LESSON PLAN 3

CLASS : 7 **TEACHER'S NAME :**

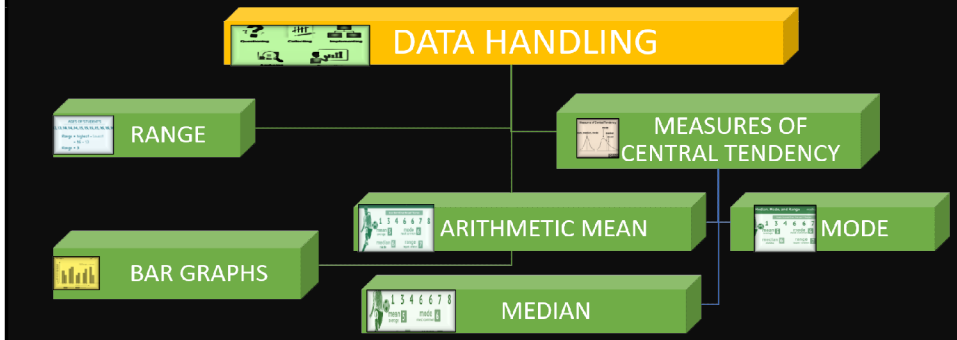
NAME OF THE UNIT	SUB-TOPICS	NO OF PERIODS REQUIRED			Time line for teaching	
		Teaching	Practice	TOTAL	From	To
DATA HANDLING	3.1 REPRESENTATIVE VALUES 3.2 ARITHMETIC MEAN 3.2.1 RANGE	1	3	4		
	3.3 MODE	1	1	2		
	3.4 MEDIAN	1	1	2		
	3.5 USE OF BAR GRAPHS WITH A DIFFERENT PURPOSE 3.5.1 USING A SCALE - DRAWING DOUBLE BAR GRAPH	2	3	5		
	TOTAL	5	8	13		
PRE-REQUISITES	KEY CONEPTS	KEY VOCABULARY				
	Every Pupil is expected to have basic knowledge in # Different number systems # Tally marks, representation of collected data in a tabular form using tally marks # Representing data in Pictographs and bar graphs # four basic operations like +,-,x and ÷	# Data Handling # Representative Values # Observation # Average # Arithmetic Mean # Tally Marks # Range # Choosing a Scale			# Highest # Lowest # Median # Mode # Frequency # Bar Graph # Pictograph # Double Bar Graph	

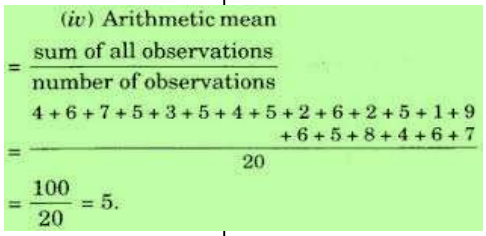
Learning Outcomes

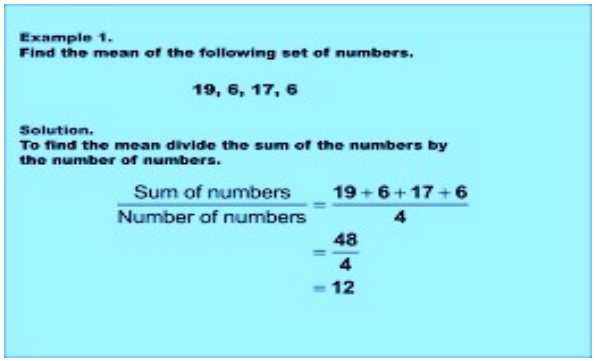
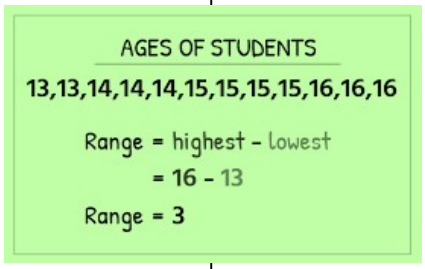
After Completion of this lesson every student will be able to

 # Find the range of a given data
 # find Arithmetic Mean, Mode and Median by using the formulae whereever necessary.
 # draw bar graphs and double bar graphs to the given data
 # recognize the significance and appreciate the importance of Measures of Central Tendency in real life situations.

