

LESSON PLAN

CLASS – VII

CHAPTER-14 : SYMMETRY

Unit	SYMMETRY
Class Transaction	Total periods: 4 (approx. 40 min each)
Pre-requisite for the course	This lesson requires 1. Knowledge of plane figures 2. Knowledge of nets of plane figures.
Assessment of qualifying knowledge	1. Written test 2. Lab activity 3. HW notebook
Objective	Students will be able to • Find the number of lines of vertices, edges and faces of different plane figures. • Find 2D shapes in daily life • Draw the nets of plane figures • View from different angles to get different views. • View an object by its shadow. Thereby inculcating competencies like collaboration, critical thinking and creative thinking.
Learning Outcomes	<u>KNOWLEDGE</u>- <i>Students will develop the ability to understand</i> 1. The number of vertices, edges and faces in different plane figures. 2. Draw nets of different plane figures. SKILLS and COMPETENCIES-<i>Students would be able to</i> 3. Develop the ability to analyze the different types of figures and identify their vertices, edges and vertices. 4. View and analyses an object by cutting or slicing. 5. Draw nets of different figure and develop creative thinking and collaboration in the process.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies used- Think pair share, Hands on activity. Dimensions Of Learning- D1,D3 Transaction would proceed in the following manner- <i>Brain Storming</i>-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 CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks from their course book. 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> - Encouragement for referring other resources <i>For weak students:</i> - 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	Q1	Write all the alphabets from A to Z. Classify them on the basis of: (i) Vertical line of symmetry (ii) Horizontal line of symmetry (iii) No line of symmetry
	Q2	_____ is a figure with exactly 6-axes of line symmetry.
	Q3	Give two examples of figures having multiple lines of symmetry.
	Q4	The number of line(s) of symmetry of a digit 7 and 8 are _____ and _____ respectively.
	Q5	What is the order of rotation, centre of rotation and angle of rotation of (a) Circle (b) rhombus
	Q6	Find the number of lines of symmetry and rotational symmetry in each: (a) A rectangle (b) The letter M (c) A regular hexagon (d) A parallelogram (e) A regular polygon with n sides.

DAY	ONE
Objective	Enhance ability to observe the virtual world of geometry .
Assessment of qualifying knowledge	Quiz testing to find out their knowledge about plane figures.
Learning Outcomes	<u>KNOWLEDGE</u>- <i>Students will know and understand how to draw nets of cube and cuboid.</i> <u>SKILLS and COMPETENCIES</u><i>Students would be able to think creatively and draw nets of cube and cuboids.</i>

Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies used- Think pair share, Hands on activity Dimensions Of Learning- D1,D3 Competency Developed : Critical thinking, Collaboration Transaction would proceed in the following manner- Anticipatory Set: 10 min Facilitator will ask few questions to introduce the topic • Give two examples of objects from daily life of cubical or cuboidal shape. • A cube has _____ vertices. Discussion of topic through Collaborative Learning: 15 min <u>Inquiry based learning</u> (Critical Thinking and Problem Solving) Class Activity: Collect the objects from the room to identify cubical or cuboidal objects and find the number of vertices, faces and vertices in them. Guided practice: 10 min The students, with the help of the facilitator, will solve the questions from NCERT book of Exercise – 15.1 in their notebook in the class with the help of their teacher. The teacher would ensure that each student tries to be independent at the work as well as be under the teacher's guidance. Independent Practice: Students will complete the remaining HW parts given in the course book of Exercise 15.1 in their Math HW notebook. Students who would difficulty in solving the problem would solve with the help of their buddies. 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 CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks from their course book.
Assessments	Oral Test (5 minutes)
DAY	TWO
Objective	Enhance ability to accurately draw isometric sketches for different shapes.
Assessment of qualifying knowledge	Drawing isometric sketches for different figures.
isoLearning Outcomes	<u>KNOWLEDGE-</u> Students will know and draw isometric sketches for different figures. <u>SKILLS and COMPETENCIES</u> Students would be able to think creatively and draw isometric sketches for different figures.
Transaction Methodology	Strategies used- Think pair share, Hands on activity Dimensions Of Learning- D1,D3

(The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Competency Developed : Critical , creative thinking, Collaboration Transaction would proceed in the following manner- Recapitulation: 5 min Brainstorming on the previously taught concept would be done. Discussion of topic through Collaborative Learning: 15 min <u>Inquiry based learning</u> (Critical Thinking and Problem Solving) Further practice and discussion of various objects in the room and to find symmetrical figures. Guided practice: 10 min The students, with the help of the facilitator, will solve the questions from NCERT book of Exercise – 15.2 in their notebook in the class with the help of their teacher. The teacher would ensure that each student tries to be independent at the work as well as be under the teacher’s guidance. Independent Practice: Students will complete the remaining HW parts given in the course book of Exercise 15.2 in their Math HW notebook. Students who would difficulty in solving the problem would solve with the help of their buddies. 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 CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks from their course book.
Assessments	Oral quiz (5 minutes)
DAY	THREE
Objective	To solve the questions of Ex- 15.3 based on shapes
Assessment of qualifying knowledge	To find cross sections when vertical and horizontal cuts are given to the solids.
Learning Outcomes	<u>KNOWLEDGE</u>- Students will know and <i>find</i> the cross sections when cut vertically or horizontally. <u>SKILLS and COMPETENCIES</u> Students would be able to think creatively and <i>find</i> the cross sections when cut vertically or horizontally.
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- Recapitulation: 5 min Oral test on the previous concept would be taken up. Discussion of topic through Collaborative Learning: 15 min (Critical thinking) Exercise 15.3 would be discussed and students would solve different questions per group and then the questions would be crosschecked. Digital

	content would be used. The facilitator would take rounds and help students with their doubts. Guided Practice: 15 min The students will solve the questions from NCERT book of Exercise – 15.3 Q2,3 in their notebook in the class with the help of their teacher. The teacher would ensure that each student tries to be independent at the work as well as be under the teacher’s guidance. Independent Practice: Students will complete the remaining HW parts given in the course book of Exercise 15.3 in their Math HW notebook. 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 CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks from their course book.
Assessments	MCQ (5 minutes)
DAY	FOUR
Objective	To solve the questions of Ex- 15.4 based on shadows.
Assessment of qualifying knowledge	To find the shape of the shadows obtained when an object is kept just below the burning lamp.
Learning Outcomes	<u>KNOWLEDGE</u>- Students will know find the shape of the shadows obtained when an object is kept just below the burning lamp. <u>SKILLS and COMPETENCIES</u> Students would be able to think creatively and find shadow of the object or object when shadow is given.
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- Recapitulation: 5 min Oral test on the previous concept would be taken up. Discussion of topic through Collaborative Learning: 15 min (Critical thinking) Exercise 15.4 would be discussed and students would solve different questions per group and then the questions would be crosschecked. Digital content would be used. The facilitator would take rounds and help students with their doubts. Guided Practice: 15 min The students will solve the questions from NCERT book of Exercise – 15.4 in their notebook in the class with the help of their teacher. The teacher would ensure that each student tries to be independent at the work as well as be under the teacher’s guidance. Independent Practice: Students will complete the remaining HW parts given in the course book of Exercise 15.4 in their Math HW notebook. 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 CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks from their course book.
Assessments	MCQ (5 minutes)