

SESSION
3.5

Race to the Top: How Many Tens? 2

MATH FOCUS POINTS

- Adding within 100 (e.g., a 2-digit number plus a 1-digit number, a multiple of 10, or a 2-digit number)
- Determining the number of tens in two 2-digit numbers
- Using an equation to represent adding within 100
- Developing strategies for adding two 2-digit numbers, by combining groups of tens and groups of ones or by keeping one number whole and adding on the other

TODAY'S PLAN

MATERIALS

10



CLASSROOM ROUTINES: REVIEW AND PRACTICE

Build It: How Many Dots?



Teacher Presentation (or use Ten Frame Cards and small counters that fit on Ten Frame Cards)

10



1 ACTIVITY

Introducing *Race to the Top: How Many Tens? 2*



Race to the Top: How Many Tens? 2 (or use one set of materials from Activity 2A)

35

2 MATH WORKSHOP

Adding 2-Digit Numbers

2A *Race to the Top: How Many Tens? 2*

2B *Three-in-a-Row on the 100 Chart*

2C *Adding within 100*

2D *Roll Tens 2*

2E *Adding Tens*



A55 (from Session 3.3)



2A G67* (as needed), G77*

Number Cards 1–50 (1 deck per pair; from Session 3.1)



Connecting cubes: 100 cubes (50 each of two colors, in single-color towers of 10; 1 set per pair)

2B Materials from Session 3.4

2C Materials from Session 3.3

2D Materials from Session 3.2

2E Materials from Sessions 3.1 and 3.2

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3 DISCUSSION

More Than 10 Ones



Three-in-a-Row on the 100 Chart (or use one set of materials from Activity 2B)

SESSION FOLLOW-UP: REVIEW AND PRACTICE

Daily Practice and Homework



Student Activity Book, pp. 331–332

* See *Materials to Prepare* in the Investigation 3 Planner.

Common
Core State
Standards

Classroom Routines: 1.NBT.A.1, 1.NBT.B.2, 1.NBT.B.2c, 1.NBT.C.4

Session: 1.NBT.A.1, 1.NBT.B.2, 1.NBT.B.2a, 1.NBT.B.2c, 1.NBT.C.4, 1.NBT.C.5

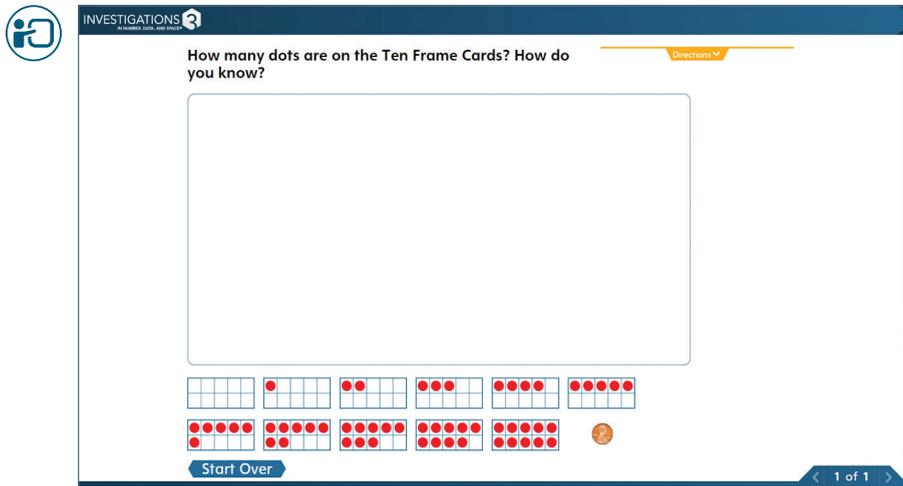
Daily Practice: 1.NBT.A.1, 1.NBT.B.2, 1.NBT.B.2c, 1.NBT.C.4, 1.NBT.C.5

CLASSROOM ROUTINES: REVIEW AND PRACTICE

Build It: How Many Dots?**MATH FOCUS POINTS**

- Determining the quantity represented by a given number of tens and ones
- Adding a 1-digit number to a 2-digit number
- Using combinations of 10 to add a 1-digit number to a 2-digit number (e.g., $16 + 7 = 16 + 4 + 3$) when the sum of the ones digits is greater than 10

Display the Teacher Presentation (or use Ten Frame Cards beginning with cards that show 26 and small counters that fit on the Ten Frame Cards).



