

Block 7 (4 sessions)

Session 7A

Complete Daily Review and Quick Teach 7A
Complete 7A – Fluency Practice
Teach Lesson 7A – Multiply and Divide Powers of 10

Lesson 7A – Multiply and Divide Powers of 10

Lesson Resources	
Teacher Resources	Resources per Student
Classroom whiteboard Workbook – 7A Visualiser	Mini whiteboard Workbook – 7A

Section A – Multiplying by Powers of 10

Teacher Resources - Section A	Resources per Student - Section A
Classroom whiteboard	Mini whiteboard

Step	Instruction
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|----|--|
| 1. | Today, we are learning more about multiplication and division . What are we learning more about?~
I'm going to teach you to multiply and divide whole numbers by 10, 100, and 1000.
Let's start with multiplying. |
|----|--|

- | | |
|----|--|
| 2. | (Draw a place value chart on whiteboard as indicated, then write $4 \times 1 =$ to the left) |
|----|--|

$4 \times 1 =$				
	TH	H	T	O

- | | |
|----|--|
| 3. | The place value chart will help you understand what happens when we multiply numbers by 10, 100, and 1000. |
|----|--|

What is 4 times 1?~ **4**

(Write **4** in the ones column)

$4 \times 1 =$				
	TH	H	T	O
				4

- | | |
|----|---|
| 4. | (Write $4 \times 10 =$ below $4 \times 1 =$) |
|----|---|

What is 4 times 10?~ **40**

(Write **40** on the place value chart)

$4 \times 1 =$				
	TH	H	T	O
				4
$4 \times 10 =$				
			4	0

-
5. (Write $4 \times 100 =$ below $4 \times 10 =$)
 What is 4 times 100? ~ **400**
 (Write **400** on the place value chart)
-
6. (Write $4 \times 1000 =$ below $4 \times 100 =$)
 If 4 times 10 equals 40, and 4 times 100 equals 400,
 what does 4 times 1000 equal? ~ **4000**
 (Write **4000** on the place value chart)
 That's right. 4 times 1000 equals 4000.
-
7. When we multiply a number by 10, 100, or 1000, the digits move **left** along the place values. Which direction?~
 (Point to 4 in ones column) Which place is the 4 in? ~ **Ones**
 That's right. 4 is in the ones place.
-
8. (Point to 4 in tens column) When we multiply 4 by 10, the 4 moves **one place left**.
 Which place is the 4 in now? ~ **Tens**
 That's right. When we multiplied 4 by 10, the 4 moved **one place left**.
-
9. (Point to 4 in hundreds column) When we multiply 4 by 100, the 4 moves **two places left**.
 Which place is the 4 in now? ~ **Hundreds**
 That's right. When we multiplied 4 by 100, the 4 moved **two places left**.
-
10. (Point to 4 in thousands column) When we multiply 4 by 1000, the 4 moves **three places left**.
 Which place is the 4 in now? ~ **Thousands**
 That's right. When we multiplied 4 by 1000, the 4 moved **three places left**.
-
11. There is a simple way to remember how to multiply whole numbers by 10, 100, and 1000.
 (Point to 10) How many zeroes are in 10? ~ **1**
 When we multiply a whole number by 10, we write **1** more zero. How many?~
 (Point to 100) How many zeroes are in 100? ~ **2**
 When we multiply a whole number by 100, we write **2** more zeroes. How many?~
 (Point to 1000) How many zeroes are in 1000? ~ **3**
 When we multiply a whole number by 1000, we write **3** more zeroes. How many?~
-
12. (Wipe board but keep the place value chart for later)
 (In a different section of the whiteboard, write $24 \times 10 =$)
 How many zeroes in 10? ~ **1**
 So how many more zeroes do we write? ~ **1**
 We write 24, then 1 more zero.
 (Write **240**)
 What is 24 times 10? ~ **240**
-
13. (Write $24 \times 100 =$ below)
 How many zeroes in 100? ~ **2**
 So how many more zeroes do we write? ~ **2**
 We write 24, then 2 more zeroes.
 (Write **2400**)
 What is 24 times 100? ~ **2400**
-
14. (Write $24 \times 1000 =$ below)
 How many zeroes in 1000? ~ **3**
 So how many more zeroes do we write? ~ **3**
 We write 24, then 3 more zeroes.
 (Write **24000**)
 What is 24 times 1000? ~ **24000**
-
15. If we multiply by 10, how many more zeroes do we write? ~ **1**
 If we multiply by 100, how many more zeroes do we write? ~ **2**
 If we multiply by 1000, how many more zeroes do we write? ~ **3**
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16. (Repeat the previous step by asking the questions in random order, until students are confident.)
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17. (Wipe board, write $8 \times 1000 =$)
Write this problem, but don't solve it yet. (Check)
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18. Eyes up.
What are we multiplying 8 by? ~ **1000**
How many more zeroes do we write? ~ **3**
Write the answer now. (Support)
-
19. 3, 2, 1, **Chin it!**
Boards down. Look at your work.
What's the answer? ~ **8000**
Eyes up.
(Write **8000**)
Check it. Wipe it.
-
20. (Wipe board, write $39 \times 100 =$)
Write this problem, but don't solve it yet. (Check)
-
21. Eyes up.
What are we multiplying 39 by? ~ **100**
How many more zeroes do we write? ~ **2**
Write the answer now. (Support)
-
22. 3, 2, 1, **Chin it!**
Boards down. Look at your work.
What's the answer? ~ **3900**
Eyes up.
(Write **3900**)
Check it. Wipe it.
-
23. (Wipe board, write $60 \times 10 =$)
Write this problem, but don't solve it yet. (Check)
-
24. Eyes up.
What are we multiplying 60 by? ~ **10**
How many more zeroes do we write? ~ **1**
Write the answer now. (Support)
-
25. 3, 2, 1, **Chin it!**
Boards down. Look at your work.
What's the answer? ~ **600**
Eyes up.
(Write **600**)
Check it. Wipe it.
-
26. (Wipe board, write $84 \times 100 =$)
Solve this problem, then the others.
-
27. (Write the following problems below the existing problem)
 $17 \times 1000 =$
 $66 \times 10 =$
 $40 \times 100 =$
 $520 \times 100 =$
(Support, allowing 60 seconds.)
-
28. 3, 2, 1, **Chin it!**
Boards down.
-
29. (Write **8400, 17000, 660, 4000, 52000** as answers)
Check it. Wipe it.
-
30. (Wipe board, write $30 \times 1000 =$)
Solve this problem, then the others.
-

