MULTIPLICATION

FACT FLUENCY

EXPLORE THE 7s TIMES TABLE

LESSON 10

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TODAY'S OBJECTIVE

Today we will explore the distributive property as a strategy to solve the 7s times table.

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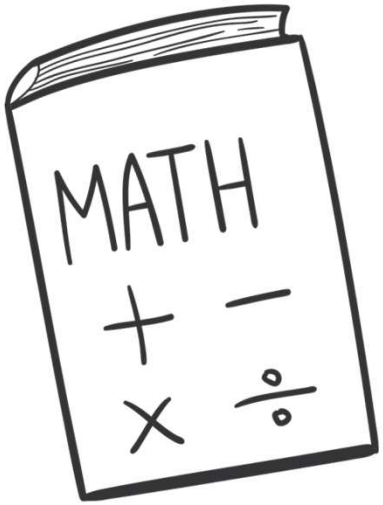
TAKE OUT YOUR

MATH JOURNALS



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WATCH ME FIRST

Today, we will use the 5s and 2s facts to find the products of the 7s facts.

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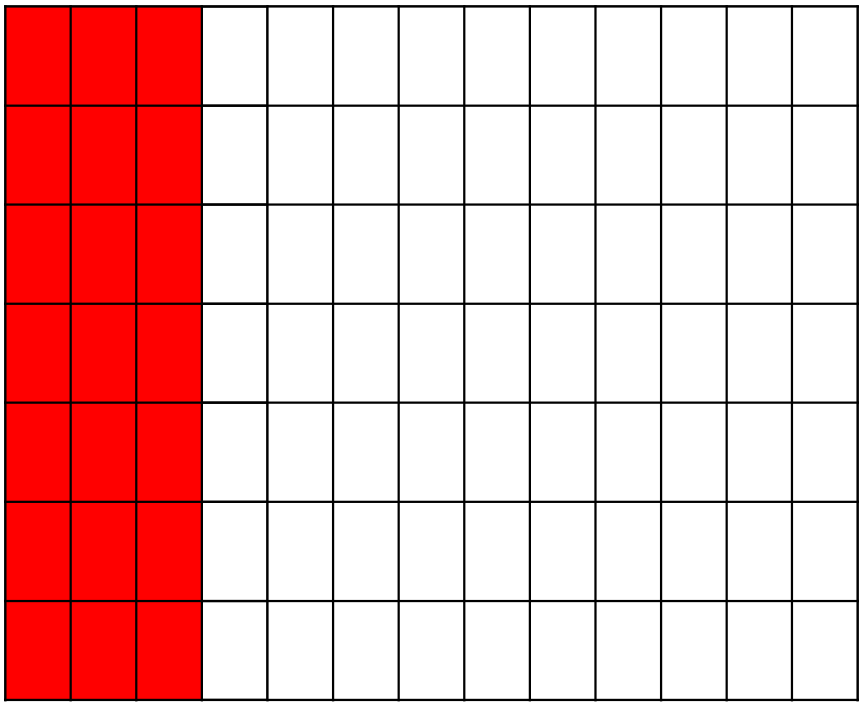
WATCH ME FIRST

I want to find the product of **7 x 3**.
I'll start by creating a model.



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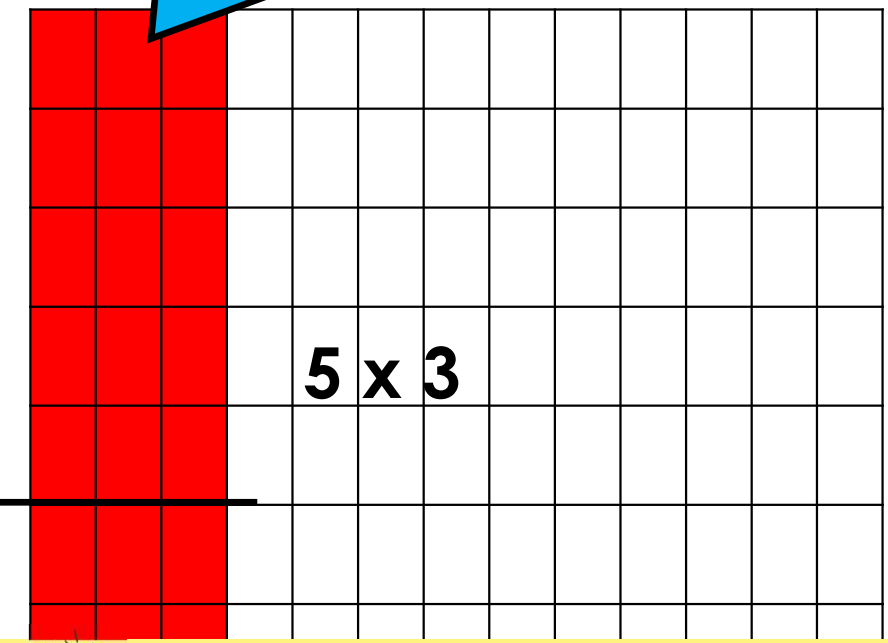
WATCH ME FIRST

Here is 5 x 3 or
5 groups of 3



My model represents 7 x 3. Inside 7 x 3 I see 5 groups of 3. (5 x 3 is a 5s fact)

I'll draw a line to separate the 5s fact.

This is called **decomposing**.

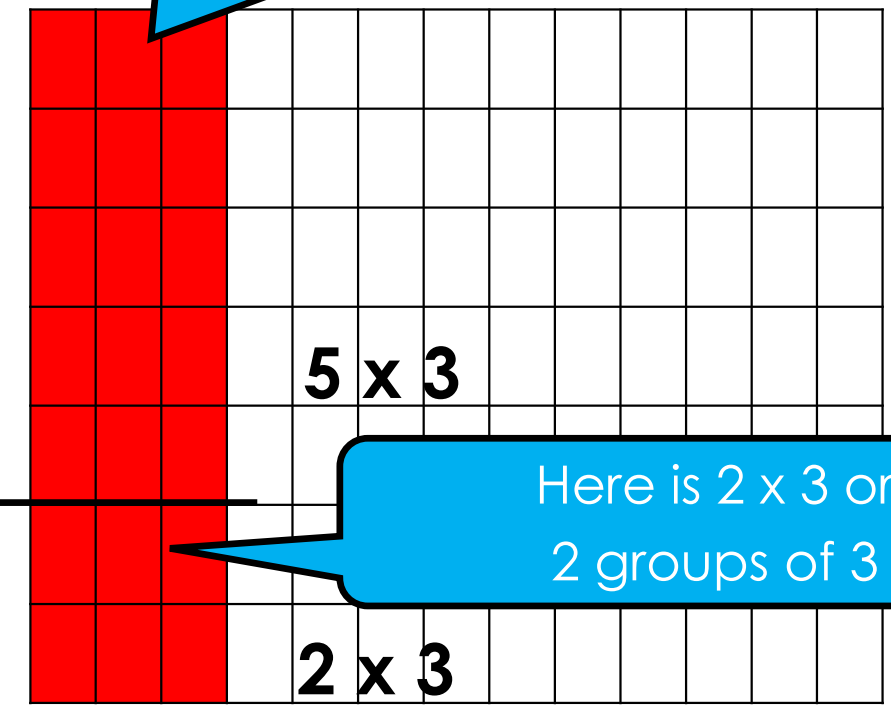
Did You Know?

