MA.2.NSO.2.3

Overarching Standard: *MA.2.NSO.2 Add and subtract two- and three-digit whole numbers*

Benchmark of Focus

MA.2.NSO.2.3 Add two whole numbers with sums up to 100 with procedural reliability. Subtract a whole number from a whole number, each no larger than 100, with procedural reliability.

> *Example:* The sum 41 + 23 can be found by using a number line and "jumping up" by two tens and then by three ones to "land" at 64.

> *Example:* The difference 87 – 25 can be found by subtracting 20 from 80 to get 60 and then 5 from 7 to get 2. Then add 60 and 2 to obtain 62.

Benchmark Clarifications:
Clarification 1: Instruction focuses on helping a student choose a method they can use reliably.

Related Benchmark/Horizontal Alignment
- MA.2.NSO.1.2
- MA.2.AR.1.1
- MA.2.AR.2.1/2.2
- MA.2.DP.1.2

Vertical Alignment

Previous Benchmarks
MA.1.NSO.2.4
MA.1.NSO.2.5

Next Benchmarks
MA.3.NSO.2.1

Terms from the K-12 Glossary
- Equation
- Expression

Purpose and Instructional Strategies
The purpose of this benchmark is for students to develop and use reliable methods to add
or subtract within 100. Students in grade 1 worked in the exploration stage which heavily relied on the use of manipulatives and drawings.
- Instruction includes the understanding that when adding it is sometimes necessary to combine ones and compose a new ten from those ones.
- Instruction includes the understanding that when subtracting it is sometimes necessary to decompose tens and regroup ones.
- Instruction includes using the relationship between addition and subtraction to find differences.
- Instruction includes strategies that support decomposing and composing numbers in multiple ways. *(MTR.2.1)*

- It is not the expectation for students to use a standard algorithm, but students should be supported if they do choose to use a standards algorithm at this stage. Students will formally learn a standard algorithm in grade 3 for addition or subtraction of multi-digit whole numbers.

Common Misconceptions or Errors
- Students may regroup ones incorrectly or forget to regroup the ones.
- Students may always think it is necessary to subtract the lesser digit from the greater digit.
- Students using a vertical method may record the total sum of the digits in a place value instead of regrouping.

Strategies to Support Tiered Instruction
- Instruction includes the opportunities where regrouping may need to take place with addition and subtraction. Teacher provides students with addition and subtraction problems that may or may not require regrouping. Teacher asks, "Which problems require regrouping and how do you know?"
  - For example, teacher may provide a few expressions like 36 + 27, 23 + 14, 87 – 2 and 64 – 28. Students sorts the problems as regrouping or no regrouping. Teacher asks how do you know that you need to regroup? Students solve a couple of the expressions and teacher checks for understanding.
- Using a number line to represent an addition problem may assist in understanding when an answer is not reasonable because the ones were not regrouped into tens and instead were wrongly recorded as two-digit number.
  - For example, teacher provides the problem 54 + 39. Students use a place value chart and don't regroup the ones into tens writing down the answer as 813. Teacher models using a number line to add 54 + 39 and show the jumps on the number line and prove that the answer is 93 and not 813.

- Instruction includes the use of base ten blocks and place value chart. Teacher provides a subtraction problem where the digit in the ones places of the subtrahend is greater than the digit in the ones place of the minuend. Students begin with the base ten blocks for the minuend, then subtract the subtrahend from the minuend where they may need to regroup a ten into ten ones. Teacher asks students to write the subtraction equation that matches the base ten model.
  - For example, teacher asks students to use the base ten blocks to model the subtraction problem 73 – 48. Students use the place value chart to help organize the subtraction problem. They can exchange a ten rod for 10 ones. Students then "take away" 4 tens and 8 ones from the 6 tens and 13 ones. They may need to be reminded or revisit when regrouping/exchanging tens and ones is needed. Teacher asks students to write the equation to match.

Questions to ask students:
- **How can you draw/show on paper, the addition you did with your base ten blocks?**
  - Sample answer that indicates understanding: *I can draw a tens and ones chart and place ___ lines/rods under the tens and ___circles/dots under the ones. Then underneath, I can*

draw more lines/rods and circle/dots. When everything is drawn, then I add them together, the ones with the ones, the tens with the tens, to find the sum.

- **How did you decompose or break apart your numbers to solve your problem using the number line?**
  - Sample answer that indicates understanding: Example: 23+35 *I started at 35 because it is the greater addend, then instead of adding all 23 at once, I broke apart the 20 into two tens. I added ten and jumped to 45, then added ten again and jumped to 55. Then I added all the 3 ones and jumped to 58. So 23 plus 35 equals 58.*

- **How do you know when you need to regroup?**
  - Sample answer that indicates understanding when **adding**: *If the ones add up to ten or more then I have to regroup them for a ten and some ones. For example, when adding 8 and 6 ones it is more than 9, the greatest digit that can go in the ones place, so the amount will form another ten to be recorded in the tens place and some ones that will be represented in the ones place.*
  - Sample answer that indicates understanding when **subtracting**: *If there aren't enough ones to subtract from, then I have to regroup tens to ones so that I can subtract. For example, I can't take away 5 ones from 2 ones, so I regroup the ten into 10 ones and put it together with the 2 ones I had for a total of 12 ones. Now, when I subtract 5 ones from 12 ones it equals 7 ones.*

Instructional Tasks
Instructional Task 1 (MTR.4.1)
Determine the difference between 62 and 39 in as many different ways as possible. Discussion of student responses should allow the opportunity to make connections between varying strategies and discuss the efficiency of a chosen strategy.

Instructional Items
Instructional Item 1
Tina was solving the sum of 3 tens 8 ones + 4 tens 5 ones. She records the sum as 7 tens and 13 ones. Her friend Brene also solved the problem and says the sum is 83. Who is correct? Explain.

Additional Resources:
CPALMS Resources

Video: Using Break-Apart to Add

Blog Post: Progression of Addition and Subtraction

Origo Video: Teaching the Think-Addition Strategy for Subtraction

---

Resources/Tasks to Support Your Child at Home:

Learn Zillion Video: [Add Within 100 Using Base Ten Blocks](#)

LearnZillion Video: [Solve Addition Problems Using a Number Line](#)

Kahn Academy Video: [Addition and Subtraction with Number Lines](#)

Use a [pair of dice](#) to roll two 2-digit numbers (make sure the sum or difference is within 100). Have your child add or subtract the two numbers using [base ten blocks](#), place value, or [number line](#) strategies. Have them explain their thinking with each step.