31. (Write the following problems below the existing problem)

$$47 \times 10 =$$

$$80 \times 10 =$$

$$99 \times 100 =$$

$$200 \times 1000 =$$

(Support, allowing 60 seconds.)

32. 3, 2, 1, **Chin it!**
Boards down.

33. (Write **30000**, **470**, **800**, **9900**, **200000** as answers)
Check it. Wipe it.
(Wipe board)

Section B – Dividing by Powers of 10

Teacher Resources - Section B	Resources per Student - Section B
As above	As above

Step Instruction

1. You've had some practise multiplying whole numbers by 10, 100, and 1000.
Now I'm going to teach you to **divide** whole numbers by 10, 100, and 1000.
The place value chart will help us again.

2. (Write $4000 \div 1 = 4000$ on the place value chart)

	TH	H	T	O
$4000 \div 1 =$	4	0	0	0

3. What is 4000 divided by 1? ~ **4000**

4. (Write $4000 \div 10 = 400$ below)

	TH	H	T	O
$4000 \div 1 =$	4	0	0	0
$4000 \div 10 =$		4	0	0

5. What is 4000 divided by 10? ~ **400**

6. (Write $4000 \div 100 =$ below)
If 4000 divided by 1 equals 4000, and 4000 divided by 10 equals 400,
What does 4000 divided by 100 equal? ~ **40**
(Write **40** on the place value chart)

7. (Write $4000 \div 1000 =$ below)
What does 4000 divided by 1000 equal? ~ **4**
(Write **4** on the place value chart)

8. Remember, when we **multiply** a number by 10, 100, or 1000, the place values of the digits move **left**.
Which direction? ~
When we **divide** a number by 10, 100, or 1000, the digits move **right** along the place values. Which
direction? ~

9. (Point to 4 in thousands column) Which place is the 4 in? ~ **Thousands**
That's right. 4 is in the thousands place.

