

CLASS – IX
LESSON PLAN
CHAPTER-13: Surface Areas And Volumes

Unit	Surface Areas and Volumes (Chapter 13: Surface Areas And Volumes)
Class Transaction	Total: 15 periods (approx. 40 min each)
Pre-requisite for the course	This lesson requires 1. Basic knowledge of triangles and circles. 2. Knowledge of square, rectangle, parallelograms and solid figures. 3. Knowledge of calculating perimeter and area of square and rectangles.
Assessment of qualifying knowledge	1. Written test 2. Lab activity 3. HW notebook
Objective	Students would be able to find • surface area of cube and cuboid, • surface area of a right circular cylinder, • surface area of a right circular cone, • surface area of a sphere, • volume of cuboid, • volume of cylinder, • volume of right circular cone, • volume of sphere, • volume of hemisphere, thereby inculcating competencies like collaboration, critical thinking and creativity
Learning Outcomes	<u>KNOWLEDGE</u>- <i>Students will develop the ability to understand and find</i> 1. Total surface area and curved surface area of solid shapes. 2. Volume of solid shapes. <u>SKILLS and COMPETENCIES</u>-<i>Students would be able to</i> 1. Find the area and perimeter of base of square, rectangle, parallelogram, triangle and circle. 2. Solve questions based on the topics like area and volume of solid figures. 3. Use analytical skills to visualize the given scenario and use the concepts learnt in everyday problems. 4. Use synthetic skills to solve problems.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies Used- Graphic Organizers, Inductive deductive reasoning, think pair share, Muddiest point discussion Dimensions of learning- D1, D2, D3 Transaction would proceed in the following manner- Brain Storming-The class would start with a discussion on what the students have already learnt in the previous classes and hence what is it that they would learn now. They would also be told the significance of the topic that they would be studying.

	<i>Introduction of the topic-</i> ppt and Digital Content would be shared <i>Guided practice followed by Independent Practice-</i> NCERT questions to be discussed in the classroom. Techniques to be used: Quiz Daily Practice Problem MCQ Peer Assessment Case Studies Lab Activities Any Other
Resources	Text Book: NCERT text book for Mathematics Reference Book 1. CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks. H.W. notebooks to be marked as per the given plan: <i>Assessment Parameters:</i> The total marks for the activity is 5 marks On time submission.....1 mark Presentation/ Neatness.....1 mark Content.....3 marks It is also advised that the students come to the class with proper background knowledge of the topic under discussion. They can refer to the resources stated above.
Assessments	Through Pen Paper Test Students will be assessed creatively and critically 4 UNIT TESTS 20 Marks each HALF YEARLY EXAMINATION 80 Marks ANNUAL BOARD EXAMINATION 80 Marks INTERNAL ASSESSMENT 10 Marks - Note Book Submission 05 Marks - Lab Practical (Subject Enrichment) 05 Marks Through lab Practical Students are assessed for Collaboration, Character building, Character Building
Addressing Classroom Diversity	Due to various social backgrounds and multiple intelligences, the classroom might be a diverse arena. The following techniques can be used for various groups: <i>For gifted students:</i> - Spiral Level 3 questions to be done - Encouragement for referring other resources

	<i>For weak students:</i> • Spiral Level 1 to be completed • Buddy help to be provided • Provide grade-up classes <i>For differently abled students:</i> • Ignore spelling mistakes and formulae, if not written • Call parents at regular intervals • Provide grade-up classes • Encourage and motivate them at every level.
Marks	The weightage would be given by CBSE.
Assessment Questions	1. How many square meters of canvas is required for a conical tent whose height is 3.5m and radius of whose base is 12m? 2. The total surface area of a solid cylinder is 231cm^2 and its curved surface area is $\frac{2}{3}$ of the total surface area. Find the volume of the cylinder. 3. The diameter of a sphere is 42cm. It is melted and drawn into a cylindrical wire of 28cm diameter. Find the length of the wire. 4. Three equal cubes are placed adjacent to each other in a row. Find the ratio of the total surface area of the cuboid thus formed to the sum of total surface area of the three cubes. 5. The pillars of a temple are cylindrically shaped. If each pillar has a circular base of radius 20cm and height 10m, how much concrete mixture would be required to build 14 such pillars?

