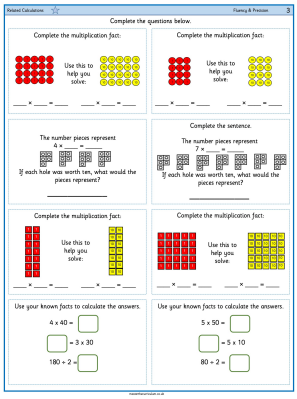
Lesson 2 – Multiplication & Division – Related Calculations

NC Objective:	Resources needed:	Vocabulary:
Write and calculate mathematical statements for multiplication and division using the multiplication tables they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods.	Differentiated Sheets Teaching Slides	Multiplication, division, problems, calculation, place value counters, manipulatives, related calculations

Children use known multiplication facts to solve other multiplication problems.
They understand that because one of the numbers in the calculation is ten times bigger, then the answer will also be ten times bigger.
It is important that children develop their conceptual understanding through the use of concrete manipulatives.

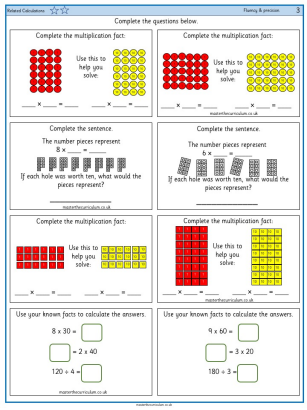
Key Questions:
What is the same and what is different about the place value counters?
How does this fact help us solve this problem?
If we know these facts, what other facts do we know?
Can you prove your answer using manipulatives?

★ Working Towards



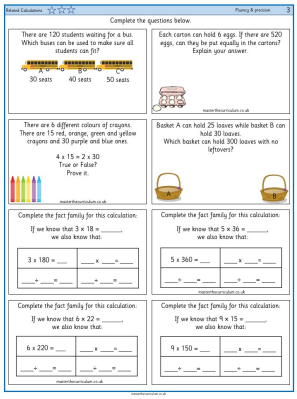
Children to use concrete resources alongside working with questions.
Children on this sheet work with the simpler times tables, multiplying by 2, 5 and 10.

★★ Working Within



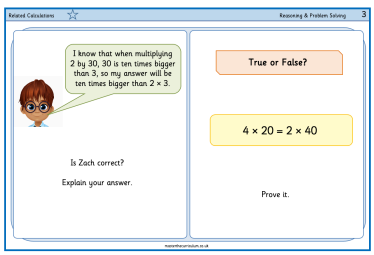
Children to use concrete resources alongside working with questions.
Children on this sheet work with a range of multiplication facts.

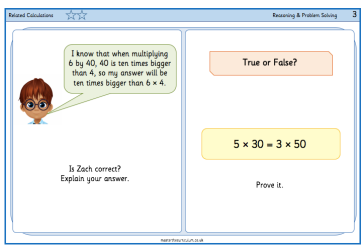
★★★ Greater Depth

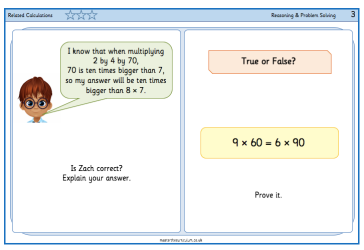


Children work with larger calculations outside of the known multiplication facts.
They solve more problem-solving questions.

Reasoning & Problem Solving

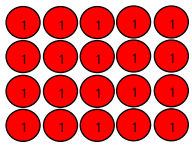




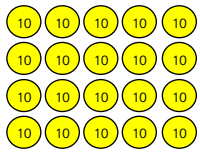


Complete the questions below.

Complete the multiplication fact:

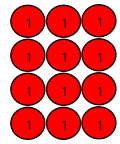


Use this to help you solve:

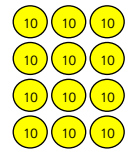


____ × ____ = ____ ____ × ____ = ____

Complete the multiplication fact:

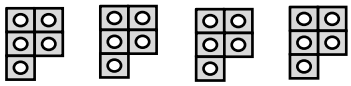


Use this to help you solve:



____ × ____ = ____ ____ × ____ = ____

The number pieces represent
4 × ____ = ____

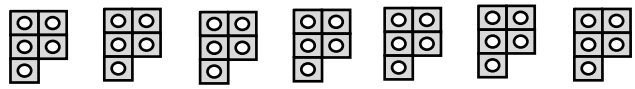


If each hole was worth ten, what would the pieces represent?

