

LESSON PLAN 11

TEACHER'S NAME :

SUBJECT: MATHEMATICS

CLASS: 6

UNIT : ALGEBRA

No.of Periods: 12+13=25

PERIOD ALLOTMENT

NAME OF THE UNIT	SUB-TOPICS	NO OF PERIODS REQUIRED			Time line for teaching	
		Teaching	Practice	TOTAL	From	To
ALGEBRA	11.1 PRE-REQUISITES & INTRODUCTION	1	1	2		
	11.2 MATCH STICK PATTERN	5	6	11		
	11.3 THE IDEA OF A VARIABLE					
	11.4 MORE MATCH STICK PATTERNS	6	6	12		
	11.5 MORE EXAMPLES OF VARIABLES					
TOTAL	12	13	25			

PRE-REQUISITES OF THE LESSON

Every Pupil is expected to have basic knowledge in

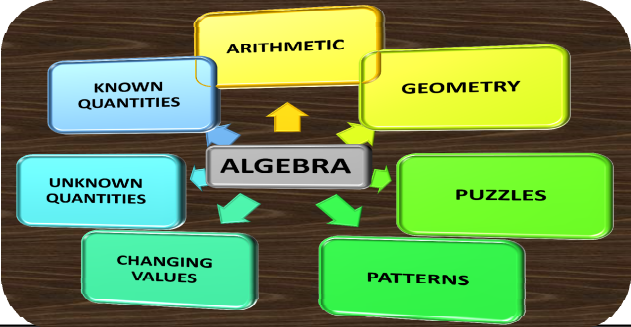
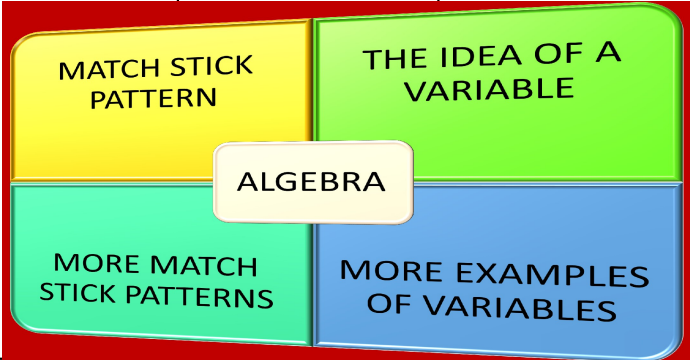
- # different geometric shapes like polygons etc.,
- # arithmetic and its related calculations
- # naming the commons with some letter in english alphabet like 'x', 'y' 'z', etc.,
- # applying basic arithmetic and geometrical skills in understanding patterns
- # and thirist in exploring new branches of mathematics.
- # four basic operations $+, -, \times, \div$

LEARNING OUTCOMES

After Completion of this lesson every student will be able to



- # apprehend that there are many more new branches of mathematics to explore
- # understand that algebra is a new branch in mathematics which opens ways to solve puzzles, finding unknowns etc.,
- # understand different patterns and will try to generalize them using variables .
- # convert patterns into algebraic expressions
- # appreciate the utility of "Algebra" in real life sums


TEACHING PERIOD : 1 (PRE - REQUISITES & INTRODUCTION)

CONCEPTS/STEPS	TEACHER ACTIVITY (I DO)	GROUP ACTIVITY (WE DO)	INDIVIDUAL ACTIVITY (YOU DO)
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 through questioning # Algebra # Arithmetic # Geometry # Known quantities # Unknown quantities # changing values # patterns # puzzles	* 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 " ALGEBRA " on the black board and will elicit its other related words through questioning 	Hetrogeneous groups are created. One group will read the words and other will explain the meaning	Pupils individually read the keywords associated with the lesson
RELEVANCE OF THE LESSON	Teacher conducts a discussion on the importance of the lesson through questioning 1. In Previous chapter we have learnt the formulae for finding perimeter and area of a rectangle and square. what does it refer to "l" and "b" there ? 2. How can we solve some puzzles related to finding unknowns involving numbers? 3. If Vidhijna and Bhaavajna have some number of chocolates with them and the total is 21, then how would you represent this condition in a mathematical form?	Students participate in the discussion and ask questions	Pupils individually write their responses to the questions asked
CONCEPT MAP	Teacher displays the concept map depicting various concepts that pupil are going to learn in this lesson 	Whole class read the concept map	
ASSESSMENT	Teacher gives children some real life situations which involve variables or unknowns and asks children to try and express them in mathematical form?	every group will do the task by discussion among each other	every individual solves the task on their own

