Lesson 5 – Multiplication - Multiplication from Pictures

NC Objective:	Resources needed:	Vocabulary:
Solve problems involving multiplication and division, using materials, arrays, repeated addition and multiplication and division facts, including problems in context.	Differentiated Sheets Teaching Slides Objects to make equal and unequal groups	Repeated addition, multiplication symbol, equal, unequal, represent

Children will use the multiplication symbol and work out the total from pictures.
They should also be able to interpret a multiplication word problem by drawing images to help them solve it.
Coins could be used within this small step too.

Key Questions:

What does the 4 represent?

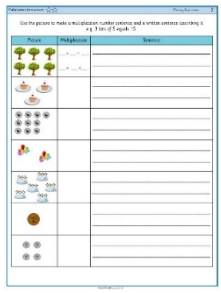
What does the 3 represent?
What does the 12 represent?
Can you think of your own story for 3 x 4 = 12?

★ Working Towards

They write calculations as ___ x ___ = _____ and ___= ___ x _____. Children have the stems to help them.

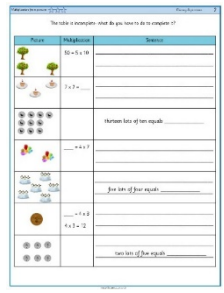
They stay within 2, 3, 5 and 10.

★★ Working Within



They write calculations as ___ x ___ = _____ and ___= ___ x _____. Children have the stems to help them.

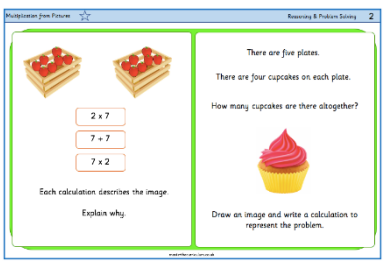
★★★ Greater Depth

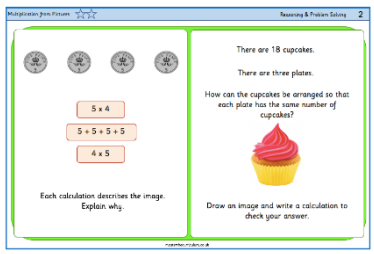


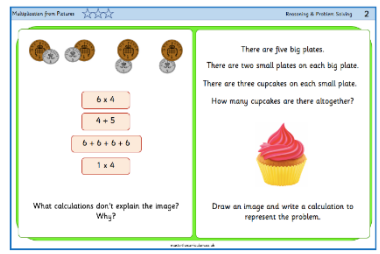
Children have an incomplete table and have to adjust the pictures to ensure the multiplication and sentences match.

Questions are within the 1 – 12 times tables and outside the 12 times tables for one of the questions.

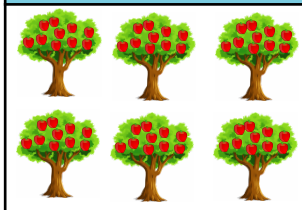
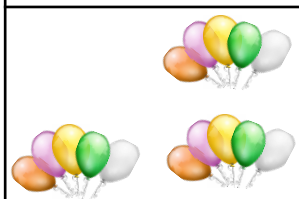
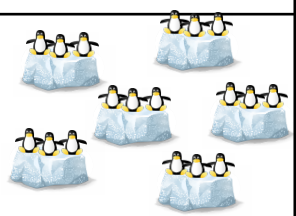
Reasoning & Problem Solving







Use the pictures to make a multiplication sentence and a written sentence describing it e.g. 3 lots of 5 equals 15.