Partners briefly discuss the total number of dots and how they know and then share strategies as a class. Then, place a blank Ten Frame next to the image of 26.

We agree there are 26 dots. I have some more dots (Show a handful of pennies.) to add, so I added a blank Ten Frame. Talk to your partner. If I add 3 pennies, how many dots will there be? How do you know?

Model students' strategies which likely include counting on 3 from 26 mentally or with the pennies (which might be placed on either Ten Frame) or placing the 3 pennies on the 6 card and seeing that their total is $10 + 10 + 9$ or $20 + 9$ or one less than 30.

Remove the pennies, and pose another problem with 26 as the starting number.

We agree that there are 26 dots. This time, I have 6 pennies to add. Talk to your partner. How many dots will there be? How do you know?

Again, model students' strategies, and highlight the strategy of using knowledge of combinations of 10 to solve the problem.

Discuss students' strategies, modeling each with the cubes.

STUDENTS MIGHT SAY



"Put the tens together and you have 10, 20, 30, 40, 50. Then count the ones."



"34 plus 10 is 44, plus another 10 is 54. Then 55, 56."



"There are 5 tens. That's 50. $4 + 2 = 6$, so we have 56."

The last thing we do is record that number on the recording sheet.

Display *Race to the Top: How Many Tens? 2* Recording Sheet (G77), read the column titles aloud, and remind students of the version of *Race to the Top* that they played in Investigation 2. **TN1**

Where do you think I would write 56?

Explain that they will record the number in the column that shows the number of tens in that number.

Race to the Top: How Many Tens? 2 Recording Sheet

					56				
0 tens	1 ten	2 tens	3 tens	4 tens	5 tens	6 tens	7 tens	8 tens	9 tens

Play several more rounds, until students understand how to play. Be sure to demonstrate a round that will result in a sum that needs to be recorded in the zero tens column (e.g., $3 + 6$) and one where there are more than 9 ones (e.g., $36 + 26$). **TN2**

TEACHING NOTES

TN1 "The Recording Sheet is different."

Some students notice that the recording sheet for this game is slightly different than the one they used in Session 2.3. Acknowledge that this is true, because students are using different cards in this version of the game. In Session 2.3, the recording sheet goes from 1 ten to 9 tens because the Counting by 10 Cards do not include a 0. Because the Number Cards include numbers 1–9, students *can* get numbers with 0 tens in this version.

TN2 "Shouldn't it be 5 tens?"

Some students look only at the numbers in the tens place to determine the number of tens in the total. So, for a problem like $36 + 26$, they think " $30 + 20 = 50$, so the number is going to have 5 tens." Realizing that sometimes there are enough ones to make another ten, resulting in an answer in the 60s, may surprise these students. The discussions in subsequent sessions focus specifically on this idea—that sometimes there will be enough ones to make another group of ten. This is an idea that students will continue to work on in later grades as they add multidigit numbers.

2 MATH WORKSHOP

Adding 2-Digit Numbers



Students choose among the following four activities. While students work, ask questions to gather information as you continue to use the **Assessment Checklist**: Add within 100 and MP8 (A55):

- ◊ How did you solve this problem?
- ◊ Could you use that strategy to solve another problem, like [example]?
- ◊ Can you describe the strategy you use to add?

2 A Race to the Top: How Many Tens? 2



Each pair needs a deck of Number Cards 1–50 and 50 cubes in each of two colors. Each student needs a *Race to the Top: How Many Tens? 2* Recording Sheet (G77). The directions are available on G67.

