3rd Grade Math: Subtraction with Regrouping in Ones, Tens, Hundreds, and Thousands

Lesson Objective:

Students will:

- Learn how to perform subtraction with regrouping across ones, tens, hundreds, and thousands.
- Understand the process of borrowing when subtracting multi-digit numbers.
- Apply subtraction techniques to solve problems in various contexts.

1. Introduction to Subtraction with Regrouping

What is Subtraction with Regrouping?

- Subtraction with regrouping (or borrowing) is necessary when the digit in the minuend (the number you are subtracting from) is smaller than the digit in the subtrahend (the number being subtracted), requiring you to borrow from a higher place value.

Why is it Important?

- It helps solve more complex subtraction problems accurately and understand multi-digit subtraction.

2. Steps for Subtracting with Regrouping

Step 1: Write the Numbers Vertically

- Align the digits by place value (ones, tens, hundreds, thousands).

Step 2: Start Subtracting from the Right

- Begin with the ones place, and move left through tens, hundreds, and thousands.

Step 3: Regroup if Needed

- If a digit in the minuend is smaller than the corresponding digit in the subtrahend, regroup from the next higher place value.

Step 4: Write the Difference

- After regrouping and subtracting each place value, write down the answer.

3. Example Problems

Example 1: Subtracting Across Ones

- **Problem:** 345 - 278

    - Write the numbers aligned:

```diff
   345
-  278
```

    - Subtract the ones place: 5 - 8. Regroup by borrowing from the tens place (4 → 3), making 5 into 15.

```
15 - 8 = 7
```

    - Subtract the tens place: 3 - 7. Regroup by borrowing from the hundreds place (3 → 2), making 3 into 13.

```
13 - 7 = 6
```

    - Subtract the hundreds place: 2 - 2 = 0.

    - **Answer:** 67

Example 2: Subtracting Across Tens

- **Problem:** 1,200 - 468

  - Write the numbers aligned:

    ```diff
      1200
    -  468
    ```

  - Subtract the ones place: 0 - 8. Regroup by borrowing from the tens place (0 → 10), making 0 into 10.

    ```
    10 - 8 = 2
    ```

  - Subtract the tens place: 0 - 6. Regroup by borrowing from the hundreds place (2 → 1), making 0 into 10.

    ```
    10 - 6 = 4
    ```

  - Subtract the hundreds place: 1 - 4. Regroup by borrowing from the thousands place (1 → 0), making 1 into 11.

    ```
    11 - 4 = 7
    ```

  - Subtract the thousands place: 0 - 0 = 0.

  - **Answer:** 732

Example 3: Subtracting Across Hundreds and Thousands

- **Problem:** 2,450 - 1,326

    - Write the numbers aligned:

```yaml
  2450
- 1326
```

    - Subtract the ones place: 0 - 6. Regroup by borrowing from the tens place (5 → 4), making 0 into 10.

```
10 - 6 = 4
```

    - Subtract the tens place: 4 - 2 = 2.
    - Subtract the hundreds place: 4 - 3 = 1.
    - Subtract the thousands place: 2 - 1 = 1.
    - **Answer:** 1,124

4. Practice Problems

Activity 1: Solve the Following

1. 1,204 - 578 = ?
2. 3,000 - 1,235 = ?
3. 4,512 - 1,689 = ?
4. 5,600 - 3,274 = ?

5. Conclusion and Review

Key Takeaways:

- Regrouping is essential when subtracting numbers with zeros and across multiple place values.
- Practice helps build confidence in solving complex subtraction problems accurately.

Exit Problem:

- Solve: 3,405 - 2,178 = ?