

MA.2.NSO.2.1

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

Benchmark of Focus

MA.2.NSO.2.1 Recall addition facts with sums to 20 and related subtraction facts with automaticity.

Related Benchmark/Horizontal Alignment

- MA.2.AR.1.1
- MA.2.AR.3.2
- MA.2.M.1.2
- M.2.GR.2.2

Vertical Alignment

Previous Benchmarks

MA.1.NSO.2.1

Next Benchmarks

MA.3.NSO

Terms from the K-12 Glossary

- Automaticity
- Expression
- Equation

Purpose and Instructional Strategies

The purpose of this benchmark is to build students' automaticity with addition facts with sums to 20 and related subtraction facts. Students in grade 1 worked to recall sums within 10 and the related subtraction facts.

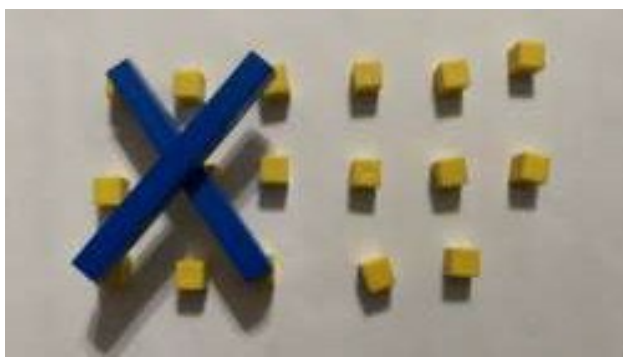
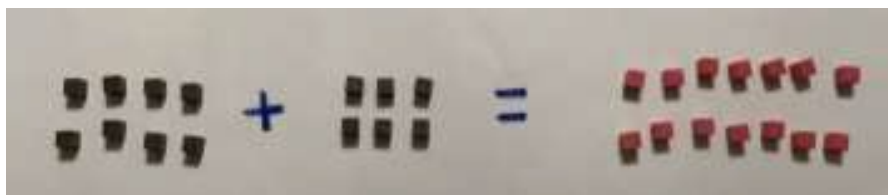
- Instruction focuses on the fact that automaticity is usually the result of repetition and practice.
- Instruction of this benchmark should not be in isolation from other benchmarks that emphasize understanding.
- Instruction should not focus on speed in the classroom.
- Instruction may initially include explicit strategies such as doubles, doubles plus one, making a ten and fact families.
- Even though such problems can typically be done without automaticity they will be done with less effort with automaticity.
- The correct way to assess automaticity is to observe students within the instructional setting as they complete problems that involve addition and subtraction.

Common Misconceptions or Errors

Students may rely heavily on visual representation or manipulatives.

Strategies to Support Tiered Instruction

- Teacher provides the addition expression $8 + 6$ and has students provide the sum. Once they have given the correct sum of 14, teacher asks "Is there another fact with the same sum?" If students are able to provide another addition expression, teacher asks them to find another one and repeats with subtraction expression, $17 - 9$. Students should provide the difference of 8. Students may need to use a manipulative to assist in determine the difference. Once students have given the correct difference, teacher asks "Can you give me a related subtraction equation?"
 - Example:



- Teacher co-creates a real-world scenario using a set of given numbers: 6, 7, and 13. Once students have helped to develop an appropriate real-world scenario, teacher discusses what might happen with the problem if the scenario is changed to the inverse operation. The teacher may find that students are not creating a true equation from the scenario they shared. Consider discussing how the numbers are related and how they are affected when the inverse operation is used.
- Teacher provides manipulatives like two color counters and asks students to create a representation of 12. Depending on how they represent the number six, the teacher has them separate the counters into two addends. They may have 12 red counters and 0 yellow showing. The equation is $12 + 0 = 12$. The teacher asks them how they could create a different representation, but with the same sum. Manipulation of the counters is continued until students can identify all sets of two addends that equal 12.
- Teacher provides a real-world problem using numbers up to 20.
 - For example, Gavin has 14 toy cars. His brother takes 6 of his toy cars. How many toy cars does he have now? Students use a manipulative to help solve the problem. The teacher acts out the scenario with the students, then represents the problem in an equation.

Questions to ask students:

Ask student how the make a ten strategy can help them solve $9 + 5$.

- Sample answer the demonstrates understanding: *$9 + 5$ is the same as $10 + 4$ is the equal to 14*

Ask students how to solve $13 - 7$ using a related addition fact.

- Sample answer the demonstrates understanding: *I know $6 + 7 = 13$ then then I can solve $13 - 7 = 6$*

Have students solve any addition or subtraction problem within 20, then ask how they found their answer.

- Sample answer the demonstrates understanding: *I used doubles/make a ten/fact family to solve.*

Instructional Tasks

Instructional Task 1 (MTR.3.1)

Using any number between 11-20 as the target number, provide students with digit cards 1-9.

Part A. Have students select a digit card to recall the missing addend needed to make the target number.

Part B. Work mentally to create an equation that is equal to the target number.

Instructional Task 2

Create two addition equations and two related subtraction equations using only the digits 1, 4, 7, and 3. (Digits can be combined and used more than once.)

Instructional Items

Instructional Item 1

What subtraction equation can be used to solve $5 + 13 = ?$

- a. $19 - 5 = 14$
- b. $18 - 5 = 13$
- c. $12 - 8 = 4$
- d. $13 - 5 = 8$

Instructional Item 2

Which of the following addition expressions have a sum of 20?

- a. $8 + 12$
- b. $15 + 4$
- c. $11 + 9$
- d. $6 + 13$
- e. $3 + 7$
- f. $14 + 4$
- g. $10 + 10$

Additional Resources:

[CPALMS Resources](#)

[Learnzillion -Make a ten](#)

[I-ready -Make a ten to add to 20](#)

[Learnzillion- Adding and subtracting using doubles facts](#)

Resources/Tasks to Support Your Child at Home

- Check out this interactive activity: <https://tangmath.com/mathlimbo>
- Task: John had 7 red jellybeans and 5 blue jellybeans. How many jellybeans does John have? Explain how you can use ten to add.
- Using a deck of cards – Addition War -make the ace 1 and remove face cards -2 players -each player flips 2 cards and adds to find the sum -the player with the greater sum keeps all 4 cards.