

Lesson 4 – Multiplication – Using The x Symbol

NC Objective:

Solve problems involving multiplication and division, using materials, arrays, repeated addition and multiplication and division facts, including problems in context

Resources needed:

Differentiated Sheets
Teaching Slides
Concrete resources

Vocabulary:

Addition, multiplication, lots of, represent, interpret, multiplication symbol, repeated addition

Children are introduced to the multiplication symbol for the first time. They should link repeated addition and multiplication together, using stem sentences to support their understanding. They should also be able to interpret mathematical stories and create their own involving multiplication. The use of concrete resources and pictorial representations is still vital for understanding.

Key Questions:

What does the 3 represent? What does the 6 represent?

What does 'lots of' mean?

Does $18 = 3 \times 6$ mean the same ?

How is $6 + 6 + 6$ the same as 3×6 ? How is it different?



Working Towards

2x5	5x2	Addition	Multiplication
There are 10 equal groups with 5 in each group.	There are 10 equal groups with 2 in each group.	$5 + 5 + 5 + 5 + 5 = 25$	$5 \times 5 = 25$
There are 10 equal groups with 2 in each group.	There are 10 equal groups with 5 in each group.	$2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = 20$	$2 \times 10 = 20$
There are 10 equal groups with 5 in each group.	There are 10 equal groups with 2 in each group.	$5 + 5 + 5 + 5 + 5 = 25$	$5 \times 5 = 25$



Working Within

2x5	5x2	Addition	Multiplication
There are 10 equal groups with 5 in each group.	There are 10 equal groups with 2 in each group.	$5 + 5 + 5 + 5 + 5 = 25$	$5 \times 5 = 25$
There are 10 equal groups with 2 in each group.	There are 10 equal groups with 5 in each group.	$2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = 20$	$2 \times 10 = 20$
There are 10 equal groups with 5 in each group.	There are 10 equal groups with 2 in each group.	$5 + 5 + 5 + 5 + 5 = 25$	$5 \times 5 = 25$



Greater Depth

2x5	5x2	Addition	Multiplication
There are 10 equal groups with 5 in each group.	There are 10 equal groups with 2 in each group.	$5 + 5 + 5 + 5 + 5 = 25$	$5 \times 5 = 25$
There are 10 equal groups with 2 in each group.	There are 10 equal groups with 5 in each group.	$2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 = 20$	$2 \times 10 = 20$
There are 10 equal groups with 5 in each group.	There are 10 equal groups with 2 in each group.	$5 + 5 + 5 + 5 + 5 = 25$	$5 \times 5 = 25$

They link equal groups and repeated addition to multiplication by drawing and completing simple tables.

They keep within the 2, 5 and 10 times tables.

They link equal groups and repeated addition to multiplication by drawing and completing tables including a simple story to relate to their multiplication sentence.

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On this sheet, they explain the commutative law and the difference between repeated addition and multiplication.

Reasoning & Problem Solving

Use $<$, $>$ or $=$ to make the statements correct.

4×5 $5 + 5 + 5 + 5 + 5$

2×2 $2 + 2$

5×10 $10 + 10 + 10 + 10 + 10$

Malachi: $3 + 3 + 3 > \dots \times \dots$

Can you help Malachi to complete the multiplication? Is there more than one option?

Use $<$, $>$ or $=$ to make the statements correct.

4×5 $4 + 4 + 4 + 4 + 4$

3×3 $3 + 3$

8×10 $5 + 5 + 5 + 5$

Malachi: $8 + 8 + 8 > \dots \times \dots$

Can you help Malachi to complete the multiplication? Is there more than one option?

Use $<$, $>$ or $=$ to make the statements correct.

2×4 $4 + 4$

8×3 4×6

5×6 $10 + 10 + 10$

$2 + 2 + 2 + 2$ 4×4

Malachi: $8 + 8 + \dots > 8 \times \dots$

Can you help Malachi to complete the multiplication using one number? Is there more than one option?

What is the greatest number that can fill the left side of the 'greater than' sign? Write how the inequality will look like then.

