Lesson 14:

Divide three-digit numbers by two-digit numbers in problems that result in one-digit quotients.

CCSS Standard – 5.NBT / 5.NBT.B.6

FLUENCY (15-min) **Sprint: Powers of 10**

Sprint A – Page 116
Write each power of 10 in exponential form

Sprint A

STOP!!

Underline the last problem that you did.

I am going to read the answers. If you got it right, call out "Yes!" If you made a mistake, circle the answer.

Count the number you got **correct** and write the number at the top of the page.

THIS WILL BE YOUR PERSONAL GOAL FOR SPRINT B

A

Number Correct: _____

Write each power of 10 in exponential form.

1.	100	10^2
2.	1,000	10^3
3.	100,000	10^5
4.	10,000	10^4
5.	1,000,000	10^6
6.	10	10^1
7.	10×10	10^2
8.	$10 \times 10 \times 10$	10^3
9.	$10 \times 10 \times 10 \times 10 \times 10 \times 10$	10^6
10.	$10 \times 10 \times 10 \times 10$	10^3
11.	$10 \times 10 \times 10 \times 10 \times 10$	10^5
12.	10	10^1
13.	Ten to the second power	10^2
14.	Ten to the third power	10^3
15.	Ten to the fifth power	10^5
16.	Ten to the sixth power	10^6
17.	Ten to the fourth power	10^4
18.	One hundred	10^2
19.	One thousand	10^3
20.	One million	10^6
21.	One hundred thousand	10^5
22.	Ten thousand	10^4

23.	1,000	10^3
24.	1,000,000	10^6
25.	10,000	10^4
26.	10×10	10^2
27.	$10 \times 10 \times 10 \times 10 \times 10$	10^5
28.	10	10^1
29.	Ten to the fourth power	10^4
30.	Ten to the sixth power	10^6
31.	Ten to the fifth power	10^5
32.	One thousand	10^3
33.	One hundred thousand	10^5
34.	One million	10^6
35.	1,000	10^3
36.	10,000	10^4
37.	100×10	10^3
38.	10×10^2	10^3
39.	$10 \times 10{,}000$	10^5
40.	$10^3 \times 10$	10^4
41.	100×100	10^4
42.	100×10^4	10^6
43.	$1{,}000 \times 100$	10^5
44.	$10^5 \times 1{,}000$	10^6

FLUENCY (15-min) **Sprint: Powers of 10**

Sprint A – Page 116
Write each power of 10 in exponential form

Sprint B

STOP!!

Underline the last problem that you did.

I am going to read the answers. If you got it right, call out "Yes!" If you made a mistake, circle the answer.

Count the number you got **correct** and write the number at the top of the page.

THIS WILL BE YOUR PERSONAL GOAL FOR SPRINT B

B

Number Correct: _____

Improvement: _____

Write each power of 10 in exponential form.

1.	100	10^2
2.	1,000	10^3
3.	10,000	10^4
4.	100,000	10^5
5.	1,000,000	10^6
6.	10	10^1
7.	10×10	10^2
8.	$10 \times 10 \times 10$	10^3
9.	$10 \times 10 \times 10 \times 10 \times 10$	10^5
10.	$10 \times 10 \times 10 \times 10$	10^4
11.	$10 \times 10 \times 10 \times 10 \times 10 \times 10$	10^6
12.	10	10^1
13.	Ten to the second power	10^2
14.	Ten to the third power	10^3
15.	Ten to the sixth power	10^6
16.	Ten to the fifth power	10^5
17.	Ten to the fourth power	10^4
18.	One hundred	10^2
19.	One thousand	10^3
20.	One million	10^6
21.	Ten thousand	10^4
22.	One hundred thousand	10^5

23.	100	10^2
24.	100,000	10^5
25.	1,000	10^3
26.	10×10	10^2
27.	$10 \times 10 \times 10 \times 10$	10^4
28.	10	10^1
29.	Ten to the third power	10^3
30.	Ten to the fifth power	10^5
31.	Ten to the fourth power	10^4
32.	One thousand	10^3
33.	Ten thousand	10^4
34.	One million	10^6
35.	100	10^2
36.	1,000	10^3
37.	10×100	10^3
38.	$10^2 \times 10$	10^3
39.	$10{,}000 \times 10$	10^5
40.	10×10^3	10^4
41.	100×100	10^4
42.	$10^4 \times 100$	10^6
43.	$100 \times 1{,}000$	10^5
44.	$1{,}000 \times 10^3$	10^6

LAUNCH (5-min)

Students determine why expressions with the same quotient and remainder may not have the same value.

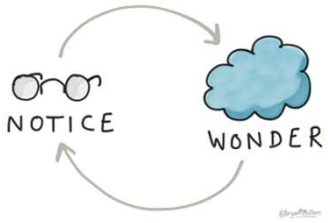
Determine the quotient and remainder of each of these expressions:

$92 \div 3$

$$
\begin{array}{r}
30 \text{ R2} \\
3\overline{)\,92} \\
-\,9 \\
\hline
02 \\
-\,0 \\
\hline
2
\end{array}
$$

$122 \div 4$

$$
\begin{array}{r}
30 \text{ R2} \\
4\overline{)\,122} \\
-\,12 \\
\hline
02 \\
-\,0 \\
\hline
2
\end{array}
$$



We know that the expressions $12 \div 3 = 4$ and $20 \div 5 = 4$. They have the same value although they have different dividends and divisors.

