LESSON PLAN 13

TEACHER'S NAME :	**SUBJECT: MATHEMATICS**

CLASS: 8 **UNIT : INTRODUCTION TO GRAPHS** **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
INTRODUCTION TO GRAPHS	13.1　INTRODUCTION	1	1	2		
	13.1.1　A LINE GRAPH	3	3	6		
	13.2　SOME APPLICATIONS	3	4	7		
	TOTAL	7	8	15		

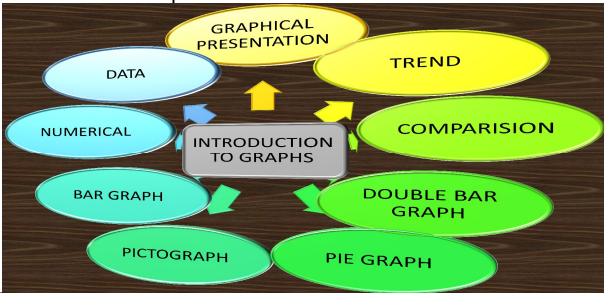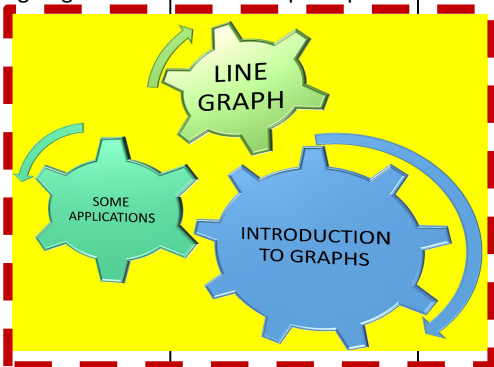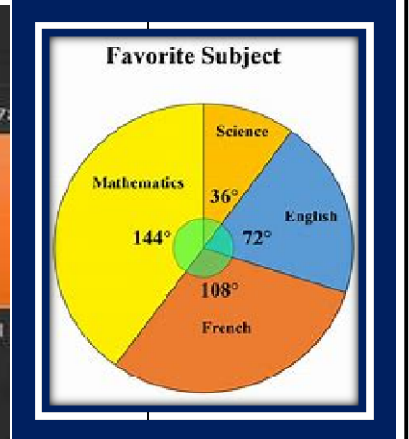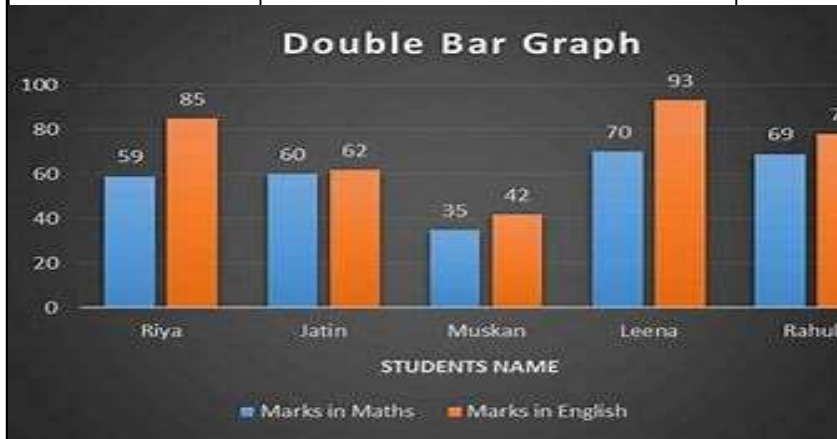| PRE-REQUISITES OF THE LESSON	LEARNING OUTCOMES
Every Pupil is expected to have basic knowledge in # basic requirements of a graph # different types of graphs like pictograph, bar graph, double bar graph and pie graph which they have already learnt in class 6th,7th and in previous lessons of 8th. # four basic operations +,-,x,÷ # skills in tabulating data # representing data on a graph	After Completion of this lesson every student will be able to # recall different types of graphs already known to them # represent data on a line graph by tabulating it and plot the curve for any given data. # reads any line graph and analyses it. # Utilize the concept of graphs in real life applications # appreciate the utility of "Graphs" in real life situations