Six 5s	Draw it	Addition	Multiplication
There are <u>6</u> equal groups with <u>5</u> in each group.		$\underline{\quad} + \underline{\quad} + \underline{\quad} +$ $\underline{\quad} + \underline{\quad} + \underline{\quad} =$ $\underline{\quad}$	$\underline{\quad} \times \underline{\quad} = \underline{\quad}$

Addition	Multiplication
$5 + 5 + 5 + 5$	
$2 + 2 + 2 + 2 + 2 + 2 + 2$	
$10 + 10$	

Addition	Multiplication
	2×2
	4×10
	1×5

Nine 2s	Draw it	Addition	Multiplication
There are <u> </u> equal groups with <u> </u> in each group.		$\underline{\quad} + \underline{\quad} + \underline{\quad} +$ $\underline{\quad} + \underline{\quad} + \underline{\quad} =$	$\underline{\quad} \times \underline{\quad} = \underline{\quad}$

Addition	Multiplication
$10 + 10 + 10 + 10 + 10 + 10 + 10$	
$5 + 5 + 5$	
$2 + 2$	

Addition	Multiplication
	6×2
	5×10
	2×5



Six 5s	Draw it	Addition	Multiplication
There are <u>6</u> equal groups with <u>5</u> in each group.		$\begin{array}{r} \underline{5} + \underline{5} + \underline{5} + \\ \underline{5} + \underline{5} + \underline{5} = \\ \underline{30} \end{array}$	$\underline{6} \times \underline{5} = \underline{30}$

Addition	Multiplication
$5 + 5 + 5 + 5$	4×5
$2 + 2 + 2 + 2 + 2 + 2 + 2$	7×2
$10 + 10$	2×10

Addition	Multiplication
$2 + 2$	2×2
$10 + 10 + 10 + 10$	4×10
5	1×5

Nine 2s	Draw it	Addition	Multiplication
There are <u>9</u> equal groups with <u>2</u> in each group.		$\begin{array}{r} \underline{2} + \underline{2} + \underline{2} + \\ \underline{2} + \underline{2} + \underline{2} + \underline{2} + \\ + \underline{2} + \underline{2} = \end{array}$	$\underline{9} \times \underline{2} = \underline{18}$

Addition	Multiplication
$10 + 10 + 10 + 10 + 10 + 10 + 10$	7×10
$5 + 5 + 5$	3×5
$2 + 2$	2×2

Addition	Multiplication
$2 + 2 + 2 + 2 + 2 + 2$	6×2
$10 + 10 + 10 + 10 + 10$	5×10
$5 + 5$	2×5

Six 5s	Draw it	Addition	Multiplication
There are ____ equal groups with ____ in each group.			

Addition	Multiplication	Story
$5 + 5 + 5 + 5$		
	9×3	
$10 + 10$		

Nine 4s	Draw it	Addition	Multiplication
There are ____ equal groups with ____ in each group.			

Addition	Multiplication	Story
	11×2	
	5×10	
$6 + 6 + 6$		

Six 5s	Draw it	Addition	Multiplication
There are <u>6</u> equal groups with <u>5</u> in each group.		$5 + 5 + 5 + 5 + 5 + 5$	$6 \times 5 = 30$

Addition	Multiplication	Examples	Story
$5 + 5 + 5 + 5$	4×5	There are 4 jars with 5p in them.	
$3 + 3 + 3 + 3 + 3 + 3 + 3 + 3 + 3$	9×3	There are 9 packs of crayons with 3 crayons in each pack.	
$10 + 10$	2×10	There are 2 coaches with 10 people in each.	

Nine 4s	Draw it	Addition	Multiplication
There are <u>9</u> equal groups with <u>4</u> in each group.		$4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4$	$9 \times 4 = 36$

Addition	Multiplication	Examples	Story
$2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2 + 2$	11×2	There are 11 jars with 2p in them.	
$10 + 10 + 10 + 10 + 10$	5×10	There are 5 packs of crayons with 10 crayons in each pack.	
$6 + 6 + 6$	3×6	There are 3 coaches with 6 people in each.	

Six 7s	Draw it	Addition	Multiplication
There are ____ equal groups with ____ in each group.			

Is $18 = 9 \times 2$ the same as $9 \times 2 = 18$?

Explain your answer.

Addition	Multiplication	Story
	11×8	
	7×4	
$9 + 9 + 9 + 9 + 9 + 9 + 9 + 9$		

How is $11 + 11 + 11$ the same as 3×11 ?

Explain your answer.

Six 7s	Draw it	Addition	Multiplication
There are <u>6</u> equal groups with <u>7</u> in each group.		$7 + 7 + 7 + 7 + 7 + 7$	$6 \times 7 = 42$

Is $18 = 9 \times 2$ the same as $9 \times 2 = 18$?

Explain your answer.

Yes, 18 is equal to 9×2 and 9×2 is equal to 18.

I know this because 9 equal groups of 2 is 18.

Addition	Multiplication	Story
$8 + 8 + 8 + 8 + 8 + 8 + 8 + 8 + 8$	11×8	There are 11 jars with 8 marbles in them.
$4 + 4 + 4 + 4 + 4 + 4 + 4 + 4$	7×4	There are 7 packs of crayons with 4 crayons in each pack.
$9 + 9 + 9 + 9 + 9 + 9 + 9 + 9 + 9$	8×9	There are 8 coaches with 9 people in each.