DAY	ONE
Objective	Enhance ability to accurately recognize and use appropriate terminology related to solid figures and developing the art of communication and critical thinking.
Assessment of qualifying knowledge	Quiz and knowledge testing on properties of solid shapes and their formulas.
Learning Outcomes	<u>KNOWLEDGE</u>- Students will know and identify solid shapes and their properties. <u>SKILLS and COMPETENCIES</u> Students would be able to Reason effectively and critically differentiate solid figures.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies Used- Inductive deductive reasoning, think, pair and share Dimensions of learning-D2, D3 Transaction would proceed in the following manner- Anticipatory Set: 10 min Facilitator will ask few questions to introduce the topic • What is a cube? • How many vertices, edges and faces cube have? • Examples of cube • What is cuboid? • How many vertices, edges and faces cuboid have? • Examples of cuboid Discussion of topic through Collaborative Learning: 15 min <u>Inquiry based learning</u> (Critical Thinking and Problem Solving) Students would be asked to about the faces, vertices and edges of cube and cuboid. The facilitator would take rounds and ensure that each learner is engaged. Guided practice: 10 min The students will solve the questions from NCERT book, solved examples before Ex 13.1 in their notebook in the class with the help of their facilitator. The facilitator would take rounds and help the students in solving the questions. Independent Practice: Students will go through the solved examples before Ex 13.1 of NCERT text book. Closure: 5 min A short oral test would be taken to check proper assimilation of the topic discussed.
Resources	Text Book: NCERT text book for Mathematics Reference Book 1. CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks.
Assessments	Oral Test (5 minutes)

DAY	TWO
Objective	Enhance ability to accurately recognize and use appropriate terminology related to solid figures and developing the art of communication and critical thinking.

Assessment of qualifying knowledge	Quiz and knowledge testing on properties of solid shapes and their formulas.
Learning Outcomes	<u>KNOWLEDGE</u>- Students will know and identify solid shapes and their properties. <u>SKILLS</u> and <u>COMPETENCIES</u> Students would be able to Reason effectively and critically differentiate solid figures.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies Used- Inductive deductive reasoning, Muddiest point discussion Dimensions of learning- D1, D3 Transaction would proceed in the following manner- Anticipatory Set: 10 min Facilitator will ask few questions to introduce the topic • What is a cube? • How many vertices, edges and faces cube have? • Examples of cube • What is cuboid? • How many vertices, edges and faces cuboid have? • Examples of cuboid Discussion of topic through Collaborative Learning: 15 min <u>Inquiry based learning</u> (Critical Thinking and Problem Solving) Students would be asked to about the faces, vertices and edges of cube and cuboid. The facilitator would take rounds and ensure that each learner is engaged. Guided practice: 10 min The students will solve the questions from NCERT book, solved examples before Ex 13.1 in their notebook in the class with the help of their facilitator. The facilitator would take rounds and help the students in solving the questions. Independent Practice: Students will go through the solved examples before Ex 13.1 of NCERT text book. Closure: 5 min A short oral test would be taken to check proper assimilation of the topic discussed.
Resources	Text Book: NCERT text book for Mathematics Reference Book 1. CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks.
Assessments	Oral Test (5 minutes)

DAY	THREE
Objective	Enhance ability to accurately recognize and use appropriate terminology related to solid figures and developing the art of communication and critical thinking. To find surface area of a right circular cylinder.

