

LESSON PLAN 3

CLASS : 8 TEACHER'S NAME :

NAME OF THE UNIT	SUB-TOPICS	NO OF PERIODS REQUIRED			Time line for teaching	
		Teaching	Practice	TOTAL	From	To
UNDERSTANDING QUADRILATERALS	3.1 INTRODUCTION 3.1.1 CONCAVE & CONVEX POLYGONS 3.1.2 REGULAR & IRREGULAR POLYGONS 3.2 SUM OF THE MEASURES OF THE EXTERIOR ANGLES OF A POLYGON	1	3	4		
	3.3 KINDS OF QUADRILATERALS 3.3.1 TRAPEZIUM 3.3.2 KITE 3.3.3 PARALLELOGRAM 3.3.4 ELEMENTS OF A PARALLELOGRAM 3.3.5 ANGLES OF A PARALLELOGRAM 3.3.6 DIAGONALS OF A PARALLELOGRAM	3	6	9		
	3.4 SOME SPECIAL PARALLELOGRAMS 3.4.1 RHOMBUS 3.4.2 RECTANGLE 3.4.3 SQUARE	2	5	7		
	TOTAL	6	14	20		
	KEY CONEPTS		KEY VOCABULARY			
PRE-REQUISITES	Every Pupil is expected to have basic knowledge in # basic geometrical shapes like line, line segment and ray, angle, triangle, rectangle, square, surface etc., # simple curve, closed curve # Angle, measuring angle, different types of angles, measuring line segment # Interior and Exterior parts of a plane figure	# line, line segment, ray # angle, side, triangle, rectangle, polygon # surface, Interior, Exterior # diagonal # Quadrilaterals, Trapezium, Kite # Parallelogram, Rectangle, Rhombus # Square, Parallel, Perpendicular			# Opposite # Adjacent # Supplementary # Complementary # Corresponding # Linear pair # Intersect, bisect # transversal # Perimetre, Identical	

Learning Outcomes

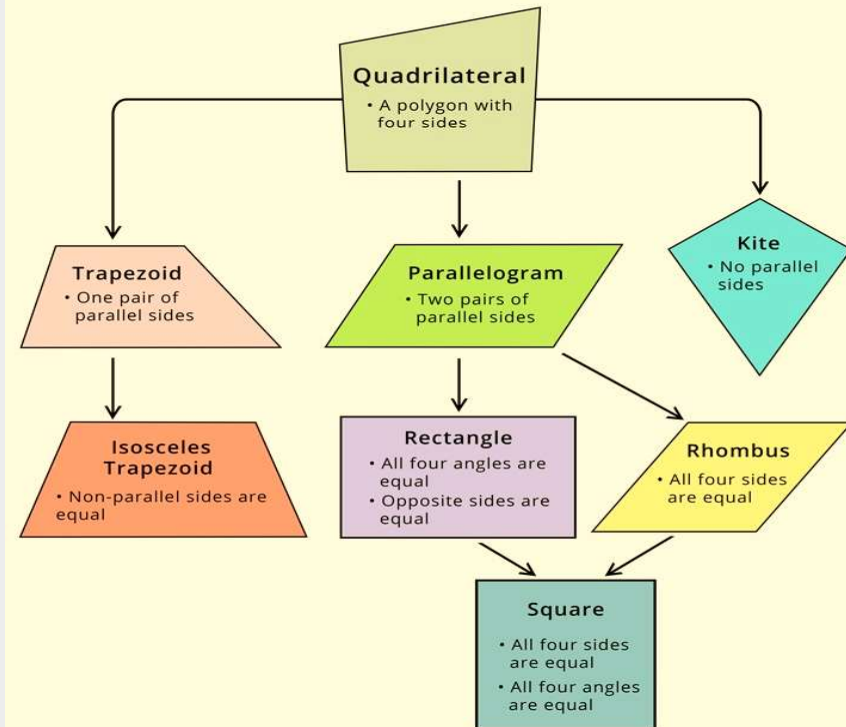
After Completion of this lesson every student will be able to

- # identify which type of quadrilateral the given one is
- # distinguish between the properties of different quadrilaterals
- # utilize the right property of the quadrilateral in solving sums related with quadrilaterals
- # recognize the significance and appreciate the importance of quadrilaterals in real life situations.

