Lesson 18

Objective: Order numbers in different forms. (Optional)

Suggested Lesson Structure

☐ Fluency Practice   (12 minutes)

■ Application Problem   (8 minutes)

☐ Concept Development   (30 minutes)

■ Student Debrief   (10 minutes)

   Total Time   **(60 minutes)**

Fluency Practice (12 minutes)
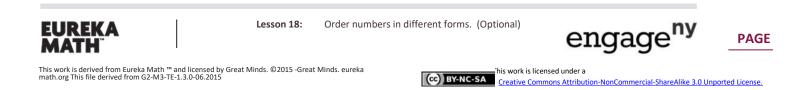
▪ Sprint: Sums–Crossing Ten **2.OA.2**   (12 minutes)

Sprint: Sums–Crossing Ten   **(12 minutes)**

Materials: (S) Sprint: Sums–Crossing Ten Sprint

This is the third day of the sums and differences intensive. Students remember the promise that yesterday's Spring would be repeated today, and now they see that the promise has been fulfilled.. Start the session by asking them to remember how many problems they were able to finish the day before.

   T: That is your goal. Everyone's goal is different because we are not competing with each other but

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with…?

S: Ourselves!

T: Your personal best. That is what matters. Share with your partner at least one strategy you use for practicing your sums and differences.

S: (Share.)

T: Here we go. Take your mark, get set, think!

Application Problem (8 minutes)

For an art project, Daniel collected 15 fewer maple leaves than oak leaves. He collected 60 oak leaves. How many maple leaves did he collect?

After guiding the students through the RDW process, let them analyze some work.

Here are some suggested questions based on the drawings to the right.

a.   How does the number sentence relate to the drawing?

b.   How does the first drawing relate to the second drawing?

c.   What did the student who drew the place value disks do to start the problem?

d.   Could the person who drew the number bonds also have started with making both the oak and maple leaves equal?

e.   Can you see that equality in both pictures?

Concept Development (30 minutes)

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**NOTES ON
MULTIPLE MEANS
OF ENGAGEMENT:**

As mentioned in Lesson 17, it is wise to provide visual support for struggling students. The teacher directives are coupled with the personal boards but are entirely oral. Write the directives while saying them aloud so that students see the connections and build toward the chart.

Partner A	Partner B
2 hundreds 12 ones	15 tens 4 ones
212	154
62 tens 4 ones	4 ones 6 hundreds
624	604
5 + 300 + 30	50 + 3 + 300
335	353
30 tens + 7 tens	29 tens + 8 tens
37 tens	37 tens

Concrete (6 minutes)

Materials: (T) Unlabeled hundreds place value chart (Lesson 8 Template), place value disks (9 hundreds, tens and ones) (S) Unlabeled hundreds place value chart (Lesson 8 Template), place value disks (9 hundreds, tens and ones), personal white board

T: Slide the place value chart inside your personal white boards.

T: Partner A, show 2 hundreds 12 ones on your place value chart. Partner B, show 15 tens 4 ones.

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T: (As students work, project your own place value chart
    and use place value disks to show 103.)

T: Compare numbers with your partner and me.

S: (Compare.)

T: What's the smallest, or least, number?

S: 103.

T: The greatest?

S: 212, or 2 hundreds 12 ones.

T: Write the three numbers from least to greatest on your
    personal white boards. Use standard form. At the
    signal, show your boards.

S: (Write 103, 154, 212.)

T: Good. Partner A, change to show 62 tens 4 ones. Partner B, change to show 4 ones 6 hundreds.

T: (As students work, show 642 on your place value chart.)

S: (Show.)

T: Now, compare. Write the numbers from least to greatest on your boards.

S: (Compare and show 604, 624, 642.)

T: Nice work. Partner A, change to show 5 + 300 + 30. Partner B, change to show 50 + 3 + 300.

T: (As students work, write *five hundred thirty-three* in word form instead of using place value disks.)

S: (Show.)

T: Compare our numbers. This time write them from greatest to least on your boards.

S: (Compare and show 533, 353, 335.)

T: You paid careful attention to the order, switching to go from greatest to least!

T: Partner A, change to show 30 tens + 7 tens. Partner B, change to show 29 tens + 8 tens.

T: (As students work, write *three hundred seventy* in word form.)

S: (Show.)

T: Compare our numbers. Write them using the symbols <, >, or = to make a number sentence.

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S: (Compare and show 370 = 370 = 370.)

