

## 1. Introduction to Multiplying with Regrouping

- **Start with a Simple Question:**
  - "Have you ever had to carry over numbers when adding or subtracting? We do something similar when we multiply bigger numbers!"
- **Explain the Concept:**
  - **Multiplying with Regrouping:** It's when you multiply larger numbers and sometimes need to carry over or regroup numbers to get the final answer.

## 2. Understanding the Need for Regrouping

- **Explain Regrouping:**
  - **Regrouping:** Happens when the result of a multiplication in any place value column is greater than 9. You write down the last digit and carry over the rest to the next column.

## 3. Step-by-Step Example

- **Example Problem: Multiply  $23 \times 4$**

### Step 1: Multiply the Ones Place

- Multiply 3 (ones place) by 4.
- $3 \times 4 = 12$ .
- Write down 2 and carry over 1 to the next column.

### Step 2: Multiply the Tens Place

- Multiply 2 (tens place) by 4.
- $2 \times 4 = 8$ .
- Add the carried-over 1:  $8 + 1 = 9$ .

### Step 3: Combine Results

- The final result is 92.

## 4. Practice Problems

- **Simple Problems with Regrouping:**
  - **Example 1: Multiply  $34 \times 2$** 
    - Multiply 4 (ones place) by 2:  $4 \times 2 = 8$ .
    - Multiply 3 (tens place) by 2:  $3 \times 2 = 6$ .
    - Combine results: 68.
  - **Example 2: Multiply  $56 \times 3$**

- Multiply 6 (ones place) by 3:  $6 \times 3 = 18$ . Write down 8, carry over 1.
  - Multiply 5 (tens place) by 3:  $5 \times 3 = 15$ . Add the carried-over 1:  $15 + 1 = 16$ .
  - Combine results: 168.
- **Practice Together:**
  - Solve on the board or with manipulatives:
    - $42 \times 3$
    - $27 \times 4$
    - $35 \times 6$

## 5. Visualizing Multiplication with Regrouping

- **Use Objects:**
  - **Example:** If you have 15 boxes and each box contains 9 items, how many items in total?
    - **Break it Down:**
      - Multiply the ones place:  $5 \times 9 = 45$ . Write down 5, carry over 4.
      - Multiply the tens place:  $1 \times 9 = 9$ . Add the carried-over 4:  $9 + 4 = 13$ .
      - The total is 135.
- **Draw a Picture:**
  - Draw a grid or area model to show how multiplication works with regrouping.

## 6. Review and Conclusion

- **Recap:**
  - Summarize how multiplying with regrouping involves carrying over numbers to the next column when the result is more than 9.
- **Practice Problem:**
  - Have students solve one final problem:
    - $43 \times 5 = \underline{\quad}$