Teaching Learning Process

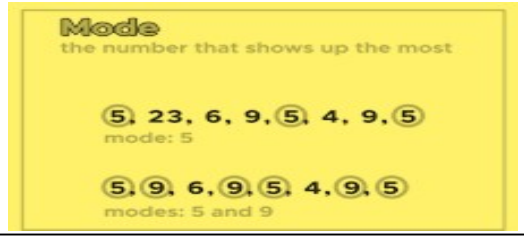
MIND MAPPING	Experience & Reflection
	# Pupils will recollect their knowledge on basic data handling concepts like collecting data, representing them in pictographs, writing tally marks etc and will utilize in learning the new concepts like measures of central tendency etc., # Students will experience the usage of data handling in real life situations.

TEACHING PERIOD : 1	REPRESENTATIVE VALUES, ARITHMETIC MEAN, RANGE		
CONCEPTS/STEPS	**TEACHER ACTIVITY (I DO)**	**GROUP ACTIVITY (WE DO)**	**INDIVIDUAL ACTIVITY (YOU DO)**
KEY WORDS & 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 * Data Handling * Tally Marks * Representive Values * Observation * Average * Arithmetic Mean * Range	* 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 " DATA HANDLING" on the black board and will elict 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 the chapter
CONCEPTUAL UNDERSTANDING	Teacher introduces the concept of representative values by citing some real life examples and explains the process of finding Range by Subtracting Lowest Value from the Highest Value in the given data. Later teacher introduces the concept of Arithmetic mean by drawing their attention towards some real life examples where there arises a necessity of finding mean . We use mean in sevaral real life situations unknowingly. example on an average 150 mg of rice is given to each pupil under mid-day meal. Infact all the pupils need not eat the same quantiy.Some may eat below 150 gms and some may eat more than 150 gms. These are the situations where we use the concept of Arithmetic mean. When we find the average mark of a class in an exam, every student can compare his own mark with class average and check his position in the class and decide whether he has to improve or going good. After explaining these type of real life examples teacher introduces the formula for finding out the mean	Hetrogeneous groups are formed to participate in the activity and each group participates in the activity actively and learn the concept	Each student in the group participates in the activity and learns concept of multiplication of fractions
LEARNING ACTIVITY			
SUMMARY	Teacher writes the summary of the concept in a step wise procedure 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 along with example sums	every group will do the sums by discussion among each other	every individual solves the sums on their own

PRACTICE PERIOD: 1,2,3	REPRESENTATIVE VALUES, ARITHMETIC MEAN, RANGE		
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 * Data Handling * Tally Marks * Representive Values * Observation * Average * Arithmetic Mean * Range	Whole class activity : one child comes to the board and reads the key words loudly and the remaining	Every child comes to the board and reads the key words and notes them down in their note books
SIMILAR LINES READING	Teacher finds the range and mean of some data and asks children to find the same for some more by watching similar lines  **Example 1.** **Find the mean of the following set of numbers.** **19, 6, 17, 6** **Solution.** **To find the mean divide the sum of the numbers by the number of numbers.** $\frac{\text{Sum of numbers}}{\text{Number of numbers}} = \frac{19+6+17+6}{4}$ $= \frac{48}{4}$ $= 12$	Each group will read the similar lines and will frame some more by discussion  AGES OF STUDENTS 13,13,14,14,14,15,15,15,15,16,16,16 Range = highest - lowest = 16 - 13 Range = 3	Every Individual prepares their own similar lines using the lines prepared by the teacher
SUMMARY/ SYNOPSIS	Teacheronce again writes important key words and step wise procedure adopted in finding range and mean of given data 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 exercise 3.1 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 the forth coming practice sessions

TEACHING PERIOD : 2	MODE		
CONCEPTS/STEPS	**TEACHER ACTIVITY (I DO)**	**GROUP ACTIVITY (WE DO)**	**INDIVIDUAL ACTIVITY (YOU DO)**
KEY WORDS	Brain storming session invoving children with key words # Mode # Popular # Tally Marks # frequency	* 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 introduces the concept of mode by conducting an activity in which pupils will engage in electing their leader from amongst the contestors for the post of class leader. In which after conducting election in a class of 30 pupils for class leader among 5 contestants Contestant A got say 8 Votes Contestant B got say 12 Votes Contestant C got say 3 Votes Contestant D got say 5 Votes Contestant E got say 2 Votes and teacher will ask the children themselves who is the winner. The answer is obviously 'B' as since he is more popular among others. Now teacher introduces the concept of mode is nothing but the most popular or most frequent value in a data is the mode and furhter explains that there can either be more than 1 mode or no mode to some datas. Teacher here illustrates some examples to ascertain that every pupil understands what mode is and how to find it. **Find the mode of the following set of numbers.** 4 10 27 12 4 4 12 27 7 34 12 48 3 34 12 42 4 **Solution.** **Arrange the numbers from least to greatest. Find the term that occurs most often. A data set can have no mode or more than one mode.** 4 10 27 12 4 4 12 27 7 34 12 48 3 34 12 42 4 3 4 4 4 4 7 10 12 12 12 12 27 27 34 34 42 48 **here this data is bimodal i.e, it has two modes 4 and 12**	pupils are divided into hetrogenous groups and given different number pairs to multiply using number line and pattern method by discussion Mode of the above Data is 15 as that was the number which has highest frequency	Each student in the group participates in the activity and learns the process of multiplication of integers
SUMMARY	Teacher once again writes important key words and step wise procedure adopted in finding mode 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 and from exercise 3.2	Every group will do the sums by discussion among each other	Every individual solves the sums on their own