Teaching Learning Process

MIND MAPPING

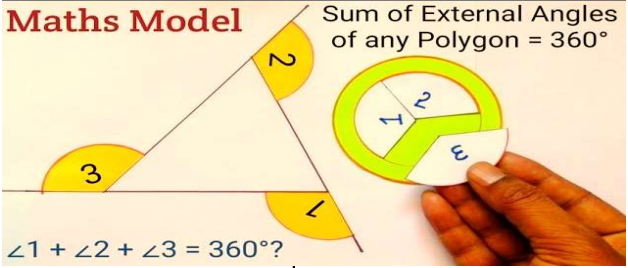
Quadrilateral Flow Chart

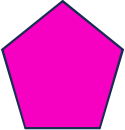
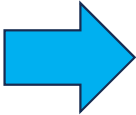


Experience & Reflection

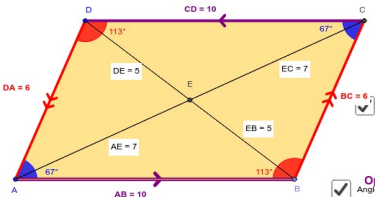
Pupils will recollect their knowledge on basic geometrical concepts like line, line segment, ray, surface, simple curve, triangle, rectangle etc and will utilize in understanding quadrilaterals.

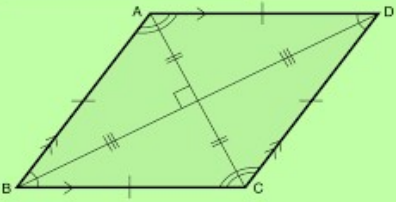
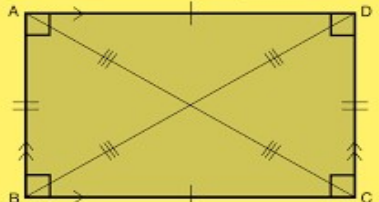
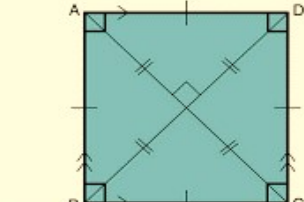
Students will experience the knowledge on quadrilaterals in real life situations.

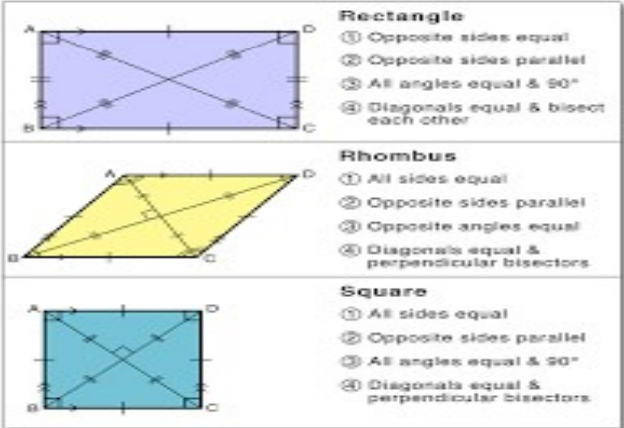
TEACHING PERIOD : 1	INTRODUCTION,CONCAVE & CONVEX POLYGONS,REGULAR & IRREGULAR POLYGONS SUM OF THE MEASURES OF THE EXTERIOR ANGLES OF A POLYGON		
CONCEPTS/STEPS	TEACHER ACTIVITY (I DO)	GROUP ACTIVITY (WE DO)	INDIVIDUAL ACTIVITY (YOU DO)
KEY WORDS & PRE REQUISITES	Brain storming session involving children with pre-requisites vocabulary and concepts related to previous knowledge. Introduction of new vocabulary and key words associated with the concept # simple curve # closed curve # convex #concave # polygons # Exterior # Interior # Angle # polygon # diagonals	* Students read the pre-requisites and answer the questions to the teacher (whole class activity)	Every Pupil will read and write the key words in their note books
MIND MAPPING	Teacher writes the key word "UNDERSTANDING QUADRILATERALS" on the black board and will elicit its other related words through questioning and will draw pupils' attention towards key concepts in the lesson	Hetrogeneous groups are created. One group will read the words and other will explain the meaning	Pupils individually read the keywords associated with Integers
CONCEPTUAL UNDERSTANDING	Teacher exhibits as well as draws different types of shapes to make pupil identify and distinguish what a simple curve is? and what a closed curve is? what a regular polygon is? What an irregular polygon is? what a convex polygon is? and what a concave polygon is?	Hetrogeneous groups are formed to participate in the activity and each group participates in the activity actively and learns the properties	Each student in the group participates in the activity and learns the properties on different polygons
LEARNING ACTIVITY	After giving a brief over these concepts teacher conducts an activity involving children by dividing them into heterogeneous groups. Teacher gives different polygon shaped paper cuts like triangle, quadrilateral, pentagon, Hexagon etc., whose exterior angles were marked as 1, 2, .. depending upon the no of angles to different groups and asks children to cut each marked exterior angle of all the polygons. Now teacher asks to place all the cut angular parts of each polygon in such a way that each corner is pointed to the centre. By observing, pupils can obviously understand sum of all the exterior angles of any polygon makes up a circle i.e., 360°	<p>Maths Model</p>  <p>Sum of External Angles of any Polygon = 360°</p>	
SUMMARY	Teacher writes the summary of the concept detailing about a simple curve, closed curve, convex polygon, concave polygon, regular polygon and irregular polygon and asks children to note and read	pupils will note down and read the summary in groups	every individual reads the summary and notes it down
ASSESSMENT	Teacher asks children to solve the sums of try these section as well as exercise 3.1 and 3.2	every group will do the sums by discussion among each other	every individual solves the sums on their own