10. (Point to 4 in hundreds column) When we divide 4000 by 10, the 4 moves **one place right**.
Which place is the 4 in now?~ **Hundreds**
That's right. When we divided 4000 by 10, the 4 moved **one place right**.

11. (Point to 4 in tens column) When we divide 4000 by 100, the 4 moves **two places right**.
Which place is the 4 in now?~ **Tens**
That's right. When we divided 4000 by 100, the 4 moved **two places right**.

12. (Point to 4 in ones column) When we divide 4000 by 1000, the 4 moves **three places right**.
Which place is the 4 in now?~ **Ones**
That's right. When we divided 4000 by 1000, the 4 moved **three places right**.

13. Remember, multiplication and division are opposites.
When we multiply by 10, 100, or 1000, the digits move **left** along the place values.
When we divide by 10, 100, or 1000, the digits move **right** along the place values.

14. When we multiply by 10, 100, or 1000, we write more zeroes.
When we divide by 10, 100, or 1000, we **cross out zeroes**. What do we do?~

15. (Wipe board, write $2000 \div 10 =$)
(Point to 10) We are dividing by 10.
When we multiply by 10, how many more zeroes do we write?~ **1**
So when we divide by 10, how many zeroes do we cross out from each number?~ **1**
That's right. We cross out 1 zero from each number.

16. We always cross out zeroes from **the end** of the number. From which part?~
(Cross out final 0 from 2000) We cross out the last zero from 2000,
(Cross out 0 from 10) and the zero from 10.

$200\cancel{0} \div 1\cancel{0} =$

(Point to 200) What is this number now?~ **200**
So what is the answer?~ **200**
(Write **200**) That's right. 2000 divided by 10 equals 200.

17. (Write $2000 \div 100 =$ below)
How many zeroes in 100?~ **2**
So how many zeroes do we cross out from each number?~ **2**
(Cross out final two 0s from 2000) We cross out the last **two** zeroes from 2000,
(Cross out 0s from 100) and the two zeroes from 100.
(Point to 20) What is this number now?~ **20**
So what is the answer?~ **20**
(Write **20**) That's right. 2000 divided by 100 equals 20.

18. (Write $2000 \div 1000 =$ below)
How many zeroes in 1000?~ **3**
So how many zeroes do we cross out from each number?~ **3**
(Cross out 0s from 2000) We cross out the **three** zeroes from 2000,
(Cross out 0s from 1000) and the three zeroes from 1000.
(Point to 2) What is this number now?~ **2**
So what is the answer?~ **2**
(Write **2**) That's right. 2000 divided by 1000 equals 2.

19. If we divide by 10, how many more zeroes do we cross out from each number?~ **1**
If we divide by 100, how many more zeroes do we cross out from each number?~ **2**
If we divide by 1000, how many more zeroes do we cross out from each number?~ **3**

20. (Repeat the previous step by asking the questions in random order, until students are confident.)

21. (Write $8060 \div 10$)
Write this problem, but don't solve it yet. (Check)

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22. Eyes up.
This is important.
We can multiply **any** whole number by 10, 100, or 1000 by writing more zeroes.
We must be more careful with division.
(Point to 8060) We only cross out zeroes to divide if the number has enough zeroes at the end.
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23. Remind me, If we divide by 10, how many more zeroes do we cross out from each number? ~ **1**
Look at the problem. Does each number end in at least one zero? ~ **Yes**
So can we cross out to divide? ~ **Yes**
You can cross out zeroes for all of the division problems in today's lesson, but this doesn't always work.
You will learn how to divide **any** number by 10, 100, or 1000 in the future.
-
24. Let's solve the problem.
Eyes up.
What are we dividing 8060 by? ~ **10**
How many more zeroes do we cross out from each number? ~ **1**
-
25. (Point to the first 0 in 8060) Do we cross out this zero? ~ **No**
That's right. We cross out the end zeroes from each number.
Cross out one zero from each number, then write the answer. (Support)
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26. 3, 2, 1, **Chin it!**
Boards down. Look at your work.
What's the answer? ~ **806**
Eyes up.
(Write **806**)
Check it. Wipe it.
-
27. (Wipe board, write **9000 ÷ 1000 =**)
Write this problem, but don't solve it yet. (Check)
-
28. Eyes up.
What are we dividing by? ~ **1000**
How many zeroes do we cross out from each number? ~ **3**
Cross out the zeroes from each number, then write the answer. (Support)
-
29. 3, 2, 1, **Chin it!**
Boards down. Look at your work.
What's the answer? ~ **9**
Eyes up.
(Write **9**)
Check it. Wipe it.
-
30. (Wipe board, write **7700 ÷ 100 =**)
Write this problem, but don't solve it yet. (Check)
-
31. Eyes up.
What are we dividing by? ~ **100**
How many zeroes do we cross from each number? ~ **2**
Cross out the zeroes from each number, then write the answer. (Support)
-
32. 3, 2, 1, **Chin it!**
Boards down. Look at your work.
What's the answer? ~ **77**
Eyes up.
(Write **77**)
Check it. Wipe it.
-
33. (Wipe board, write **830 ÷ 10 =**)
Solve this problem, then the others.
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34. (Write the following problems below the existing problem)

