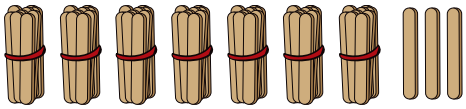
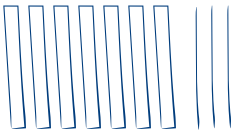
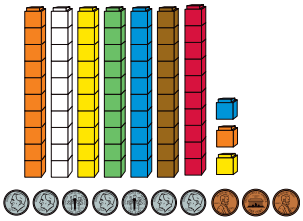
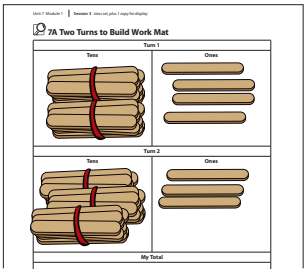
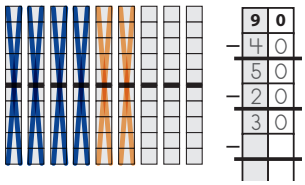
Bridges in Mathematics
Grade 1 Unit 7

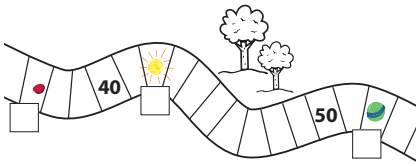
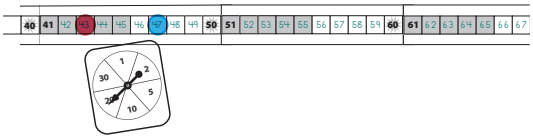
One Hundred & Beyond

In this unit, your student will:

- Understand place value within 120
- Represent quantities to 120 using groups of 1s, 10s, and 100
- Use models, sketches, and numbers to add and subtract within 100
- Count forward and backward by 1s, 2s, 5s, and 10s on a number path

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

PROBLEM	COMMENTS
Show 73 with bundles & sticks.  *"10, 20, 30, 40, 50, 60, 70…71, 72, 73. I used 7 bundles of 10 and 3 sticks."* Make a sketch of your sticks. *"I drew a rectangle for each bundle and a line for each stick."* 	Place value refers to our base ten number system. The value of each digit in a number depends on its place: ones, tens, or hundreds. Using models strategically grouped into 10s and 1s (like the bundles & sticks shown at left) emphasizes the connection between the quantity and symbol. Other models we're using in class include trains of linking cubes and individual cubes, as well as dimes and pennies. 
Build two quantities with bundles & sticks. Add the collections together to get the total number of sticks. *"I counted the 10s first — 10, 20, 30, 40, 50 — and got 50. Then I counted the 1s — 1, 2, 3, 4, 5, 6, 7 — that makes 57!"*  7A Two Turns to Build Work Mat Turn 1 Tens Ones Turn 2 Tens Ones My Total	Base ten models encourage students to split numbers by place value and add tens to tens, and ones to ones. In the example problem, the student used the bundles of 10 sticks and single sticks to represent the numbers 24 and 33. Next, the bundles of 10 were added together and then the single sticks were added separately, resulting in two partial sums that were combined to get the total. This strategy of "splitting" 10s and 1s helps students understand the structure of numbers in our base ten system and furthers their understanding of place value.
Color the 10-strips to see how much is left. Fill in the numbers on your record sheet. *"I drew a blue X through 4 of the 10-strips to subtract 40. On my next turn, I got 20 so I crossed out 2 more 10-strips. Now I only have 3 strips left to go. I hope I get 30 on my next turn."*  9 0 − 4 0 5 0 − 2 0 3 0 −	In the game Race to Zero, students subtract multiples of 10 from a starting amount as shown on this record sheet. This helps them to see how adding and subtracting groups of 10 is similar to adding and subtracting single-digit numbers and to relate this understanding to problems such as 4 + 5 = 9 and 40 + 50 = 90 or 9 − 4 = 5 and 90 − 40 = 50.

PROBLEM	COMMENTS
What's the number of the section on the path where the rock is? What about the chalk drawings of the sun and the ball? How do you know?  *"The rock is on 37. Start on 40 and count backwards, like 39, 38, 37, see?"* *"If you start on 40 and count forward, like 41, 42, you land on the sun."* *"The ball is on 52. That means the sun and the ball are 10 spaces apart because 42 plus 10 is 52."*	During this unit, students are introduced to a fictional nature path made of 120 sections, with every 10th section numbered. Students use the decade numbers as landmarks to help identify the locations of kindness rocks and chalk drawings people have left for others to find. They also add and subtract to determine how far it is from one chalk drawing to another. Later, students make a partner game involving a path 120 sections long. They spin to make jumps of 1, 2, 5, or 10, and later 20 or 30, to race from one end of the path to the other. 

Frequently Asked Questions About Unit 7

Q: The nature path looks like fun, but I'm not sure of its purpose.

A: The number path activities in this unit build on the work done in Unit 4. Students count forward and backward by 1s and by 10s along the path as they learn to recognize the patterns that exist in our number system. This practice helps them notice each number's place in the counting sequence and the distance between numbers. They come to think of adding and subtracting as a process of moving from one number to another, and to do so efficiently.

The ability to add or subtract 10 to any number is a foundational skill for many computational strategies involving larger numbers. Once students understand the counting pattern, adding and subtracting 10 makes sense because of the predictable pattern based on place value. Students recognize that the 1s stay constant, while the 10s numbers increase sequentially (as in 27, 37, 47, 57 …). For example, in adding 23 and 34, students might start at 23, then jump 3 tens on the number path (23 to 33, 33 to 43, 43 to 53) and then jump 4 ones (54, 55, 56, 57). This kind of flexible thinking develops strong mental math and will be further developed in second grade.

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

A: Invite your student to count anywhere and everywhere. How many steps from one end of the block to the other? How many cans or boxes in the display at the grocery store? How many crayons in the basket? The possibilities are endless, and if some of them involve objects that can be moved around, challenge your student to find ways to organize them so they're easier to count.

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 1: Set 7 together. These activities complement the learning that takes place in the classroom during Unit 7 and provide fun ways to engage in mathematical thinking. This set also includes digital versions of games your student has learned at school, such as Two Turns to Build and Race to Zero
- Visit apps.mathlearningcenter.org and invite your student to explore the Money Pieces, Number Chart, and Number Line apps. Throughout Unit 7, students use these tools in their physical forms in the classroom.
- Read books with your student that offer opportunities to think about numbers from 1 to infinity. Some book suggestions for this unit include:
  - *How Many Jelly Beans?* by Andrea Menotti, illustrated by Yancey Labat
  - *Counting on Katherine: How Katherine Johnson Saved Apollo 13* by Helaine Becker, illustrated by Dow Phumiruk
  - *Sheep Won't Sleep* by Judy Cox, illustrated by Nina Cuneo
  - *Billions of Bricks: A Counting Book About Building,* by Kurt Cyrus
  - *Infinity and Me* written by Kate Hosford, illustrations by Gabi Swiatkowska