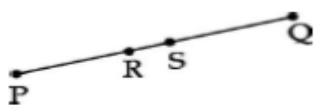


CLASS – IX
LESSON PLAN
CHAPTER-5: INTRODUCTION TO EUCLID’S GEOMETRY

Unit	(Chapter -5 Introduction To Euclid’s Geometry)
Class Transaction	Total: 5 periods (approx. 40 min each)
Pre-requisite for the course	This lesson requires basic knowledge of 1. Basic knowledge of the word Geometry 2. Knowledge of basic term used in geometry e.g. point, line, straight line, surface, plane surface
Assessment of qualifying knowledge	1. Written test 2. Lab activity 3. Group Discussion 4. HW notebook
Objective	Students would be able to 1. Appreciate the contribution of Great Mathematician like Euclid, Thales and Pythagoras in Geometry 2. Comprehend the basic Geometrical terms e.g. point, line, surface, defined by Euclid. 3. Differentiate between postulates and axioms 4. Understand seven axioms and five postulates 5. Understand the meaning of proportions /theorems thereby inculcating competencies like collaboration, critical thinking and creativity
Learning Outcomes	<u>KNOWLEDGE-</u> <i>Students will develop the ability to understand</i> 1. Euclid’s Definitions, Axioms and Postulates. 2. Equivalent Versions of Euclid’s Fifth Postulate. 3. There are seven axioms. 4. There are five postulates. <u>SKILLS and COMPETENCIES-</u><i>Students would be able to</i> 1. Analyse and apply Euclid’s postulates/axioms to solve simple geometrical problems. 2. Prove some more results by critically applying deductive reasoning. 3. Explain creatively that the given statement is a direct consequence of Euclid’s fifth postulate etc. 4. Rewrite Euclid’s fifth postulate in an easy to understand language. 5. Explain the existence of parallel lines.
Transaction Methodology (The teacher can use the mentioned	Strategies Used : Inductive Deductive Reasoning, Graphic Organizers, Think, pair and share 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

techniques, wherever applicable, and can use any other too.)	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 questions in their H.W notebooks. HW 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 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
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
Marks	The weightage would be given by the teacher.
Assessment Questions	1. If $AB = PQ$ and $PQ = XY$, then by which Euclid's axiom we can show that $AB = XY$. 2. By which axiom we can say that area of sector of a circle is always less than the area of the circle. In the figure given below, if $PS = RQ$, then prove that $PR = SQ$.  3. 4. State The latest version of Euclid's postulate. 5. Write any four axioms of Euclid.

DAY	ONE
Objective	Enhance ability to accurately recognize and use appropriate terminology related to geometry and developing the art of communication and critical thinking.
Assessment of qualifying knowledge	Quiz and knowledge testing on notions of point, line, plane (or surface)
Learning Outcomes	KNOWLEDGE- <i>Students will know and identify the terms related to geometry given by Euclid by analyzing them critically</i> SKILLS and COMPETENCIES <i>Students would be able to Reason effectively and critically describe definitions.</i>
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies Used : Inductive Deductive Reasoning, 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 •Where did the word ‘geometry’ come from? •What were the practical problems which required the development of geometry in various ways? •Some examples show that geometry was being developed and applied everywhere in the world? Discussion of topic through Collaborative Learning: 15 min <u>Inquiry based learning</u> (Critical Thinking and Problem Solving) Students would be asked to write different real life situations in which they are supposed to use geometry and would critically examine postulates. 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 5.1 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 5.1 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	Students will be able to identify and prove the theorems related to geometry, in collaborative manner .
Assessment of qualifying knowledge	Written questions on postulates and theorems.
Learning Outcomes	KNOWLEDGE- <i>Students will know and Demonstrate the ability to use proper postulate in different situations.</i> SKILLS and COMPETENCIES- <i>Students will be able to differentiate and classify the</i>

	different postulates and results, in collaboration with each other.
Transaction Methodology (The teacher can use the mentioned techniques, wherever applicable, and can use any other too.)	Strategies Used : Inductive Deductive Reasoning, Graphic Organizers, Think, pair and share Dimensions of Learning : D1, D2, D3 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 (Critical Thinking, Collaboration) An oral quiz will be taken and students will be asked to identify and explain Euclid's results and will be able to realize that these results can be used to prove some more results by applying deductive reasoning. Guided practice: 15 min The students, with the help of the facilitator, will solve the questions from NCERT book of Exercise – 5.1 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 monthly planner of Exercise 5.1 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 1. CBSE Exemplar
Self Study, Home Work, Assignments	Independent Practice: Students would do the given questions in their H.W. notebooks.
Assessments	Oral quiz (5 minutes)
DAY	THREE
Objective	To solve the questions of Ex- 5.2 based on Equivalent Versions of Euclid's Fifth Postulate
Assessment of qualifying knowledge	Written questions on how to place points in the plane if we know its coordinates, calling this process "plotting the point".
Learning Outcomes	KNOWLEDGE- Students will develop the ability to understand the several equivalent versions of fifth postulate. SKILLS and COMPETENCIES - Students would be able to critically apply the concepts in given situations and collaboratively realize the fact that Two distinct intersecting lines cannot be parallel to the same line.
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, muddiest point discussion Dimensions of Learning : D1 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 5.2 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 – 5.2 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 monthly planner of Exercise 5.2 in their Math HW notebook. 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	Written test (5 minutes)