_____

Complete the sentence.

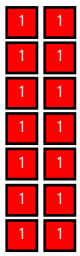
The number pieces represent
7 × ____ = ____



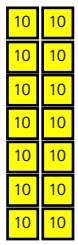
If each hole was worth ten, what would the pieces represent?

_____

Complete the multiplication fact:

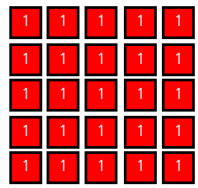


Use this to help you solve:

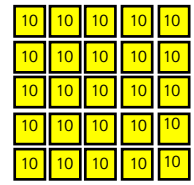


____ × ____ = ____ ____ × ____ = ____

Complete the multiplication fact:



Use this to help you solve:



____ × ____ = ____ ____ × ____ = ____

Use your known facts to calculate the answers.

4 x 40 = ☐

☐ = 3 x 30

180 ÷ 2 = ☐

Use your known facts to calculate the answers.

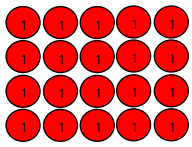
5 x 50 = ☐

☐ = 5 x 10

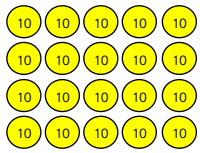
80 ÷ 2 = ☐

Complete the questions below.

Complete the multiplication fact:

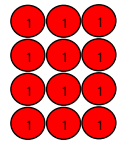


Use this to help you solve:



5 × 4 = 20 5 × 40 = 200

Complete the multiplication fact:



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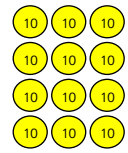
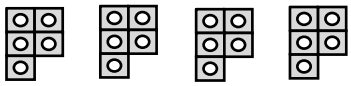


3 × 4 = 12 3 × 40 = 120

Complete the sentence.

The number pieces represent
4 × 5 = 20

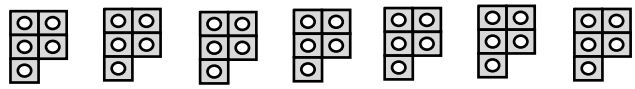


If each hole was worth ten, what would the pieces represent?

20 x 10 = 200

Complete the sentence.

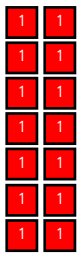
The number pieces represent
7 × 5 = 35



If each hole was worth ten, what would the pieces represent?

35 x 10 = 350

Complete the multiplication fact:



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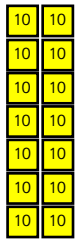
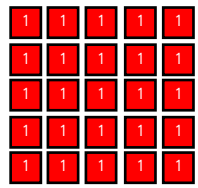


2 × 7 = 14 2 × 70 = 140

Complete the multiplication fact:



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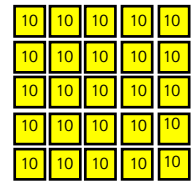


5 × 5 = 25 5 × 50 = 250

Use your known facts to calculate the answers.

4 x 40 = 160

90 = 3 x 30

180 ÷ 2 = 90

Use your known facts to calculate the answers.

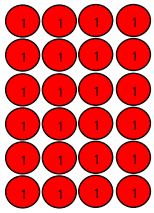
5 x 50 = 250

50 = 5 x 10

80 ÷ 2 = 40

Complete the questions below.

Complete the multiplication fact:



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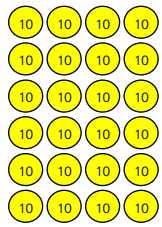
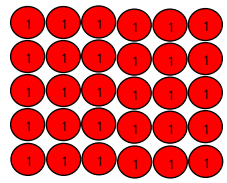


____ × ____ = ____ ____ × ____ = ____

Complete the multiplication fact:



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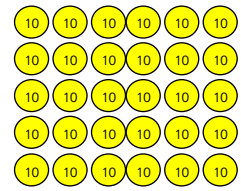
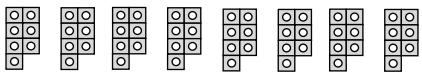


____ × ____ = ____ ____ × ____ = ____

Complete the sentence.