Assessment of qualifying knowledge	Quiz and knowledge testing on properties of solid shapes and their formulas.
Learning Outcomes	<u>KNOWLEDGE</u>- Students will know and identify solid shapes and their properties. <u>SKILLS and COMPETENCIES</u> Students would be able to Reason effectively and critically differentiate solid figures.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies Used- Think pair share, Muddiest point discussion Dimensions of learning- D2, D3 Transaction would proceed in the following manner- Anticipatory Set: 10 min Facilitator will ask few questions to introduce the topic • What is a cylinder? • How many vertices, edges and faces cylinder have? • Examples of cylinder Discussion of topic through Collaborative Learning: 15 min <u>Inquiry based learning</u> (Critical Thinking and Problem Solving) Students would be asked to about the faces, vertices and edges of cube and cuboid. The facilitator would take rounds and ensure that each learner is engaged. Guided practice: 10 min The students will solve the questions from NCERT book, solved examples before Ex 13.2 in their notebook in the class with the help of their facilitator. The facilitator would take rounds and help the students in solving the questions. Independent Practice: Students will go through the solved examples before Ex 13.2 of NCERT text book. Closure: 5 min A short oral test would be taken to check proper assimilation of the topic discussed.
Resources	Text Book: NCERT text book for Mathematics Reference Book 1. CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks.
Assessments	Oral Test (5 minutes)

DAY	FOUR
Objective	Enhance ability to accurately recognize and use appropriate terminology related to solid figures and developing the art of communication and critical thinking. To find surface area of a right circular cylinder.
Assessment of qualifying knowledge	Quiz and knowledge testing on properties of solid shapes and their formulas.
Learning Outcomes	<u>KNOWLEDGE</u>- Students will know and identify solid shapes and their properties. <u>SKILLS and COMPETENCIES</u> Students would be able to Reason effectively and critically differentiate solid figures.

Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies Used- Think pair share, Muddiest point discussion Dimensions of learning- D2, D3 Transaction would proceed in the following manner- Anticipatory Set: 10 min Facilitator will ask few questions to introduce the topic • What is a cylinder? • How many vertices, edges and faces cylinder have? • Examples of cylinder Discussion of topic through Collaborative Learning: 15 min <u>Inquiry based learning</u> (Critical Thinking and Problem Solving) Students would be asked to about the faces, vertices and edges of cube and cuboid. The facilitator would take rounds and ensure that each learner is engaged. Guided practice: 10 min The students will solve the questions from NCERT book, solved examples before Ex 13.2 in their notebook in the class with the help of their facilitator. The facilitator would take rounds and help the students in solving the questions. Independent Practice: Students will go through the solved examples before Ex 13.2 of NCERT text book. Closure: 5 min A short oral test would be taken to check proper assimilation of the topic discussed.
Resources	Text Book: NCERT text book for Mathematics Reference Book 1. CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks.
Assessments	Oral Test (5 minutes)

DAY	FIVE
Objective	Enhance ability to accurately recognize and use appropriate terminology related to solid figures and developing the art of communication and critical thinking. To find surface area of a right circular cone.
Assessment of qualifying knowledge	Quiz and knowledge testing on properties of solid shapes and their formulas.
Learning Outcomes	<u>KNOWLEDGE-</u> <i>Students will know and identify solid shapes and their properties.</i> <u>SKILLS and COMPETENCIES</u> <i>Students would be able to Reason effectively and critically differentiate solid figures.</i>
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies Used- Graphic Organizers, Inductive deductive reasoning Dimensions of learning- D1, D3 Transaction would proceed in the following manner- Anticipatory Set: 10 min Facilitator will ask few questions to introduce the topic

	• What is a cone? • How many vertices, edges and faces cone have? • Examples of cone Discussion of topic through Collaborative Learning: <u>15 min</u> <u>Inquiry based learning</u> (Critical Thinking and Problem Solving) Students would be asked to about the faces, vertices and edges of cube and cuboid. The facilitator would take rounds and ensure that each learner is engaged. Guided practice: <u>10 min</u> The students will solve the questions from NCERT book, solved examples before Ex 13.3 in their notebook in the class with the help of their facilitator. The facilitator would take rounds and help the students in solving the questions. Independent Practice: Students will go through the solved examples before Ex 13.3 of NCERT text book. Closure: <u>5 min</u> A short oral test would be taken to check proper assimilation of the topic discussed.
Resources	Text Book: NCERT text book for Mathematics Reference Book 1. CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks.
Assessments	Oral Test (5 minutes)

