3rd Grade Math: Adding 2-Digit Numbers Close to 100 Mentally

Lesson Objective:

By the end of this lesson, students will be able to:

- Use different strategies to add two-digit numbers close to 100 mentally.
- Apply mental addition techniques to solve real-world problems involving numbers near 100.

1. Introduction to Mental Addition of Numbers Close to 100

What is Mental Addition?

- Mental addition is solving addition problems in your head without using paper, a calculator, or writing things down.

Why Focus on Numbers Close to 100?

- Numbers close to 100, like 98 or 95, are easy to work with using certain strategies that make addition faster.
- This skill is helpful in everyday situations, such as shopping, estimating costs, and handling money.

2. Strategies for Adding 2-Digit Numbers Close to 100 Mentally

Activity 1: Using Place Value

1. **Materials:** Paper and pencils.
2. **Instructions:**
    - Explain that breaking numbers into their tens and ones makes mental addition easier.
    - Example: To add 98 + 47, break it into tens and ones:
        - Add the tens: 90 + 40 = 130.
        - Add the ones: 8 + 7 = 15.
        - Add the sums: 130 + 15 = 145.
    - Practice adding pairs of numbers close to 100 using this strategy (e.g., 89 + 56, 97 + 38).

Activity 2: Using Rounding and Adjusting

1. **Materials:** Number cards, paper, and pencils.
2. **Instructions:**
    - Introduce rounding as a strategy to simplify addition.
    - Example: To add 98 + 47:
        - Round 98 up to 100.

        - Add 100 + 47 = 147.
        - Subtract the 2 you added earlier: 147 - 2 = 145.
    - Practice rounding and adjusting with several problems (e.g., 95 + 37, 96 + 54).

Activity 3: Using Compatible Numbers

1. **Materials:** Paper and pencils.
2. **Instructions:**
    - Explain how compatible numbers are pairs of numbers that add up to easy sums (like 100 or 50).
    - Example: For 98 + 53:
        - Think of 98 + 2 = 100.
        - Now add the remaining part: 100 + 51 = 151.
    - Practice finding compatible numbers to simplify addition (e.g., 89 + 51, 96 + 49).

Activity 4: Breaking Numbers Apart (Compensation Method)

1. **Materials:** Paper and pencils.
2. **Instructions:**
    - Teach students how to break one number apart and "compensate" by adding smaller parts.
    - Example: For 98 + 47:
        - Add 98 + 50 = 148.
        - Subtract 3 because you added too much: 148 - 3 = 145.
    - Practice with various examples (e.g., 92 + 37, 95 + 59).

3. Practice Problems

1. **Problem 1:** Add the following pairs of numbers using place value:
    - 88 + 67
    - 97 + 54
    - 95 + 73
2. **Problem 2:** Round and adjust to add the following:
    - 99 + 35
    - 96 + 52
    - 89 + 48
3. **Problem 3:** Find compatible numbers to add:
    - 97 + 53
    - 92 + 59
    - 94 + 47
4. **Problem 4:** Use the compensation method to solve:
    - 96 + 48
    - 93 + 37
    - 98 + 65

4. Real-World Applications

Activity: Adding Prices

1. **Materials:** Play money, price tags for items.
2. **Instructions:**
    - Set up a mock store with items priced between 80 and 99 dollars.
    - Have students mentally add the cost of two items and give the total.
    - Discuss how mental addition helps in real-life situations, such as shopping.

Activity: Estimation Challenge

1. **Materials:** Timer, paper, and pencils.
2. **Instructions:**
    - Call out a series of addition problems (e.g., 94 + 57, 88 + 63).
    - Have students solve the problems mentally and write down their answers.
    - Review and discuss different strategies used.

5. Review and Wrap-Up

Key Points to Remember:

- **Mental Addition** involves using strategies like breaking numbers apart, rounding, or finding compatible numbers to simplify addition.
- Practice helps improve speed and confidence when adding numbers mentally.

Exit Question: Can you solve 98 + 56 in your head and explain the strategy you used?