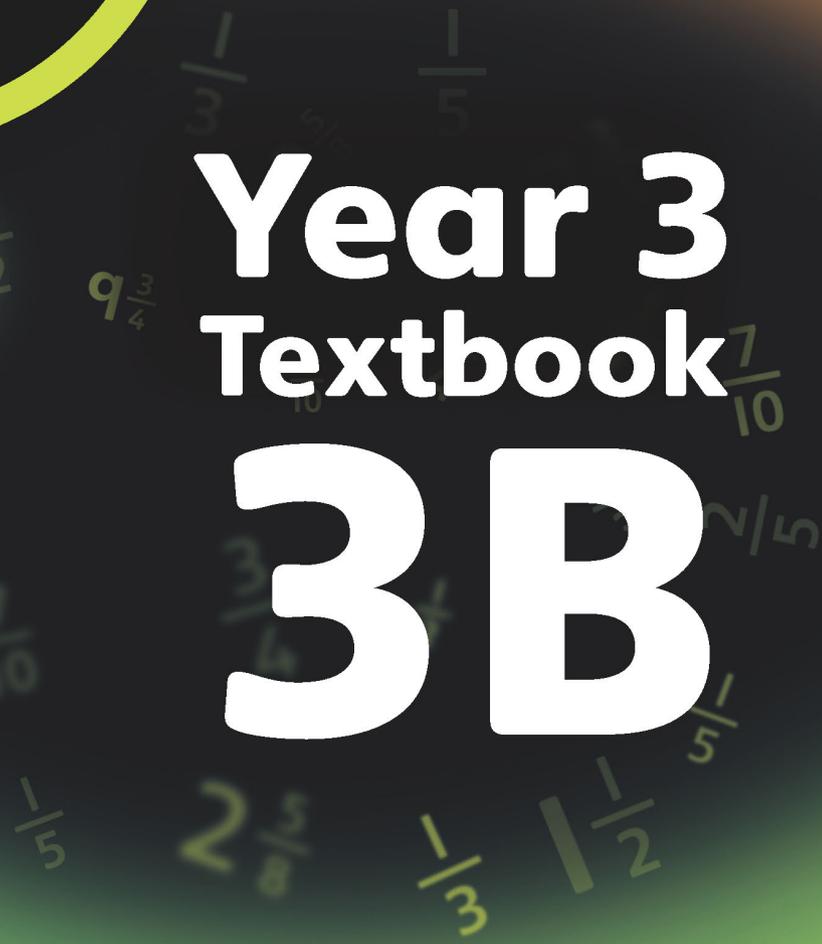


Year 3 Textbook 3B





Year 3 Textbook 3B

Series Editor: Tony Staneff



Astrid

Astrid is brave.
She likes to have a go at solving new types of problems.

flexible



Flo

helpful



Sparks

curious



Ash

determined



Dexter

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Contents

Unit 6 – Multiplication and division (3)

Multiples of 10
Related calculations
Reasoning about multiplication
Multiply 2-digits by 1-digit – no exchange
Multiply 2-digits by 1-digit – exchange
Expanded written method
Link multiplication and division
Divide 2-digits by 1-digit – no exchange
Divide 2-digits by 1-digit – flexible partitioning
Divide 2-digits by 1-digit with remainders
How many ways?
Problem solving – mixed problems (1)
Problem solving – mixed problems (2)
End of unit check

Unit 7 – Length and perimeter

Measure in m and cm
Measure in cm and mm
Metres, centimetres and millimetres
Equivalent lengths (m and cm)
Equivalent lengths (mm and cm)
Compare lengths
Add lengths
Subtract lengths
Measure perimeter
Calculate perimeter
Problem solving – length
End of unit check

6
8
12
16
20
24
28
32
36
40
44
48
52
56
60

62
64
68
72
76
80
84
88
92
96
100
104
108

Your teacher will tell you which page you need.



Unit 8 – Fractions (I)	110
Understand the denominator of unit fractions	112
Compare and order unit fractions	116
Understand the numerator of non-unit fractions	120
Understand the whole	124
Compare and order non-unit fractions	128
Divisions on a number line	132
Count in fractions on a number line	136
Equivalent fractions as bar models	140
Equivalent fractions on a number line	144
Equivalent fractions	148
End of unit check	152
Unit 9 – Mass	154
Use scales	156
Measure mass	160
Measure mass in kilograms and grams	164
Equivalent masses	168
Compare mass	172
Add and subtract mass	176
Problem solving – mass	180
End of unit check	184
Unit 10 – Capacity	186
Measure capacity and volume in litres and millilitres	188
Measure in litres and millilitres	192
Equivalent capacities and volumes (litres and millilitres)	196
Compare capacity and volume	200
Add and subtract capacity and volume	204
Problem solving – capacity	208
End of unit check	212
What do we know now?	215

Let's go and find some new maths adventures!



