Vision Empower & XRCVC

Teacher Instruction KIT

Addition

Syllabus: Karnataka State Board Subject: Math Grade: 4 Textbook Name: Karnataka state board Chapter Number & Name: 3, Addition

1. OVERVIEW

1.1 OBJECTIVE & PREREQUISITES

Objective

Students will be able to

- Add four-digit numbers without regrouping.
- Add four-digit numbers with carrying.
- Able to solve verbal problems in daily life by writing numbers according to their place value.
- Add mentally and quickly by knowing the process of addition.

Prerequisite Concept

- Addition of 4 digit numbers
- Magic square

TIK_MATH_GRADE3_CH3_Addition

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Kindly Note: Activities marked with * are mandatory

OVERVIEW

OBJECTIVE & PREREQUISITES

<u>LEARN</u>

KEY POINTS LEARN MORE

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EXERCISES & REINFORCEMENT

PRACTICE EXERCISES Activity 1: Practice and Recall IMPORTANT GUIDELINES* Exercise Reading Perform Textbook Activity Provide Homework

2. LEARN

2.1 KEY POINTS

• The addition is taking two or more numbers and adding them together, that is, it is the total sum of 2 or more numbers.

2.2 LEARN MORE

3. ENGAGE

3.1 INTEREST GENERATION ACTIVITY

Activity 1: Addition puzzle

Materials Required: None *Prerequisites:* Addition and place value.

- Ask the following questions to the students.
 - I have 27 ones and 4 hundreds. What number am I?
 - I have 6 ones, 7 tens and 14 hundreds. What number am I?
 - I have 15 ones, 8 hundreds and 1 thousand. What number am I?
 - I have 5 tens, 8 tens and 15 hundreds. What number am I?
 - I have 4 tens and 54 hundreds. What number am I?
 - I am a two-digit number. My ten digit number is the double of my one's digit.
 The sum of my digit is nine.

3.2 CONCEPT INTRODUCTION ACTIVITIES **ADDITION OF 4 DIGIT NUMBERS**

Activity 1: Introduction to an addition of 4 digit numbers.

Materials Required: Taylor frame *Prerequisites:* Addition

Activity Flow

- Ask the following questions to the students.
 - 1. If the chair costs 350 rupees and the table costs 500 rupees, what is the total cost of the both furniture?
 - 2. If Siva has 200 groundnut seeds, 790 peas, 679 bean seeds what is the total no. of seeds does he have?
- Tell the cost of a book, cloth, Taylor frame and tactile ruler and ask them to find the total.
- Ask the student to use the Taylor frame to solve the following questions

The table shows the number of people visiting an art museum for over 3 months.

	January	February	March
Child	28	34	56
Adult	59	45	55
Senior	15	22	?
Total	?	?	?

The questions are:

- 1. What is the total number of people that visited the art museum in January?
- 2. Compared to January, how many more children go to the museum in February?
- 3. What is the total number of people that visited the art museum in February?
- 4. 16 more seniors visited in March. How many people visited the museum in March?
- 5. Which month had the highest number of visitors?

Activity 2: The prices are represented through symbolic pictures and are added. *Materials Required*: Braille cards of 1000, 100, 10, 1 place value of 9 cards each, Taylor frame.

Prerequisites: Place value

- Give them different 4 digit numbers.
- Let them write the number in an expanded form on a Taylor frame.
- Ask them to choose the respective shapes for the numbers.

Example: 4567 = 4000 + 500 + 60 + 7 + 1000 + 30 + 2 = 5599

So they have to take 4 thousand cards, 5 hundred cards, 6 tens cards and 7 unit cards.

For a number 1032 = 1000 + 30 + 2, they have to take 1 thousand cards, 3 tens cards, 2 unit cards.

• Finally ask them to add the total number of thousand's cards, hundred's cards, tens cards and one's card and at last, read the number. Similarly, give them the 4 and 3 digit numbers to add.

Activity 3: Addition with carrying

Materials Required: Taylor frame *Prerequisites:* Place value

Activity Flow

To introduce the concept of addition with a carry for any digit number for the first time otherwise, it is optional.

- Arrange the paper cups in rows and columns (3 rows and 3 columns)
- Explain to the students that each cup in units place represents a chair where only one person can sit and in total 9 people will sit.
- There are 9 sofas in the tens place, where 10 people can sit on each sofa. Therefore 90 people will be there in the tens place.
- There are 9 rooms in the hundreds place, in each room 100 people can stay. Therefore 900 people will be there in the hundreds place.
- There are 9 big halls, in each hall, 1000 people can stay. Therefore 9000 people will be there in the thousand's place.
- Place single ice cream sticks in the units place in all 9 paper cups, if we want to place one more, since every cup is occupied, then combine one stick with 9 sticks and place it in the tens place.

In the same way, if all ten places are filled and if one or more than one group of 10 sticks can't place in tens instead it will move a group of 100 to the hundreds place.

Finally, ask them to read the answer by seeing the number of sticks in each place value accordingly.

Example: Adding 987 plus 256 equal to 1243.

