SESSION 3.3

How Far From 100?

Math Focus Points

- Finding the difference between 2- and 3-digit numbers and 100
- Using the value of each place to make 2- and 3-digit numbers closest to 100
- Using multiples of 100 as a landmark to solve subtraction problems

Today's Plan		Materials
1 ACTIVITY **Introducing *How Far From 100?***	15 MIN CLASS PAIRS	• T33–T35 (from Session 1.3)
2 ACTIVITY **How Far From 100?**	30 MIN PAIRS	• *Student Activity Book*, p. 52 • M54; M55* • Digit Cards
3 DISCUSSION **Crossing Over 100**	15 MIN CLASS PAIRS	
4 SESSION FOLLOW-UP **Daily Practice**		• *Student Activity Book*, p. 53 • *Student Math Handbook*, pp. 29–30; G15

*See *Materials to Prepare,* p. 105.

Ten-Minute Math

What Time Is It? Ask students to set their clocks to 3:40, and record that time on the board. Set the demonstration clock to 3:45 and ask students what time it is. Write 3:45 on the board. Tell students this time can be read as 3:45 or 45 minutes past 3 o'clock.

- If I move the minute hand to the 10, what time will it be? What about to 11? What time will it be then?

Continue to record the times on the board and ask what each time is called. Working in pairs, students practice setting their clocks to 4:15, 6:25, 6:35, and 8:05.

ACTIVITY

1 Introducing *How Far From 100?*

15 MIN CLASS PAIRS

Introduce the game *How Far From 100?* (M54). ❶

I'm going to teach you a new game called *How Far From 100?* In each round of this game, you'll use Digit Cards to make two numbers that are close to 100. First you'll make a 2-digit number, and then you'll make a 3-digit number. You'll figure out how far each of these numbers is from 100.

Display the following Digit Cards from T33–T34 or draw the cards on the board.

1	6	2	7

When you play *How Far From 100?* you always have a [1] Digit Card to use throughout the game. For each round of the game, you get three more Digit Cards. Pretend that these are the cards you have for round 1. What's the closest 2-digit number to 100 that you can make with these cards? Take a minute to talk with a partner about what number you would make.

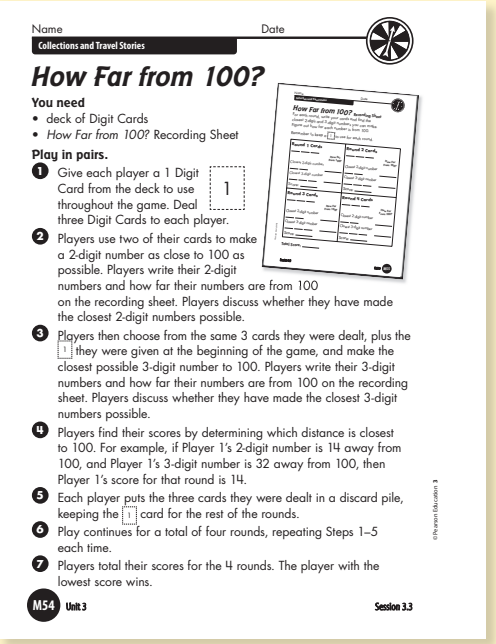
Give students a couple of minutes to talk together before discussing their answers. Students should understand that, to make the number closest to 100, the largest digit must be used for the tens place and the next largest for the ones place.

How did you choose which digit to put in the tens place? After you chose the tens digit, how did you decide which digit to put in the ones place?

After students have agreed that 76 is the largest 2-digit number that can be made with these cards, ask them to figure out how far that number is from 100. Display *How Far From 100?* Recording Sheet (T46) and demonstrate where to record the largest 2-digit number and the distance of that number from 100.

Professional Development

❶ **Dialogue Box:** *How Far From 100?*, p. 221



Name Date

Collections and Travel Stories

How Far from 100?

You need
- deck of Digit Cards
- *How Far from 100?* Recording Sheet

Play in pairs.