PRACTICE PERIOD: 1 to 4	INTRODUCTION,CONCAVE & CONVEX POLYGONS,REGULAR & IRREGULAR POLYGONS SUM OF THE MEASURES OF THE EXTERIOR ANGLES OF A POLYGON		
CONCEPTS/STEPS	TEACHER ACTIVITY (I DO)	GROUP ACTIVITY (WE DO)	INDIVIDUAL ACTIVITY (YOU DO)
KEY WORDS READING	Teacher writes the key words from previous class's teaching period and asks children to read and write them in note books # simple curve # closed curve # convex #concave # polygons # Exterior # Interior # Angle # polygon # diagonals	Whole class activity : one child comes to the board and reads the key words loudly and the remaining class follows.	Every child comes to the board and reads the key words and notes them down in their note books
SIMILAR LINES READING	Teacher draws some polygons and writes the name as well as whether it is convex or concave ,regular or irregular and sum of the exterior angles on the BB and asks children to frame some more like these. <div style="display: flex; align-items: center; gap: 10px;">  <div style="background-color: #90EE90; padding: 5px; border: 1px solid black;"> Name : Pentagon Convex or Concave : Convex Regular/Irregular : Regular Sum of ext.angles : 360° </div> </div> <div style="display: flex; align-items: center; gap: 10px;">  <div style="background-color: #FFFF00; padding: 5px; border: 1px solid black;"> Name : Septagon Convex or Concave : Concave Regular/Irregular : irregular Sum of ext.angles : 360° </div> </div>	Each group will read the similar lines and will frame some more by discussion	Every Individual prepares their own similar lines using the lines prepared by the teacher
SUMMARY/ SYNOPSIS	Teacheronce again writes important key words and tabulates different properties of Polygons and asks children to read,note down and practice.	pupils will note down and read the summary in groups	every individual spells and reads the summary and notes it down
WRITING/ EDITING	Teacher guides children in doing sums of try these sectionas well as exercise sums of 3.1 & 3.2 on their own and checks their writings	One group will check the writings of the other and vice versa	Slow learners are focused and teacher will ascertain that every individual learns the concept in successive upcoming practice sessions

