

# N-Number Line I

## N-Number Line I

Click [here](#) to download lesson.

Summary	Students work with the table they built in the previous class for multiple number lines, focusing on the notation for variables ( $N + 5 - 3$ or $N + 2$ ).
Goals	To discuss generalizations and to introduce $N$ as the starting point on an $N$ -number line.
Materials	Overheads, Handouts
Keywords	Contextualized Situations Full Class Discussion Interpretation of Tables Negative Numbers Number Lines Production of Algebraic Expressions Representing Variables Science Context Small Group Work

## Activity Plan:

### Solving Different Problems Involving Same Changes

#### 1. Reviewing the table [Group Work]

Display the overhead of the table on page 1 (or the table produced on page 4 of lesson 3.13 - Multiple Number Lines) for the problem:

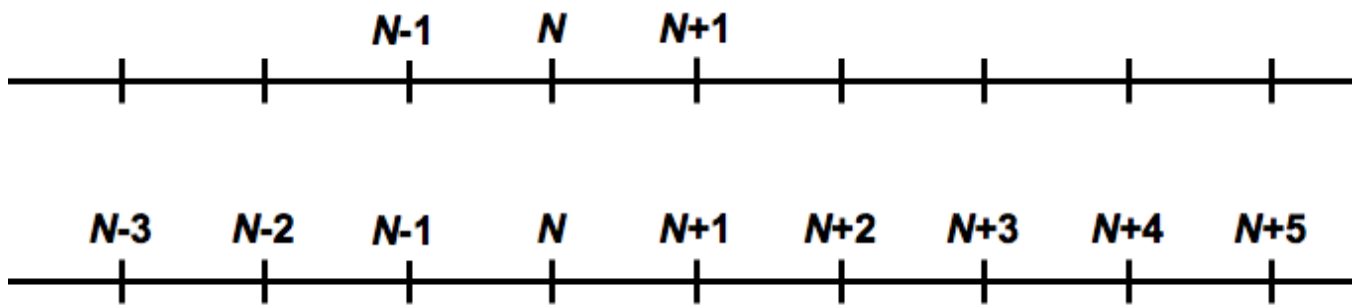
It was \_\_\_ degrees outside.  
Then the temperature rose by 5 degrees.  
Later it dropped 3 degrees.  
What was the temperature at the end?

#### 2. Comparing the problems [Whole Class]

Ask the children to suggest how we could represent any starting point. If necessary, suggest  $N$  as representing any number. Then ask the children to suggest how to write the number sentence, starting with  $N$ . Lead the children to write  $N + 5 - 3$  and to reduce it to  $N + 2$ .

#### 3. The $N$ -number line [Whole Class]

Distribute the handout (page 2) and display the handout (also page 2) showing an incomplete number line and ask the children to complete it.



Ask three or four volunteers to show to the class how they completed the  $N$ -number line.

Represent the initial problem on temperature on the  $N$ -number line.

#### 4. Homework (Page 3)

It is very similar to the problems given in the previous class, but now the starting value in each case is  $N$ .

It was \_\_\_\_ degrees outside.

Then the temperature rose by 5 degrees.

Later it dropped 3 degrees.

What was the temperature at the end?

<b>Initial value</b>	<b>Number sentence</b>	<b>Final value</b>	<b>The difference</b>
-5	$-5 + 5 - 3$	-3	2
-2	$-2 + 5 - 3$	0	2
-1	$-1 + 5 - 3$	1	2
0	$0 + 5 - 3$	2	2
1	$1 + 5 - 3$	3	2
2	$2 + 5 - 3$	4	2
3	$3 + 5 - 3$	5	2
5	$5 + 5 - 3$	7	2
7	$7 + 5 - 3$	9	2
12	$12 + 5 - 3$	14	2
100	$100 + 5 - 3$	102	2
<i>N</i>			

## Overhead and Handout: The $N$ -Number Line (Page 2)

Name: \_\_\_\_\_ Date: \_\_\_\_\_

Complete the  $N$ -number line and represent the following problem on it:

Geronimo's plant was  $N$  inches tall.  
After one week it grew by 5 more inches.  
A bug then ate 5 inches at the top of the plant.  
How tall was the plant at the end?



**Number sentence:** \_\_\_\_\_

**The difference:** \_\_\_\_\_

## Overhead and Homework

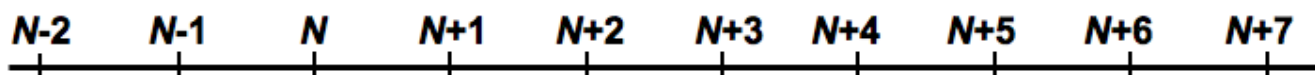
(Page 3)

Name: \_\_\_\_\_ Date: \_\_\_\_\_

For each problem: ① show, on the number line, what has happened, ② write a number sentence to represent the process of change in the problem, and ③ find the difference between  $N$  and the final result

### Problem 1:

It was  $N$  degrees outside. Then the temperature rose by 6 degrees. Later it dropped 2 degrees. What was the temperature at the end?

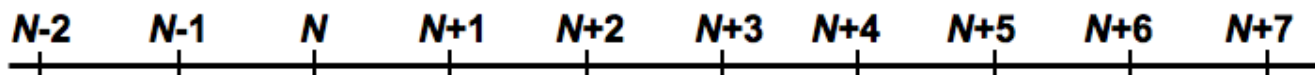


**Number sentence representing the process of change:**

**The difference between  $N$  and the final result:** \_\_\_\_\_

### Problem 2:

Daisy had  $N$  dollars. Her mother gave her 7 dollars. She then spent 4 dollars. How much money did she end up with?



**Number sentence representing the process of change:**

**The difference between  $N$  and the final result:** \_\_\_\_\_