DAY	SIX
Objective	Enhance ability to accurately recognize and use appropriate terminology related to solid figures and developing the art of communication and critical thinking. To find surface area of a right circular cone.
Assessment of qualifying knowledge	Quiz and knowledge testing on properties of solid shapes and their formulas.
Learning Outcomes	<u>KNOWLEDGE</u> - Students will know and identify solid shapes and their properties. <u>SKILLS and COMPETENCIES</u> Students would be able to Reason effectively and critically differentiate solid figures.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies Used- think pair share, Muddiest point discussion Dimensions of learning- D3, D1 Transaction would proceed in the following manner- Anticipatory Set: <u>10 min</u> Facilitator will ask few questions to introduce the topic • What is a cone? • How many vertices, edges and faces cone have? • Examples of cone Discussion of topic through Collaborative Learning: <u>15 min</u> <u>Inquiry based learning</u> (Critical Thinking and Problem Solving)

	Students would be asked to about the faces, vertices and edges of cube and cuboid. The facilitator would take rounds and ensure that each learner is engaged. Guided practice: 10 min The students will solve the questions from NCERT book, solved examples before Ex 13.3 in their notebook in the class with the help of their facilitator. The facilitator would take rounds and help the students in solving the questions. Independent Practice: Students will go through the solved examples before Ex 13.3 of NCERT text book. Closure: 5 min A short oral test would be taken to check proper assimilation of the topic discussed.
Resources	Text Book: NCERT text book for Mathematics Reference Book 1. CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks.
Assessments	Oral Test (5 minutes)

DAY	SEVEN
Objective	Enhance ability to accurately recognize and use appropriate terminology related to solid figures and developing the art of communication and critical thinking. To find surface area of a sphere.
Assessment of qualifying knowledge	Quiz and knowledge testing on properties of solid shapes and their formulas.
Learning Outcomes	<u>KNOWLEDGE</u>- <i>Students will know and identify solid shapes and their properties.</i> <u>SKILLS and COMPETENCIES</u> <i>Students would be able to Reason effectively and critically differentiate solid figures.</i>
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies Used- Muddiest point discussion Dimensions of learning- D3, D1 Transaction would proceed in the following manner- Anticipatory Set: 10 min Facilitator will ask few questions to introduce the topic • What is a Sphere? • How many vertices, edges and faces sphere have? • Examples of sphere Discussion of topic through Collaborative Learning: 15 min <u>Inquiry based learning</u> (Critical Thinking and Problem Solving) Students would be asked to about the faces, vertices and edges of cube and cuboid. The facilitator would take rounds and ensure that each learner is engaged. Guided practice: 10 min The students will solve the questions from NCERT book, solved examples before Ex 13.4 in their notebook in the class with the help of their facilitator. The facilitator would take rounds and help the students in solving the questions.

	Independent Practice: Students will go through the solved examples before Ex 13.4 of NCERT text book. Closure: 5 min A short oral test would be taken to check proper assimilation of the topic discussed.
Resources	Text Book: NCERT text book for Mathematics Reference Book 1. CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks.
Assessments	Oral Test (5 minutes)