PRACTICE PERIOD: 1


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 # Algebra # Arithmetic # Geometry # Known quantities # Unknown quantities # changing values # patterns # puzzles	Students read these key words in groups and will try to give examples to each key word	Every child comes to the board and reads the key words and notes them down in their note books
SIMILAR LINES READING	Teacher quotes some real life examples where it is really needed a variable and asks children to frame some more by watching similar lines	Each group will observe the similar lines and will frame some more by discussion	Every Individual will frame some more using similar lines
<p>$? + 5 = 9$ we know that '4' comes in the place of $?$ This expression can be expressed as $x+5=9$, here we have taken 'x' as an unknown</p>			
<p>3 times of $\text{🤔} = 18$ we know that '6' comes in the place of 🤔 This expression can be expressed as $3y=18$, here we have taken 'y' as an unknown</p>			
SUMMARY/ SYNOPSIS	Teacher writes synopsis on the board and asks children to read,write 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 conducts a dictation on key words ,pre-requisites and similar lines and asks children to exchange books for editing after writing is finished.	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

TEACHING PERIODS : 2 to 6	MATCH STICK PATTERN THE IDEA OF A VARIABLE																																	
CONCEPTS/STEPS	TEACHER ACTIVITY (I DO)	GROUP ACTIVITY (WE DO)	INDIVIDUAL ACTIVITY (YOU DO)																															
KEY WORDS	Brain storming session involving children with key words # Match stick pattern # Constant # Variable	* Students read the keywords answer the questions to the teacher (whole class)	Every Pupil will read and write the key words in their note books																															
CONCEPTUAL UNDERSTANDING	Teacher conducts an activity involving heterogeneous groups where each group will be provided with a match box and are asked to frame any english alphabet using match sticks in such a way that 1st arrangement shall consist of 1 letter, 2nd arrangement shall have 2 letters and so on. Now teacher guides children to arrive at a general formula for counting number of match sticks in any term of the pattern.	Each group will understand the concepts by participation in the activity	every child learns the concept through the learning activity and observation of TLM																															
LEARNING ACTIVITY	 <table border="1" data-bbox="344 1075 1398 1270"> <thead> <tr> <th>No. of L's formed</th> <th>1</th> <th>2</th> <th>3</th> <th>....</th> <th>....</th> <th>n</th> </tr> </thead> <tbody> <tr> <th>No. of Match sticks required</th> <td>2</td> <td>2x2</td> <td>2x3</td> <td>....</td> <td>....</td> <td>2n</td> </tr> </tbody> </table>  <table border="1" data-bbox="344 1438 1409 1564"> <thead> <tr> <th>No. of C's formed</th> <th>1</th> <th>2</th> <th>3</th> <th>....</th> <th>....</th> <th>n</th> </tr> </thead> <tbody> <tr> <th>No. of Match sticks required</th> <td>3</td> <td>3x2</td> <td>3x3</td> <td>....</td> <td>....</td> <td>3n</td> </tr> </tbody> </table>						No. of L's formed	1	2	3	n	No. of Match sticks required	2	2x2	2x3	2n	No. of C's formed	1	2	3	n	No. of Match sticks required	3	3x2	3x3	3n
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SUMMARY	Teacher once again writes important key words and procedures and asks children to note down and adopt.	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 Try These sections as well as some examples 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 : 2 to 7	MATCH STICK PATTERN THE IDEA OF A VARIABLE														
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 # Match stick pattern # Constant # Variable	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 takes some patterns and generalizes them using variables and asks children to do some more by watching similar lines	Each group will read the similar lines and will frame some more by discussion	Every Individual will do a few more by watching similar lines												
 <p data-bbox="162 1144 1409 1260">By observing the no.of petals in each fan it is obvious that there are 3 petals in each fan. So we can fill the table as follows and generalize as below</p> <table border="1" data-bbox="162 1270 1409 1438"> <thead> <tr> <th data-bbox="162 1270 414 1333">No.of fans</th> <th data-bbox="414 1270 511 1333">1</th> <th data-bbox="511 1270 609 1333">2</th> <th data-bbox="609 1270 706 1333">3</th> <th data-bbox="706 1270 911 1333">....</th> <th data-bbox="911 1270 1409 1333">m</th> </tr> </thead> <tbody> <tr> <td data-bbox="162 1333 414 1438">No.of petals in each fan</td> <td data-bbox="414 1333 511 1438">3x1</td> <td data-bbox="511 1333 609 1438">3x2</td> <td data-bbox="609 1333 706 1438">3x3</td> <td data-bbox="706 1333 911 1438">....</td> <td data-bbox="911 1333 1409 1438">3xm</td> </tr> </tbody> </table>				No.of fans	1	2	3	m	No.of petals in each fan	3x1	3x2	3x3	3xm
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SUMMARY/ SYNOPSIS	Teacher once again writes important key words and definitions and asks children to note down and adopt.	Pupil groups will read and adopt the procedure	Teacher focuses on every individual so that every child is able to learn the concept in successive upcoming practice sessions												
WRITING/ EDITING	Teacher gives some questions from Exercise 11.1 and 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													

