Mathematics

Learning Outcomes	*Sources/Resources*	*Week-wise Suggestive Activities (to be guided by parents with the help of teachers)*
The learners • uses algorithms to multiply and divide fractions/decimals. • finds various representative values for simple data from her/his daily life contexts like mean, median and mode • recognises variability in real life situations, such as, variations in the height of students in her class and uncertainty in happening of events like throwing a coin • interprets data using bar graph such as consumption of electricity is more in winters than summer, runs scored by a team in first 10 overs etc. • represents daily life situations in the form of a simple equation and solves it. • classifies pairs of angles based on theirproperties as linear, supplementary, complementary, adjacent and verticallyopposite and finds value of the one when the other is given. • verifies the properties of various pairs of angles formed when a transversal cuts two lines.	NCERT Mathematics Textbook for Class VII **Theme** **Fractions and Decimals** **Theme** **Data Handling** **Theme** Simple Equations Chapter5 Lines and Angles **E-resources** **Theme** **Fractions and Decimals** https://nroer. gov.in/55ab34ff 81fccb4f1d80 6025/ page/58dd39 33472d4a03 227bf93c https://nroer.gov .in/55ab34ff8 1fccb4f1d806025/ page/ 57df7fe016b51 c25f097831d **Theme** **Data Handling** https://nroer.gov. in/55ab34ff81 fccb4f1d80 6025/page/5b 473c4216b51c0 1f1742322	### WEEK 5 • Initially revisiting of decimals can be done by establishing a relation between fractions and decimals studied in Class VI. • Discussion about multiplication of decimals may then be initiated using that of fractions. Use of grids of 100 can be made. For e.g. 0.2 x 0.3 can be written as 2/10 x 3/10. It can be done using multiplication of fractions and then representing the product back in decimal form. • In a similar way, discussion about division of decimals can be introduced. Students may be encouraged to create and solve the examples and send them to the teacher. ### WEEK 6 • Activities given in the mathematics textbook for Class VII 'Fractions and decimals' and in the laboratory manual for elementary classes can be referred. Students should send their observations online. Both the books are available on NCERT website. • The students can be encouraged to attempt features like 'Try These' and 'Think, discuss and Write'of the mathematics textbook for Class VII. Moreover, exercises from the textbook supported by problems from Exemplar problem book for Class VII will deepen the understanding about decimals. • A brief recall of Data and its organisation may be done. Students may be asked to collect data from situations around, such as, persons in their neighbourhood

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Theme

Simple Equations

http://ncert.nic. in/textbook/textbook.htm ?gemh1=4-15

Theme

Lines and Angles

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children who help in household works or who do regular exercises during this period etc. Information may be collected using online medium. This may be organised and sent to the teacher. Teacher may discuss about creating more such tasks with the students and ask them to send the data after organising it.

WEEK 7

- Students may be encouraged to send different situations around them. For e.g. Temperature in their city on each day of a month say, May. Students may collect the information from Internet/ Newspapers/ magazines, etc. They may be asked, if we want to know the temperature on a particular day in May then what could it be approximately? The discussion on this question can give rise to the concept of Average or more broadly Arithmetic mean.

- The method of finding arithmetic mean (AM) can then be discussed.

- The concepts of other two central tendencies, i.e., mode and median can also be generated by thinking of daily life situations and then formal ways of calculating them can be thought of.

- The features like 'Try These' in the textbook will help in the skill of developing questions and 'Think, Discuss and Write' will make them think closely on the concepts learnt.Lot of cross questioning can be encouraged.

WEEK 8

- Students may be motivated to create examples and see which central tendency can be used there. For e.g.,a shopkeeper selling shirts has range of sizes of shirts.To maximize his profit, he needs to buy shirts of those sizes which are sold most. Which concept can be used AM,Mode or Median.

- Exercises in textbook and exemplar problem provide questions related to daily life. Students may be motivated to discuss and attempt them.

- It may be discussed how visual presentation of data can help in quick understanding of a situation. Students may refer Newspapers/Magazines/Internet to look for Bar graph and double bar graph. It could be about sports, agriculture yields, rainfalls, etc. They should send their observations to the teacher online. This will make them realise the importance of mathematics in different fields of activity around.

- Formal ways of drawing and reading bar graphs/double bar graphs can then be discussed.

WEEK 9

- The students may be encouraged to send situations from their daily life where they are required to predict and take a decision about some event. For e.g., possibility of rain next day. They may consult other family members and friends on phone and think of more such contexts.

- The concept of probability of an event can then be arrived at after enough discussions.

- After this concept discussion may be initiated about what an equation is. Students may be given different conditions, based on which they may form an equation using some variable. For e.g., Saina has purchased some pens, cost of each pen is Rs 6. She has spent Rs. 90 on the purchase of pens. How many pens did she purchase? Students may be encouraged to form conditions and make equations using different variables say, y, n, m, etc.

- After discussing setting up equations, discussion about their solutions may begin. Solutions of equations with guessing may be initiated and then gradually shift to formal methods.

Week 10

- The complexities in setting up new equations may be increased, and solutions may be found. An activity can be done as follows: Give the students value of x as say, x = 4. Ask them to form as many equations as possible using rules of addition, subtraction, multiplication and division of numbers on both sides. Some of them are 3x-4=8, (x/2) +1 = 3 etc. Different students can be given different values of x.

- Initially equations with single operation between variables and numbers may be discussed. For example,

7x = 21 or p/8 = 3. Encourage students to form their own equations and send. Later two or more operations can be introduced. For e.g.,2y + 3 = 7 or 6t/7 - 5 = 7.

- Students may then attempt solutions of equations with two or more operations. Step by step way of solving the equation may be encouraged.

- Use of exercises from the textbook and Exemplar problem book will be helpful in understanding the concepts.

Week 11

- Word problems are helpful in understanding the formulation of equations. Translating word statements in terms of equations, solving them and getting the required conclusion is an important skill the students should be exposed to.

- A revisit of the basic elements of geometry, like point, line segment, etc., can be done by taking objects around the students. Lots of objects and their resemblance to these concepts can be discussed.

- Students may be asked to measure angles between the edges of plane faces of different objects say, tabletop, window frame, paper folds, etc., they may be asked to add the pairs of such angles formed. Classify the sums obtained as less than 90b, equal to 90^0, more than

- 90^0 but less than 180^0, equal to 180^0, etc. Concepts of complementary and supplementary angles can be discussed.

- In a similar way, students may be asked to observe different objects like vegetable chopper, scissors etc., look for angles in these objects and send their observations to the teacher. The concepts of adjacent angles, , vertically opposite angles can then be discussed.

WEEK 12

- Students may be motivated to look for objects to see if some of its edges meet and some do not. A list of such objects and the description of such edges may be sent to the teacher. Discussion on Intersecting and parallel lines can be initiated.

- Different types of angles formed with respect to parallel lines can be done. Students may draw parallel lines and find methods to check whether these are parallel or not.

- The terms alternate interior angles, corresponding angles may be discussed. Students may be asked to draw parallel lines and intersecting lines and check for these angles. In which case they are equal and where they are not. Students may be encouraged to draw their inferences based on these observations. General rules may be thought of.

- Visual activities in e-resources on NROER may be seen. Innovative exercise given on 'Think, Discuss and Write', textbook exercises and Exemplar problem book exercises may be encouraged to be attempted.