Decomposing is the act of breaking a quantity into parts.

WATCH ME FIRST

I also see 2 groups of 3 inside the model.

Here is 5 x 3 or
5 groups of 3



I decomposed
7 x 3 and found **two**
multiplication facts inside.
5 x 3 and 2 x 3

Here is 2 x 3 or
2 groups of 3

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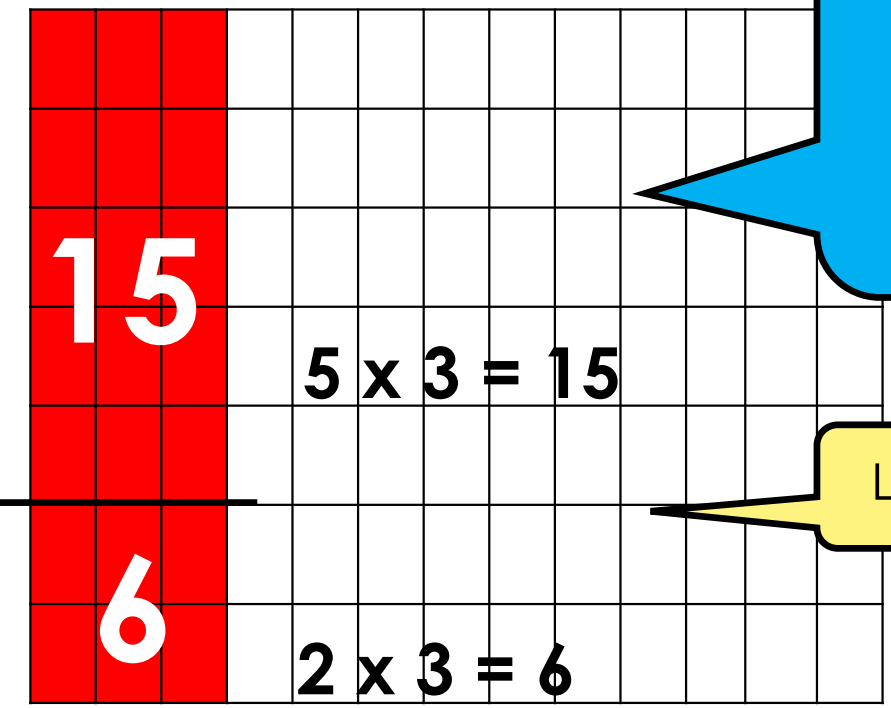
WATCH ME FIRST

Next, I'll add both products to solve.



15 + 6 = 21
The total is 21, so...
7 x 3 = 21

Let's explore more 7s facts.

	7s Facts
x1	
x2	
x3	**7 x 3 = 21**
x4	
x5	
x6	
x7	
x8	
x9	
x10	
x11	
x12	

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LET'S WORK TOGETHER

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Let's Review!

We can solve 7s facts by using the related 5s and 2s facts:

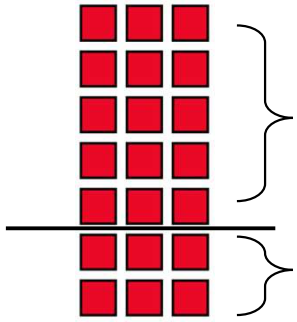
1st – Decompose the 7s fact into the related 5s and 2s facts.

2nd – Find the product of both facts.

3rd – Solve the 7s fact by adding both products.

EXAMPLE: Find the product of **7 x 3**.

STEP 1 7 x 3 = ?



STEP 2

7 x 3 = (5 x 3) + (2 x 3)

15 **6**

STEP 3

7 x 3 = (5 x 3) + (2 x 3)

15 + 6

7 x 3 = **21**

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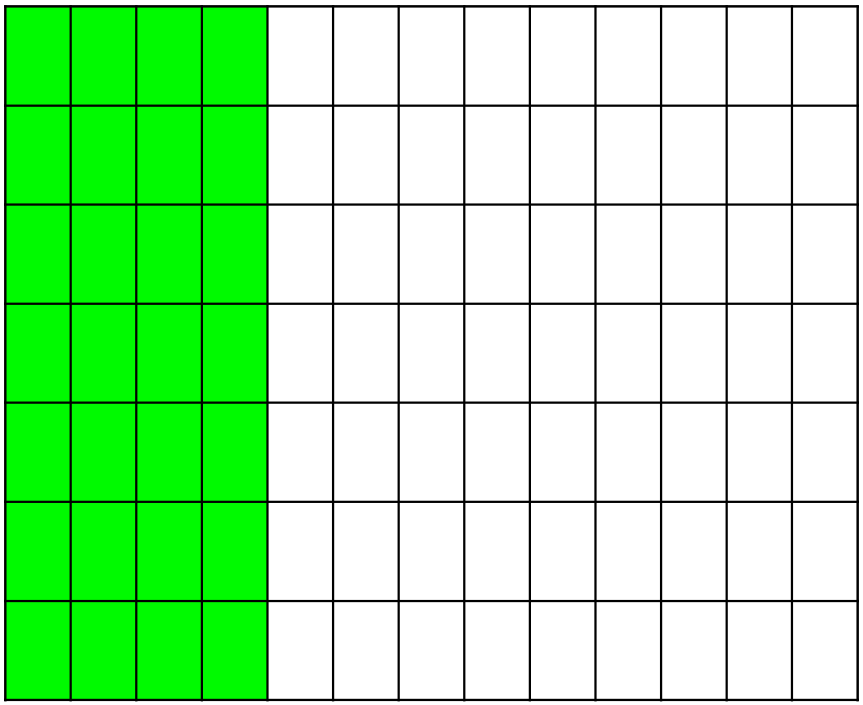
Problem #1
LET'S WORK TOGETHER

Find the product of **7 × 4**.
Draw a model in your math journal.



	7s Facts
x1	
x2	
x3	7 x 3 = 21
x4	
x5	
x6	
x7	
x8	
x9	
x10	
x11	
x12	

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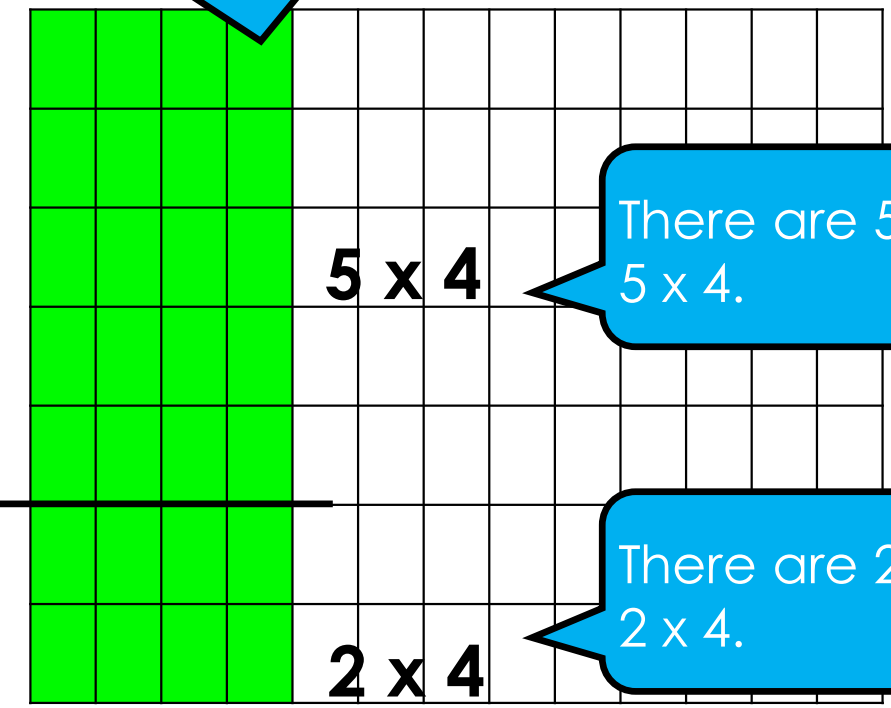
Problem #1
LET'S WORK TOGETHER

What do we need to do first?
Record in your math journal.