1. Give each player a 1 Digit Card from the deck to use throughout the game. Deal three Digit Cards to each player. [1]
2. Players use two of their cards to make a 2-digit number as close to 100 as possible. Players write their 2-digit numbers and how far their numbers are from 100 on the recording sheet. Players discuss whether they have made the closest 2-digit numbers possible.
3. Players then choose from the same 3 cards they were dealt, plus the [1] they were given at the beginning of the game, and make the closest possible 3-digit number to 100. Players write their 3-digit numbers and how far their numbers are from 100 on the recording sheet. Players discuss whether they have made the closest 3-digit numbers possible.
4. Players find their scores by determining which distance is closest to 100. For example, if Player 1's 2-digit number is 14 away from 100, and Player 1's 3-digit number is 32 away from 100, then Player 1's score for that round is 14.
5. Each player puts the three cards they were dealt in a discard pile, keeping the [1] card for the rest of the rounds.
6. Play continues for a total of four rounds, repeating Steps 1–5 each time.
7. Players total their scores for the 4 rounds. The player with the lowest score wins.

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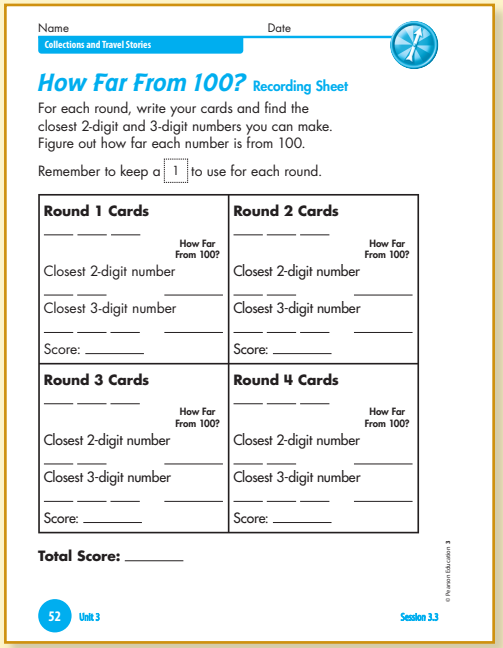
▲ Resource Masters, M54



Name Date

Collections and Travel Stories

How Far From 100? Recording Sheet

For each round, write your cards and find the closest 2-digit and 3-digit numbers you can make. Figure out how far each number is from 100.

Remember to keep a [1] to use for each round.

Round 1 Cards	Round 2 Cards
___ ___ ___	___ ___ ___
How Far From 100?	How Far From 100?
Closest 2-digit number ___ ___ ___	Closest 2-digit number ___ ___ ___
Closest 3-digit number ___ ___ ___ ___	Closest 3-digit number ___ ___ ___ ___
Score: ___	Score: ___
Round 3 Cards	**Round 4 Cards**
___ ___ ___	___ ___ ___
How Far From 100?	How Far From 100?
Closest 2-digit number ___ ___ ___	Closest 2-digit number ___ ___ ___
Closest 3-digit number ___ ___ ___ ___	Closest 3-digit number ___ ___ ___ ___
Score: ___	Score: ___

Total Score: ___

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▲ Student Activity Book, p. 52; Resource Masters, M55; T46

Remember that you have a Digit Card with the number 1 to use throughout the game. You use that card to make 3-digit numbers that are as close as possible to 100. The 3-digit number you make must be greater than 100, so even if you have a zero, you can't use it in the 100s place when you make your 3-digit number.

What's the closest 3-digit number to 100 that you can make with these cards? Talk to a partner about what number you would make and what the difference between that number and 100 is.

After a few minutes, ask students to explain their answers.

We made the largest 2-digit number (76) and the smallest 3-digit number (127) and figured out the difference between both of these numbers and 100. Which number is closer to 100?

Explain to students that their scores for each round will be the smaller difference between the 2- and 3-digit numbers and 100. In the example just worked on, 76 is closer to 100 (24 away) than 127 is (27 away), so the score for that round will be 24. Demonstrate how to record the 3-digit number, how far it is from 100, and the score for the round on the recording sheet on *Student Activity Book* page 52.

2 ACTIVITY

How Far From 100?

30 MIN PAIRS

Students play the game *How Far From 100?* (M54) in pairs. Remind each player to take a 1 Digit Card from the deck to keep throughout the game.

ONGOING ASSESSMENT: Observing Students at Work

Students use knowledge of place value to make 2- and 3-digit numbers close to 100 and determine the difference between each number and 100.