$900 \div 100 =$

$14000 \div 1000 =$

$30900 \div 100 =$

$500000 \div 1000 =$

(Support, allowing 60 seconds.)

35. **3, 2, 1, Chin it!**

Boards down.

36. (Write **83, 9, 14, 309, 500** as answers)

Check it. Wipe it.

37. (Wipe board, write **$5600 \div 100 =$**)

Solve this problem, then the others.

38. (Write the following problems below the existing problem)

$47000 \div 1000 =$

$5080 \div 10 =$

$890000 \div 1000 =$

$701000 \div 100 =$

(Support, allowing 60 seconds.)

39. **3, 2, 1, Chin it!**

Boards down.

40. (Write **56, 47, 508, 890, 7010** as answers)

Check it. Wipe it.

41. (Wipe board, write **$47 \times 10 =$**)

When I say go, solve this problem, then the others.

When we multiply, we write more zeroes.

When we divide, we cross out zeroes.

Go.

42. (Write the following problems below the existing problem)

$670 \div 10 =$

$25 \times 1000 =$

$7300 \div 100 =$

$368 \times 1000 =$

(Support, allowing 60-90 seconds.)

43. **3, 2, 1, Chin it!**

Boards down.

44. (Write **470, 67, 25000, 73, 368000** as answers)

Check it. Wipe it.

45. (Wipe board, write **$92000 \div 1000 =$**)

Solve this problem, then the others.

46. (Write the following problems below the existing problem)

$86 \times 1000 =$

$5050 \div 10 =$

$64 \times 100 =$

$21400 \div 100 =$

(Support, allowing 60-90 seconds.)

47. **3, 2, 1, Chin it!**

Boards down.

48. (Write **92, 86000, 505, 6400, 214** as answers)

Check it. Wipe it.

Section C – Independent Practice

Teacher Resources - Section C	Resources per Student - Section C
Workbook – 7A Visualiser	Workbook – 7A

Step	Instruction
1.	(Remove whiteboards) (Place Workbook - 7A under visualiser) Open your workbook to 7A. (Check) This page is full of multiplication and division problems.
2.	When I say go, solve Problem A. Go. (Support)
3.	Pencils down. (Write 1,400 for Problem A) The answer to Problem A is 1,400. Check it.
4.	Solve the rest of the problems now. (Support students as they work independently)
5.	(Conclude lesson by correcting together, then reading the final step below.)
6.	You just learned to multiply and divide whole numbers by 10, 100, and 1000! This is a skill that is used in lots of different areas of maths. Eventually, you will learn how to multiply and divide decimals by 10, 100, and 1000.

Student Workbook Answers:

A. 1,400 **B.** 35 **C.** 560 **D.** 70 **E.** 62 **F.** 20,000 **G.** 899 **H.** 89 **I.** 35,000 **J.** 6,770 **K.** 180 **L.** 14,200
M. 7,990 **N.** 79 **O.** 366,000 **P.** 36,600 **Q.** 978 **R.** 83,100 **S.** 74,400 **T.** 1,000
U. 20,000 **V.** 340,000 **W.** 8 **X.** 5,450,000 **Y.** 99 **Z.** 87

This concludes your maths session for today.