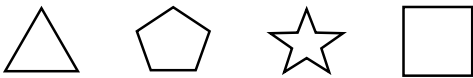# Class-V

Mathematics (Class-V)

Learning Outcomes	Resource	Week-wise Suggestive Activities (to be guided by Parents with the help of teachers) (to be guided by Parents)
Child - • reads and writes numbers bigger than 1000 being used in her/his surroundings	**NCERT book/State Textbook**	**WEEK-1** ***Reading of large numbers:*** Get the context of large numbers from newspapers and ask the student to read the numbers Some new terminology like Lakh, Crore, Arab, etc or Thousands, Million, Trillion, etc. may come to the student's knowledge while reading these numbers. Discuss with them the interrelationship in both the Indian and International system of numeration. For example, the total number of corona infected persons in each country and the total number in the world. Money allocated to various activities in the national budget for 2020-21 Textbooks may also have such numbers ***Writing of large numbers*** Let the student write large numbers in both Indian and International system. The two activities may be of writing numbers in words and then numeral for the same and vice-versa first reading a numeral and writing in words. **WEEK-2** Expanding numbers in different ways. Engage the student in describing large numbers in terms of number of thousands, lakhs, etc. For example like 12 lakh as 10,00,000+2,00,000 12,00,000=5,00,000+5,00,000+2,00,000 Engaging the student in finding the number of 2000/500 rupee notes to make a certain amount

• performs four basic arithmetic operations on numbers beyond 1000 by an understanding of place value of numbers • divides a given number by another number using standard algorithms		**WEEK-3** The student can be engaged in addition and subtraction of numbers from daily life context. For example, a person donated ₹1,26,000 and another person from the same family donated ₹4,25,000, what is the total amount they both donated? Similarly, if a person wants to buy a car that costs ₹25,03,756, and he/she has only ₹ 18,00,000 the rest he/she has to get loan from a bank. What is the amount he/she will have to have as a loan? Reading and comparing different rate charts and bills for a purchase is a good opportunity to apply and learn operations on numbers. Contexts related to division of large numbers are often available in every student's life. Avail those contexts, and ask the student to develop their own strategies to solve such problems. For example, to divide 9450 by 25, divide 9000 by 25, 400 by 25, and finally 50 by 25 and gets the answer by adding all these quotients.
• estimates sum, difference, product and quotient of numbers and verifies the same using different strategies like using standard algorithms or breaking a number and then using operation.	Chapter: The Fish tail	**WEEK-4** For any problem solving involving operations numbers estimation and verification by actual operation is very important. For example, in a stadium there are 25340 seats and the average price of each seat is ₹ 1480, what is the total amount collected, if all seats have been sold? In such a case a better estimate can be made by multiplying 25000 by 1500 i.e. ₹3,75,00,000 app. e-content https://diksha.gov.in/play/collection/do_31 2981338824802304120?contentType=TextBo ok&contentId=do_312936528888012800192

CLASS V

Subject: Mathematics (Class V)

Learning outcomes	*Resource(s)*	*Week-wise suggestive activities (to be guided by parents with the help of teachers)*

The learner
• explores idea of angles and shapes
  ✓ classifies angles into right angle, acute angle, obtuse angle and represents the same by drawing and tracing
  ✓ identifies 2D shapes from the immediate environment that have rotation and reflection symmetry like alphabet and shapes
• acquires understanding about fractions – finds the number corresponding to part of a collection – identifies and forms equivalent fractions of a given fraction
  ✓ expresses a given fraction 1/2 , 1/4, 1/5 in decimal notation and vice-versa. For example, in using units of length and money
  ✓ half of Rs. 10 is Rs.5 – converts fractions into decimals and vice versa
	NCERT/State Textbook for Class V
	
	Material Required
	• Match sticks/ Toothpicks
	• Rubber tubes to join the ends of the match sticks.
	Chapter 2 Shapes and angles
	Chapter 3 How many squares?
	Chapter 4 Parts and wholes
	Chapter 5 Does it look the same?
	Chapter 7 Can you see the pattern?
	
	QR codes content related to these chapters available on NROER
		WEEK 5
		
		Theme: Shapes and angles
		• Ask the child to observe a shape and tell if the given shape is closed or open. Random shapes can be drawn on paper or paper cut-outs of various shapes can also be used.
		• Any shape can be shown to the child and ask how many sides the shape have. Simple shapes can be drawn on paper or paper cut-outs can be used.
		• Ask the child to draw a shape of a particular number of sides. For example, a child can be asked to draw a shape with foursides. In this case, a child can draw a square or rectangle, etc.
		Activity 1: Ask the child to take three or more sticks and join them end to end by rubber tubes. These shapes (and other shapes) can be used for the above purpose
		