How to use this book

These pages make sure we are ready for the unit ahead. Find out what we will be learning and brush up on your skills!



Unit 6
Multiplication and division 3

In this unit we will ...

- Compare multiplication and division statements using inequality signs
- Use known multiplication facts to solve other multiplication problems
- Find multiplication and division fact families
- Learn to multiply and divide by partitioning
- Solve mixed multiplication and division problems including multi-step problems

Do you remember what this is called? We will use it to help partition numbers.

We will need some maths words. Do you know what they all mean?

multiplication division statement
number sentence compare less than (<)
greater than (>) equal (=) equally
least most remainder
expanded written method share multi-step

We need to use number lines too. These will help us understand multiplication and division.

6 7

Discover

Lessons start with **Discover**.
Here, we explore new maths problems.
Can you work out how to find the answer?

Do not be afraid to make mistakes.
Learn from them and try again!

Unit 6: Multiplication and division (2) - Lesson 3

Reasoning about multiplication

Discover

Richard Lexi

1 a) Who has more apples?
b) How many apples does each child have?
How many apples are there in total?

16



Share

Next, we share our ideas with the class.

Did we all solve the problems the same way?
What ideas can you try?

Unit 6: Multiplication and division (1), Lesson 2

Share

a) Richard has 4 packs of apples. Lexi has 5 packs of apples.

I worked out the number of apples each child had.

I just know that 5 groups of 3 is more than 4 groups of 3.

5×3 is greater than 4×3 .
 $5 \times 3 > 4 \times 3$

Lexi has more apples.

b) $4 \times 3 = 12$ Richard has 12 apples.
 $5 \times 3 = 15$ Lexi has 15 apples.

$12 + 15 = 27$. There are 27 apples in total.

17

Think together

Then we have a go at some more problems together. Use what you have just learnt to help you.

We will try a challenge too!

Unit 6: Multiplication and division (1), Lesson 2

Think together

1 a) Richard and Lexi both have bags of pears. There are 4 pears in each bag. Who has more pears?

Richard Lexi

b) How many pears are there in total?

2 Complete the number sentences using $<$, $>$ or $=$.

a) 3×5 18 c) 5×3 3×5
b) 4×5 5×3 d) 8×2 3×5

Use equipment or draw a picture to explain your thinking.

18

Unit 6: Multiplication and division (1), Lesson 2

Challenge

3 a) Use $<$, $>$ or $=$ to make the statement correct.

3×40 2×40

b) Compare each number sentence without working out any calculations.

i) 7×30 30×7
ii) 6×20 3×40
iii) 4×30 5×20

I wonder if I need to use groups of 10 building blocks every time, or if there is another way.

19

Practice book 38 p22



This tells you which page to go to in your **Practice Book**.

At the end of each unit there is an **End of unit check**. This is our chance to show how much we have learnt.

Unit 6: Multiplication and division (1), Lesson 2

End of unit check

1 What calculation is shown?

$100 \div 10$
 10×10
 10×10
 $100 \div 11$

2 What is 3×60 ?

18
 36
 180
 240

3 Work out 5×18 .

23
 40
 50
 90

4 What is $52 \div 4$?

48
 10 remainder 12
 5 remainder 2
 13

5 What is the value of the missing number?

$16 \div 3 = \square \div 2$

14
 16
 24
 48

6 A sock of sugar weighs 20 kg. A sack of oats weighs 15 kg. Emma buys 8 sacks of each. What is the total weight of sugar and oats she buys?

7 There are 2 boxes of counters. There are 3 times as many counters in the second box as in the first box. There are 72 counters in total. How many more counters are there in the second box than there are in the first box?

60

Practice book 38 p22

Unit 6

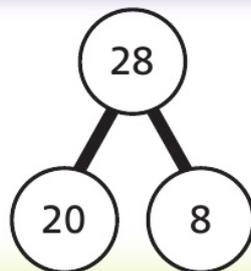
Multiplication and division ③



In this unit we will ...