TEACHING PERIODS : 7 to 12	MORE MATCH STICK PATTERNS MORE EXAMPLES OF VARIABLES		
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CONCEPTS/STEPS	TEACHER ACTIVITY (I DO)	GROUP ACTIVITY (WE DO)	INDIVIDUAL ACTIVITY (YOU DO)
KEY WORDS	Brain storming session involving children with key words # Match stick pattern # Constant # Variable # usage of variables in real life situations	* 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	Teacher once again conducts some more activities using match sticks but this time involving some inclusive arrangement of matchsticks. This arrangement depicts an uniform pattern but the required number of match sticks in each case for forming a particular shape differs from the number required to form the single shape in the first term. Here teacher explains the variation in these patterns and will guide children to arrive at the generalized form of each term in the pattern by using a variable.	Each group will understand the concepts by participation in the activity	every child learns the concept through the learning activity and observation of TLM
LEARNING ACTIVITY			



No. of Δ's formed	1	2	3	....	....	n
No. of Match sticks required	$1 + 2 \times 1$	$1 + 2 \times 2$	$1 + 2 \times 3$	....	....	$1 + 2 \times n$



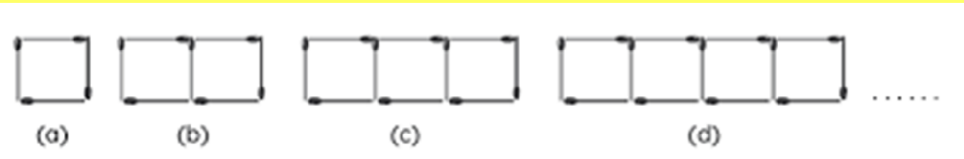
No. of Houses formed	1	2	3	....	....	n
No. of Match sticks required	$1 + 5 \times 1$	$1 + 5 \times 2$	$1 + 5 \times 3$	....	....	$1 + 5 \times n$

SUMMARY	Teacher once again writes important key words and procedures and asks children to note down and adopt.	Pupils will note down and read the summary in groups	Every individual reads the summary and notes it down and adopts the
ASSESSMENT	Teacher gives some questions from Try These sections as well as some examples 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

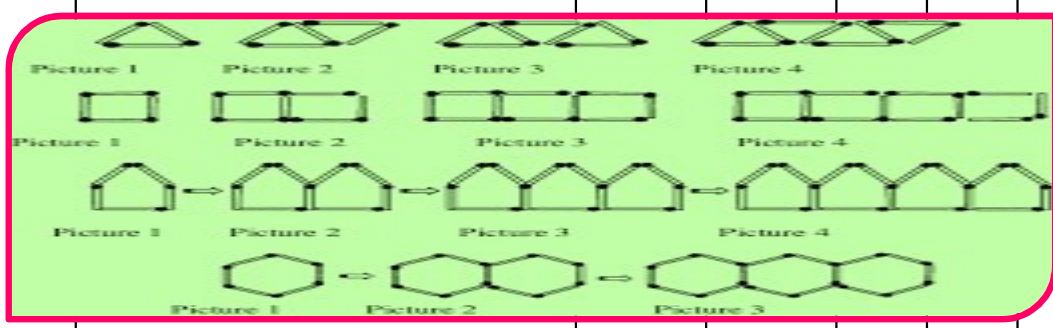
PRACTICE PERIODS: 8 to 13	MORE MATCH STICK PATTERNS MORE EXAMPLES OF VARIABLES		
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CONCEPTS/STEPS	TEACHER ACTIVITY (I DO)	GROUP ACTIVITY (WE DO)	INDIVIDUAL ACTIVITY (YOU DO)
KEY WORDS READING	Teacher writes the key words from previous class's teaching period and asks children to read and write them in note books # Match stick pattern # Constant # Variable # usage of variables in real life situations	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 converts some examples of real life sums as well as some patterns into algebraic form and asks children to form some more by watching similar lines.	Each group will read the similar lines and will frame some more by discussion	Every Individual will do a few more by watching similar lines

9 more than 'x' = $x+9$
 3 times of a number 'y' = $3y$
 5 less than 4 times of 'm' = $4m-5$



No. of rectangles formed	1	2	3	....	....	r
No. of Match sticks required	$1+3 \times 1$	$1+3 \times 2$	$1+3 \times 3$	....	....	$1+3r$



SUMMARY/ SYNOPSIS	Teacher once again writes important key words and definitions and asks children to note down and adopt.	Pupil groups will read and adopt the procedure	Teacher focuses on every individual so that every child is able to learn the concept in successive upcoming practice sessions
WRITING/ EDITING	Teacher gives some questions from Exercise 11.1 and 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	