STEP 1

We need to decompose to find the related 5s and 2s facts.



There are 5 groups of 4 or 5 x 4.

There are 2 groups of 4 or 2 x 4.

	7s Facts
x1	
x2	
x3	7 x 3 = 21
x4	
x5	
x6	
x7	
x8	
x9	
x10	
x11	
x12	

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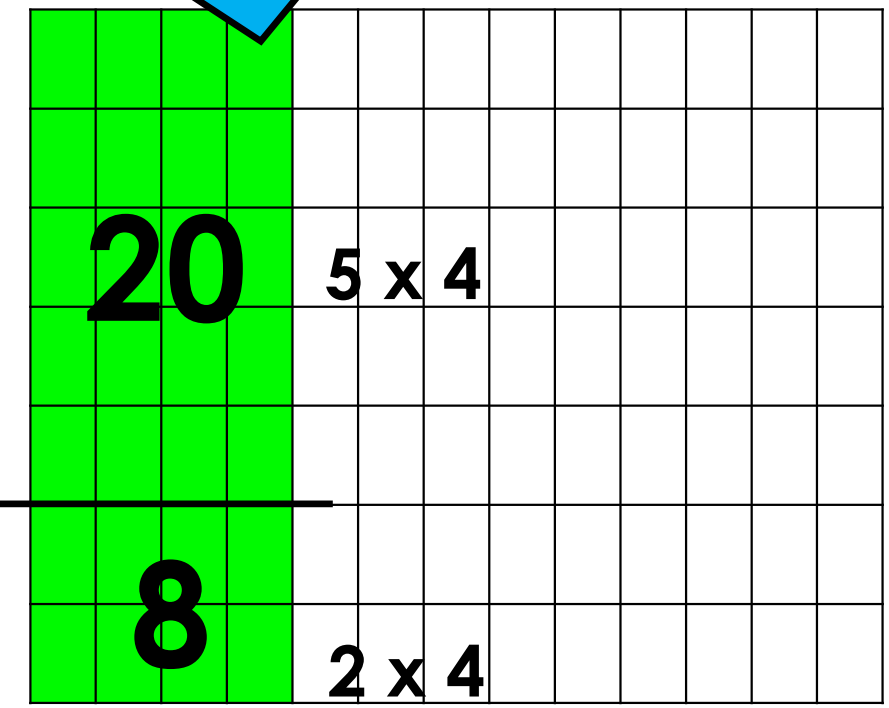
Problem #1
LET'S WORK TOGETHER

STEP 1

We need to decompose to find the related 5s and 2s facts.



What should we do next?
Record in your math journal.

STEP 2 Find both products.

$7 \times 4 = (5 \times 4) + (2 \times 4)$

20 **8**

	7s Facts
x1	
x2	
x3	7 x 3 = 21
x4	
x5	
x6	
x7	
x8	
x9	
x10	
x11	
x12	

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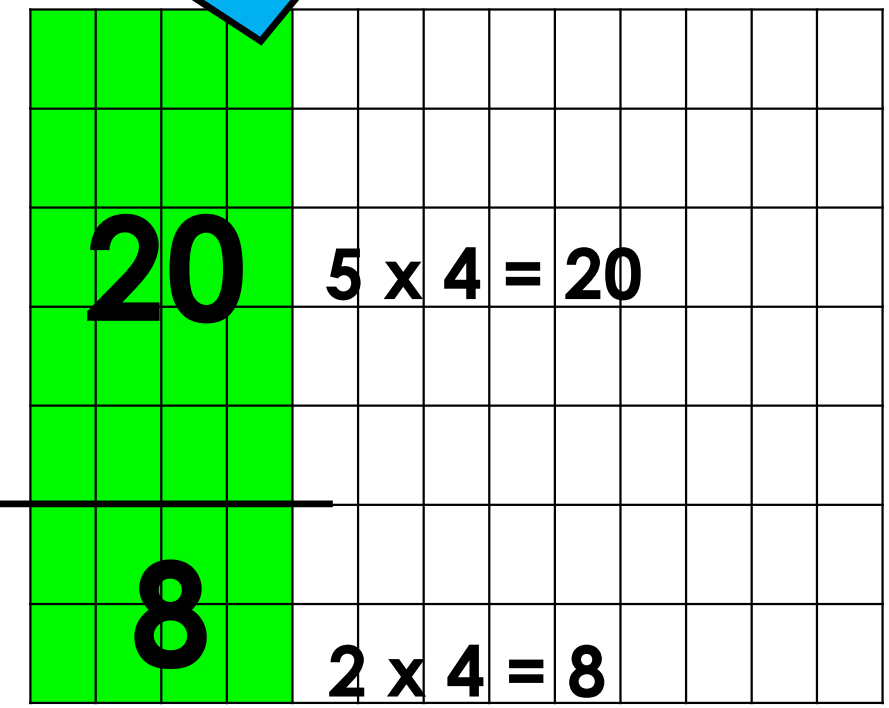
Problem #1
LET'S WORK TOGETHER

What should we do last?
Record in your math journal.

STEP 1

We need to decompose to find the related 5s and 2s facts.



STEP 2

$7 \times 4 = (5 \times 4) + (2 \times 4)$

20 + 8

STEP 3 **7 x 4 = 28**

Add the products together to find 7 x 4.

	7s Facts
x1	
x2	
x3	7 x 3 = 21
x4	**7 x 4 = 28**
x5	
x6	
x7	
x8	
x9	
x10	
x11	
x12	

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Did you know, when we decompose a multiplication fact into 2 separate facts and add the products, we are using the **distributive property**?

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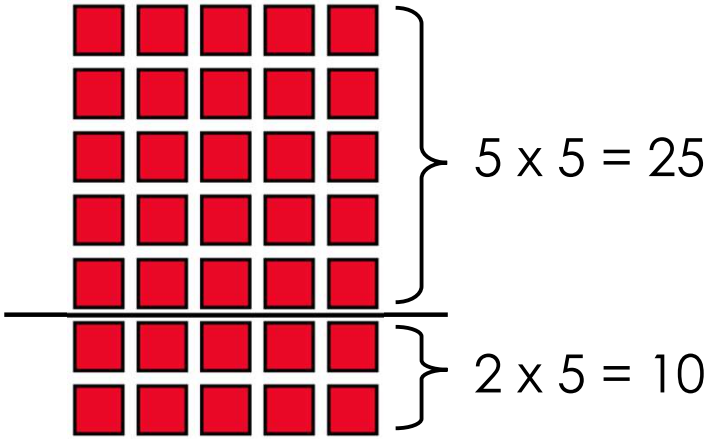
Vocabulary Highlight

The **distributive property** states, multiplying a sum by a given number is the same as multiplying each addend by the number and then adding the products.