DAY	EIGHT
Objective	Enhance ability to accurately recognize and use appropriate terminology related to solid figures and developing the art of communication and critical thinking. To find surface area of a sphere.
Assessment of qualifying knowledge	Quiz and knowledge testing on properties of solid shapes and their formulas.
Learning Outcomes	<u>KNOWLEDGE</u> - Students will know and identify solid shapes and their properties. <u>SKILLS and COMPETENCIES</u> Students would be able to Reason effectively and critically differentiate solid figures.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies Used- Inductive deductive reasoning, think pair share Dimensions of learning- D1, D2, D3 Transaction would proceed in the following manner- Anticipatory Set: 10 min Facilitator will ask few questions to introduce the topic • What is a Sphere? • How many vertices, edges and faces sphere have? • Examples of sphere Discussion of topic through Collaborative Learning: 15 min <u>Inquiry based learning</u> (Critical Thinking and Problem Solving) Students would be asked to about the faces, vertices and edges of cube and cuboid. The facilitator would take rounds and ensure that each learner is engaged. Guided practice: 10 min The students will solve the questions from NCERT book, solved examples before Ex 13.4 in their notebook in the class with the help of their facilitator. The facilitator would take rounds and help the students in solving the questions. Independent Practice: Students will go through the solved examples before Ex 13.4 of NCERT text book. Closure: 5 min A short oral test would be taken to check proper assimilation of the topic discussed.
Resources	Text Book: NCERT text book for Mathematics

	Reference Book 1. CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks.
Assessments	Oral Test (5 minutes)

DAY	NINE
Objective	Enhance ability to accurately recognize and use appropriate terminology related to solid figures and developing the art of communication and critical thinking. To find volume of cuboid.
Assessment of qualifying knowledge	Quiz and knowledge testing on properties of solid shapes and their formulas.
Learning Outcomes	<u>KNOWLEDGE</u> - Students will know and identify solid shapes and their properties. <u>SKILLS and COMPETENCIES</u> Students would be able to Reason effectively and critically differentiate solid figures.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies Used- Muddiest point discussion Dimensions of learning-D1, D3 Transaction would proceed in the following manner- Anticipatory Set: 10 min Facilitator will ask few questions to introduce the topic • What is volume? • How to compare the capacity of two vessel? • Give some examples Discussion of topic through Collaborative Learning: 15 min <u>Inquiry based learning</u> (Critical Thinking and Problem Solving) Students would be asked questions related to volume of cuboid. The facilitator would take rounds and ensure that each learner is engaged. Guided practice: 10 min The students will solve the questions from NCERT book, solved examples before Ex 13.5 in their notebook in the class with the help of their facilitator. The facilitator would take rounds and help the students in solving the questions. Independent Practice: Students will go through the solved examples before Ex 13.5 of NCERT text book. Closure: 5 min A short oral test would be taken to check proper assimilation of the topic discussed.
Resources	Text Book: NCERT text book for Mathematics Reference Book 1. CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks.
Assessments	Oral Test (5 minutes)

DAY	TEN
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Objective	Enhance ability to accurately recognize and use appropriate terminology related to solid figures and developing the art of communication and critical thinking. To find volume of cylinder.
Assessment of qualifying knowledge	Quiz and knowledge testing on properties of solid shapes and their formulas.
Learning Outcomes	<u>KNOWLEDGE</u> - Students will know and identify solid shapes and their properties. <u>SKILLS and COMPETENCIES</u> Students would be able to Reason effectively and critically differentiate solid figures.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies Used- think pair share, Muddiest point discussion Dimensions of learning- D3, D1 Transaction would proceed in the following manner- Anticipatory Set: 10 min Facilitator will ask few questions to introduce the topic • What is volume? • How to compare the capacity of two vessels? • Give some examples Discussion of topic through Collaborative Learning: 15 min <u>Inquiry based learning</u> (Critical Thinking and Problem Solving) Students would be asked questions related to volume of cuboid. The facilitator would take rounds and ensure that each learner is engaged. Guided practice: 10 min The students will solve the questions from NCERT book, solved examples before Ex 13.6 in their notebook in the class with the help of their facilitator. The facilitator would take rounds and help the students in solving the questions. Independent Practice: Students will go through the solved examples before Ex 13.6 of NCERT text book. Closure: 5 min A short oral test would be taken to check proper assimilation of the topic discussed.
Resources	Text Book: NCERT text book for Mathematics Reference Book 1. CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks.
Assessments	Oral Test (5 minutes)

