Vision Empower & XRCVC

Teacher Instruction KIT

Mental Arithmetic

Syllabus: Karnataka State Board Subject: Mathematics Grade: Second Textbook Name: Mathematics-Text cum Workbook(Revised)-Second Standard Chapter Number & Name: 7. Mental Arithmetic

1. OVERVIEW

1.1 OBJECTIVE & PREREQUISITES

Objective

- To add and subtract single digit numbers mentally.
- To add and subtract multiples of 10 mentally.

Prerequisite Concept

- Basic addition and subtraction
- Number sense
- Multiples of 10

Refer to VE_TIK_Math_G1-05-:Addition(sum not more than 9) VE_TIK_Math_G1-06-Subtraction

Content Index

Kindly Note: Activities marked with * are mandatory

1. OVERVIEW

1.1 OBJECTIVE & PREREQUISITES

2. LEARN

2.1 KEY POINTS

3. ENGAGE

3.1 INTEREST GENERATION ACTIVITY

3.2 CONCEPT INTRODUCTION ACTIVITIES

MENTAL MATH

Activity 1: Teaching mental math*

3.3 LET'S DISCUSS: RELATE TO DAILY LIFE

4. EXERCISES & REINFORCEMENT

4.1 REINFORCEMENT

Activity 2: Let's play BINGO *

4.2 IMPORTANT GUIDELINES

2. LEARN

2.1 KEY POINTS

Mental calculation comprises arithmetical calculations using only the human brain, with no help from any supplies or devices. People use mental calculation when computing tools are not available, when it is faster than other means of calculation.

2.2 LEARN MORE - None

3. ENGAGE

3.1 INTEREST GENERATION ACTIVITY

NONE

3.2 CONCEPT INTRODUCTION ACTIVITIES

MENTAL MATH

Activity 1: Teaching mental math* Materials Required: None Prerequisites: Number sense, basic addition and subtraction

Activity Flow

Listed are few mental math strategies which the teacher can teach the students.

- 1. The "9-trick".
- To add 9 to any number, first add 10, and then subtract 1. For example, we change the addition of 9 + 4 to 10 + 3, which is much easier to solve.
- 2. Doubles + 1
- Encourage children to memorize the doubles from 1 + 1 through 9 + 0. After that, a whole lot of other addition facts are at their fingertips. For example, 5 + 6 is just one more than 5 + 5.
- 3. Using addition facts when adding bigger numbers.

Once the children know that 6 + 2 = 8, they can be told that 60 + 20 = 80 (6 tens + 2 tens is 8 tens). 5 + 2 = 7, so 50 + 20 = 70.

4. Subtract by adding.

This is a very important principle, based on the connection between addition and subtraction. Children really don't need to memorize the subtraction facts as such, if they use this principle. For example, to find 8 minus 6, think. "Six plus what number makes 8?" In other words, think of the missing number addition 6 + ? = 8. The answer to this is the answer to the question 8 minus 6.

3.3 LET'S DISCUSS: RELATE TO DAILY LIFE

We calculate mentally when the shopkeeper offers change to check for correctness.

4. EXERCISES & REINFORCEMENT

4.1 REINFORCEMENT

Activity 2: Let's play BINGO *

Materials Required: Braille number cards 1 to 10 Prerequisites: Counting, number sense, basic addition and subtraction.

Activity Flow

The teacher can deal three cards (number cards 1 to 10) randomly to students or let the students choose three numbers of their choice. Encourage the students to touch and feel the cards and identify the three numbers they received and place it in front of them.

The teacher can then inform the students that they will be playing an interesting game called Bingo.

In this game the teacher will be posing a few questions and the answers would be the numbers they have received. Inform the students that in case they have the answer with them, they would be required to place that card upside down and clap so that the teacher has an idea that the child has got an answer and simultaneously the teacher gets to check if the student has worked out the question asked correctly.

For example, if the question posed to them is what is 3minus 2? The answer is 1. In case they have the card with a number 1, then they will be required to keep the card with number 1 upside down and clap.

The game continues in a similar manner. The child with all the three cards upside down first would call out the word "BINGO". The teacher then checks for correctness and then the same continues till the last student remains.

The teacher needs to frame appropriate questions based on addition and subtraction up to 10. This reinforces the concept of calculating mentally. Encourage children to use the tips taught to them in calculating mentally.

Few Questions the teacher can pose:

- 1. 6+2, 4+4, 2+3,5+4
- 2. 5 minus 3, 9 minus 5, 6 minus 1, 8 minus 6
- 3. 3 plus what number makes 9?
- 4. 7 minus what number gives 6?
- 5. Which is the number I need to add to 8 to get 9?

Teaching Tips:

None

References:

None

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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