EXAMPLE: SOLVE 7 x 5



7 x 5 = (5 x 5) + (2 x 5)

25 + 10

7 x 5 = 35

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It's important to remember that **we can use different strategies to solve problems.**

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Problem #1
LET'S WORK TOGETHER

Based on previous lessons, what other strategy can we use to find the product of **7 x 4**? Explain your answer.

We could also use the related 2s fact and then double the product. This is the strategy we learned to find the 4s fact.

STEP 1	STEP 2	STEP 3
7 x 2 is related to **7 x 4** 7 x 2 = 14	Double 14. 14 + 14 = 28	7 x 4 = 28

	7s Facts
x1	
x2	
x3	7 x 3 = 21
x4	7 x 4 = 28
x5	
x6	
x7	
x8	
x9	
x10	
x11	
x12	

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Let's think of other strategies we learned in previous lessons, to solve 7 x 1 and 7 x 2.

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Problem #1
LET'S WORK TOGETHER

Based on previous lessons, what strategy can we use to find the product of **7 x 1**? Explain.

We can use the **identity property** of multiplication to solve. Any number multiplied by 1 equals that number. So… 7 x 1 = 7 and 1 x 7 = 7.

	7s Facts
x1	**7 x 1 = 7**
x2	
x3	7 x 3 = 21
x4	7 x 4 = 28
x5	
x6	
x7	
x8	
x9	
x10	
x11	
x12	

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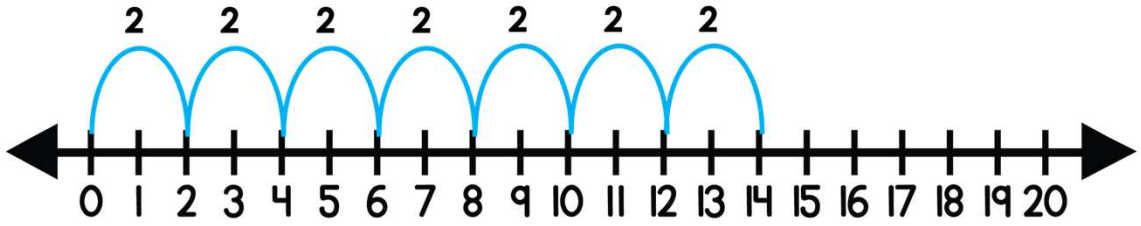
Problem #1
LET'S WORK TOGETHER

Based on previous lessons, what strategy can we use to find the product of **7 x 2**? Explain.

We can use the doubling strategy we learned to find the 2s fact.

7 + 7 = <u>14</u> then, 7 x 2 = <u>14</u> and, 2 x 7 = <u>14</u>

We can also skip count by 2s.



	7s Facts
x1	7 x 1 = 7
x2	**7 x 2 = 14**
x3	7 x 3 = 21
x4	7 x 4 = 28
x5	
x6	
x7	
x8	
x9	
x10	
x11	
x12	

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LET'S DO ONE MORE TOGETHER...

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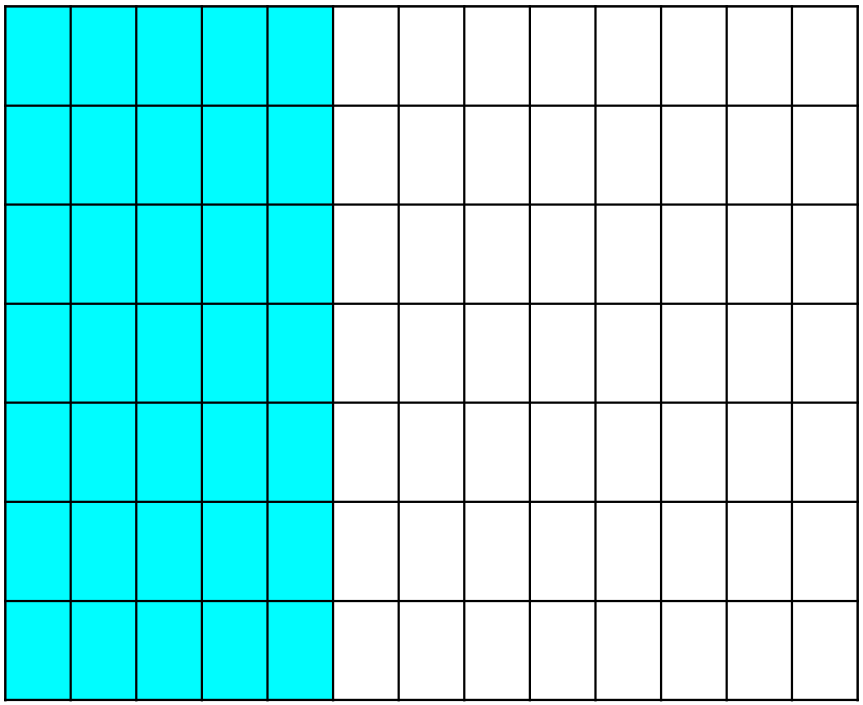
Problem #2
LET'S WORK TOGETHER

Find the product of **7 × 5** using the **distributive property.**
Draw a model in your math journal.



	7s Facts
x1	7 x 1 = 7
x2	7 x 2 = 14
x3	7 x 3 = 21
x4	7 x 4 = 28
x5	
x6	
x7	
x8	
x9	
x10	
x11	
x12	

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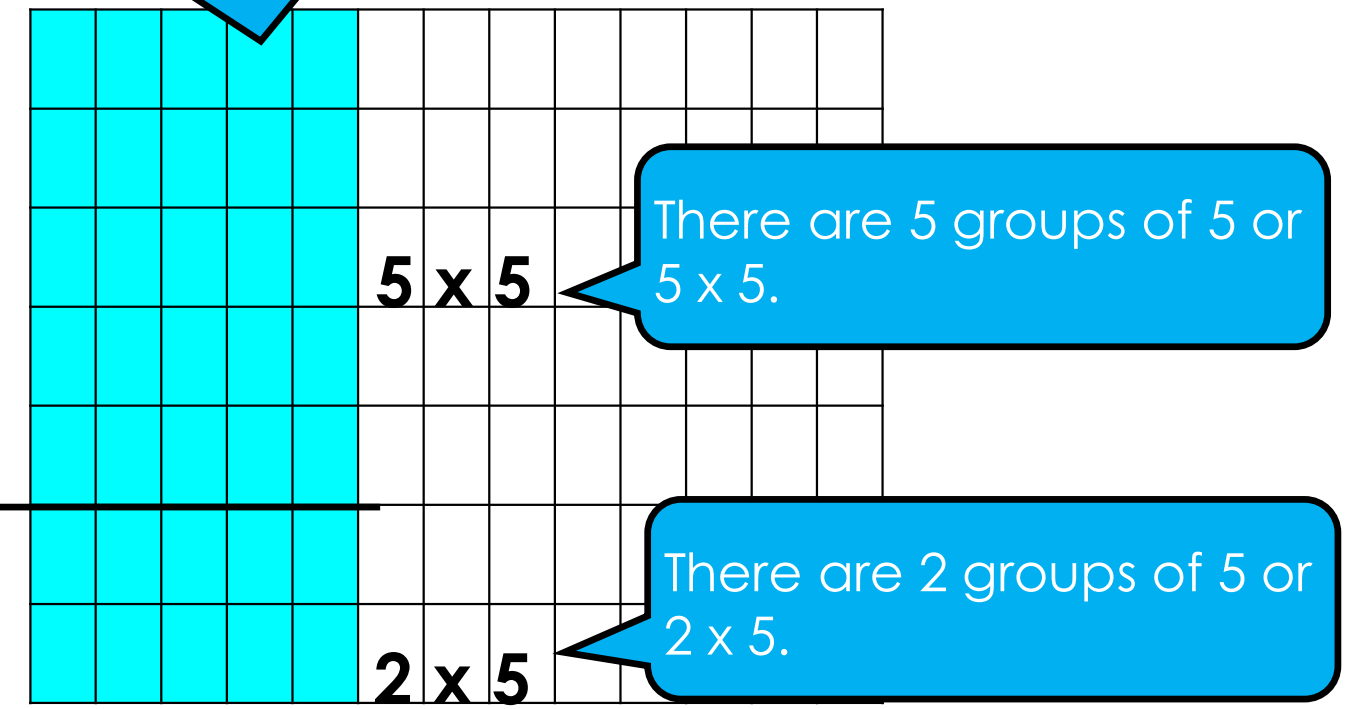
Problem #2
LET'S WORK TOGETHER