The number pieces represent
8 × ____ = _____

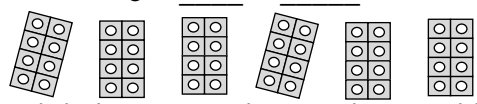


If each hole was worth ten, what would the pieces represent?

_____

Complete the sentence.

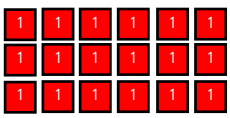
The number pieces represent
6 × ____ = _____



If each hole was worth ten, what would the pieces represent?

_____

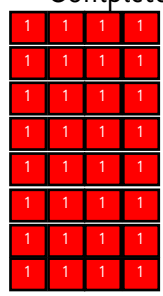
Complete the multiplication fact:



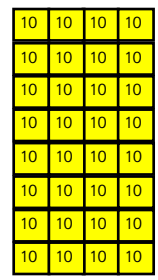
Use this to help you solve:

____ × ____ = ____ ____ × ____ = ____

Complete the multiplication fact:



Use this to help you solve:



____ × ____ = ____ ____ × ____ = ____

Use your known facts to calculate the answers.

8 x 30 = ☐

☐ = 2 x 40

120 ÷ 4 = ☐

Use your known facts to calculate the answers.

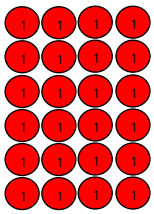
9 x 60 = ☐

☐ = 3 x 20

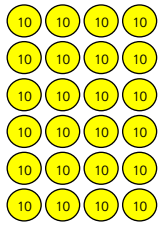
180 ÷ 3 = ☐

Complete the questions below.

Complete the multiplication fact:

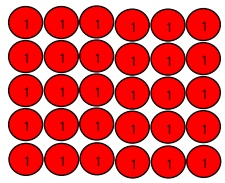


Use this to help you solve:

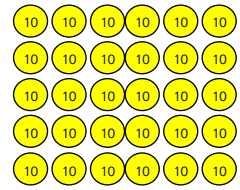


4 × 6 = 24 4 × 60 = 240

Complete the multiplication fact:



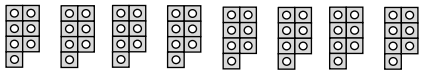
Use this to help you solve:



6 × 5 = 30 6 × 50 = 300

Complete the sentence.

The number pieces represent
8 × 7 = 56

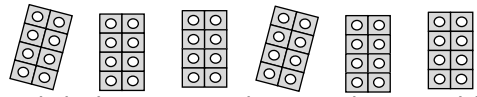


If each hole was worth ten, what would the pieces represent?

80 x 7 = 560

Complete the sentence.

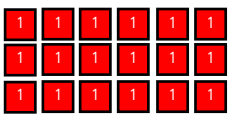
The number pieces represent
6 × 8 = 48



If each hole was worth ten, what would the pieces represent?

60 x 8 = 480

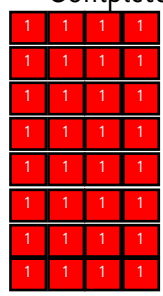
Complete the multiplication fact:



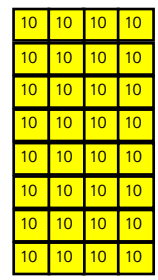
Use this to help you solve:

6 × 3 = 18 6 × 30 = 180

Complete the multiplication fact:



Use this to help you solve:



4 × 8 = 32 4 × 80 = 320

Use your known facts to calculate the answers.

8 x 30 = 240

80 = 2 x 40

120 ÷ 4 = 30

Use your known facts to calculate the answers.

9 x 60 = 540

60 = 3 x 20

180 ÷ 3 = 60

Complete the questions below.

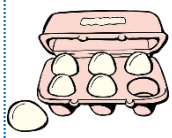
There are 120 students waiting for a bus. Which buses can be used to make sure all students can fit?

A 30 seats

B 40 seats

C 50 seats

Each carton can hold 6 eggs. If there are 520 eggs, can they be put equally in the cartons? Explain your answer.