- ⚡ Compare multiplication and division statements using inequality signs
- ⚡ Use known multiplication facts to solve other multiplication problems
- ⚡ Find multiplication and division fact families
- ⚡ Learn to multiply and divide by partitioning
- ⚡ Solve mixed multiplication and division problems including multi-step problems

Do you remember what this is called? We will use it to help partition numbers.





We will need some maths words.
Do you know what they all mean?

multiplication

division

statement

number sentence

compare

less than ($<$)

greater than ($>$)

equal ($=$)

equally

least

most

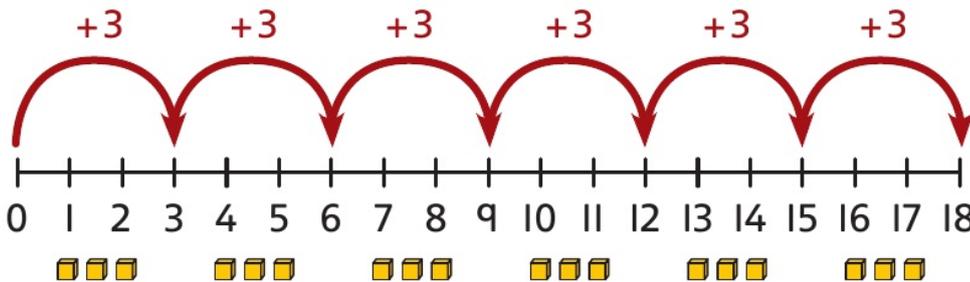
remainder

expanded written method

share

multi-step

We need to use number lines too.
These will help us understand
multiplication and division.



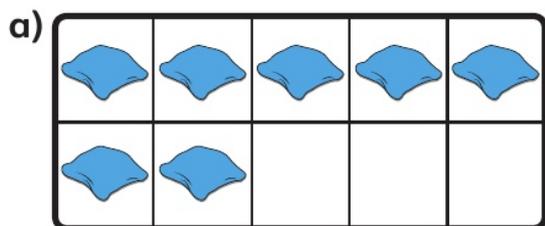
Multiples of 10

Discover



- I** a) How many bean bags has Bella collected?
How many points has she scored?
- b) How many bean bags has Andy collected?
How many points has he scored?

Share



7 tens is 70.

Bella scored 70.

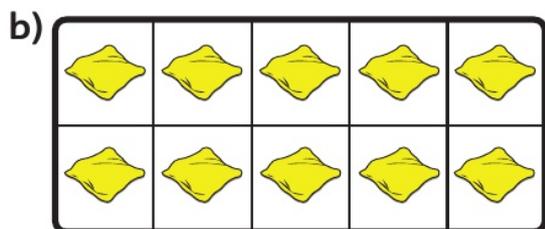
I counted in 10s.



Remember that each bean bag is worth 10 points.



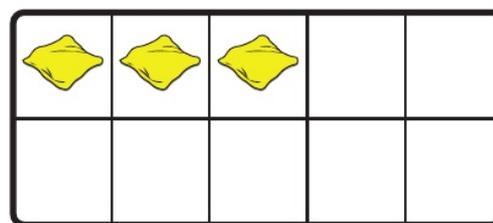
I know that 7 tens is 70.



10 tens is 100,

So, 13 tens is 130.

Andy scored 130.



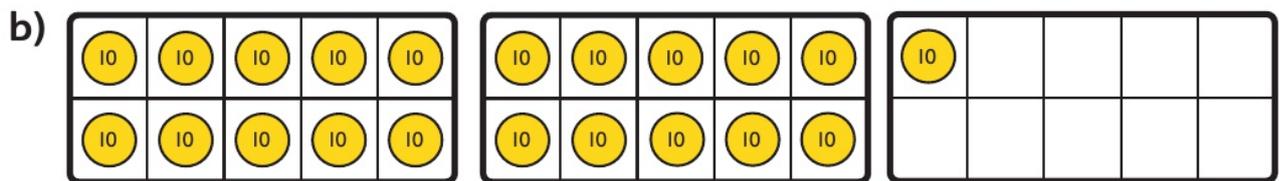
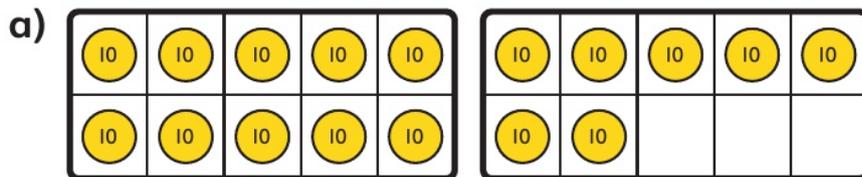
3 tens is 30.