DAY	ELEVEN
Objective	Enhance ability to accurately recognize and use appropriate terminology related to solid figures and developing the art of communication and critical thinking. To find volume of cylinder.
Assessment of qualifying knowledge	Quiz and knowledge testing on properties of solid shapes and their formulas.
Learning Outcomes	<u>KNOWLEDGE</u> - Students will know and identify solid shapes and their properties. <u>SKILLS and COMPETENCIES</u> Students would be able to Reason effectively and

	critically differentiate solid figures.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies Used- Graphic Organizers, Think, pair and share Dimensions of learning- D1, D3 Transaction would proceed in the following manner- Anticipatory Set: 10 min Facilitator will ask few questions to introduce the topic • What is volume? • How to compare the capacity of two vessel? • Give some examples Discussion of topic through Collaborative Learning: 15 min <u>Inquiry based learning</u> (Critical Thinking and Problem Solving) Students would be asked questions related to volume of cuboid. The facilitator would take rounds and ensure that each learner is engaged. Guided practice: 10 min The students will solve the questions from NCERT book, solved examples before Ex 13.6 in their notebook in the class with the help of their facilitator. The facilitator would take rounds and help the students in solving the questions. Independent Practice: Students will go through the solved examples before Ex 13.6 of NCERT text book. Closure: 5 min A short oral test would be taken to check proper assimilation of the topic discussed.
Resources	Text Book: NCERT text book for Mathematics Reference Book 1. CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks.
Assessments	Oral Test (5 minutes)

DAY	TWELVE
Objective	Enhance ability to accurately recognize and use appropriate terminology related to solid figures and developing the art of communication and critical thinking. To find volume of right circular cone.
Assessment of qualifying knowledge	Quiz and knowledge testing on properties of solid shapes and their formulas.
Learning Outcomes	<u>KNOWLEDGE</u>- Students will know and identify solid shapes and their properties. <u>SKILLS and COMPETENCIES</u> Students would be able to Reason effectively and critically differentiate solid figures.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies Used- Muddiest point discussion, think, pair and share Dimensions of learning- D3, D1 Transaction would proceed in the following manner- Anticipatory Set: 10 min

	Facilitator will ask few questions to introduce the topic • What is volume? • How to compare the capacity of two vessel? • Give some examples Discussion of topic through Collaborative Learning: <u>15 min</u> <u>Inquiry based learning</u> (Critical Thinking and Problem Solving) Students would be asked questions related to volume of cuboid. The facilitator would take rounds and ensure that each learner is engaged. Guided practice: <u>10 min</u> The students will solve the questions from NCERT book, solved examples before Ex 13.7 in their notebook in the class with the help of their facilitator. The facilitator would take rounds and help the students in solving the questions. Independent Practice: Students will go through the solved examples before Ex 13.7 of NCERT text book. Closure: <u>5 min</u> A short oral test would be taken to check proper assimilation of the topic discussed.
Resources	Text Book: NCERT text book for Mathematics Reference Book 1. CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks.
Assessments	Oral Test (5 minutes)

DAY	THIRTEEN
Objective	Enhance ability to accurately recognize and use appropriate terminology related to solid figures and developing the art of communication and critical thinking. To find volume of sphere and Hemisphere.
Assessment of qualifying knowledge	Quiz and knowledge testing on properties of solid shapes and their formulas.
Learning Outcomes	<u>KNOWLEDGE</u>- Students will know and identify solid shapes and their properties. <u>SKILLS and COMPETENCIES</u> Students would be able to Reason effectively and critically differentiate solid figures.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies Used- Muddiest point discussion, graphic organisers Dimensions of learning- D3, D2 Transaction would proceed in the following manner- Anticipatory Set: <u>10 min</u> Facilitator will ask few questions to introduce the topic • What is volume? • How to compare the capacity of two vessel? • Give some examples Discussion of topic through Collaborative Learning: <u>15 min</u> <u>Inquiry based learning</u> (Critical Thinking and Problem Solving)