Players choose two Number Cards and build each with cubes of one color. They find the total and record it based on the number of tens in the sum.

ONGOING ASSESSMENT Observing Students at Work

Students represent and add two 2-digit numbers and record the sum based on the number of tens in it.

- ◊ Can students accurately build the numbers with cubes?
- ◊ How do students find the total? Do they group the tens and the ones? If they do, do they then count by 10s and 1s (e.g., 10, 20, 30, 31, 32, 33, 34), combine groups of tens (e.g., $20 + 10 = 30$), or think about the total number of tens (e.g., 3 tens is 30)? Do they add on one number (e.g., $22 + 10 = 32$ and then 33, 34)? Work mentally?
- ◊ Can students apply the same solution strategy to other problems? MP8
- ◊ How do students decide where to write the total? Do they refer to the number of towers of 10? Do they refer to the number in the tens place? Are they thrown off by problems that involve regrouping, expecting an answer with 5 tens, but finding a sum of sixty-something?



DIFFERENTIATION Supporting the Range of Learners

INTERVENTION Adapt the Problem Some students may initially be more successful if the set of Number Cards is limited to 1–30, thus allowing them to work with smaller numbers. Once it is clear that students are able to build each number and determine the total, encourage them to play with the 1–50 deck.

ENGLISH LANGUAGE LEARNERS Model Thinking Aloud Before students play the game in pairs, play a few rounds with them to help them understand how to play and how to record their results on *Race to the Top: How Many Tens? 2* Recording Sheet (G77). Walk them through each step, one step at a time, having them say each number, build it with cubes, and tell how many. Show students how to record the number in the appropriate column on the recording sheet.

2 B *Three-in-a-Row on the 100 Chart*

For complete details about this activity, see Session 3.4.

**DIFFERENTIATION** Supporting the Range of Learners

For another practice activity to be done outside of class, see *Three-in-a-Row on the 100 Chart: Recording Equations* at the end of this investigation.

INTERVENTION **Adapt the Learning Situation** Some students benefit from playing in a small group with you. Begin by playing with two of each card rather than three. Together, figure out all of the possible combinations of two numbers and record them as equations. Ask each student to build one combination with cubes and determine the total. Record the four sums and choose one to cover on the 100 Chart. Repeat for each round, deciding as a group which number to cover.

For a more comprehensive intervention activity to be done outside of class, see *Three-in-a-Row on the 100 Chart with Fewer Numbers* at the end of this investigation.

2 C *Adding within 100*

For complete details about this activity, see Session 3.3.

2 D *Roll Tens 2*

For complete details about this activity, see Session 3.2.

2 E *Adding Tens*

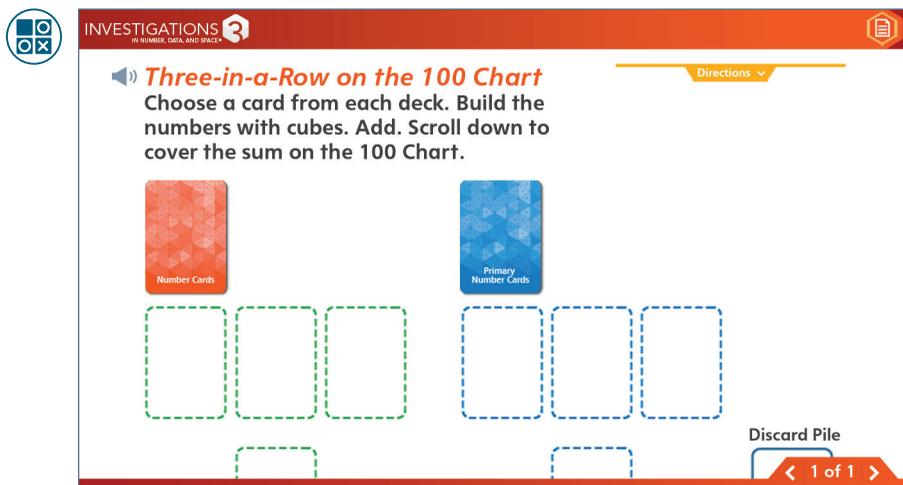
For complete details about this activity, see Sessions 3.1 and 3.2.