What do we need to do first?
Record in your math journal.

STEP 1

We need to decompose to find the related 5s and 2s facts.



	7s Facts
x1	7 x 1 = 7
x2	7 x 2 = 14
x3	7 x 3 = 21
x4	7 x 4 = 28
x5	
x6	
x7	
x8	
x9	
x10	
x11	
x12	

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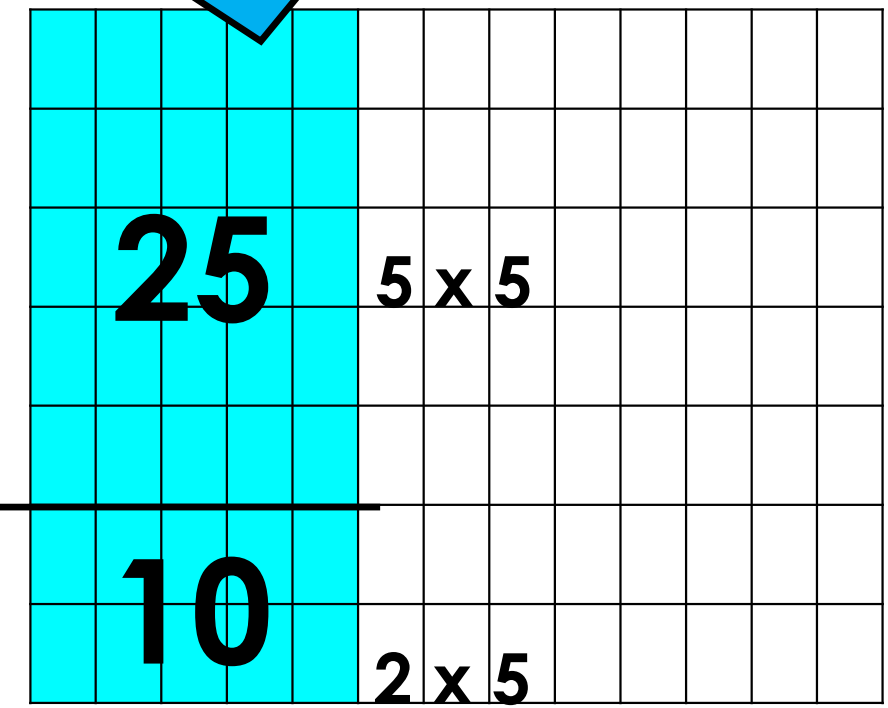
Problem #2
LET'S WORK TOGETHER

STEP 1

We need to decompose to find the related 5s and 2s facts.



What should we do next?
Record in your math journal.

STEP 2 Find both products.

$7 \times 5 = (5 \times 5) + (2 \times 5)$

25 **10**

	7s Facts
x1	7 x 1 = 7
x2	7 x 2 = 14
x3	7 x 3 = 21
x4	7 x 4 = 28
x5	
x6	
x7	
x8	
x9	
x10	
x11	
x12	

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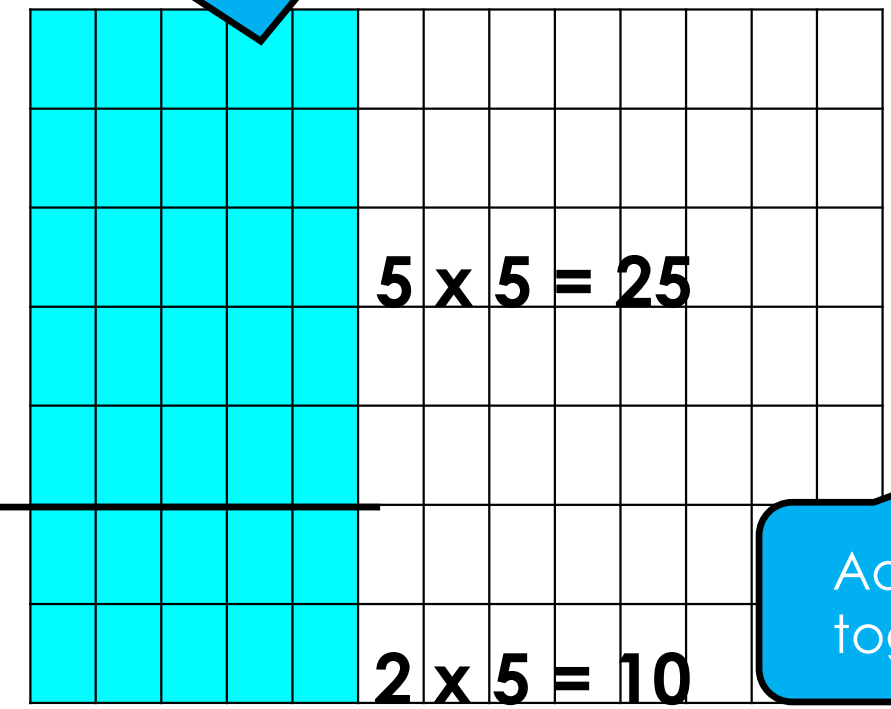
Problem #2
LET'S WORK TOGETHER

What should we do last?
Record in your math journal.

STEP 1

We need to decompose to find the related 5s and 2s facts.



STEP 2 Find both products.

$7 \times 5 = (5 \times 5) + (2 \times 5)$

25 + 10

STEP 3

7 x 5 = 35

Add the products together to find 7 x 5.

	7s Facts
x1	7 x 1 = 7
x2	7 x 2 = 14
x3	7 x 3 = 21
x4	7 x 4 = 28
x5	**7 x 5 = 35**
x6	
x7	
x8	
x9	
x10	
x11	
x12	

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CHECK - IN

- ❑ What did you notice?
- ❑ Can you make a connection to anything else you already know? How?
- ❑ Do you have any questions?

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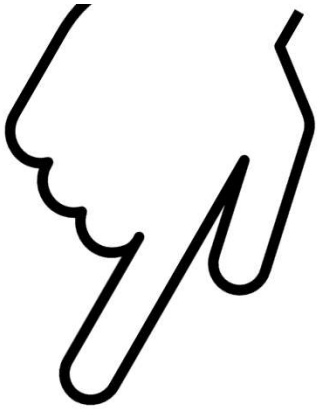

Now It's "YOUR TURN" to Solve

Don't forget to show your work!