How is $11 + 11 + 11$ the same as 3×11 ?

Explain your answer.

The repeated addition sentence is three eights.

3×11 means 3 equal groups of 11, which is the same as $11 + 11 + 11$.

Use $<$, $>$ or $=$ to make the statements correct.

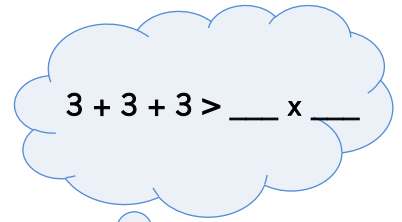
$$4 \times 5 \quad \bigcirc \quad 5 + 5 + 5 + 5 + 5$$

$$2 \times 2 \quad \bigcirc \quad 2 + 2$$

$$5 \times 10 \quad \bigcirc \quad 10 + 10 + 10 + 10 + 10$$



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Malachi



Can you help Malachi to complete the multiplication?
Is there more than one option?

Use $<$, $>$ or $=$ to make the statements correct.

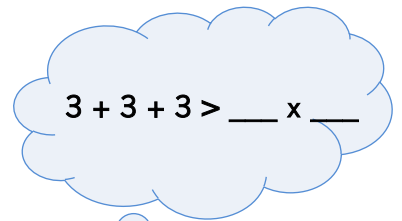
$$4 \times 5 \quad \bigcirc \quad 5 + 5 + 5 + 5 + 5$$

$$2 \times 2 \quad \bigcirc \quad 2 + 2$$

$$5 \times 10 \quad \bigcirc \quad 10 + 10 + 10 + 10 + 10$$



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Malachi



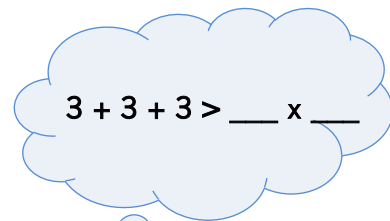
Can you help Malachi to complete the multiplication?
Is there more than one option?

Use $<$, $>$ or $=$ to make the statements correct.

$$4 \times 5 \quad < \quad 5 + 5 + 5 + 5 + 5$$

$$2 \times 2 \quad = \quad 2 + 2$$

$$5 \times 10 \quad = \quad 10 + 10 + 10 + 10 + 10$$



Malachi



Any two numbers that multiply together to give an answer less than 9.
E.g. 2×4 ; 3×2 ; 1×7 etc.

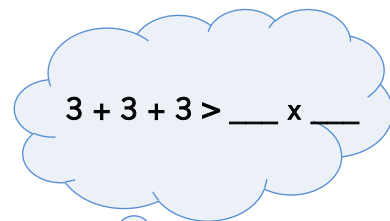
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$$4 \times 5 \quad < \quad 5 + 5 + 5 + 5 + 5$$

$$2 \times 2 \quad = \quad 2 + 2$$

$$5 \times 10 \quad = \quad 10 + 10 + 10 + 10 + 10$$



Malachi



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E.g. 2×4 ; 3×2 ; 1×7 etc.

Can you help Malachi to complete the multiplication?
Is there more than one option?

Use $<$, $>$ or $=$ to make the statements correct.

$$4 \times 5 \quad \bigcirc \quad 4 + 4 + 4 + 4 + 4$$

$$3 \times 3 \quad \bigcirc \quad 3 + 3$$

$$8 \times 10 \quad \bigcirc \quad 5 + 5 + 5 + 5$$



$$8 + 8 + 8 > ___ \times ___$$

Malachi



Can you help Malachi to complete the multiplication?
Is there more than one option?

Use $<$, $>$ or $=$ to make the statements correct.

$$4 \times 5 \quad \bigcirc \quad 4 + 4 + 4 + 4 + 4$$

$$3 \times 3 \quad \bigcirc \quad 3 + 3$$

$$8 \times 10 \quad \bigcirc \quad 5 + 5 + 5 + 5$$



$$8 + 8 + 8 > ___ \times ___$$

Malachi



Can you help Malachi to complete the multiplication?
Is there more than one option?

Use $<$, $>$ or $=$ to make the statements correct.

4×5



$4 + 4 + 4 + 4 + 4$

3×3



$3 + 3$

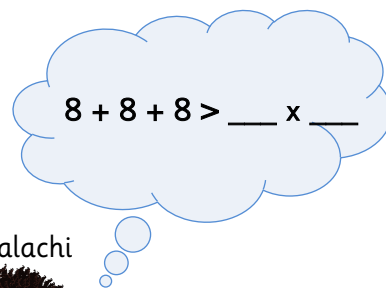
8×10



$5 + 5 + 5 + 5$



Malachi



Any two numbers that multiply together to give an answer less than 24.
E.g. 2×8 ; 3×6 ;
 1×20 etc.