70 and 130 are both multiples of 10.



Think together

1 How much is each multiple of 10?



2 a) Make each number using base 10 equipment.

Tell a partner how many 10s there are in each number.

H	T	O	H	T	O
1	1	0	2	3	0

b) Match each multiplication to the correct multiple of 10.

$$34 \times 10$$

$$13 \times 10$$

$$10 \times 43$$

$$130$$

$$430$$

$$340$$

CHALLENGE

3 Play this game with a partner.

Take turns to cover a multiple of 10 with a counter.

Keep going until all the multiples of 10 are covered.

50	15	105	501
100	80	10	55
93	240	200	210
300	320	301	340



I know 200 is a multiple of 100, but I wonder if it is also a multiple of 10.

I will make my own grid and play again.



Related calculations

Discover



1 a) How many balloons are there on all the cakes in total?

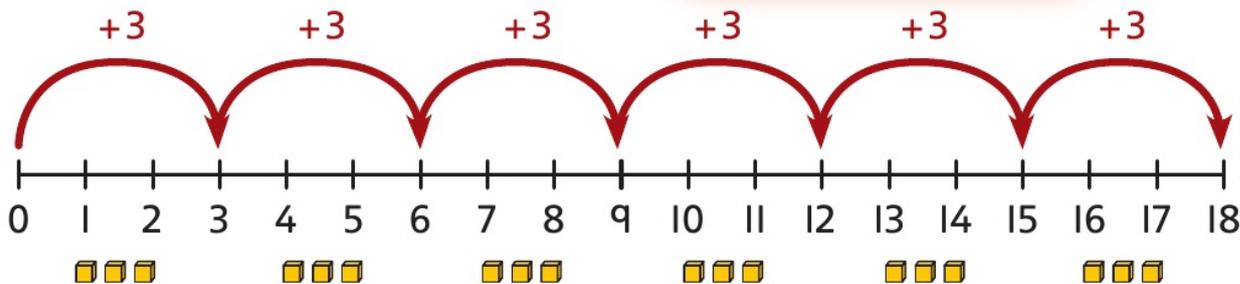
b) How many candles are there on all the cakes in total?

What do you notice about your answers?

Share

- a) There are 3 balloons on each cake.

There are 6 cakes in total.



$$6 \times 3 = 18$$

There are 18 balloons in total.

Remember to use your multiplication facts if you know them.

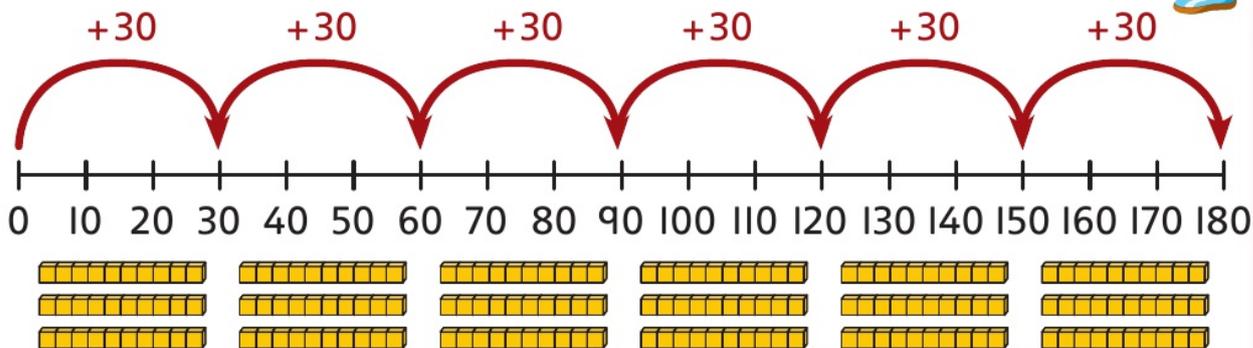


I used a number line and counted up in 3s.



- b) There are 6 cakes.