TEACHING PERIODS : 2,3,4	KINDS OF QUADRILATERALS,TRAPEZIUM,KITE,PARALLELOGRAM,ELEMENTS OF A PARALLELOGRAM,ANGLES OF A PARALLELOGRAM,DIAGONALS OF A PARALLELOGRAM		
CONCEPTS/STEPS	TEACHER ACTIVITY (I DO)	GROUP ACTIVITY (WE DO)	INDIVIDUAL ACTIVITY (YOU DO)
KEY WORDS	Brain storming session involving children with key words * Quadrilateral * Trapezium * Isosceles Trapezium * Kite * Parallelogram * diagonals * bisecting * Consecutive * Symmetry * Opposite * Adjacent * Identical * Perimetre * Transversal * measure* Supplementary * Complementary * Intersection	* Students read the keywords answer the questions to the teacher (whole class activity)	Every Pupil will read and write the key words in their note books
CONCEPTUAL UNDERSTANDING	<p>Teacher exhibits different types of quadrilaterals and asks children to identify the differences among each other. Here teacher demonstrates the spl.qualities of a quadrilateral to make it a trapezium, to make it a kite and to make it a parallelogram.</p> <p>In each teaching period teacher shows and names each and every element of a parallelogram and ascertains that each pupil in the class is able to recognize all elements of a parallelogram.</p> <div data-bbox="814 808 1339 1024" data-label="Image"> </div> <div data-bbox="495 1032 1003 1255" data-label="Image"> </div>	<p>pupils are divided into heterogeneous groups and given different types of quadrilateral shaped paper cuts and are instructed to observe the properties through discussion</p> <div data-bbox="1377 854 1955 1214" data-label="Image"> </div>	<p>Each student in the group participates in the activity and learns the concept</p>
SUMMARY	<p>Teacher once again writes important key words and tabulates the properties of different types of quadrilaterals discussed and asks children to note down and adopt.</p>	<p>Pupils will note down and read the summary in groups</p>	<p>Every individual reads the summary and notes it down and adopts the procedure</p>
ASSESSMENT	<p>Teacher gives some questions from Try These sections, example sums, exercise sums of 3.3 and asks children to solve those sums</p>	<p>Every group will do the sums by discussion among each other</p>	<p>Every individual solves the sums on their own</p>

PRACTICE PERIODS: 4 to 9	KINDS OF QUADRILATERALS, TRAPEZIUM, KITE, PARALLELOGRAM, ELEMENTS OF A PARALLELOGRAM, ANGLES OF A PARALLELOGRAM, DIAGONALS OF A PARALLELOGRAM		
CONCEPTS/STEPS	TEACHER ACTIVITY (I DO)	GROUP ACTIVITY (WE DO)	INDIVIDUAL ACTIVITY (YOU DO)
KEY WORDS READING	Teacher writes the key words from previous class's teaching period and asks children to read and write them in note books * Quadrilateral * Trapezium * Isosceles Trapezium * Kite * Parallelogram * diagonals * bisecting * Consecutive * Symmetry * Opposite * Adjacent * Identical * Perimetre * Transversal * measure * Supplementary * Complementary * Intersection	Whole class activity : one child comes to the board and reads the key words loudly and the remaining class follows.	Every child comes to the board and reads the key words and notes them down in their note books
SIMILAR LINES READING	Teacher writes the properties of some quadrilaterals on the black board and asks children to write for some more. <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>A PARALLELOGRAM A quadrilateral with both pair of opposite sides parallel.</p>  </div> <div style="width: 45%;"> <p>PROPERTIES OF A PARALLELOGRAM</p> <ol style="list-style-type: none"> 1) Opposite sides are equal 2) Opposite angles are equal 3) Diagonals bisect each other 4) Adjacent angles are supplementary. </div> </div> <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div style="width: 45%;"> <p>OPPOSITE SIDES $AB = CD = 10$ $AD = CB = 6$ <input checked="" type="checkbox"/> Opposite sides are EQUAL</p> <p>OPPOSITE ANGLES $\angle A = \angle C = 67^\circ$ $\angle B = \angle D = 113^\circ$ <input checked="" type="checkbox"/> Opposite angles are EQUAL</p> </div> <div style="width: 45%;"> <p>DIAGONALS $DE = EB = 5$ $AE = EC = 7$ <input checked="" type="checkbox"/> Diagonals BISECT each other.</p> <p>ADJACENT ANGLES $\angle A + \angle B = 67^\circ + 113^\circ = 180^\circ$ $\angle B + \angle C = 67^\circ + 113^\circ = 180^\circ$ <input checked="" type="checkbox"/> Adjacent angles are SUPPLEMENTARY</p> </div> </div>	Each group watches the similar lines and frames some more	Every individual frames some more statements by watching the similar lines
SUMMARY/ SYNOPSIS	Teacher once again writes important key words tabular form of properties of different quadrilaterals discussed and asks children to note down and adopt.	Pupil groups will read and adopt the procedure	Teacher focuses on every individual so that each one learns properties in successive
WRITING/ EDITING	Teacher gives some questions from Try These sections and exercise sums asks children to solve those sums and teacher checks the writings of children	One group will check the writings of the other and vice versa	upcoming practice sessions

