

N-Number Line II

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Summary	Students use the N -Number line to make generalizations about an unknown amount of money in a piggy bank.
Goals	To discuss generalizations and to work with N as the starting point on an N -number line.
Materials	Overheads, Handouts
Keywords	Contextualized Situations Interpretation of Stories Full Class Discussion Function Representations Number Lines Production of Algebraic Expressions Production of Tables Representing Variables Small Group Work

Activity Plan:

Representing and Solving a Problem on the N -Number Line

1. Representing a problem with an initial unknown amount [Group Work]

Bring a Piggy Bank to class with some money in it. Have the children inspect the Piggy Bank and acknowledge that there is some money in it, but they do not know how much.

Distribute the handout (page 1) with the problem below and ask the children to represent it on paper.

Joe had some money in his Piggy Bank on Monday.

On Tuesday, his mother gave him 3 dollars.

On Wednesday, Joe spent 5 dollars.

How much money did he end up with?

Did he come out ahead or behind compared to Monday?

Ask 3 or 4 children to show and explain their work to the class. Make sure to call children who had produced representations that are different from each other.

2. Instantiating values on a table [Whole Class]

Work with the children to complete the table of possible initial amounts of money in the Piggy Bank (page 2).

3. Discussing representations [Whole Class]

Display the overhead on page 3 with the problem, a regular number line, and an N -number line.

Ask the children to choose which line they would like to work with. Discuss their options until they agreed that the N -number line is a better choice if we do not know how much money was in the Piggy Bank.

Work with the children, step by step, to represent the problem on the N -number line and as a number sentence.

4. Homework (Page 4)

It is similar to the problem given in the class.

Overhead and Handout: The Problem

(Page 1)

Name: _____ Date: _____

On Monday, Joe had some money in his Piggy Bank.

On Tuesday, his mother gave him 3 dollars.

On Wednesday, Joe spent 5 dollars.

How much money did he end up with?

Did he come out ahead or behind compared to Monday?

Write or draw something to show what happened.

Overhead: The Problem and the Number Lines

(Page 3)

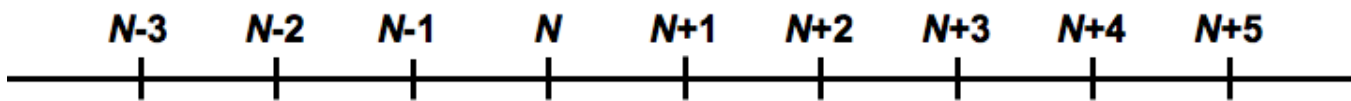
On Monday, Joe had some money in his Piggy Bank.

On Tuesday, his mother gave him 3 dollars.

On Wednesday, Joe spent 5 dollars.

How much money did he end up with?

Did he come out ahead or behind compared to Monday?



Overhead and Homework: Solving a Problem on the N-Number Line **(Page 4)**

Name: _____ Date: _____

Show the following problem on the number line, solve it and show how many marbles Bob has at the end.

Bob had K marbles. He lost 5 marbles in a first game.
He then won 9 marbles in a second game.
Finally, he lost 3 marbles in the third game.
Did he come out ahead or behind today?



"Number sentence" representing the process of change in the problem:

How well did he do compared to what he started with?