3 DISCUSSION**More Than 10 Ones****MATH FOCUS POINT FOR DISCUSSION**

- Developing strategies for adding two 2-digit numbers, by combining groups of tens and groups of ones or by keeping one number whole and adding on the other

Use this discussion to present several addition problems that involve regrouping in the ones place. Begin with a problem that does *not* involve regrouping.

Display the Game Presentation (or use connecting cubes in two colors, Primary Number Cards without the Wild Cards, and Number Cards 1–50).



Display the Number Card for 25 and the Primary Number Cards for 4, 5, and 6.

I watched one pair play *Three-in-a-Row*. They had a 25 they wanted to use, and then they had a 4, a 5, and a 6. Let's think about each of the problems they could solve.

Ask a volunteer to build the 25. Briefly discuss students' strategies for adding 4, then focus on 5 and 6.

What if they used the 5? (Adapt the cubes to show 25 and 5.) **How would you think about $25 + 5$?**

Record:

$$25 + 4 = 29$$

$$25 + 5 = \underline{\quad}$$

STUDENTS MIGHT SAY



"There's 25, and then keep counting: 26, 27, 28, 29, 30."



"Put the two 5s together and that's another 10. 20 plus 10, that's 30."



"You added 1 more cube. So it's 1 more than the last one.
 $29 + 1 = 30$."

What about the 6? What could they cover for $25 + 6$?

Record:

$$25 + 4 = 29$$

$$25 + 5 = 30$$

$$25 + 6 = \underline{\quad}$$

If students do not suggest combining the 6 ones with the 5 from the 25, be sure to raise it yourself.

For $25 + 5$, [Isabel] said we could put the ones together. What if we put the ones together for this problem? . . . [Chris] said $5 + 6$ makes 11. Now what?

STUDENTS MIGHT SAY



"11 has a 10 in it. So $20 + 10 = 30$, and 1 more is 31."



"20 plus 11. I agree with [Neil]. It's 31."

Pose a few more problems that result in more than 9 ones, focusing on using a combination of 10 or adding the ones and making another ten. For example:

$$29 + 7 = \underline{\quad}$$

$$36 + 5 = \underline{\quad}$$

$$47 + 4 = \underline{\quad}$$

For each, encourage students to model their strategy with cubes. Focus the discussion specifically on the total number of ones and the additional group of 10 it contains.

SESSION FOLLOW-UP: REVIEW AND PRACTICE

Daily Practice and Homework

 **DAILY PRACTICE** For reinforcement of this unit's content, students complete *Student Activity Book* page 331.

 **HOMEWORK** Students add quantities to solve a story problem on *Student Activity Book* page 332.

STUDENT ACTIVITY BOOK, P. 331



DAILY PRACTICE

Adding Multiples of Ten 3

Write the number of cubes. Add.

1			
	<u>25</u>	+ <u>30</u>	= <u>55</u>
2			
	<u>36</u>	+ <u>40</u>	= <u>76</u>
3			
	<u>48</u>	+ <u>50</u>	= <u>98</u>

NOTE

Students add a multiple of 10 to a 2-digit number.
NEW! Adding a 2-Digit Number and a Multiple of 10

UNIT 7 | 331 | SESSION 3.5

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STUDENT ACTIVITY BOOK, P. 332



HOMEWORK

Flowers

Solve the problem. Show your work.



Rosa has 11 flowers.
 Kim gives her 9 more flowers.
 How many flowers does Rosa have now? 20 flowers

Review students' work.

NOTE

Students add one quantity to another quantity to solve a story problem.
NEW! Adding a 2-Digit Number and a 1-Digit Number

UNIT 7 | 332 | SESSION 3.5

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