		Conduct the following discussion related to the above shapes.
		  ✓ Which of the shapes are closed?
		  ✓ Which are open?
		  ✓ How many sides does each shape have?
		Activity 2: A random shape can be drawn on a paper or paper cut-outs can be used. Ask the child to mark all the angles he/she can identify in the shape. Let children explore angles made by doors while opening /closing, hand of clock, different body positions while exercising/Yoga etc.
		Activity 3: Give the child some matchsticks. Ask the child to make a particular shape using a particular number of matchsticks. For example, ask the child to make 8 triangles using 6 matchsticks only. ORAsk the child to make 5 squares with 12 matchsticks, etc.
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• identifies the pattern in triangular number and square number	https://diksha.gov.in/play/collection/do312937229886611456142?contentType=TextBook&contentId=do_312936516860266444481129	**WEEK 6** **Theme:** Measurement of angles **Activity 1:** Make different shapes using match sticks/toothpicks and rubber tubes. Now ask the child to observe the angles made by two adjoining sticks. How many angles are there in a triangular shape? How many angles will be there in a closed shape made up of six sticks? Make an estimate and then verify by actually forming the shape. • Ask the child to observe the angles made by opening/closing of doors, angles made by the wall with the ceiling, etc. • Show the child an angle and ask him/her to first tell if the angle is acute, obtuse, or right angle. **Activity 2:** Making an Angle Tester. Cut two strips from a cardboard sheet. Fix them with a drawing pin such that both the strips can move around easily. Use this tester to check the measure of the angle. • Engage the child to guess the measure of the angle. • Further ask the child to use a protractor to verify if his guess of the angle was correct. • Ask the child to make a right angle, acute angle, obtuse angle, etc., with his hands and even in the yoga postures. • Further ask the child to make a square, circle, rectangle, etc., with his/her finger and to justify the shape made by him/her. https://diksha.gov.in/play/collection/do_31298133882480230412?contentType=Text-Book&contentId=do_31297680142205747216933 **WEEK 7** **Theme:** Perimeter • Make a dot grid on a paper. Ask the child to make as many rectangles as he/she can using the dots of the grid. • Further, ask the child to shade the largest rectangle that he made in the grid. Ask the child to tell why a particular rectangle is largest. (Note: A square is also a rectangle) • Now ask the child to shade the rectangle that has the largest boundary. • Ask the child to measure the boundary using a thread or by counting the sides of the squares at the boundary.

- Let the child now understand that the measure of the boundary of a closed shape is called its perimeter.
- The child can also be asked to find the perimeter of any object using a thread. For example, ask the child to find the perimeter of the cover page of his notebook, etc.
- Engage the child in finding the perimeter of bed, room and other objects in his/her vicinity. These objects may also include the objects whose boundary cannot be measured by a straight edge/ruler.
- Ask the child to arrange 7 squares in different ways. Then ask the child which combination would give minimum perimeter and which combination would give maximum perimeter.

WEEK 8

Theme: Area

Activity 1: Make a dot grid. Ask the child to make as many rectangles as he/she can using the dots of the grid. (Note: A square is also a rectangle)

- Now, ask the child to shade the biggest rectangle that he made in the grid.Now ask the child to count the number of squares that are enclosed in the biggest rectangle. From here the concept of area can be introduced to the child as the measure of the region bounded by a closed shape on a surface.

Activity 2: Take a graph paper and trace different objects/ handspan of different family members, etc., on the graph paper and ask the child to estimate the area of the given shape using the grid by counting the squares.

Activity 3: Make a square grid on a sheet of paper. Ask the child to make as many shapes as he can make by shading say, exactly 7 squares. Then ask them to find the perimeter of each shape. Help them observe that the area remains the same but the perimeter may vary. Find which of the shapes drawn with the same area has the largest perimeter.

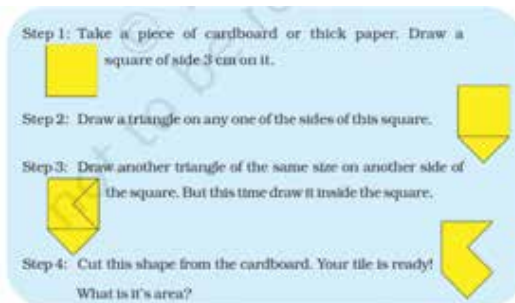- Estimate and then calculate the area of different currency notes using a graph paper or a 1x1 square grid.

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Week 9

Theme: Patterns and tiling

- The child already has an idea about patterns of shapes seen on floors, walls, pavements, pedestrian paths etc.

- They have also studied in earlier classes about the shapes or combinations of shapes that can be used as tiles to fill a given region completely without overlapping and leaving gaps. Encourage children to make tiling patterns firstly with regular shapes then with a combination of regular shapes and ultimately with irregular shapes.

Activity: Make your own tile.

Step 1: Take a piece of cardboard or thick paper. Draw a square of side 3 cm on it.

Step 2: Draw a triangle on any one of the sides of this square.

Step 3: Draw another triangle of the same size on another side of the square. But this time draw it inside the square.

Step 4: Cut this shape from the cardboard. Your tile is ready!