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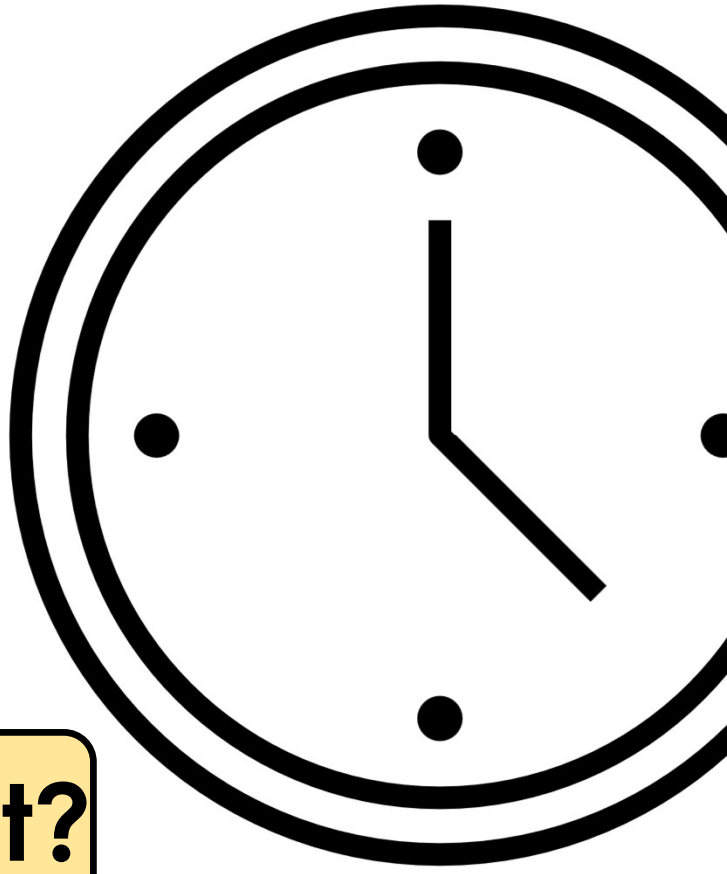
Time to Discuss and Check Your Answers



How did you solve it?

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Problem #1
YOUR TURN

Use the distributive property to find the product of 7 × 6. Fill in the chart.

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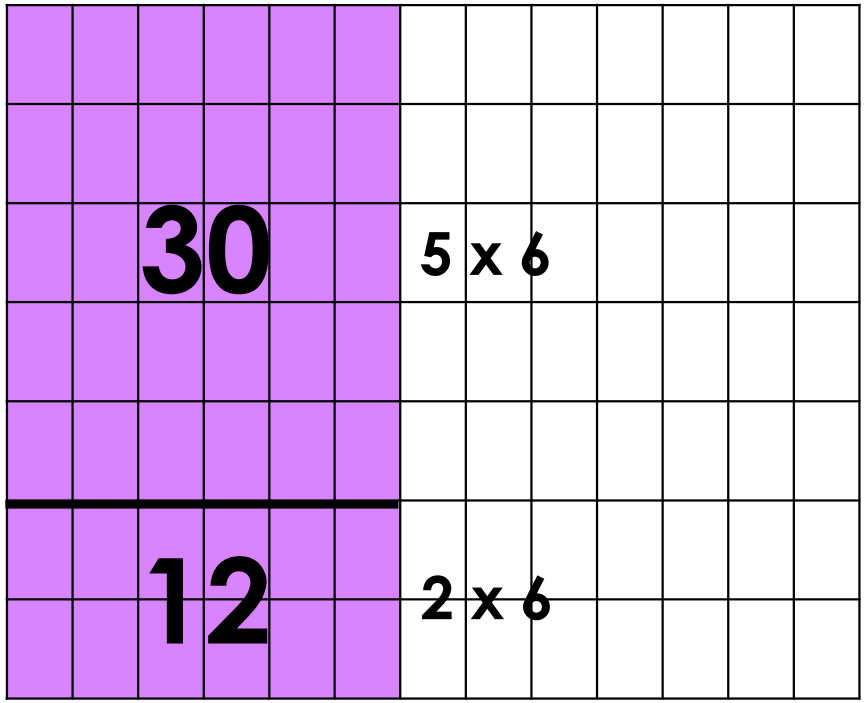
Problem #1
YOUR TURN

Use the distributive property to find the product of 7 × 6. Fill in the chart.

	7s Facts
x1	7 x 1 = 7
x2	7 x 2 = 14
x3	7 x 3 = 21
x4	7 x 4 = 28
x5	7 x 5 = 35
x6	**7 x 6 = 42**
x7	
x8	
x9	
x10	
x11	
x12	

DRAW



RECORD & SOLVE

7 x 6 = (5 x 6) + (2 x 6)

30 + **12**

7 x 6 = 42

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Problem #2
YOUR TURN

Use the distributive property to find the product of 7 × 7. Fill in the chart.

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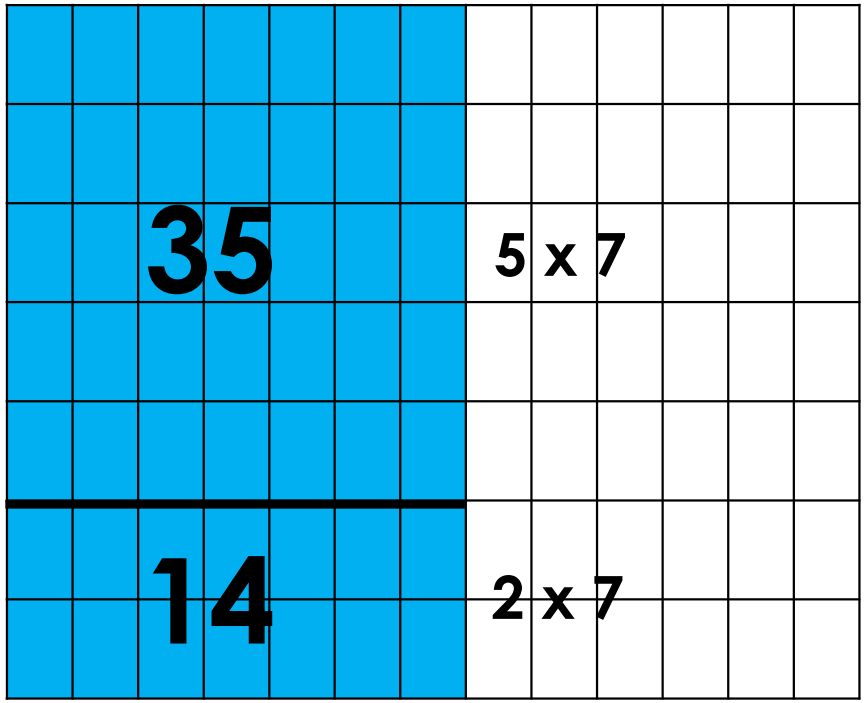
Problem #2
YOUR TURN

Use the distributive property to find the product of 7 × 7. Fill in the chart.