There are 6 different colours of crayons. There are 15 red, orange, green and yellow crayons and 30 purple and blue ones.

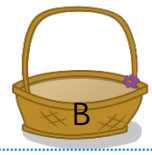
$4 \times 15 = 2 \times 30$

True or False?

Prove it.

Basket A can hold 25 loaves while basket B can hold 30 loaves.

Which basket can hold 300 loaves with no leftovers?



Complete the fact family for this calculation:

If we know that 3 × 18 = _____, we also know that:

3 x 180 = ___	____ x ____= ____
____÷ ____= ____	____÷ ____= ____

Complete the fact family for this calculation:

If we know that 5 × 36 = _____, we also know that:

5 x 360 = ___	____ x ____= ____
____÷ ____= ____	____÷ ____= ____

Complete the fact family for this calculation:

If we know that 6 × 22 = _____, we also know that:

6 x 220 = ___	____ x ____= ____
____÷ ____= ____	____÷ ____= ____

Complete the fact family for this calculation:

If we know that 9 × 15 = _____, we also know that:

9 x 150 = ___	____ x ____= ____
____÷ ____= ____	____÷ ____= ____

Complete the questions below.

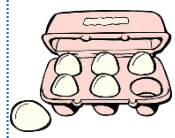
There are 120 students waiting for a bus. Which buses can be used to make sure all students can fit?

A 30 seats | B 40 seats | C 50 seats

Buses A and B
Because 120 is a multiple of 30 and 40.

Each carton can hold 6 eggs. If there are 520 eggs, can they be put equally in the cartons? Explain your answer.

6 x 87 = 522
520 eggs cannot be put equally in the cartons because it needs to be 522 eggs.



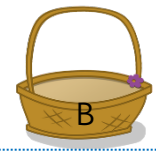
There are 6 different colours of crayons. There are 15 red, orange, green and yellow crayons and 30 purple and blue ones.

4 x 15 = 2 x 30
True or False?
Prove it.

True
4 x 15 = 60
2 x 30 = 60

Basket A can hold 25 loaves while basket B can hold 30 loaves. Which basket can hold 300 loaves with no leftovers?

Both baskets A and B can hold 300 loaves without leftovers because 300 is a multiple of 25 and 30.
30 x 10 = 300
25 x 12 = 300



Complete the fact family for this calculation:

If we know that 3 × 18 = 54,
we also know that:

3 x 180 = 540	180 x 3 = 540
540 ÷ 180 = 3	540 ÷ 3 = 180

Complete the fact family for this calculation:

If we know that 5 × 36 = 180,
we also know that:

5 x 360 = 1800	360 x 5 = 1800
1800 ÷ 360 = 5	1800 ÷ 5 = 360

Complete the fact family for this calculation:

If we know that 6 × 22 = 132,
we also know that:

6 x 220 = 1320	220 x 6 = 1320
1320 ÷ 220 = 6	1320 ÷ 6 = 220

Complete the fact family for this calculation:

If we know that 9 × 15 = 135,
we also know that:

9 x 150 = 1350	150 x 9 = 1350
1350 ÷ 150 = 9	1350 ÷ 9 = 150

I know that when multiplying 2 by 30, 30 is ten times bigger than 3, so my answer will be ten times bigger than 2 × 3.

Is Zach correct?

Explain your answer.

True or False?

$4 \times 20 = 2 \times 40$

Prove it.

Related Calculations ☆ Reasoning & Problem Solving 3

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Is Zach correct?

Explain your answer.

True or False?

$4 \times 20 = 2 \times 40$

Prove it.

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I know that when multiplying 2 by 30, 30 is ten times bigger than 3, so my answer will be ten times bigger than 2 × 3.

Is Zach correct?

Explain your answer.

Zach is correct.
I know 2 × 3 = 6, so if he has
2 × 30 then his answer will be ten times bigger because 3 has become ten times bigger.

True or False?

$$4 \times 20 = 2 \times 40$$

Prove it.

Possible response:
Children may represent it with place value counters.
True because they are equal.

Children may explore the problem in a context.
e.g. 4 lots of 20 apples compared to 2 lots of 40 apples.