Picture	Multiplication	Sentence
	___ x ___ = ___ ___ = ___ x ___	_____ _____
	___ x ___ = ___ ___ = ___ x ___	_____ _____
	___ x ___ = ___ ___ = ___ x ___	_____ _____
		_____ _____
		_____ _____
		_____ _____
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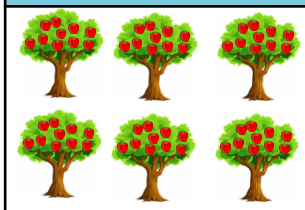
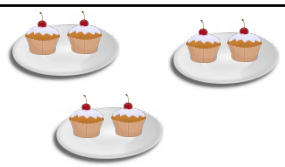
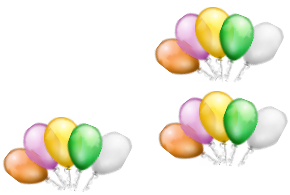
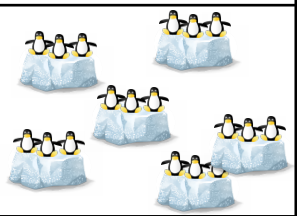
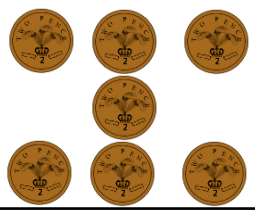
	6 x 10 = 60 60 = 6 x 10	6 lots of 10 equals 60
	3 x 2 = 6 6 = 3 x 2	3 lots of 2 equals 6
	9 x 10 = 90 90 = 9 x 10	9 lots of 10 equals 90
	3 x 5 = 15 15 = 3 x 5	3 lots of 5 equals 15
	6 x 3 = 18 18 = 6 x 3	6 lots of 3 equals 18
	7 x 2 = 14 14 = 7 x 2	7 lots of 2 equals 14
	4 x 5 = 20 20 = 4 x 5	4 lots of 5 equals 20

Use the pictures to make a multiplication sentence and a written sentence describing it
e.g. 3 lots of 5 equals 15.

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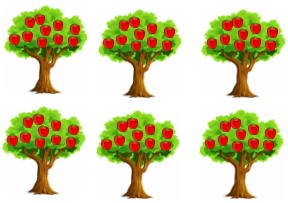
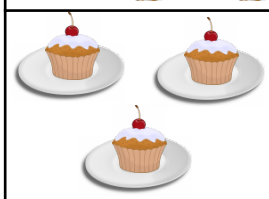
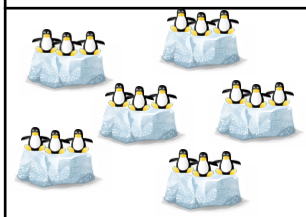
		_____ _____
		_____ _____
		_____ _____
		_____ _____
		_____ _____
		_____ _____
		_____ _____

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e.g. 3 lots of 5 equals 15.

