

2nd Grade Math: Using Part-Part-Whole in Addition and Subtraction

What is Part-Part-Whole?

The **part-part-whole** model is a foundational concept in addition and subtraction. It helps students understand how numbers relate to one another and how they can be combined or separated.

- **Whole:** The total amount.
- **Part:** The pieces that make up the whole.

Understanding Part-Part-Whole with Addition

In addition, the whole is the sum of the parts. For example, if you have 3 apples (part A) and 2 apples (part B), the whole number of apples is 5.

Addition Example

Problem: If you have 3 red balloons and 4 blue balloons, how many balloons do you have in total?

1. **Identify the Parts:**

- Part A: 3 red balloons
- Part B: 4 blue balloons

2. **Add the Parts Together:**

$$3 + 4 = 7$$

3. **Whole:** You have a total of 7 balloons.

Understanding Part-Part-Whole with Subtraction

In subtraction, one of the parts is taken away from the whole to find the other part. For example, if you have 8 candies and you eat 3, the number of candies left is the whole minus the part you took away.

Subtraction Example

Problem: If you have 10 cookies and you eat 3, how many cookies do you have left?

1. **Identify the Whole and the Part:**

- Whole: 10 cookies
- Part: 3 cookies (eaten)

2. **Subtract the Part from the Whole:**

$$10 - 3 = 7$$

3. **Remaining Part:** You have 7 cookies left.

Part-Part-Whole Models

To visualize the part-part-whole concept, you can use models such as:

1. **Bar Models:** Draw two bars representing the parts and a third bar for the whole.
2. **Number Bonds:** Show how the parts connect to the whole.

Example of a Number Bond:



Practice Problems

1. **Addition:** Fill in the blanks:
 - Part A: 5, Part B: 3, Whole: ____
 - Part A: 7, Part B: 2, Whole: ____
2. **Subtraction:** Fill in the blanks:
 - Whole: 15, Part: 6, Remaining Part: ____
 - Whole: 12, Part: 4, Remaining Part: ____

3. Word Problems:

- You have 8 crayons and you buy 4 more. How many crayons do you have in total?
- You have 20 stickers and you give away 5. How many stickers do you have left?

Conclusion

Understanding the part-part-whole model is essential for mastering addition and subtraction. By practicing this concept through various activities and visual aids, students can develop a stronger understanding of how numbers work together, paving the way for more advanced math skills in the future.