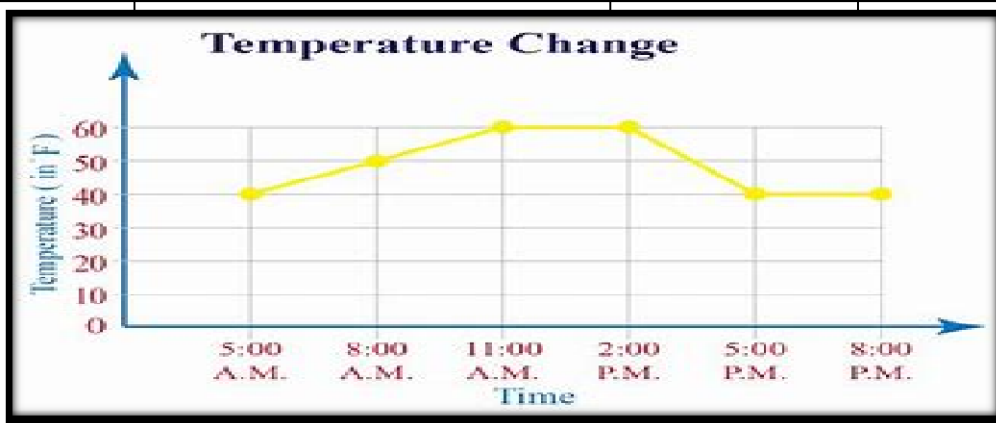## TEACHING PERIOD : 1 (PRE - REQUISITES & INTRODUCTION)

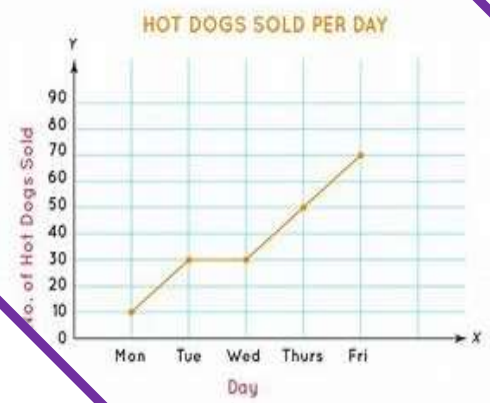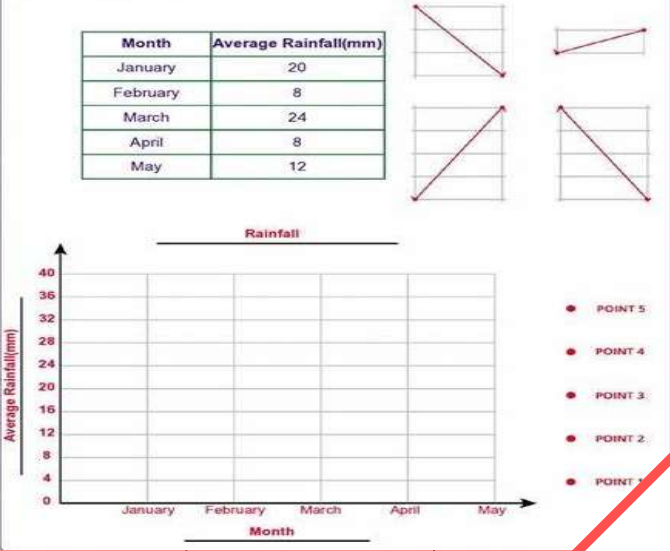| CONCEPTS/STEPS	TEACHER ACTIVITY (I DO)	GROUP ACTIVITY (WE DO)	INDIVIDUAL ACTIVITY (YOU DO)
PRE REQUISITES	Brain storming session invoving children with pre-requisites vocabulary and concepts related to previous knowledge. Introduction of new vocabulary and key words associated with the concept through questioning # Graphical presentation # Trend # Data # Comparision # pictograph # Bar graph # Double bar graph # Pie graph # numerical	* 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 " INTRODUCTION TO GRAPHS" on the black board and will elict 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) How will you represent data for easy reading ? 2) what type of graphs are known to you? 3) Which graph best suits to compare the performance of two companies simultaneously?	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 poses some questions to test their knowledge on prerequisites.	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 # Graphical presentation # Trend # Data # Comparision # pictograph # Bar graph # Double bar graph # Pie graph # numerical	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 converts some exemplary data into relevent graphs like bar graph or pictograph and asks children to convert 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