TEACHING PERIOD : 5,6	SOME SPECIAL PARALLELOGRAMS,RHOMBUS,RECTANGLE,SQUARE		
CONCEPTS/STEPS	TEACHER ACTIVITY (I DO)	GROUP ACTIVITY (WE DO)	INDIVIDUAL ACTIVITY (YOU DO)
KEY WORDS	Brain storming session involving children with key words * Special Parallelograms * Rhombus * Rectangle * Square * Perpendicular Bisectors	* Students read the key words and answer the questions to the teacher	Every Pupil will read and write the key words in their note books
CONCEPTUAL UNDERSTANDING	<p>Teacher exhibits some special Parallelograms and demonstrates the properties of those parallelograms and asks children to identify such shapes in real life situations. By the way teacher also explains the basic differences between a kite and a rhombus, a parallelogram and a rectangle and a rhombus and a square</p> <div style="display: flex; justify-content: space-around;"> <div data-bbox="499 748 905 1101" style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; margin: 0;"><u>Properties of a Rhombus</u></p>  <ul style="list-style-type: none"> ① All four sides are equal ② Opposite sides are parallel ③ Opposite angles are equal ④ Diagonals are perpendicular and bisect each other ⑤ Adjacent angles add up to 180° </div> <div data-bbox="947 748 1352 1117" style="border: 1px solid black; padding: 5px;"> <p style="text-align: center; margin: 0;"><u>Properties of a Rectangle</u></p>  <ul style="list-style-type: none"> ① Has four sides and four vertices ② Opposite sides are equal ③ Opposite sides are parallel ④ All four angles are right angles ⑤ Diagonals are equal and bisect each other </div> </div>	Heterogeneous groups are created and are given different paper cuts of spl.parallelograms and are instructed to observe the properties through discussion.	<p>Every child participates in the learning activity and understands the concept</p> <div data-bbox="1577 816 1978 1187" style="border: 1px solid black; padding: 5px; margin-top: 10px;"> <p style="text-align: center; margin: 0;"><u>Properties of a Square</u></p>  <ul style="list-style-type: none"> ① Has four sides and four vertices ② All four sides are equal ③ All four angles are right angles ④ Opposite sides are parallel ⑤ Diagonals are perpendicular (bisect at 90°) </div>
SUMMARY	Teacher writes the summary displaying different properties of special parallelograms on the black board and asks children to read write and note down	pupils will note down and read the summary in groups	every individual reads the summary and notes it down and adopts the procedure
ASSESSMENT	Teacher gives some questions from exercise 3.4 and asks children to solve those sums	every group will do the sums by discussion among each other	every individual solves the sums on their own

PRACTICE PERIODS: 10 to 14	SOME SPECIAL PARALLELOGRAMS,RHOMBUS,RECTANGLE,SQUARE		
CONCEPTS/STEPS	TEACHER ACTIVITY (I DO)	GROUP ACTIVITY (WE DO)	INDIVIDUAL ACTIVITY (YOU DO)
KEY WORDS READING	<p>Teacher writes the key words from previous class's teaching period and asks children to read and write them in note books</p> <p>* Special Parallelograms * Rhombus * Rectangle * Square</p> <p>* Perpendicular Bisectors</p>	Whole class activity : one child comes to the board and reads the key words loudly and the remaining class follows.	Every child comes to the board and reads the key words and notes them down in their note books
SIMILAR LINES READING	<p>Teacher writes the properties of some spl. Parallelograms and asks children to frame some more by watching the similar lines</p> <p style="text-align: center;">Special Parallelograms</p>  <p>Rectangle</p> <ol style="list-style-type: none"> ① Opposite sides equal ② Opposite sides parallel ③ All angles equal & 90° ④ Diagonals equal & bisect each other <p>Rhombus</p> <ol style="list-style-type: none"> ① All sides equal ② Opposite sides parallel ③ Opposite angles equal ④ Diagonals equal & perpendicular bisectors <p>Square</p> <ol style="list-style-type: none"> ① All sides equal ② Opposite sides parallel ③ All angles equal & 90° ④ Diagonals equal & perpendicular bisectors 	Each group will read the similar lines and will frame some more by discussion	Every Individual prepares their own similar lines using the lines prepared by the teacher
SUMMARY/ SYNOPSIS	Teacher once again writes important key words and table of properties and asks children to read ,note down and adopt.	Pupil groups will read the table of properties and utilize	Teacher focuses on every individual so that each one knows and adopts the different
WRITING/ EDITING	Teacher asks children to solve the sums of exercise 3.4 on their own and teacher checks the writings of children	One group will check the writings of the other and vice versa	properties in successive upcoming practice sessions