

Cluster 5: Adding and Subtracting within 1,000

Duration: 4-5 weeks

Content Standards:

This list includes standards addressed in this cluster, but not necessarily mastered, since all standards are benchmarks for the end of the year. Note strikethroughs and recommendations in the Important Considerations section for more information.

NC.2.NBT.6 (sums greater than 100 are possible)

Add up to three two-digit numbers using strategies based on place value and properties of operations.

NC.2.NBT.7

Add and subtract, within 1,000, relating the strategy to a written method, using:

- Concrete models or drawings
- Strategies based on place value
- Properties of operations
- Relationship between addition and subtraction

NC.2.NBT.8

Mentally add 10 or 100 to a given number 100–900, and mentally subtract 10 or 100 from a given number 100–900.

NC.2.OA.1

Represent and solve addition and subtraction word problems, within 100, with unknowns in all positions, by using representations and equations with a symbol for the unknown number to represent the problem, when solving:

- One-Step problems:
 - Add to/Take from - Start Unknown
 - Compare - Bigger Unknown
 - Compare - Smaller Unknown
- ~~Two-Step problems involving single digits:~~
 - ~~Add to/Take from - Change Unknown~~
 - ~~Add to/Take From - Result Unknown~~

Mathematical Practices:

1. Make Sense of Problems and Persevere in Solving Them
2. Reason Abstractly and Quantitatively
3. Construct Viable Arguments and Critique the Reasoning of Others
4. Model with Mathematics
5. Use Appropriate Tools Strategically
6. Attend to Precision
7. Look for and make use of structure
8. Look for and express regularity in repeated reasoning

What is the Mathematics?

- Place Value knowledge will be applied in composing and decomposing numbers within 1,000. For example, discussions should include questions like “How many hundreds will be left after taking away 300 from 743?”

Important Considerations

- Students are not expected to demonstrate mastery of these standards until the end of the year. At this point, students should begin working with addition and subtraction within 1,000, with the expectation that it will be practiced throughout the school year (e.g., through daily math routines such as number talks).
- In this cluster, teachers should begin with mental math and reasoning strategies.
- Students need to develop a number sense with large numbers before performing standard algorithms. (ex. If $5 + 5 = 10$, what is $50 + 50$? $500 + 500$?) The standard algorithm is not the expectation for second grade.
- Relate familiar mathematics facts to more complex facts. (ex. if $400 + 400 = 800$ what is $400 + 399$? etc.) Students begin to make the connection that they can use the same reasoning strategies they used in K and 1, just now with larger numbers.
- Help students use the relationship between addition and subtraction to solve problems (ex. If $500 + 500 = 1000$ what is $1000 - 500$?).
- When teaching written strategies use visual representations such as drawings, number lines, hundreds boards; over reliance on a fixed representation decreases students' flexibility and efficiency because they continue to use the representation beyond when it is needed or when there is a more convenient strategy.
- Word problems provide a concrete, familiar context to explore addition and subtraction with three-digit numbers.