

Table of Contents

Unit: Mensuration.....	1
Class 9th.....	1
Sub units:.....	1
Sub unit considered for 20min class demo.....	1
Learning points.....	1
Learning outcome.....	2
Management of learners.....	2
lesson activities.....	3
Evaluation & Resources required.....	4

Unit: Mensuration

Class:

Class: 9

Sub units:

1. Surface area and volume of cube
2. Surface area and volume of cuboid
3. Surface area and volume of cylinder
4. Surface area and volume of cone

Sub Unit Considered for 20 min class demo: Surface area of cone

Learning points

A cone is a three dimensional solid with a circular base that narrows toward a point, called its vertex.

1. Properties of a cone :that it has a flat circular base, has 1 side which is a curved surface.
2. A cone has a lateral surface area and a curved surface area.
3. It has a total surface area which is the sum of the area of its curved surface and its circular base.

Learning outcome

1. Students will have developed an understanding of the concept of a cone.
2. Students will be able to understand that the cone has a curved surface area and how to find it.
3. Students will be able to understand how to calculate the base area of the cone which is a circle.
4. Students will be able to calculate the total surface area.

Management of learners

1. ‘Learning together’ is the group activity followed
2. Problem questions are given to students to solve in groups and to share it with the whole class.

Lesson activities

Today, we are going to learn about something that we may have seen in different places. See the images on the slide Questions for discussion 1. Where do you observe cone shape in your surroundings? 2. Which is the cone shaped object you like the most? Today, we will learn more about cone. How to pack the Icecream cone?	Working in groups, students recognizes the solid shape and share their findings in the group/ document. After that, they will share with the whole class. Working in small groups, they need to list the conical shaped objects and the one they like the most and share it with the class. In this step, students are doing the following: Engaging they see the pictures of various conical shaped objects.They mention their favourite, especially ice cream. They will be expressing by saying cutting the cone and opening. explore now students guess that the spread out cone can be cut into equal triangles. They will calculate the area of each triangle and add.
The teacher asks to recall Pythagoras Theorem and asks students to write the formula for a right angled triangle.	The students write the formula to find the slant height or hypotenuse.
The teacher shows the animation of a right angled triangle revolving around its own axis	The students identifies that the right angled triangle traces a cone.
The teacher now asks about the shape of the base of the cone and to find its area	The students identifies it as a circle and recalls the area.
Now put together the curved surface area and the area of circle.	Expand: The students puts all they have arrived at, integrates and finds the total surface area of the cone and hence they learn to calculate the amount of wrapper needed to wrap the cone icecream.
Now the teacher asks the student to generalize	Students express their understandings.

what they have learnt. Since the groups continues the teacher asks problems to solve and they use the formulas they have learnt to solve them. Home assignment is given for further practice.	Evaluate: Students solves the problem teacher has given
---	---

Evaluation

1. Problems are displayed on the screen related to cone seen in daily lives, to calculate the total surface area of the cone.

Resources required

1. Libre office Impress- for presentation
2. Images of cone seen in daily lives
3. GIF's
4. Turtle Blocks for construction of a cone
5. Concept map
6. Quiz questions
7. Geogebra files
8. <http://www.mathsisfun.com/geometry/cone.html>
9. <https://opencurriculum.org/5947/g-mg-ice-cream-cone/>