> **NOTES ON**
> **MULTIPLE MEANS**
> **OF REPRESENTATION:**
>
> Thinking of a number can be challenging for students working below grade level. Provide some less intimidating ways to generate numbers:
>
> ▪ Digit cards
>
> ▪ Spinners
>
> ▪ Dice
>
> Again, post the assignments with visual clues or examples, too.
>
> | Form | Example |
> |------|---------|
> | A: Standard Form | 24 |
> | B: Unit Form | 4 ones 2 tens |
> | C: Word Form | twenty-four |
> | D: Expanded Form | 20 + 4 |

Pictorial (12 minutes)

Materials: (T): Pocket chart, 1 set of pre-cut <, >, = symbol
cards (Lesson 15 Template 1)
(S) Personal white board

Assign students to groups by counting off as A, B, C, and D.

T: Write your letter on the back of your board so you
don't forget it.

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S: (Quickly write their letters.)

T: Think of a number, and draw it on your place value chart in the way that you choose.

T: Use hundreds, tens, and ones or any combination of those you'd like. Take about one minute.

S: (Think of numbers, and draw them in a variety of ways.)

T: A's, write your number in standard form below your drawing. B's, write numbers in unit form. C's, write them in word form, and D's, write them in expanded form.

Students are seated at the carpet.

T: (Collect three boards. Place the numbers side by side in the pocket chart with space between them.)

T: Work with your partner to order these three numbers from least to greatest on your personal white boards.

S: (Order the numbers on their boards.)

T: Let's read the numbers in order.

S: (Read.)

T: (Trade drawings for three new ones, and continue with two or three drawings at a time until each has been used at least once.)

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Problem Set (12 minutes)

Students should do their personal best to complete the Problem Set within the allotted 12 minutes. For some classes, it may be appropriate to modify the assignment by specifying which problems they work on first. Some problems do not specify a method for solving. Students should solve these problems using the RDW approach used for Application Problems.
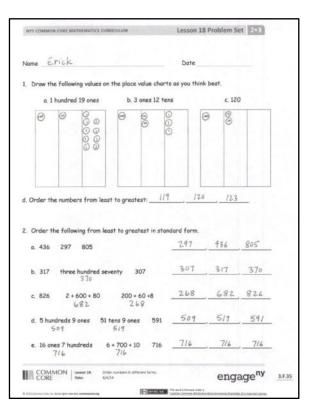
Instruct students to draw the values on the place value chart as directed on the Problem Set, and then order from least to greatest or greatest to least in standard form. Write <, >, or =.

Student Debrief (10 minutes)

Lesson Objective: Order numbers in different forms.

The Student Debrief is intended to invite reflection and active processing of the total lesson experience.

Invite students to review their solutions for the Problem Set. They should check work by comparing answers with a partner before going over answers as a class. Look for misconceptions or misunderstandings that can be

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addressed in the Debrief. Guide students in a conversation to debrief the Problem Set and process the lesson.

- T: Bring your Problem Sets to our Debrief.
- T: Work with your partner to carefully check your answers.
- S: (Work for two minutes.)
- T: Look at your drawings on your place value charts. Think about how your pictures are alike or different. Tell your partner.
- S: I drew them just like the words say. They're all different. ꙮ I used hundreds, tens, and ones in all of mine. ꙮ I drew them all differently, but then I wrote the numbers in standard form. ꙮ I decided to only use tens and ones to show each number.
- T: Look again. What about your drawings makes the numbers easy or difficult to compare?

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S: It's hard to compare them when they all are in different forms. ☐ It's also really hard when the units are mixed up.

T: How might you use what you know about comparing to help you order numbers well?

S: It helps to write all those different forms in the same way. Then, it's simple to put them in order.

T: True! Head back to your seats for your Exit Ticket.

Exit Ticket (3 minutes)

After the Student Debrief, instruct students to complete the Exit Ticket. A review of their work will help with assessing students' understanding of the concepts that were presented in today's lesson and planning more effectively for future lessons. The questions may be read aloud to the students.

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A

Number Correct: _____

Sums—Crossing Ten

1.	9 + 2 =			23.	4 + 7 =	
2.	9 + 3 =			24.	4 + 8 =	
3.	9 + 4 =			25.	5 + 6 =	
4.	9 + 7 =			26.	5 + 7 =	
5.	7 + 9 =			27.	3 + 8 =	
6.	10 + 1 =			28.	3 + 9 =	
7.	10 + 2 =			29.	2 + 9 =	
8.	10 + 3 =			30.	5 + 10 =	
9.	10 + 8 =			31.	5 + 8 =	
10.	8 + 10 =			32.	9 + 6 =	
11.	8 + 3 =			33.	6 + 9 =	
12.	8 + 4 =			34.	7 + 6 =	
13.	8 + 5 =			35.	6 + 7 =	
14.	8 + 9 =			36.	8 + 6 =	
15.	9 + 8 =			37.	6 + 8 =	
16.	7 + 4 =			38.	8 + 7 =	
17.	10 + 5 =			39.	7 + 8 =	

