it.	Teacher will write her/his observations after completion of the topic
show ICR content on derivation for the formula of volume of right circular cone	understand the concept and try solving problems based on the concept	
show ICR content on derivation for the formula of volume of sphere	assimilate the concept and will try solving problems based on the concept	
give extra practice assignment	try to solve the problems given in the assignment	

Teaching Aids : Smart board, ICR, Cartesian Plane, Graph Paper

Methodology/Innovative Methods: Discussion, Question-Answer method, Activity, problem solving, Drawing skills

Interdisciplinary Links: Architecture, Interior Designing, Geometry and Real life Problems.

Faculty Head

Coordinator

Vice-Principal

Principal

ANNEXURE-1

Subject	MATHEMATICS
Class	IX
Chapter/Unit	Geometry
Topic	Surface area and volume
Time	20 minutes
Nature of Activity	Individual

What will I learn(Learning outcome)?

To obtain the formula for the lateral surface area of a right circular cylinder

Skills:- Deriving, Problem solving

What I have to do?

To obtain the formula for the lateral surface area of a right circular cylinder in terms of the radius (r) of its base and height (h).

What do I require?

Cylinder made of glazed paper, white chart paper, A pair of scissors, geometry kit, glue

What do I need to know?

Concept of right circular cylinder, Area of a rectangle, Area of circle, Circumference of a circle

➤ Teacher's Activity

The teacher ask the students to cut a cylinder along the height and derive the formula for its lateral surface

How will I proceed?**➤ Student's Activity**

- Cut the circular ends of cylinder from top and bottom.
- Cut the cylinder vertically and open the lateral surface flat which is a rectangle.
- Paste the cutout of cylinder on white chart paper.

What have I observed?

Curved surface area of cylinder = Area of _____

$$= \text{_____} \times \text{_____}$$

$$= \text{_____} \times \text{_____}$$

What have I learnt?

Lateral surface area of right circular cylinder is _____

What am I curious to know?

Derive the formula for total surface area

Let me evaluate myself

1. The surface area of a cylinder of height 14 cm is 88sq. cm . The diameter of the cylinder is _____
2. Shanti had to make a model of a cylindrical kaleidoscope for her science project. She wanted to use chart paper to make the curved surface of the kaleidoscope. What would be the area of chart paper required by her, if she wanted to make a kaleidoscope of length 25cm with a 3.5cm radius?
