

3rd Grade Math: Mental Subtraction

Lesson Objective:

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

- Perform subtraction mentally using various strategies.
- Solve subtraction problems quickly without using paper and pencil.
- Apply mental subtraction strategies to real-world problems.

1. Introduction to Mental Subtraction

What is Mental Subtraction?

- **Mental Subtraction** is subtracting numbers in your head without writing them down or using a calculator. It involves using strategies to make subtraction easier and faster.

Why is Mental Subtraction Important?

- It helps solve problems quickly and accurately.
- It enhances number sense and supports more advanced math skills.

2. Strategies for Mental Subtraction

Activity 1: Using Number Bonds

1. **Materials:** Number cards, paper, and pencils.
2. **Instructions:**
 - Explain that number bonds can also be used for subtraction (e.g., if you know $12 - 7$, you can think of it as finding the missing part to make 12).
 - Show examples with simple number bonds (e.g., $15 - 6 = 9$).
 - Have students practice finding number bonds for subtraction problems (e.g., $14 - 9$, $20 - 7$) using number cards.

Activity 2: Using Friendly Numbers

1. **Materials:** Number cards, paper, and pencils.
2. **Instructions:**
 - Introduce **friendly numbers** (e.g., numbers close to 10 or 50) and how they make subtraction easier.
 - Show how to round numbers to the nearest ten or hundred to simplify subtraction (e.g., $43 - 29$ can be approximated as $40 - 30 = 10$, then adjust as needed).
 - Practice with a few examples and have students solve similar problems using friendly numbers.

Activity 3: Breaking Numbers Apart

1. **Materials:** Paper and pencils.
2. **Instructions:**
 - Explain how to break numbers into smaller, more manageable parts for subtraction (e.g., $72 - 37$ can be broken into $70 - 30$ and $2 - 7$).
 - Practice breaking numbers apart and subtracting (e.g., $85 - 46 = (80 - 40) + (5 - 6) = 40 - 1 = 39$).
 - Have students try this strategy with different pairs of numbers.

Activity 4: Using Doubles

1. **Materials:** Paper and pencils.
2. **Instructions:**
 - Explain how knowing doubles can help with subtraction (e.g., $7 - 4$ can be thought of as $7 - 3 - 1$).
 - Practice with double facts and use them to solve related subtraction problems (e.g., if you know $8 - 4 = 4$, then $8 - 5 = 3$).
 - Have students solve subtraction problems using doubles and nearby numbers.

3. Practice Problems

1. **Problem 1:** Use number bonds to solve the following:
 - $15 - 6$
 - $18 - 7$
 - $24 - 9$
2. **Problem 2:** Use friendly numbers to solve the following:
 - $53 - 27$
 - $82 - 39$
 - $91 - 44$
3. **Problem 3:** Break the numbers apart and subtract:
 - $67 - 29$
 - $54 - 18$
 - $76 - 35$
4. **Problem 4:** Use doubles to solve:
 - $9 - 5$
 - $12 - 6$
 - $10 - 7$

4. Real-World Applications

Activity: Subtracting with Money

1. **Materials:** Play money, price tags for items.
2. **Instructions:**
 - Set up a mock store with items priced at different amounts (e.g., \$10, \$15, \$8).

- Have students mentally subtract the cost of items from a set amount of money (e.g., if they have \$20 and buy an item costing \$13, they mentally subtract 13 from 20).
- Discuss how mental subtraction helps in everyday situations like budgeting and shopping.

Activity: Mental Math Challenge

1. **Materials:** Timer, paper, and pencils.
2. **Instructions:**
 - Call out a series of subtraction problems (e.g., $45 - 18$, $62 - 27$).
 - Have students solve the problems mentally and write down their answers.
 - Review answers and discuss different strategies used.

5. Review and Wrap-Up

Key Points to Remember:

- **Mental Subtraction** involves using strategies to quickly and accurately subtract numbers in your head.
- Strategies like number bonds, friendly numbers, breaking numbers apart, and using doubles can simplify subtraction.
- Practice helps improve speed and accuracy in mental subtraction.

Exit Question: Can you solve the problem $53 - 28$ in your head and explain the strategy you used?