There are 30 candles on each cake.



$$6 \times 30 = 180$$

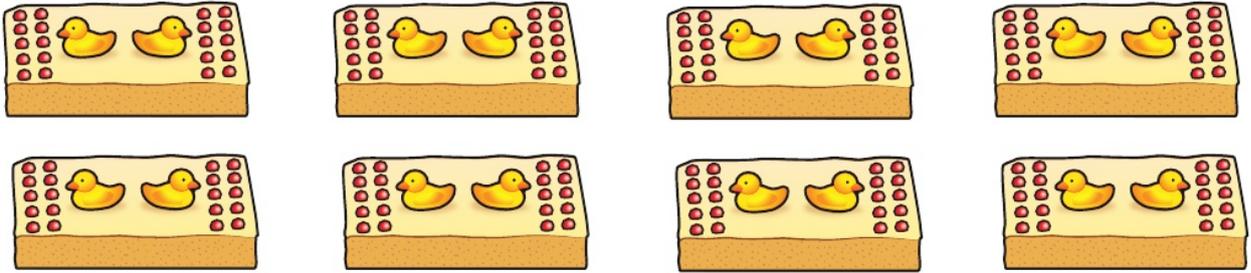
There are 180 candles in total.

I know that 6×3 ones is 18 ones. So, I know that 6×3 tens is 18 tens. 18 tens is 180.



Think together

1 A baker bakes 8 cakes.



a) Multiply to work out the total number of ducks.

$$8 \times 2 = \square$$

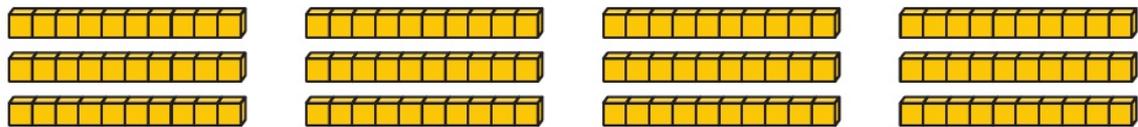
b) Multiply to work out the total number of cherries.

$$8 \times 20 = \square$$

2 a) Use base 10 equipment to work out these calculations.



$$4 \times 3 = \square$$



$$4 \times 30 = \square$$

b) Work out these calculations.

i) $7 \times 5 = \square$

iv) $6 \times 4 = \square$

ii) $7 \times 50 = \square$

v) $6 \times 40 = \square$

iii) $70 \times 5 = \square$

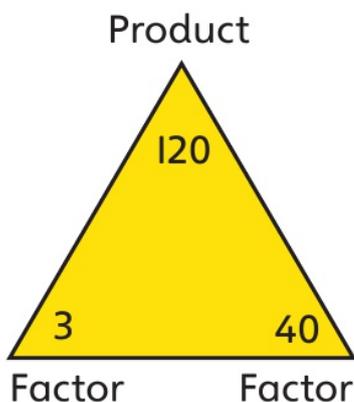
vi) $60 \times 4 = \square$

I can see a pattern in the answers.



CHALLENGE

3 This is called a multiplication triangle.



factor \times factor = product

$$3 \times 40 = 120$$

$$40 \times 3 = 120$$

If you change the order of the factors, the product stays the same.



Complete these calculations.