Number	Tally Marks	Frequency
12	|||	3
13	||||	4
14	𝍸	5
15	𝍸 𝍸	10
16	𝍸 |	6
17	||	2
18	|	1
19	|	1

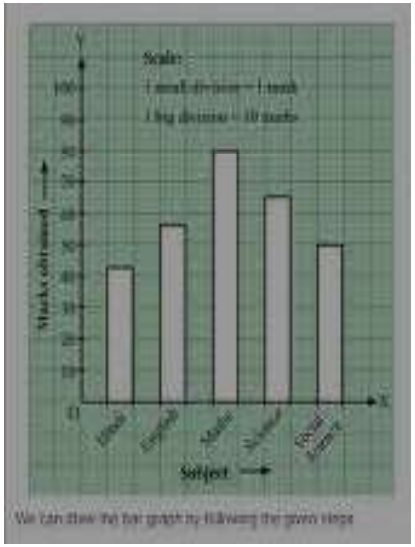
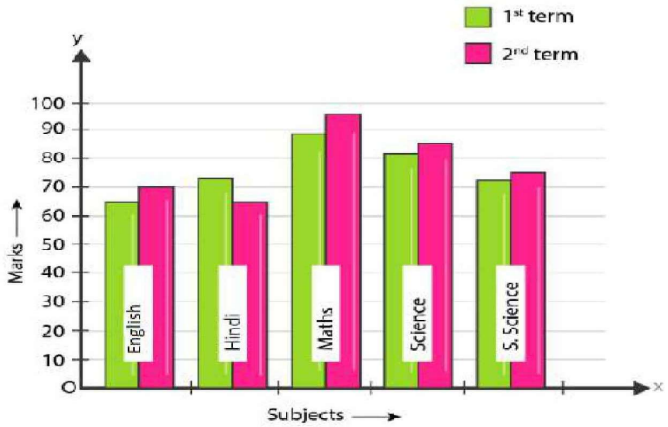
PRACTICE PERIODS:4	MODE		
CONCEPTS/STEPS	**TEACHER ACTIVITY (I DO)**	**GROUP ACTIVITY (WE DO)**	**INDIVIDUAL ACTIVITY (YOU DO)**
KEY WORDS READING	Teacher writes the key words from previous class's teaching period and asks children to read and write them in note books # Mode # Popular # Tally Marks # frequency	Whole class activity : one child comes to the board and reads the key words	Every child comes to the board and reads the key words and notes them down in their note
SIMILAR LINES READING	Teacher solves some example sums finding mode and asks children to find mode to some more sums by watching similar lines 	Each group will read the similar lines and will frame some more by watching them	Every individual will watch the similar lines and will frame some more
SUMMARY/ SYNOPSIS	Teacher once again writes important key words and step wise procedure adopted in finding mode of given data 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 how to find mode in successive upcoming practice sessions
WRITING/ EDITING	Teacher gives some questions from Try These sections and guides them in doing the some sums of exercise 3.2 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	