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18.	6 + 5 =	
19.	7 + 5 =	
20.	9 + 5 =	
21.	5 + 9 =	
22.	10 + 6 =	

40.	6 + 6 =	
41.	7 + 7 =	
42.	8 + 8 =	
43.	9 + 9 =	
44.	4 + 9 =	

B

Sums—Crossing Ten

1.	10 + 1 =	
2.	10 + 2 =	
3.	10 + 3 =	
4.	10 + 9 =	
5.	9 + 10 =	
6.	9 + 2 =	
7.	9 + 3 =	
8.	9 + 4 =	
9.	9 + 8 =	
10.	8 + 9 =	
11.	8 + 3 =	
12.	8 + 4 =	

23.	5 + 6 =	
24.	5 + 7 =	
25.	4 + 7 =	
26.	4 + 8 =	
27.	4 + 10 =	
28.	3 + 8 =	
29.	3 + 9 =	
30.	2 + 9 =	
31.	5 + 8 =	
32.	7 + 6 =	
33.	6 + 7 =	
34.	8 + 6 =	

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13.	8 + 5 =			35.	6 + 8 =	
14.	8 + 7 =			36.	9 + 6 =	
15.	7 + 8 =			37.	6 + 9 =	
16.	7 + 4 =			38.	9 + 7 =	
17.	10 + 4 =			39.	7 + 9 =	
18.	6 + 5 =			40.	6 + 6 =	
19.	7 + 5 =			41.	7 + 7 =	
20.	9 + 5 =			42.	8 + 8 =	
21.	5 + 9 =			43.	9 + 9 =	
22.	10 + 8 =			44.	4 + 9 =	

Name _____   Date _____

1. Draw the following values on the place value charts as you think best.

   a. 1 hundred 19 ones   b. 3 ones 12 tens   c. 120

<table>
<tr><td></td><td></td><td></td></tr>
</table>

d. Order the numbers from least to greatest: _____, _____, _____

2. Order the following from least to greatest in standard form.

a. 436   297   805   _____, _____,
    _____

b. 317   three hundred seventy   307   _____, _____, _____

c. 826   2 + 600 + 80   200 + 60 + 8   _____, _____, _____

d. 5 hundreds 9 ones   51 tens 9 ones   591 _____, _____,
    _____

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e. 16 ones 7 hundreds   6 + 700 + 10   716   _____, _____,

_____

3. Order the following from greatest to least in standard form.

a. 731   598   802   _____, _____, _____

b. 82 tens   eight hundreds twelve ones   128   _____, _____, _____

c. 30 + 3 + 300   30 tens 3 ones   300 + 30   _____, _____, _____

d. 4 ones 1 hundred   4 tens + 10 tens   114   _____, _____, _____

e. 19 ones 6 hundreds   196   90 + 1 + 600   _____, _____, _____

4. Write >, <, or =. Whisper the complete number sentences as you work.

a. 700   599   ◯   388

b. four hundred nine   9 + 400   490

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c. 63 tens + 9 tens   seven hundred twenty   720

d. 12 ones 8 hundreds   2 + 80 + 100   128

e. 9 hundreds 3 ones   390   three hundred nine

f. 80 tens + 2 tens   837   3 + 70 + 800

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Name _____   Date _____

1. Order the following from **least to greatest** in standard form.

    a. 426   152   801   _____, _____, _____

    b. six hundred twenty   206   60 tens 2 ones   _____, _____, _____

    c. 300 + 70 + 4   3 + 700 + 40   473   _____, _____, _____

2. Order the following from **greatest to least** in standard form.

    a. 4 hundreds 12 ones   421   10 + 1 + 400   _____, _____, _____

    b. 8 ones 5 hundreds   185   5 + 10 + 800   _____, _____, _____

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Name _____   Date _____

1. Draw the following values on the place value charts as you think best.

    a. 241   b. 412   c. 124

    d. Order the numbers from least to greatest: _____, _____, _____

2. Order the following from least to greatest in standard form.

    a. 537   263   912   _____, _____, _____

    b. two hundred thirty   213   20 tens 3 ones   _____, _____, _____

    c. 400 + 80 + 5   4 + 800 + 50   845   _____, _____, _____

3. Order the following from greatest to least in standard form.

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a. 11 ones 3 hundreds   311   10 + 1 + 300   _____, _____, _____

b. 7 ones 9 hundred   79 tens + 10 tens   970   _____, _____, _____

c. 15 ones 4 hundreds   154   50 + 1 + 400   _____, _____, _____

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