If $92 \div 3$ and $122 \div 4$ have the same quotient and the same remainder, **do the expressions have the same value?**

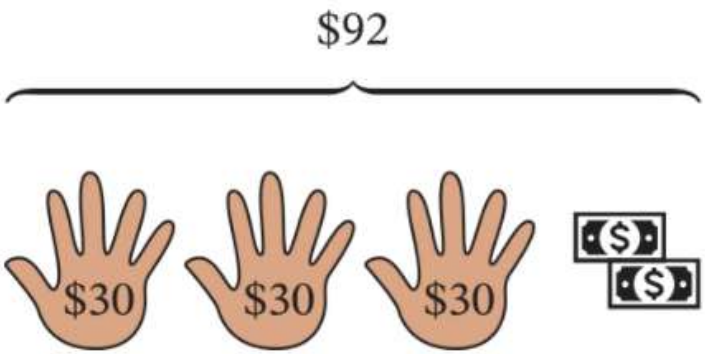
LAUNCH (5-min)

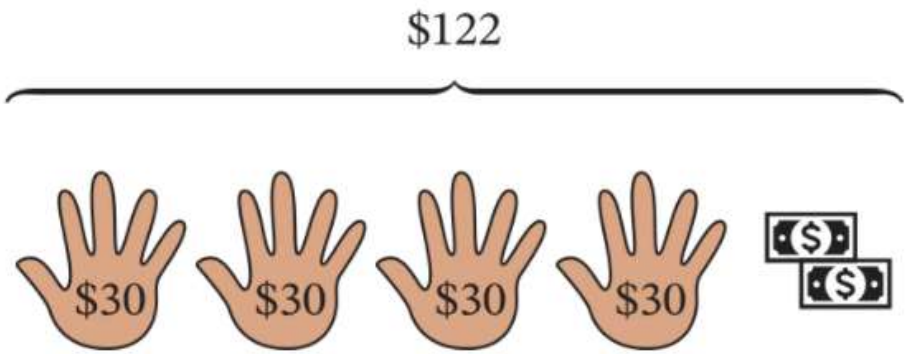
Students determine why expressions with the same quotient and remainder may not have the same value.

We can draw a diagram to help us reason about this situation. Let's think of splitting $92 among 3 people and splitting $122 among 4 people.

$92 ÷ 3 = 30 r2

$122 ÷ 4 = 30 r2





In both situations, after the money is split equally, **each person gets $30** and there are **$2 left over to share**.
If we can equally split the leftover $2 between each person in each group, do the people in the group of 4 get the same amount as the people in the group of 3? How do you know?

No. The expressions **do NOT have the same value** because each person does not **receive the same amount of money!**

LEARN (30-min) **Compare Division Expressions**

$310 \div 43$ $95 \div 19$

In both expressions, the divisors are 2-digit numbers.

How are these two expressions alike?

How are they different?

Do you think that we can use the same process to divide that we used in the previous lessons? Why?

Does having more digits in the dividend affect how you will divide?

LEARN (30-min) **Compare Division Expressions**

Page 119 – Learn Book

Use the Read–Draw–Write process to solve each problem.

1. A school activity has 301 students split into 43 equal-size groups. How many students are in each group?

What is the division problem here? Identify the dividend and the divisor? How do you know?

301 ÷ 43

300 ÷ 50 = 6

280 ÷ 40 = 7

Before we divide, can we estimate the dividend and the divisor to make a mental math problem?

So now let's divide this problem to get the actual quotient.

LEARN (30-min) **Compare Division Expressions**

Page 119 – Learn Book

301 ÷ 43

Use the Read–Draw–Write process to solve each problem.

1. A school activity has 301 students split into 43 equal-size groups. How many students are in each group?

So now here is where we have to use multiplication on the side to help us determine 301 divided by 43.

Since we know our estimates, let's plug them in and see what we get:

43 x 6 = 258

43 x 7 = 301

$$
\begin{array}{r}
XX7 \\
43\overline{)\,301} \\
-\ 301 \\
\hline
0
\end{array}
$$

7 students are in each group.

We check our work by multiplying 43 x 7 again.

LEARN (30-min) **Compare Division Expressions** **Page 120 – Learn Book**

2. Eddie has 34 days to read a 170-page book. If he reads the same number of pages each day, how many pages does he need to read each day to finish the book in 34 days?

What is the division problem here? Identify the dividend and the divisor? How do you know?

170 ÷ 34

180 ÷ 30 = 6

Before we divide, can we estimate the dividend and the divisor to make a mental math problem?

So now let's divide this problem to get the actual quotient.

LEARN (30-min) **Compare Division Expressions**

Page 120 – Learn Book

2. Eddie has 34 days to read a 170-page book. If he reads the same number of pages each day, how many pages does he need to read each day to finish the book in 34 days?

170 ÷ 34

So now here is where we have to use multiplication on the side to help us determine 170 divided by 34.

Since we know our estimate, let's plug it in and see what we get:

34 x 6 = 258 – oh no, too much!!

34 x 5 = 170

```
   XX5
34)170
 - 170
    0
```

5 pages each day.

We check our work by multiplying 34 x 5 again.

LAND (10-min) **Exit Ticket**

Exit Ticket – PAGE 127

EUREKA MATH² 5 • M1 • TC • Lesson 14

14

Name _____ Date _____

There are 418 people going on a field trip. Each bus can hold 72 people. What is the least number of buses the school must use? Explain your answer.

Small Group Time:
Problem Set Page 123 - 124

Homework:
Page 89 APPLY BOOK