Can you help Malachi to complete the multiplication?
Is there more than one option?

Use $<$, $>$ or $=$ to make the statements correct.

4×5



$4 + 4 + 4 + 4 + 4$

3×3



$3 + 3$

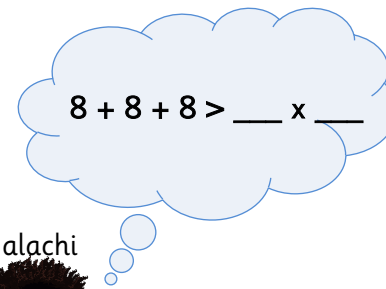
8×10



$5 + 5 + 5 + 5$



Malachi



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E.g. 2×8 ; 3×6 ;
 1×20 etc.

Can you help Malachi to complete the multiplication?
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Use $<$, $>$ or $=$ to make the statements correct.

$$2 \times 4 \quad \bigcirc \quad 4 + 4$$

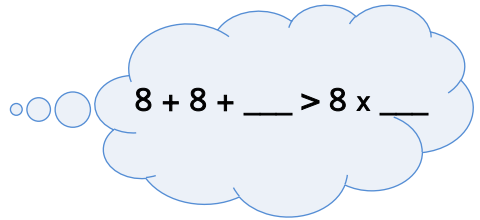
$$8 \times 3 \quad \bigcirc \quad 4 \times 6$$

$$5 \times 6 \quad \bigcirc \quad 10 + 10 + 10$$

$$2 + 2 + 2 + 2 \quad \bigcirc \quad 4 + 4$$



Malachi



Can you help Malachi to complete the multiplication using one number?
Is there more than one option?

What is the greatest number that can fill the left side of the 'greater than' sign?

Write how the inequality will look like then.



Use $<$, $>$ or $=$ to make the statements correct.

$$2 \times 4 \quad \bigcirc \quad 4 + 4$$

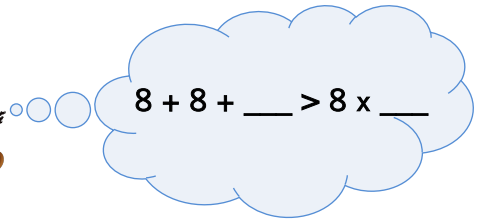
$$8 \times 3 \quad \bigcirc \quad 4 \times 6$$

$$5 \times 6 \quad \bigcirc \quad 10 + 10 + 10$$

$$2 + 2 + 2 + 2 \quad \bigcirc \quad 4 + 4$$



Malachi



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Use $<$, $>$ or $=$ to make the statements correct.

$$2 \times 4 \quad = \quad 4 + 4$$

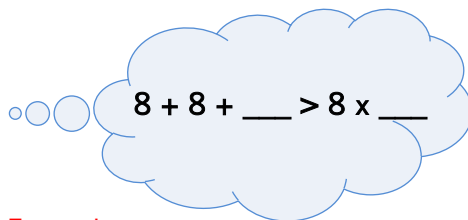
$$8 \times 3 \quad = \quad 4 \times 6$$

$$5 \times 6 \quad = \quad 10 + 10 + 10$$

$$2 + 2 + 2 + 2 \quad = \quad 4 + 4$$



Malachi



Example answer

$$8 + 8 + \underline{2} > 8 \times 2$$

Can you help Malachi to complete the multiplication using one number?
Is there more than one option?

What is the greatest number that can fill the left side of the 'greater than' sign?

Write how the inequality will look like then.



Use $<$, $>$ or $=$ to make the statements correct.

$$2 \times 4 \quad = \quad 4 + 4$$

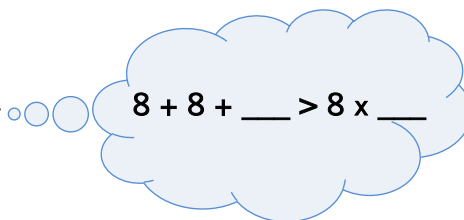
$$8 \times 3 \quad = \quad 4 \times 6$$

$$5 \times 6 \quad = \quad 10 + 10 + 10$$

$$2 + 2 + 2 + 2 \quad = \quad 4 + 4$$



Malachi



Example answer

$$8 + 8 + \underline{2} > 8 \times 2$$

Can you help Malachi to complete the multiplication using one number?
Is there more than one option?

What is the greatest number that can fill the left side of the 'greater than' sign?

Write how the inequality will look like then.