- **Are students using knowledge of place value to make 2- and 3-digit numbers closest to 100?** In other words, do they understand that to make the closest 2-digit number, they must use the largest digit in the tens place? Do they know that to make the closest 3-digit number, they must use the 1 Digit Card in the hundreds place and the smallest digit from their other cards in the tens place?
- **Are they accurately determining the difference between each number and 100 and identifying the one that is closer?**

DIFFERENTIATION: Supporting the Range of Learners

Intervention Some students may initially need support in determining the smallest 3-digit number closest to 100. When making the largest 2-digit number, they must place the largest digit in the tens place and the next largest in the ones place. Making the smallest 3-digit number reverses this strategy. Refer students who are having a problem with this to representations such as number lines and the 200 Chart (M53).

DISCUSSION

3 Crossing Over 100

15 MIN CLASS PAIRS

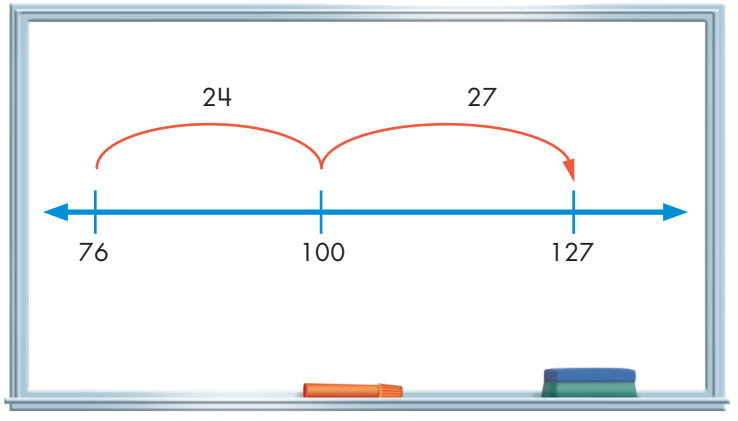
Math Focus Points for Discussion

- Using multiples of 100 as a landmark to solve subtraction problems

Display the transparency Digit Cards 1, 6, 2, and 7 from T33–T34 again or point to them on the board.

Who remembers the closest 2-digit number to 100 that we could make with these cards? What about the closest 3-digit number? How far was each from 100?

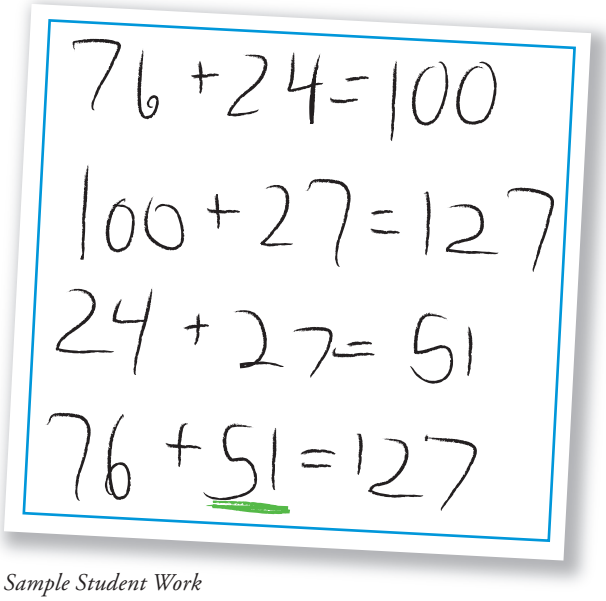
As students respond, draw a number line that shows the distance of each number from 100.



What if we wanted to find the difference between 76 and 127? In other words, how far is it from one of these numbers to the other? Talk to a neighbor about this and be ready to explain how you figured out the answer.

Students might say:

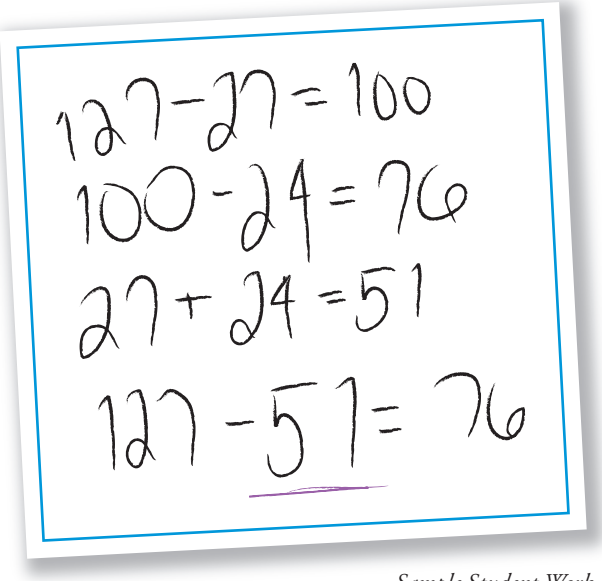
"We knew that from 76 to 100 is 24 and from 100 to 127 is 27, so we knew that the distance between 76 and 127 is 24 plus 27. That's 51."