TEACHING PERIOD : 3	MEDIAN		
CONCEPTS/STEPS	**TEACHER ACTIVITY (I DO)**	**GROUP ACTIVITY (WE DO)**	**INDIVIDUAL ACTIVITY (YOU DO)**
KEY WORDS	Brain storming session invoving children with key words # Median # Middle Value # Ascending Order # Descending Order # Middle Observation	* 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	Teacher introduces the concept of median by citing some real life examples.Suppose Our school's Head master plans to supply stiched uniform to all the pupils of class 8th in our school but he is running short of time. He is in a hurry to provide a unique measurements to the tailor rather than taking all measurements. Then the question is which measurement shall he take as ideal for the class. Obviously the middle most person's measurements when they are stood in ascending/Descending order will be the ideal. Why because if we take the measurements of the shortest person as ideal the dress will be too tight to the tallest and if we take the measurements of the tallest person as ideal, the dress will be too loose to the shortest. So it would be ideal if we tal the measurements of the middle most person. In this way teacher introduces the concept of median and further strengthens the concept by some illustrations.	Hetrogeneous groups are created and different multiplications in decimals are given among groups	Every child participates in expanding the numbers involving 5 digits and ascertains learning.
SUMMARY	Teacher writes the summary of the concept and step wise procedure in finding mode and asks children to read, 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 section and exercise sums of 3.2,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

- The Median is the middle observation of an ordered (from low to high) data set
- Examples:
  - 1, 2, 4, 5, 5, 6, 8
    - Here, the middle observation is 5, so the median is 5
  - 1, 3, 4, 4, 5, 7, 8, 8
    - Here, there is no "middle" observation so we take the average of the two observations at the center

$$\text{Median} = \frac{4+5}{2} = 4.5$$

PRACTICE PERIODS: 5	MEDIAN		
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 # Median # Middle Value # Ascending Order # Descending Order # Middle Observation	Whole class activity : one child comes to the board and reads the key words loudly and the remaining	Every child comes to the board and reads the key words and notes them down in their note books
SIMILAR LINES READING	Teacher solves some example sums finding median and asks children to find median to some more sums by watching similar lines Find the Median of the following observations 12,45,31,52,18,4,25,36,49 sol: By arranging the data in ascending order we get 4,12,18,25,31,36,45,49,52 by observing the data, the middle most observation is 31 hence median for the above data is '31'.	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 procedure adopted in finding median of given data and asks children to read ,note down and adopt.	Pupil groups will read the summary and utilize	Teacher focuses on every individual so that each one knows and adopts the concept learnt in successive upcoming practice sessions
WRITING/ EDITING	Teacher asks children to solve the sums of exercise 3.2 on their own and teacher checks the writings of children	One group will check the writings of the other and vice versa	

TEACHING PERIOD : 4,5	USE OF BAR GRAPHS WITH A DIFFERENT PURPOSE, USING A SCALE - DRAWING DOUBLE BAR 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 * Bar Graph * Double Bar graph * Scale * X-axis * Y-axis	* Students read the key words and 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 demonstrates the concept of usage of Bar graphs and using a scale and drawing double bar graph through some illustrations. Teacher here explains how clearly a bar graph or double bar graphs visualizes the data to be represented and compared.	Each group will be given some data and are asked to draw draw bar and double bar graphs by discussion	Every child participates in the activity and learns the the concept
LEARNING ACTIVITY	 (ii)The maximum numbers of students are in class V. (iii) The minimum number of students are in class X. **4. The performance of students in 1st term and 2nd term is as given below. Draw a double bar graph choosing appropriate scale and answer the following:** **(i) In which subject, has the children improved their performance the most?** **(ii) Has the performance gone down in any subject?** **Solution:** 		
SUMMARY	Teacher once again writes important key words and step wise procedure adopted in drawing graphs 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 section/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

Subject:	English	Hindi	Maths	Science	S.Science
1st term:	67	72	88	81	73
2nd term:	70	65	95	85	75

PRACTICE PERIODS: 6,7,8	USE OF BAR GRAPHS WITH A DIFFERENT PURPOSE, USING A SCALE - DRAWING DOUBLE BAR 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 * Bar Graph * Double Bar graph * Scale * X-axis * Y-axis	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 a graph and asks children to draw graphs to some more problems by watching similar lines **Bar Graph** - Rectangular bars with lengths proportional to the values that they represent. This double bar graph shows the comparative profits for 2 consecutive years. ABC Pvt. Ltd. Profit Graph Profit: 600, 500, 400, 300, 200, 100, 0 January, February, March, April 2011: 430, 250, 350, 450 2012: 550, 350, 175, 390	Each group will read the similar lines and will frame some more by discussion	Every Individual will frame some more on their own
SUMMARY/ SYNOPSIS	Teacher once again writes important key words and step wise procedure adopted in drawing graphs and asks children to read ,note down and adopt.	Pupil groups will read and adopt the procedure	Teacher focuses on every individual so that each one learns the concept of drawing graphs in successive upcoming practice sessions
WRITING/ EDITING	Teacher gives some questions from examples as well as exercise 3.3 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	