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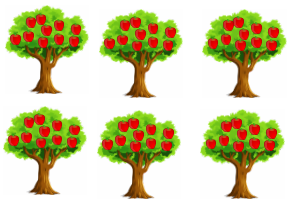
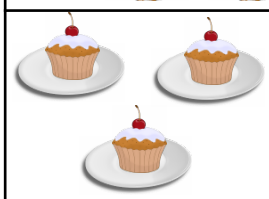
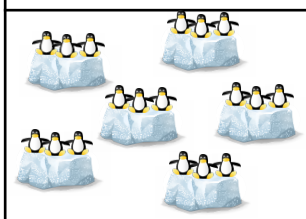
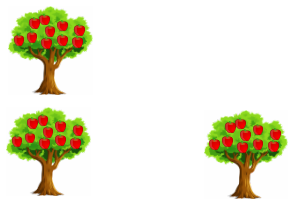
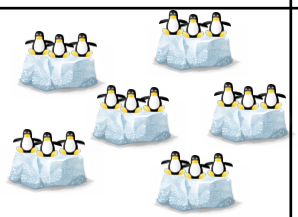
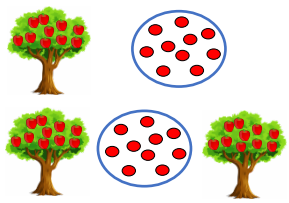
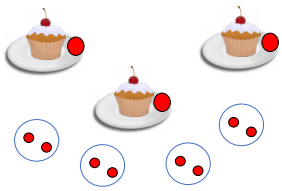
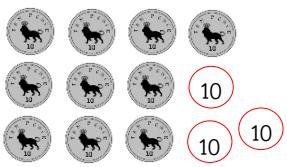
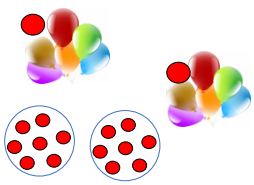
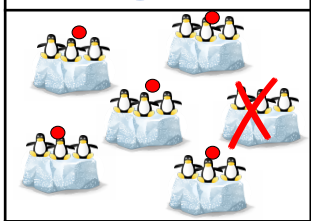
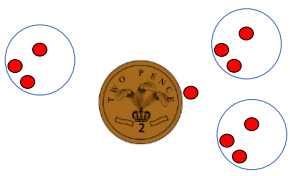
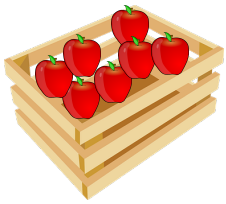
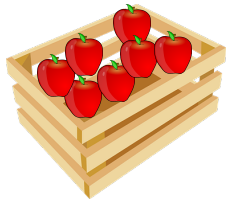
	6 x 10 = 60 60 = 6 x 10	6 lots of 10 equals 60
	3 x 1 = 3 3 = 3 x 1	3 lots of 1 equals 3
	10 x 10 = 100 100 = 10 x 10	10 lots of 10 equals 100
	2 x 6 = 12 12 = 2 x 6	2 lots of 6 equals 12
	6 x 3 = 18 18 = 6 x 3	6 lots of 3 equals 18
	1 x 2 = 2 2 = 1 x 2	1 lot of 2 equals 2
	4 x 5 = 20 20 = 4 x 5	4 lots of 5 equals 20

The table is incomplete- what do you have to do to complete it?

Picture	Multiplication	Sentence
	50 = 5 x 10	_____ _____
	7 x 2 = _____	_____ _____
		thirteen lots of ten equals _____
	_____ = 4 x 7	_____ _____
		_____ five lots of four equals _____
	_____ = 4 x 3 4 x 3 = 12	_____ _____
		_____ two lots of five equals _____

The table is incomplete- what do you have to do to complete it?

Picture	Multiplication	Sentence
	50 = 5 x 10 5 x 10 = 50	five lots of 10 equals fifty
	7 x 2 = 14 14 = 7 x 2	seven lots of 2 equals fourteen
	13 x 10 = 130 130 = 13 x 10	thirteen lots of ten equals one hundred and thirty
	28 = 4 x 7 4 x 7 = 28	four lots of seven equals twenty-eight
	5 x 4 = 20 20 = 5 x 4	five lots of four equals twenty
 A circle representing 2 can be used.	12 = 4 x 3 4 x 3 = 12	four lots of three equals twelve
	2 x 5 = 10 10 = 2 x 5	two lots of five equals ten

2 x 7

7 + 7

7 x 2

Each calculation describes the image.

Explain why.

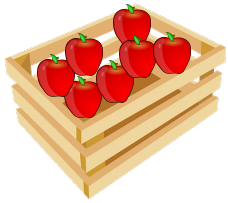
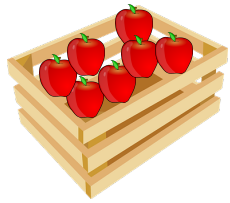
There are five plates.

There are four cupcakes on each plate.

How many cupcakes are there altogether?

Draw an image and write a calculation to represent the problem.

Multiplication from Pictures ☆ Reasoning & Problem Solving 2

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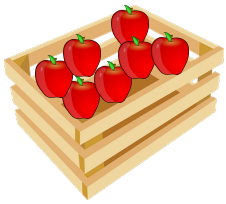
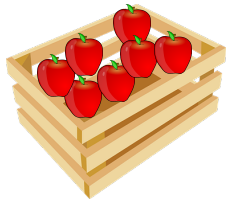



2 x 7

7 + 7

7 x 2

Each calculation describes the image.
Explain why.