Sample Student Work

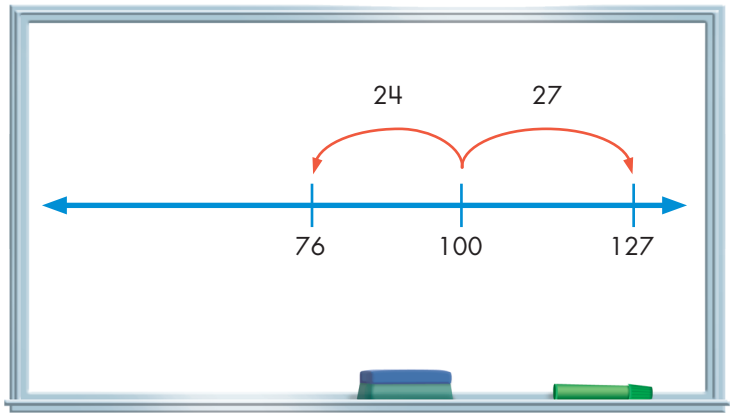
Students might say:

"We started at 127 and subtracted 27 to get to 100. We knew that we had to subtract 24 more to get to 76. We subtracted 51 in all, so the difference between 127 and 76 is 51."



Sample Student Work

Ask a volunteer to show the difference between 76 and 127 on the number line.❷



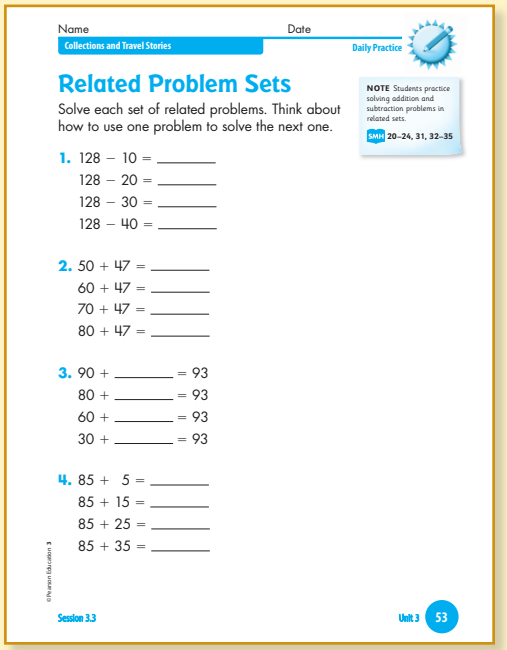
4 SESSION FOLLOW-UP
Daily Practice

Daily Practice: For ongoing review, have students complete *Student Activity Book* page 53.

Student Math Handbook: Students and families may use *Student Math Handbook* pages 29–30 and G15 for reference and review. See pages 225–233 in the back of this unit.

Math Note

❷ **Where's the Answer?** When students use a number line representation for a subtraction problem that involves distance (e.g., finding the difference between 76 and 127), it is important that they recognize that the solution is the series of jumps that they made from one number to the other (24 + 27 = 51). This is different from a number line representation of a removal situation, such as subtracting 76 from 127 in parts, when the jumps represent the parts of the number being removed, and the solution is the number landed on (51).


Name Date

Collections and Travel Stories — Daily Practice

Related Problem Sets

Solve each set of related problems. Think about how to use one problem to solve the next one.

NOTE Students practice solving addition and subtraction problems in related sets.
SMH 20–24, 31, 32–35

1. 128 − 10 = _____
   128 − 20 = _____
   128 − 30 = _____
   128 − 40 = _____

2. 50 + 47 = _____
   60 + 47 = _____
   70 + 47 = _____
   80 + 47 = _____

3. 90 + _____ = 93
   80 + _____ = 93
   60 + _____ = 93
   30 + _____ = 93

4. 85 + 5 = _____
   85 + 15 = _____
   85 + 25 = _____
   85 + 35 = _____

Session 3.3 — Unit 3 53

▲ Student Activity Book, p. 53