Related Calculations ☆ Answers Reasoning & Problem Solving 3

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I know that when multiplying 6 by 40, 40 is ten times bigger than 4, so my answer will be ten times bigger than 6 × 4.

Is Zach correct?
Explain your answer.

True or False?

$5 \times 30 = 3 \times 50$

Prove it.

Related Calculations ☆☆ Reasoning & Problem Solving 3

I know that when multiplying 6 by 40, 40 is ten times bigger than 4, so my answer will be ten times bigger than 6 × 4.

Is Zach correct?
Explain your answer.

True or False?

$5 \times 30 = 3 \times 50$

Prove it.

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I know that when multiplying 6 by 40, 40 is ten times bigger than 4, so my answer will be ten times bigger than 6 × 4.

Is Zach correct?
Explain your answer.

Zach is correct.
I know 6 × 4 = 24, so if he has 6 × 40 then his answer will be ten times bigger because 4 has become ten times bigger.

True or False?

$5 \times 30 = 3 \times 50$

Prove it.

Possible response:
Children may represent it with place value counters.
True because they are equal.

Children may explore the problem in a context.
e.g. 5 lots of 30 apples compared to 3 lots of 50 apples.

Related Calculations ☆☆ Answers Reasoning & Problem Solving 3

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Prove it.

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Children may represent it with place value counters.
True because they are equal.

Children may explore the problem in a context.
e.g. 5 lots of 30 apples compared to 3 lots of 50 apples.

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I know that when multiplying 2 by 4 by 70, 70 is ten times bigger than 7, so my answer will be ten times bigger than 8 × 7.

Is Zach correct?
Explain your answer.

True or False?

$9 \times 60 = 6 \times 90$

Prove it.

Related Calculations ☆☆☆ Reasoning & Problem Solving 3

I know that when multiplying 2 by 4 by 70, 70 is ten times bigger than 7, so my answer will be ten times bigger than 8 × 7.

Is Zach correct?
Explain your answer.

True or False?

$9 \times 60 = 6 \times 90$

Prove it.

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I know that when multiplying 2 by 4 by 70, 70 is ten times bigger than 7, so my answer will be ten times bigger than 8 × 7.

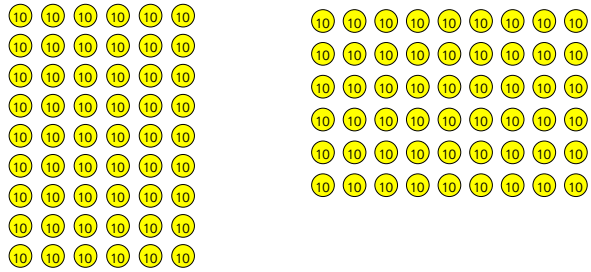
Is Zach correct?
Explain your answer.

Zach is correct.
I know 2 × 4 × 7 = 8 × 7 = 56, so if he has 8 × 70 then his answer will be ten times bigger because 7 has become ten times bigger.

True or False?

$9 \times 60 = 6 \times 90$

Prove it.
Possible response:
Children may represent it with place value counters.
True because they are equal.



Children may explore the problem in a context.
e.g. 9 lots of 60 apples compared to 6 lots of 90 apples.

Related Calculations ☆☆☆ Answers Reasoning & Problem Solving 3

I know that when multiplying 2 by 4 by 70, 70 is ten times bigger than 7, so my answer will be ten times bigger than 8 × 7.

Is Zach correct?
Explain your answer.

Zach is correct.
I know 2 × 4 × 7 = 8 × 7 = 56, so if he has 8 × 70 then his answer will be ten times bigger because 7 has become ten times bigger.

True or False?

9 × 60 = 6 × 90

Prove it.
Possible response:
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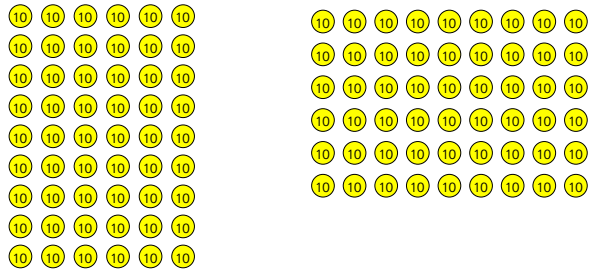

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