What is it's area?

- Children can make patterns using motifs/objects/designs/alphabets by rotating them at different angles like half turn, one-fourth turn, full turn, etc., clockwise or anticlockwise.

- The children can be given patterns and asked to verbalise rules behind the pattern and extend them. Many such examples are given in the text books.

- Rules can be given to the child for the construction of patterns and asked to extend it on the basis of the rule.

- Patterns can also be used for introduction of degree of rotational symmetry. For example, given a shape you have to turn it to 45 degrees (half of a quarter turn) each time until you get the same shape again.

- Also give examples of patterns which are breaking a rule and ask them to identify it. For example, in the pattern 4, 9, 16, 25, 50, 64 find the number that is wrongly written.

- The purpose of playing with patterns should be the skill of generalisation. The child should be able to predict what will come at say 50th position or 115th position, etc.

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WEEK 10

Theme: Fractions

- Engage the child to draw flags of different countries. Ask her/him to observe and estimate the fraction of area covered by a particular color in the flag. Ask her/him to notice in how many parts the flag is divided? Are the parts equally divided? How many parts are there in that flag, what part of the whole is represented by each part. Ask the child to write it in the form of fractions.

- Activity: Making Magic Top: Take a cardboard piece. Draw a circle of radius 3 cm and cut it out. Divide the circle into 8 equal parts. Now each part is 1/8th of the circle. Colour 2/8th red, 1/8th orange, 1/8th yellow, etc., as shown. Push a matchstick through the centre of the circle and spin it like a top.


- Divide different shapes into equal parts in many different ways. Name each part. For example, if the shape is divided into six equal parts then each part will be called one-sixth of the whole shape. On shading four parts out of six the shaded region will be called four-sixths of the whole shape.

- The child can make different pattern drawings like given a 4x4 grid you have to color 2/8th white, 1/8th black, 1/8th red.

- Usage of fractions as an operator on numbers in different contexts- 1/8th of a group of 16 people, cut ½ of a meter, color 1/3rd of the hats red, half a kg of tomatoes and calculating the number.

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WEEK 11

Theme: Equivalent fractions

Activity: Making Equivalent fraction chart

1. Take four origami sheets (make sure they are of the same size).

2. Fold the paper in two equal parts and make a crease on the first sheet.
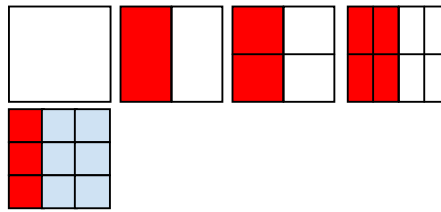
3. Ask the child to shade ½ part of this sheet.

4. Make creases on the second sheet such that it is divided into 4 equal parts. Ask the child to shade 2/4 part of this sheet.

5. Make creases on the third sheet such that it is divided into 8 equal parts. Ask the child to shade 4/8 part of this sheet.

6. Make creases on the fourth sheet such that it is divided into 9 equal parts. Ask the child to shade 3/9 part of this sheet.

7. Now keep all the four sheets with each other and ask the child if the shaded portion in each is the same but named differently. The fraction that shows the same part of a whole are called equivalent fractions. From here it should be explained that the first three sheets look the same because they are equivalent fractions and the fourth sheet looks different because it represents a different fraction (i.e., 3/9= 1/3 which is not equivalent to ½=2/4=4/8).

  ✓ Similarly, the relationships can be constructed with equivalent fractions by folding a chapati. For example, divide the chapati into two equal parts (½ each). Take one part and further divide it into two equal parts (we will get 1/4th). Now ask the child to observe how many 1/4ths make half a chapati so two 1/4ths make half a chapati, so ½ =2/4 and so on.

• After the understanding about equivalent fractions children should be motivated to construct a rule to get equivalent fractions.

WEEK 12

Theme: Rotational Symmetry

Activity: Origami

• Make different shapes using origami paper. A windmill, a dog, cat, boat or any shape can be made. You can surf the internet to see how it can be made. Make two copies of the shape for comparison.

• Now keep one copy of the shape on the left and the other on the right.

• Keep the left shape stationary and rotate only the right shape.

| | | • Rotate the right shape at different angles - 90 degree, 120 degree, 180 degree.
• On rotating the right shape at every angle, ask the child if the left and the right shapes still look the same.
• The same activity can be repeated with the cut-outs of different numbers and alphabets also.
• Check the blades of a ceiling fan. They look the same on rotating three times about its center. There are many such shapes who look the same more than once while rotating about their centers in a complete round. Such shapes are said to have rotational symmetry.
• The number of times an object looks the same while rotated in a round is called order of rotational symmetry. For example the order of rotational symmetry of a ceiling fan is three.
• The child can be asked to check the rotational symmetry of different alphabet, shapes of triangles, squares, rectangles, circle etc. Find the order of rotational symmetry of different objects in your house like a plate, table top, book cover etc.

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