3rd Grade Math Lesson: Multiply by 9

Objective:

- Students will learn how to multiply numbers by 9 using various strategies such as skip counting, repeated addition, and learning multiplication facts. By the end of the lesson, students will be able to multiply by 9 and apply these skills to real-world scenarios.

1. Introduction to Multiplying by 9

- **Discussion:**
  - Begin by asking students, "What does multiplying by 9 mean?" Encourage them to share what they know about multiplication and their strategies for multiplying by 9.
- **Explain:**
  - Multiplying by 9 is like adding 9 repeatedly. For example, 9×3 means adding 9 three times: $9 + 9 + 9 = 27$.
  - Another useful strategy is skip counting by 9: 9, 18, 27, 36, 45, etc.

2. Skip Counting by 9

- **Activity:**
  - Practice skip counting by 9 as a class. Write the numbers on the board while students count out loud: 9, 18, 27, 36, 45, 54, 63, 72, 81, 90.

  Tip: Add movements like clapping or snapping fingers to make skip counting more engaging.

3. Multiplying by 9 Using Repeated Addition

- **Explain:**
  - Show how multiplying by 9 can be represented as repeated addition:

  Example 1:

  - $9 \times 2 = 9 + 9 = 18$

    Example 2:
  - $9 \times 4 = 9 + 9 + 9 + 9 = 36$
- **Activity:**
  - Provide students with problems like:
    - $9 \times 3 =$ _____
    - $9 \times 5 =$ _____
  - Have them use repeated addition to solve the problems.

4. Learning the Multiplication Facts for 9

- **Introduce and practice:**
    - Teach students the multiplication table for 9:

| 9 × 1 | 9 | | 9 × 2 | 18 | | 9 × 3 | 27 | | 9 × 4 | 36 | | 9 × 5 | 45 | | 9 × 6 | 54 | | 9 × 7 | 63 | | 9 × 8 | 72 | | 9 × 9 | 81 | | 9 × 10 | 90 |

- **Activity:**
    - Practice these facts using flashcards, a matching game, or quick-fire questions.

5. Real-World Applications of Multiplying by 9

- **Discuss:**
    - Explore situations where multiplying by 9 is useful:
        - Counting packs of 9 items.
        - Multiplying 9 objects or groups.
- **Example Problem 1:**
    - There are 9 pencils in each box. How many pencils are there in 6 boxes?
    - Solution: 9 × 6 = 54 pencils.
- **Example Problem 2:**
    - A spider has 8 legs. If 9 spiders were seen, how many legs would there be altogether?
    - Solution: 8 × 9 = 72 legs.

6. Guided Practice

- **Solve together:**
    - Solve multiplication problems like these as a class:
        - 9 × 2 = _____
        - 9 × 4 = _____
        - 9 × 7 = _____
- **Use visuals:**
    - Use arrays, groups of objects, or pictures to help students visualize the multiplication process.