Number 7 and 6 in the unit place will be 13. In units place, only 9 can sit. Take 10 of them from 13 and place them in the tens place and keep 3 sticks in the units place. So there is a carry of 1 ten, then add it to the number 8 and 5 in the tens place and the sum will be 14 tens. Since there are only 9 tens in the tens place, it will take 10 tens or 1 hundred and move to the hundred place as a carry and keep 4 tens in the tens place. Adding numbers 9 and 2 in the hundreds place along with 1 carry will give 12 hundred, as we know even in the hundreds place only 9 hundred can be placed. So, now there is a carry of 10 hundred which is 1000 and move it to the thousands place and keep 2 in the hundreds place. So the final answer will be 1243.

Similarly, the concept of addition with carrying can be explained in this way for any number of digits or place value.

Activity 4: Addition Game

Materials Required: Table representing numbers from 1000 to 2000. *Prerequisites:* Addition

Activity Flow

- Ask the students to observe the numbers in the chart in a textbook.
- Place a tamarind seed (any object) on the two numbers to touch either row or column. Find their sum.
- The table contains numbers from 1000 to 2000.
- 5 marks for each correct answer.

Activity 5: Properties of Addition

Materials Required: Ice cream sticks/Plastic toothpicks and Taylor frame. *Prerequisites:* Addition

Activity Flow

- Ask them the following questions
 - 1. 4+3=3+?
 - 2. 60 = 42 + ?
 - 3. 7+8+1=1+7+?
- Ask the students what they observe after solving all the above questions.

Observation: Even if the order of arrangement of numbers are different the answer remains the same in addition.

Commutative and Associative Property of Addition

- Explain the following examples.
 - Suganth bought chocolates for 32 rupees, Ice cream for 25 rupees and cake for 145 rupees. What is the total amount should he pay for the shopkeeper?
 - First, he will consider 145 then adding 32 to it will be 177 then adding 25 will be 202 rupees in total.
 - But whereas the shopkeeper followed the order that he gave things to Suganth,

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i.e. 32+25+145 = 202. Where the answer is the same. This is the associative property for addition.
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- Give them the Ice cream sticks or Taylor frame.
- Ask them to solve the above questions using sticks or Taylor frame. Example:

1+2+3 = 3+2+1 = 7

Let them take 1 stick first then add 2 sticks, so there will be 3 in total. Again let them take 3 sticks and ask them how many sticks they have in total. So there are 7 sticks altogether.

Activity 6: Power of magic square

Materials Required: Ice cream sticks/Plastic toothpicks and Taylor frame. *Prerequisites:* Addition

Note:	Table

1726	1558	2398
2566	1894	1222
1390	2230	2062

- Ask the students to add the numbers vertically, horizontally and diagonally.
 - For example, 1726 + 1894 + 2062 = 5682 (adding diagonally)
- Ask the students, what do you observe, when you add numbers vertically, horizontally and diagonally?
- Start with an opening question and discuss how the numbers are arranged so that the number obtained is the same in all directions.
- Give the following tactile table to the students.

2	7	6
9	5	1

4	3	8

- Similarly, ask students to add the numbers vertically, horizontally and diagonally for the numbers in the tactile diagram.
- Also, ask students to create their Magic square with different numbers.
- Magic square means if you add the numbers vertically, horizontally and diagonally, the sum will be the same.

3.3 LET'S DISCUSS: RELATE TO DAILY LIFE*

We use addition in many situations but commonly we use addition when handling money. For example, when we go to the market we buy some things by spending money. Learning addition helps to know the right amount that needs to be paid. All of us need to buy or sell something at some point.

4. EXERCISES & REINFORCEMENT

4.1 PRACTICE EXERCISES

Activity 1: Practice and Recall

Materials Required: None Prerequisites: Addition.

- 1. In box 1, there are one thousand cards, five hundred cards, 3 tens cards and 4 unit cards. In box 2, three thousand cards, 2 hundred cards, 5 tens cards and 2 unit cards. Find totally, how many thousands, hundreds, tens and ones.
- 2. Find the sum:
 - a. 5490 + 3507 =
 - *b.* 5490 + 3507 =
 - *c.* 5213 + 3673 =
 - $d. \quad 3468 + 4127 =$
 - *e.* 5894 + 3263 =
 - $f. \quad 4372 + 3009 =$
 - g. 5097 + 3865 =

4.1 IMPORTANT GUIDELINES*

Exercise Reading

It is very important that the children practice their learnings as well as their reading. Hence have the children read out the newly learned concepts from their textbooks or other available resources.

Perform Textbook Activity

It is good practice to have the children perform the textbook activities. Your textbook activities might not be accessible hence go through this resource to learn how to make textbook content accessible

Provide Homework

To evaluate their understanding and to help the student revise and implement the new learnt concept ensure to provide them with homework. Students should perform one or two of the questions mentioned above or from the textbook exercises with the teacher in

Class and the remaining may be given for homework. Also, ensure that the student knows their special skills linked to independently using their accessible books as it will be critical to doing homework independently

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