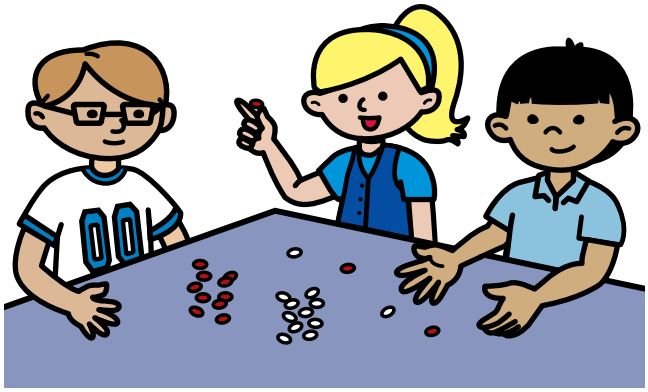
Bridges in Mathematics
Grade 2 Unit 2

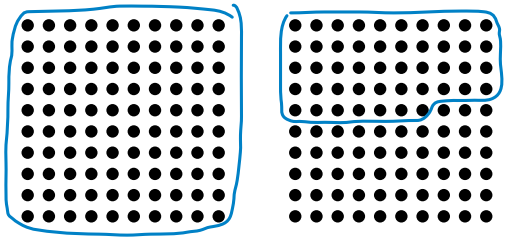
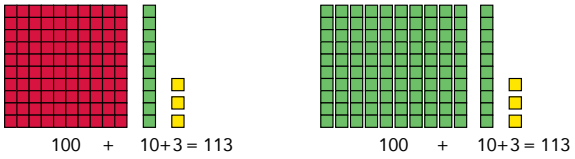
Setting Foundations for Place Value & Measurement

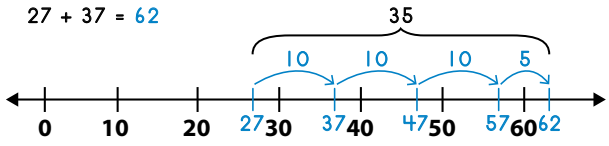


In this unit, your student will:

- Explore place value with 3-digit numbers
- Add and subtract within 100
- Explore strategies using number lines
- Work with arrays
- Continue to add and subtract within 20 and skip-count by 5s and 10s

Your student will practice these skills by solving problems such as these:

<table>
<tr><th>PROBLEM</th><th>COMMENTS</th></tr>
<tr><td>Circle 147 dots.
 
"Each of the big squares has 10 rows of 10. That's 100, so we circled one whole square for the hundred in 147. Then on the other one, we circled 4 rows of 10 and 7 more for the 47."</td><td rowspan="3"> 

In this unit, students think about the value of a number by looking at its place. For example, the number 113 can be broken into 1 hundred, 1 ten, and 3 ones. The first picture shows how we make this number with base ten number pieces.
Students will think of other ways to break a number into its component parts. For instance, 113 can also be thought of as 11 tens and 3 ones, like in the second picture.</td></tr>
<tr><td>629 How many hundreds are in this number?
How many tens are in this number?
How many ones are in this number?
(6 hundreds, 2 tens, 9 ones)</td></tr>
<tr><td>I have 12 tens and 3 ones. What number am I? (123)
"Well, 12 tens is the same as 120, plus 3 more is 123."</td></tr>
<tr><td> 

"I started at 27 and added 3 tens. That got me to 37, 47, 57. I still had to add 5, so I went 57 … 58, 59, 60, 61, 62."</td><td>A common strategy students use when computing on a number line is to add or subtract a friendly number (usually 10 or a multiple of 10) until that's no longer possible and then add or subtract the rest. In adding 27 + 35, for example, one can add 10 three times and then add the remaining 5 to get a total of 62.</td></tr>
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Frequently Asked Questions About Unit 2

Q: I understand why students should know the hundreds, tens, and ones for adding and subtracting, but why do they need to know different ways to break numbers apart?

A: One of the key strategies developed in this unit is breaking numbers into their component parts (also known as decomposing numbers). Grouping objects into hundreds, tens, and ones helps students understand the relative size of each digit compared to other digits. For example, when comparing 531 with 351, they should understand that 531 is the greater number because it has 5 hundreds, while 351 has only 3 hundreds.

Understanding 2-digit numbers as groups of tens and ones is essential for learning how to add and subtract. For example, when a student understands that 5 ones plus 8 ones is the same as 1 ten and 3 ones, they can develop a strategy to solve 35 + 28. First, they add the 3 tens and 2 tens to get 5 tens, or 50, then add 1 ten and 3 ones to get at the sum of 63.

Q: How is this unit teaching my student to add and subtract 2-digit numbers?

A: In second grade, students develop and practice a variety of strategies for adding and subtracting numbers flexibly and efficiently. When they first begin adding and subtracting 2-digit numbers, students often break numbers into tens and ones and add the parts together. For example, they might add 35 and 22 by adding the tens, adding the ones, and then combining the results: 30 + 20 = 50, 5 + 2 = 7, and 50 + 7 = 57. Other times, students treat numbers as lengths on a number line, making jumps of 10 and jumps of 1 to get from one number to another. If students are adding 35 and 22, they might start at 35, then jump 2 tens on the number line (35 to 45, 45 to 55) and then jump 2 ones (55 to 56, 56 to 57). The number line encourages students to use landmark numbers like 10, 50, and 100 and to count by 10s and 100s, which is useful for mental computation.

Q: How can I support my student's learning?

A: Look for authentic opportunities to read, discuss, represent, and compare 3-digit numbers with your student. Noticing 3-digit numbers in their everyday activities gives students opportunities to practice the skills they learned at school and to understand why place value is so important.

To further support your student in learning mathematics, you can:

- Visit mathathome.mathlearningcenter.org and work through some or all of the activities in Grade 2: Set 2 together. These activities complement the learning that takes place in the classroom during Unit 2 and provide fun ways to engage children in mathematical thinking. This set also includes digital versions of familiar games that your student has learned at school, such as The Subtraction Wheel and Steps & Leaps.
- Your student has been practicing telling time to the nearest 5 minutes during Number Corner. You can support this work by asking them to tell the time using analog and digital clocks throughout the day.
- Visit apps.mathlearningcenter.org and invite your student to explore the Number Line, Number Chart, Number Pieces, Number Rack, and Math Clock apps. Throughout Unit 2 and in Number Corner, students explore these tools in their physical forms in the classroom.
- Read books with your student that focus on skills such as place value with 3-digit numbers to 1,000, addition and subtraction within 100, arrays, and telling time to the nearest 5 minutes. Some suggestions for this unit include:
  - *A Place for Zero* by Angeline Sparagna LoPresti, illustrated by Phyllis Hornung
  - *Telling Time* by David A. Adler, illustrated by Edward Miller
  - *How Much, How Many, How Far, How Heavy, How Long, How Tall Is 1000?* by Helen Nolan, illustrated by Tracy Walker