	Students would be asked questions related to volume of cuboid. The facilitator would take rounds and ensure that each learner is engaged. Guided practice: 10 min The students will solve the questions from NCERT book, solved examples before Ex 13.8 in their notebook in the class with the help of their facilitator. The facilitator would take rounds and help the students in solving the questions. Independent Practice: Students will go through the solved examples before Ex 13.8 of NCERT text book. Closure: 5 min A short oral test would be taken to check proper assimilation of the topic discussed.
Resources	Text Book: NCERT text book for Mathematics Reference Book 1. CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks.
Assessments	Oral Test (5 minutes)

DAY	FOURTEEN
Objective	Enhance ability to accurately recognize and use appropriate terminology related to solid figures and developing the art of communication and critical thinking. To find volume of sphere and Hemisphere.
Assessment of qualifying knowledge	Quiz and knowledge testing on properties of solid shapes and their formulas.
Learning Outcomes	<u>KNOWLEDGE</u>- Students will know and identify solid shapes and their properties. <u>SKILLS</u> and <u>COMPETENCIES</u> Students would be able to Reason effectively and critically differentiate solid figures.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies Used- think pair share, Muddiest point discussion Dimensions of learning- D2, D3 Transaction would proceed in the following manner- Anticipatory Set: 10 min Facilitator will ask few questions to introduce the topic • What is volume? • How to compare the capacity of two vessel? • Give some examples Discussion of topic through Collaborative Learning: 15 min <u>Inquiry based learning</u> (Critical Thinking and Problem Solving) Students would be asked questions related to volume of cuboid. The facilitator would take rounds and ensure that each learner is engaged. Guided practice: 10 min The students will solve the questions from NCERT book, solved examples before Ex 13.8 in their notebook in the class with the help of their facilitator. The facilitator would take rounds and help the students in solving the questions.

	Independent Practice: Students will go through the solved examples before Ex 13.8 of NCERT text book. Closure: 5 min A short oral test would be taken to check proper assimilation of the topic discussed.
Resources	Text Book: NCERT text book for Mathematics Reference Book 1. CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks.
Assessments	Oral Test (5 minutes)

DAY	FIFTEEN
Objective	Enhance ability to accurately recognize and use appropriate terminology related to solid figures and developing the art of communication and critical thinking. To find volume of different shapes.
Assessment of qualifying knowledge	Quiz and knowledge testing on properties of solid shapes and their formulas.
Learning Outcomes	<u>KNOWLEDGE</u> - <i>Students will know and identify solid shapes and their properties.</i> <u>SKILLS and COMPETENCIES</u> <i>Students would be able to Reason effectively and critically differentiate solid figures.</i>
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies Used- Inductive deductive reasoning, think, pair and share Dimensions of learning- D3, D1 Transaction would proceed in the following manner- Anticipatory Set: 10 min Facilitator will ask few questions to introduce the topic • What is volume? • How to compare the capacity of two vessel? • Give some examples Discussion of topic through Collaborative Learning: 15 min <u>Inquiry based learning</u> (Critical Thinking and Problem Solving) Students would be asked questions related to volume of cuboid. The facilitator would take rounds and ensure that each learner is engaged. Guided practice: 10 min The students will solve the questions from NCERT book, solved examples before Ex 13.9 in their notebook in the class with the help of their facilitator. The facilitator would take rounds and help the students in solving the questions. Independent Practice: Students will go through the solved examples before Ex 13.9 of NCERT text book. Closure: 5 min A short oral test would be taken to check proper assimilation of the topic discussed.
Resources	Text Book: NCERT text book for Mathematics Reference Book 1. CBSE Exemplar

Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks.
Assessments	Oral Test (5 minutes)