Double Bar Graph

Favorite Subject
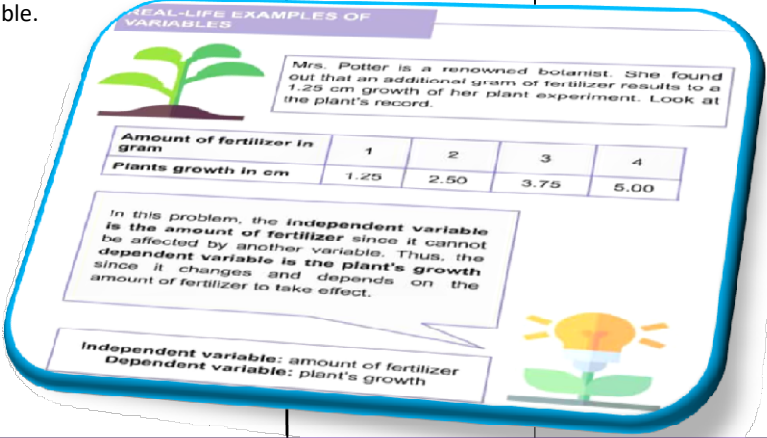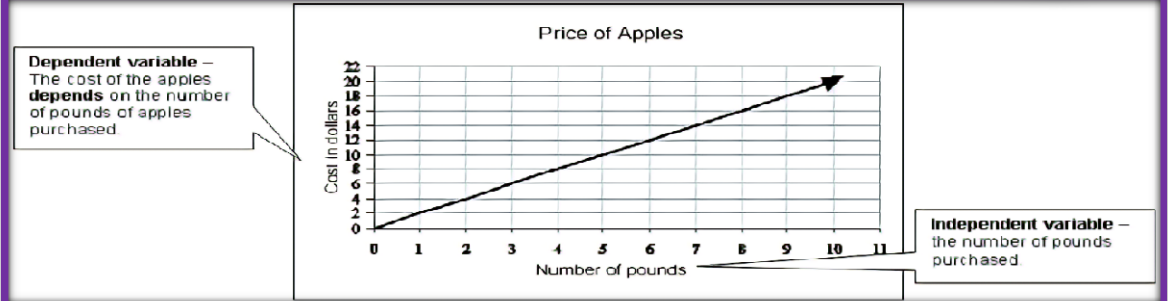
SUMMARY/ SYNOPSIS	Teacher writes synopsis on the board nd asks children to read, note down and practice.	pupils will note down and read the summary in groups	every individual spells and reads the summary and notes it down
WRITING/ EDITING	Teacher conducts a dictation on key words ,pre-requisites and 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 4	A LINE GRAPH		
CONCEPTS/STEPS	**TEACHER ACTIVITY (I DO)**	**GROUP ACTIVITY (WE DO)**	**INDIVIDUAL ACTIVITY (YOU DO)**
KEY WORDS	Brain storming session invoving children with key words # Line graph # co ordinates # x- axis, y-axis # Data change # period of time # Linear Graph	* 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 LEARNING ACTIVITY	Teacher demonstrates the process of drawing a line graph using graph board and explains the basic terminology related with the line graph through some exemplary illustrations.	Each group will understand the concepts by participation in the activity	every child learns the concept through the learning acitivity

Plot a line graph for the following data showing the change in temperature(in ^{0}F) at different points of time in a city

TIME	5 A.M	8 A.M	11 A.M	2 P.M	5 P.M	8 P.M
TEMPARATURE IN ^{0}F	40^0	50^0	60^0	60^0	40^0	40^0

Temperature Change

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 4	A LINE GRAPH		
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 # Line graph # co ordinates # x- axis, y-axis # Data change # period of time # Linear Graph	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 plots a line graph by using some data and analyses it and asks children to analyse some more in the worksheet 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 watcing similar lines

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 13.1 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 : 5 to 7	SOME APPLICATIONS		
CONCEPTS/STEPS	TEACHER ACTIVITY (I DO)	GROUP ACTIVITY (WE DO)	INDIVIDUAL ACTIVITY (YOU DO)
KEY WORDS	Brain storming session invoving children with key words # Dependent Variable # Independent variable	* 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 gives some more applicative illustrations from real life where we can effectively use line graph to depict data and analyse by making one variable dependent and the other independent.Through this teacher conducts an activity involving children where each group of children will observe the variation of dependent varaible while we change the values of independent variable.	Each group will understand the concepts by participation in the activity	every child learns the concept through the learning acitivity and observation of TLM

REAL-LIFE EXAMPLES OF VARIABLES

Mrs. Potter is a renowned botanist. She found out that an additional gram of fertilizer results to a 1.25 cm growth of her plant experiment. Look at the plant's record.

Amount of fertilizer in gram	1	2	3	4
Plants growth in cm	1.25	2.50	3.75	5.00

In this problem, the independent variable is the amount of fertilizer since it cannot be affected by another variable. Thus, the dependent variable is the plant's growth since it changes and depends on the amount of fertilizer to take effect.

Independent variable: amount of fertilizer
Dependent variable: plant's growth

Dependent variable – The cost of the apples depends on the number of pounds of apples purchased

Price of Apples

Independent variable – the number of pounds purchased

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

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 ## Dependent Variable # Independent 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 gives some illustrations and asks children to do some more by watching similar lines in the work sheet	Each group will read the similar lines and will frame some more	Every Individual will do a few more by watcing similar lines

Dependent Vs Independent Variables

Key Differences

Independent vs Dependent variables on a graph

Look at the graph on the right

□ Which is the independent variable?
□ Which is the dependent variable?

Graphs and graphing advice from http://misterguch.brinkster.net/graph.html

Independent and Dependent Variables

| 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 13.2 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 | |