	7s Facts
x1	7 x 1 = 7
x2	7 x 2 = 14
x3	7 x 3 = 21
x4	7 x 4 = 28
x5	7 x 5 = 35
x6	7 x 6 = 42
x7	**7 x 7 = 49**
x8	
x9	
x10	
x11	
x12	

DRAW



RECORD & SOLVE

7 x 7 = (5 x 7) + (2 x 7)

35 + **14**

7 x 7 = 49

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Problem #3
YOUR TURN

Use the distributive property to find the product of 7 × 8. Fill in the chart.

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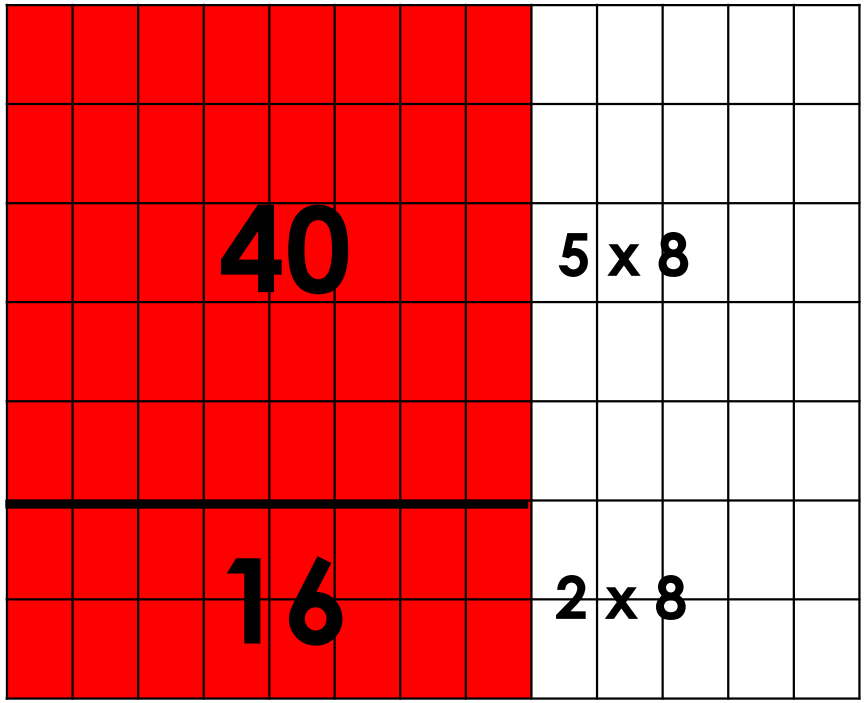
Problem #3
YOUR TURN

Use the distributive property to find the product of 7 × 8. Fill in the chart.

	7s Facts
x1	7 x 1 = 7
x2	7 x 2 = 14
x3	7 x 3 = 21
x4	7 x 4 = 28
x5	7 x 5 = 35
x6	7 x 6 = 42
x7	7 x 7 = 49
x8	**7 x 8 = 56**
x9	
x10	
x11	
x12	

DRAW



RECORD & SOLVE

7 x 8 = (5 x 8) + (2 x 8)

40 + **16**

7 x 8 = 56

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Problem #4
YOUR TURN

Use the distributive property to find the product of 7 × 9. Fill in the chart.

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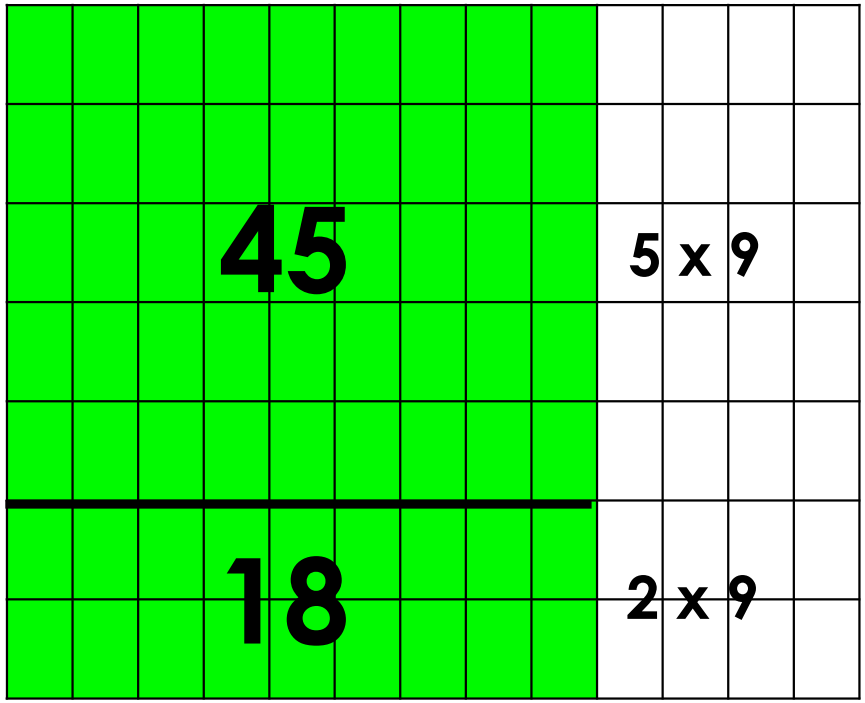
Problem #4
YOUR TURN

Use the distributive property to find the product of 7 × 9. Fill in the chart.

	7s Facts
x1	7 x 1 = 7
x2	7 x 2 = 14
x3	7 x 3 = 21
x4	7 x 4 = 28
x5	7 x 5 = 35
x6	7 x 6 = 42
x7	7 x 7 = 49
x8	7 x 8 = 56
x9	**7 x 9 = 63**
x10	
x11	
x12	

DRAW



RECORD & SOLVE

7 x 9 = (5 x 9) + (2 x 9)

45 + **18**

7 x 9 = 63

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Problem #5
YOUR TURN

Use the distributive property to find the product of 7 × 10. Fill in the chart.

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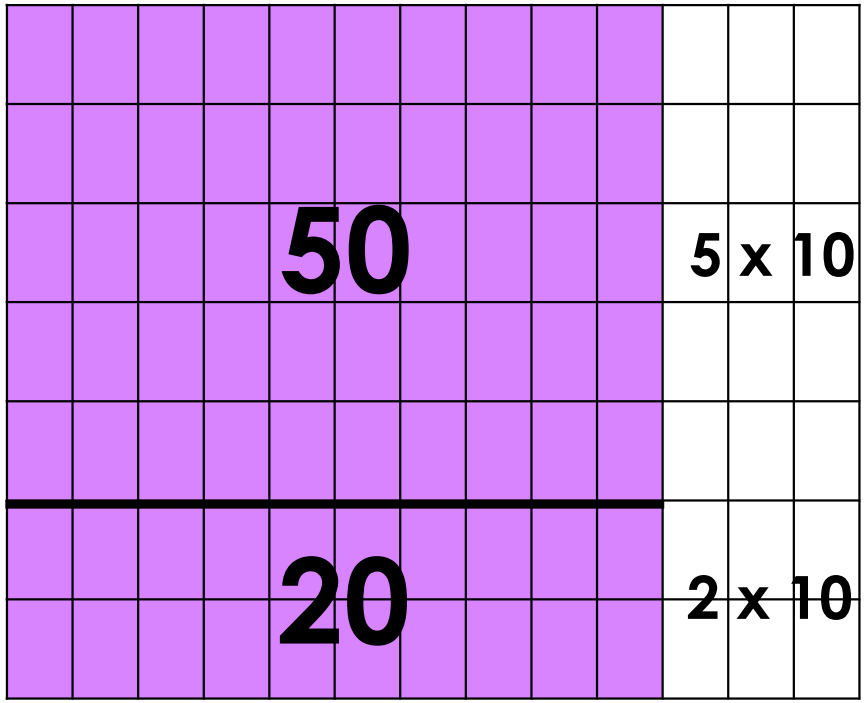
Problem #5
YOUR TURN

Use the distributive property to find the product of 7 × 10. Fill in the chart.