There are 2 crates with 7 apples in each.
There are 7 apples in one crate and 7 in the other.
There are 7 lots of 2 apples.

There are five plates.

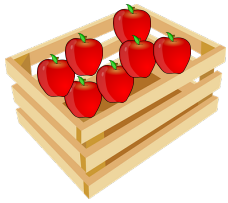
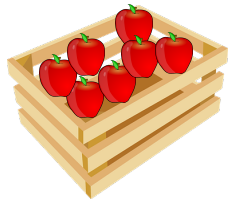
There are four cupcakes on each plate.

How many cupcakes are there altogether?

Draw an image and write a calculation to represent the problem.

Calculation: 5 x 4 = 20

Multiplication from Pictures ☆ Answers Reasoning & Problem Solving 2

2 x 7

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Each calculation describes the image.
Explain why.

There are 2 crates with 7 apples in each.
There are 7 apples in one crate and 7 in the other.
There are 7 lots of 2 apples.

There are five plates.

There are four cupcakes on each plate.

How many cupcakes are there altogether?

Draw an image and write a calculation to represent the problem.

Calculation: 5 x 4 = 20

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5 x 4

5 + 5 + 5 + 5

4 x 5

Each calculation describes the image.
Explain why.

There are 18 cupcakes.

There are three plates.

How can the cupcakes be arranged so that each plate has the same number of cupcakes?

Draw an image and write a calculation to check your answer.

Multiplication from Pictures ☆☆ Reasoning & Problem Solving 2

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5 x 4

5 + 5 + 5 + 5

4 x 5

Each calculation describes the image.
Explain why.

There are 5 lots of 4 pence.
There are 5 p in one group, 5 p in the second, 5 p in the third, 5 p in the fourth and 5 p in the fifth group.
There are 4 groups with 5 p in each.

There are 18 cupcakes.

There are three plates.

How can the cupcakes be arranged so that each plate has the same number of cupcakes?

Draw an image and write a calculation to check your answer.
There would be 3 plates, 6 cupackes on each.
Calculation: 3 x 6 = 18

Multiplication from Pictures ☆☆ Answers Reasoning & Problem Solving 2

5 x 4

5 + 5 + 5 + 5

4 x 5

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Explain why.

There are 5 lots of 4 pence.
There are 5 p in one group, 5 p in the second, 5 p in the third, 5 p in the fourth and 5 p in the fifth group.
There are 4 groups with 5 p in each.

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6 x 4

4 + 5

6 + 6 + 6 + 6

1 x 4

What calculations don't explain the image? Why?

There are five big plates.

There are two small plates on each big plate.

There are three cupcakes on each small plate.

How many cupcakes are there altogether?

Draw an image and write a calculation to represent the problem.

Multiplication from Pictures ☆☆☆ Reasoning & Problem Solving 2

6 x 4

4 + 5

6 + 6 + 6 + 6

1 x 4

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Draw an image and write a calculation to represent the problem.

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6 x 4

4 + 5

6 + 6 + 6 + 6

1 x 4

What calculations don't explain the image? Why?

There are two calculations that don't explain the image: 4 + 5 and 1 x 4.
The image shows 4 groups of 6 p in each. That can be represented as 4 x 6, 6 + 6 + 6 + 6 or 6 x 4.

There are five big plates.

There are two small plates on each big plate.

There are three cupcakes on each small plate.

How many cupcakes are there altogether?

Draw an image and write a calculation to represent the problem.

There would be 5 plates, 6 (2 x 3) cupackes on each.
Calculation: 5 x 6 = 30

Multiplication from Pictures ☆☆☆ Answers Reasoning & Problem Solving 2

6 x 4

4 + 5

6 + 6 + 6 + 6

1 x 4

What calculations don't explain the image? Why?

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