Vision Empower & XRCVC Teacher Instruction KIT Multiplication

Syllabus: Karnataka State Board Subject: Math Grade: 5 Textbook Name: Karnataka State Board Chapter Number & Name: 11. Multiplication

1. OVERVIEW

Objective

- Multiplication is a repeated addition,
- To find the product of two 3 digit numbers,
- Multiplication of a 4 digit number by a 1 and 2 digit number,
- Multiplication of a 5 digit number with a 1 digit number,
- Solve verbal problems based on multiplication.

Prerequisite Concept

• Multiplication *TIK_MATH_G4_CH5_Multiplication*

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*Kindly Note: Activities marked with * are mandatory*

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2. LEARN

2.1 KEY POINTS

Multiplication: A mathematical operation performed on a pair of numbers in order to derive a third number called a product. Multiplication is when you take one number and add it together a number of times. This is why multiplication is sometimes called "times". Example: $7 \times 3 = 7 + 7 + 7 = 21$

2.2 LEARN MORE

3. ENGAGE

3.1 INTEREST GENERATION ACTIVITY

Activity 1: Multiplication on Ganit mala

Materials required: Ganit mala, catchers Prerequisites: Repeated addition

Activity Flow

• Teacher will give the numbers to be multiplied and ask students how they are going to multiply 2 numbers with the help of Ganitmala and number catchers.

- Example: 2 times 3, and if they are using number catcher 2 which holds only 2 beads in it and they have to measure 3 times each time holding 2 beads. At the end they will reach the 6th bead which will be the answer.
- They can also do it mentally.
- Set up a time to answer the question asked by the teacher, so that students have to answer within the fixed time. Whoever is able to give the answer within the time, ask them to verify it through Ganitmala with the help of a catcher. And the one who was not able to answer within the fixed time, build a discussion among them and see are there any other methods which take less time than doing repeated addition to multiply the numbers.

3.2 CONCEPT INTRODUCTION ACTIVITIES

MULTIPLICATION

Activity 2: Multiplication is a repeated addition

Materials required: Sticks/Ice cream sticks/stones Prerequisites: Addition

Activity Flow

As we all know that multiplication is one of the basic mathematical operations. Also multiplication is nothing but the repeated addition. The number to be multiplied is called the multiplicand. The number which multiplies the given number is called the multiplier and the result of multiplication is called the product.

Do the following activity.

Ask the students to find the product of the following numbers not by multiplying directly with the help of tables instead let them find the product by doing repeated addition. Also give them or ask them to collect small stones or sticks and let them do two digit multiplication by repeated addition.

- $1. 24 \times 5$ 2. 123×4
- 2. 123×4 3. 780×3
- 3. 780×3

Properties of Multiplication

- 1. The product of any number and zero is always zero. Ask the students what will be the answer when they add 13 sticks zero times. Example: $13 \times 0 = 0$.
- 2. The product of any number and 1 is always the number itself. Ask the students what will be the answer when they add 11 sticks one time. Example: $11 \times 1 = 11$.
- 3. The product remains the same when we interchange multiplicand and multiplier. Ask the students what will be the answer when they add 13 sticks zero times. Example: $5 \times 7 = 35$, $7 \times 5 = 35$.

PRODUCT OF TWO 3 DIGIT NUMBERS

Activity 3: To find the product of two 3 digit numbers

Materials required: Taylor frame Prerequisites: Multiplication

Activity Flow Find the product of 135 and 274.

Steps involved in multiplication

1. Multiply: $135 \times 4 = 540$. Write the product in the first row to the left side from the units place.

2. Multiply: $135 \times 7 = 945$. Write the product in the second row starting from the tens place to the left side.

3. Multiply: $135 \times 2 = 270$. Write the product in third row starting from the hundreds place to the left side. 4. Add the digits in these three rows.

Therefore, $135 \times 274 = 36,990$.

Do the following activity.

- 1. Make 3 groups and name each group with place value names called units, tens and hundreds. Then the teacher will give a 3 digit number written on Taylor frame to the first group, which is the multiplicand. And give to the units group.
- 2. Then orally the teacher will give one more 3 digit number which is the multiplier.
- 3. If for example the multiplier is 231 then the units group will multiply the multiplicand by the number in units place which is 1 on Taylor frame and write the product below and after that pass the Taylor frame to tens group so as their group name itself suggests that group will multiply the multiplicand by 3 which is in tens place and write the product below the first product from right to left starting at tens place. Then pass

the same Taylor frame to a third group and they will multiply by 2 which is in hundreds place and will write below the second product from right to left starting from tens place then ask the same group to add all the numbers and write the final answer.

4. Similarly, play for 5 rounds and observe the effectiveness of the activity.

MULTIPLICATION OF 4 DIGIT NUMBERS

Activity 4: Multiplication of a 4 digit number by a 1 and 2 digit number

Materials required: 10 Braille number cards having 4 digit numbers, 2 sets of Braille number cards from 0 to 9.

Prerequisites: Multiplication

Activity Flow

Can do the same activity 3 with some changes as follows: There will be only two groups called units and tens since the multiplicand is 2 digit number then teacher will give 4 digit numbers. Then follow the same steps.

OR

- 1. Make two groups and each group will have Braille cards from 0 to 9 have to select two single Braille number cards from the pack.
- 2. Then the teacher will randomly pick one 4 digit number and will read out the number. Then whichever group will find the correct product first of the 4 digit number with their selected 2 digit multiplicand will get to keep the 4 digit number card with them.
- 3. Finally the group which has more number of 4 digit number cards will be the winner.
- 4. First ask the students to multiply the 4 digit number with a single digit for which they have to pick one Braille card then after a few rounds multiply with two digits by taking two cards.

MULTIPLICATION OF 5 DIGIT NUMBERS

Activity 5: Multiplication of a 5 digit number with a 1 digit number

Materials required: 3 sets of Braille number cards from 0 to 9 Prerequisites: Multiplication

Activity Flow

Method of multiplication remains the same for however long the number would be.

1. Mix all the Braille cards and keep it on a table, now ask one of the students to come and take 5 Braille number cards from the table and ask him to arrange it and tell the 5 digit number.

- 2. Then the teacher will pick one card from the table and will read the number.
- 3. Then whoever gets the answer first will keep the 5 digit number with them.
- 4. Finally whoever has the maximum number of 5 digit numbers will be the winner.

3.3 LET'S DISCUSS: RELATE TO DAILY LIFE*

- We will use multiplication buying the items in multiple copies.
- Daily expenditure Grocery
- Bank- Writing denominations in a bank challan while depositing, Cash, Accounts, salary
- Market, Complexes

4. EXERCISES & REINFORCEMENT

4.1 PRACTICE EXERCISES

Activity 6: Solve verbal problems based on multiplication

Materials required: None Prerequisites: Multiplication

Activity Flow

Ask the students to solve the word problems given as follows and also the problems in the textbook.

- 1. 21 folders each have 55 sheets of paper inside them. How many sheets of paper are there altogether?
- 2. A carton box holds 34 packets of biscuits. Each packet has 12 biscuits. How many biscuits can be packed in 52 carton boxes?
- 3. A bicycle costs rupees 325. How much will be paid for 78 such bicycles?
- 4. A chair costs rupees 524 and a table costs rupees 1570. What will be the cost of 17 chairs and 30 tables?

4.2 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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