	7s Facts
x1	7 x 1 = 7
x2	7 x 2 = 14
x3	7 x 3 = 21
x4	7 x 4 = 28
x5	7 x 5 = 35
x6	7 x 6 = 42
x7	7 x 7 = 49
x8	7 x 8 = 56
x9	7 x 9 = 63
x10	**7 x 10 = 70**
x11	
x12	

DRAW



RECORD & SOLVE

7 x 10 = (5 x 10) + (2 x 10)

50 + **20**

7 x 10 = 70

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Problem #6
YOUR TURN

Use the distributive property to find the product of 7 × 11. Fill in the chart.

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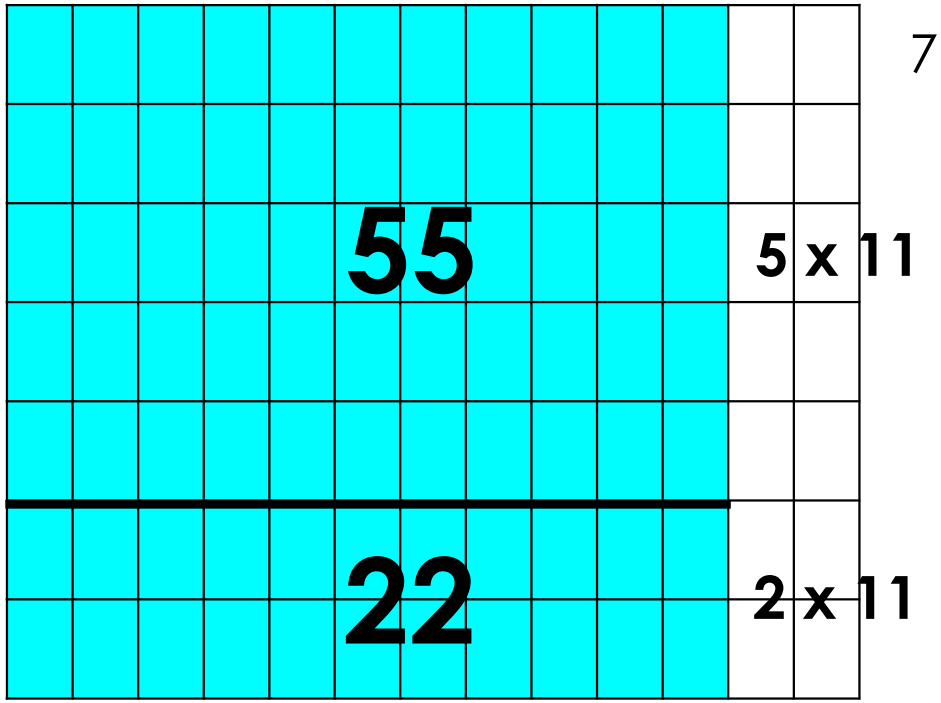
Problem #6
YOUR TURN

Use the distributive property to find the product of 7 × 11. Fill in the chart.

	7s Facts
x1	7 x 1 = 7
x2	7 x 2 = 14
x3	7 x 3 = 21
x4	7 x 4 = 28
x5	7 x 5 = 35
x6	7 x 6 = 42
x7	7 x 7 = 49
x8	7 x 8 = 56
x9	7 x 9 = 63
x10	7 x 10 = 70
x11	**7 x 11 = 77**
x12	

DRAW



RECORD & SOLVE

7 x 11 = (5 x 11) + (2 x 11)

55 + **22**

7 x 11 = 77

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Problem #7
YOUR TURN

Use the distributive property to find the product of 7 × 12. Fill in the chart.

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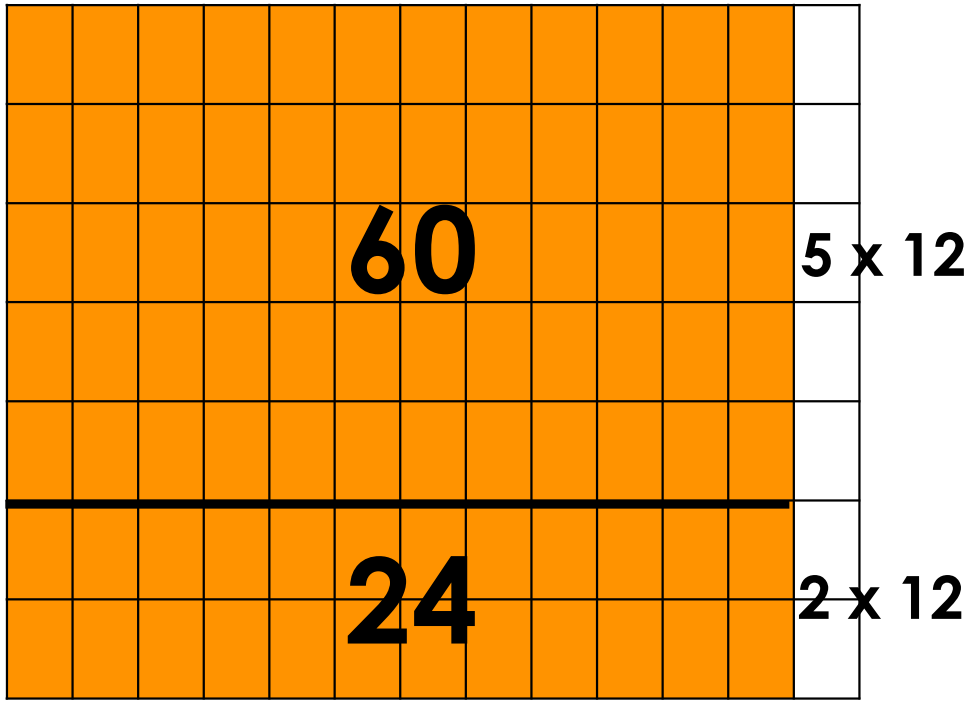
Problem #7
YOUR TURN

Use the distributive property to find the product of 7 × 12. Fill in the chart.

	7s Facts
x1	7 x 1 = 7
x2	7 x 2 = 14
x3	7 x 3 = 21
x4	7 x 4 = 28
x5	7 x 5 = 35
x6	7 x 6 = 42
x7	7 x 7 = 49
x8	7 x 8 = 56
x9	7 x 9 = 63
x10	7 x 10 = 70
x11	7 x 11 = 77
x12	**7 x 12 = 84**

DRAW



RECORD & SOLVE

7 x 12 = (5 x 12) + (2 x 12)

60 + **24**

7 x 12 = 84

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Problem #8
YOUR TURN

Explain the strategy we used to solve the 7 times table.

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Problem #8
YOUR TURN

Explain the strategy we used to find the product of a 7s times table fact.

Answers May Vary

We used the distributive property to solve. We can add the products of the related 5s and 2s facts. By adding these together, we will get the product of the 7s fact.

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Let's Reflect

It's reflection time!

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