Unit 3 Family Support Materials

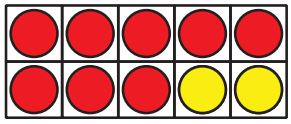
Adding and Subtracting within 20

In this unit, students add and subtract within 20.

Section A: Develop Fluency with Addition and Subtraction to 10

This section focuses on developing students' fluency with addition and subtraction within 10. Students need to have fluency with addition and subtraction facts within 10 by the end of grade 1. They are encouraged to think about addition facts that can help them figure out subtraction facts. For example, given $9 - 4$, students may say, "I know that $5 + 4 = 9$, so $9 - 4 = 5$."

Students develop fluency with sums of 10, and the 10-frame is used as a helpful visual. For example, this 10-frame may allow students to see several related facts.



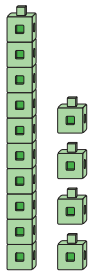
$8 + 2 = 10$
$2 + 8 = 10$
$10 - 2 = 8$
$10 - 8 = 2$

Students also continue to build an understanding of the equal sign as they work with equations, with an expression on each side. They may use computation, or reasoning about the numbers, to determine if the equations are true or false.

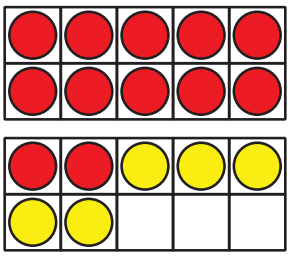
Section B: Use the Structure of 10 to Add and Subtract

In this section, students explore the base-ten system and place value as they learn that 10 ones are put together to make a new unit, a ten.

Students see that teen numbers are a ten plus some number of ones. Students use connecting cubes, organized into towers of 10, and 10-frames to make sense of ten as a unit.



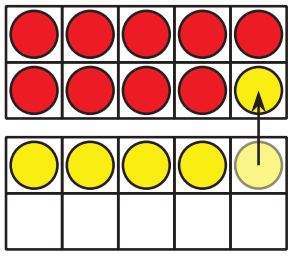
Students use 10-frames to help them add and subtract from teen numbers. For example, this image shows $12 + 5$ and $17 - 5$.



Section C: Add within 20

In this section, students add two or three numbers, with a total within 20. They start with problems in which two of the numbers make a ten (for example, $6 + 8 + 4$) and learn that they can add numbers in any order, which can make adding easier. They discover the usefulness of grouping numbers to find a sum of 10 when adding. Students find the sum of two addends, using methods by which they count on or use related facts they know.

For example, making a ten is helpful when finding the value of $9 + 5$. Students can take 1 from the 5 and group it with the 9 to make 10, and then add the 4.



$9 + 5$

$9 + 1 + 4$

$10 + 4$

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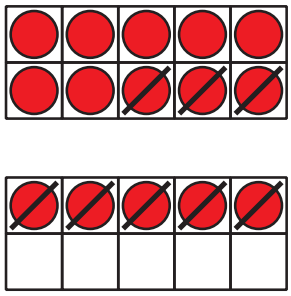
Section D: Subtract within 20

In this section, students subtract within 20. They use the relationship between addition and subtraction and their understanding of the usefulness of a ten.

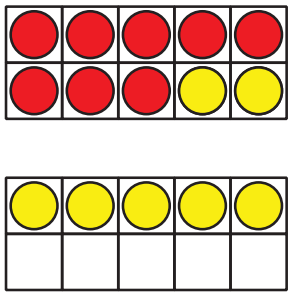
For example, given $15 - 8$, students may take away 5 to get to 10 and then take away 3 to find the difference of 7.



$15 - 5 = 10$

$10 - 3 = 7$

They also may start with 8 and count on by 2 to get 10, and then add 5 to reach 15. They see that the difference is 7.



$8 + 2 = 10$

$10 + 5 = 15$

$2 + 5 = 7$

Try it at home!

Near the end of the unit, ask your first grader to solve these expressions:

1. $7 + 2 + 3$
2. $18 - 9$

Questions that may be helpful as they work:

- How could you make a ten to help you?
- Could you tell me how to count on/count back to find the answer?
- Could you solve this problem in a different way?
- What tools could you use to help you subtract? Consider drawing 10-frames for your first grader or

providing them with access to cubes or other countable objects.

Solution:

1. 12
2. 9

Sample response:

- I can add 7 and 3 to make 10. Then I can add 2 to get my answer.
- I can count back from 18: 18, . . . 17, 16, 15, 14, 13, 12, 11, 10, 9.
- I can start with 9 and add until I get 18. I know that I can add 1 to 9 to make 10. I can add 8 more to get 18. Then I can add 1 and 8 together to get my answer.
- I can use 10-frames or cubes to help me subtract.