a) $4 \times 5 = 20$

$$40 \times 5 = \square$$

$$5 \times 40 = \square$$

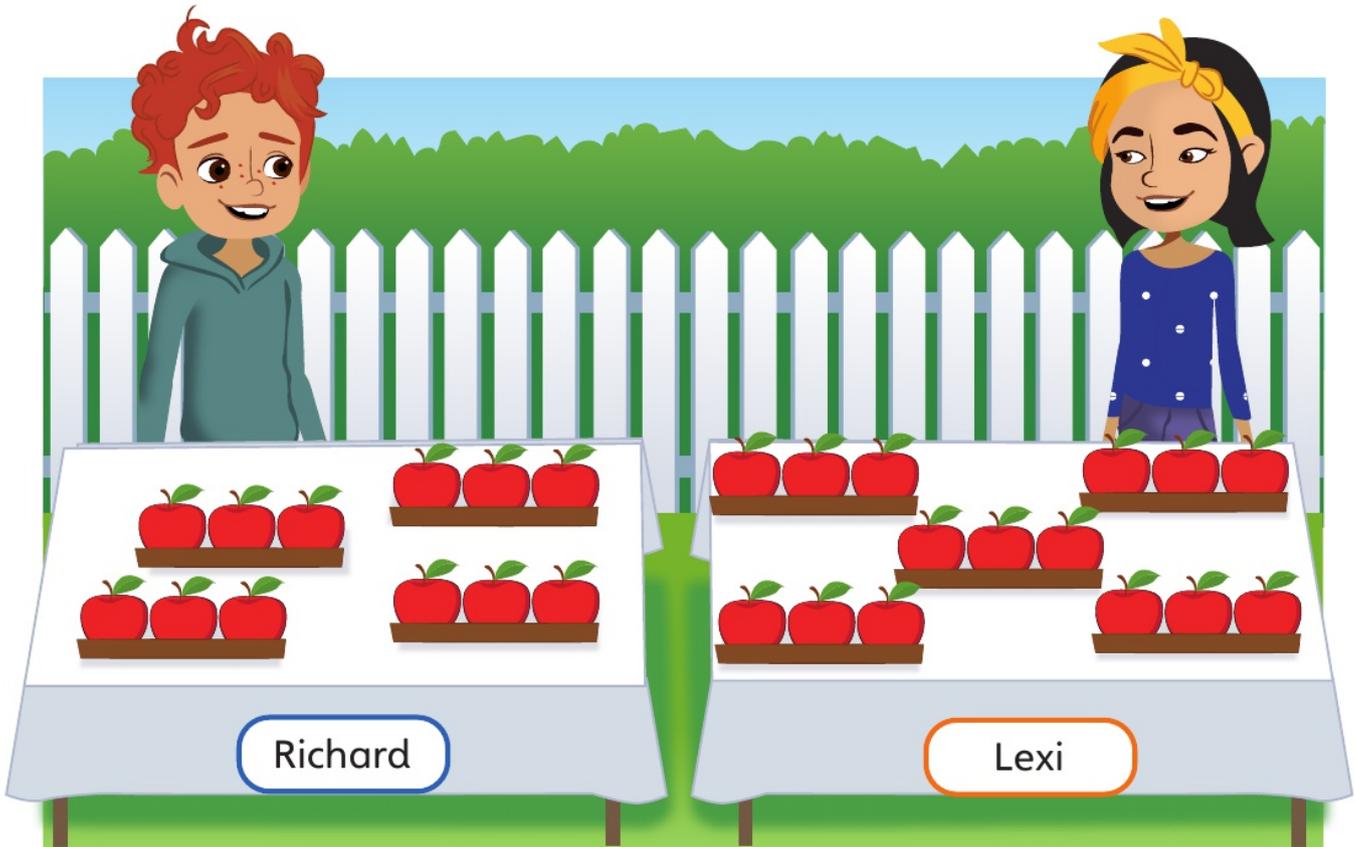
b) $2 \times 4 = 8$

$$20 \times 4 = \square$$

$$4 \times 20 = \square$$

Reasoning about multiplication

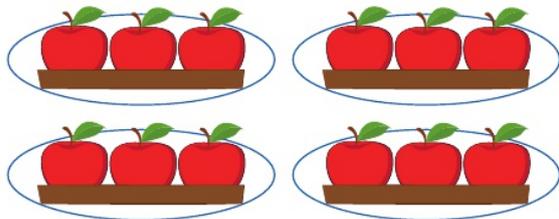
Discover



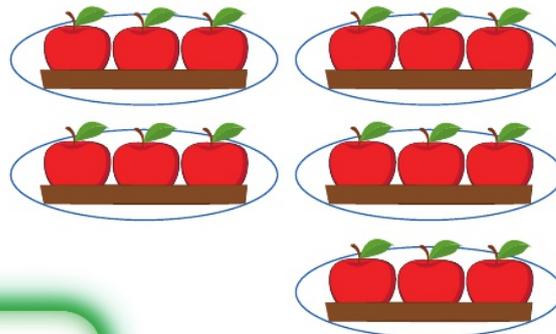
- 1 a) Who has more apples?
- b) How many apples does each child have?
How many apples are there in total?

Share

a) Richard has 4 packs of apples.



Lexi has 5 packs of apples.



I worked out the number of apples each child had.

I just know that 5 groups of 3 is more than 4 groups of 3.



5×3 is greater than 4×3 .

$$5 \times 3 > 4 \times 3$$

Lexi has more apples.

b) $4 \times 3 = 12$

Richard has 12 apples.



$$5 \times 3 = 15$$

Lexi has 15 apples.



$12 + 15 = 27$. There are 27 apples in total.

Think together

- 1 a) Richard and Lexi both have bags of pears.

There are 4 pears in each bag. Who has more pears?



- b) How many pears are there in total?

- 2 Complete the number sentences using $<$, $>$ or $=$.

a) 3×5 18

c) 5×3 3×5

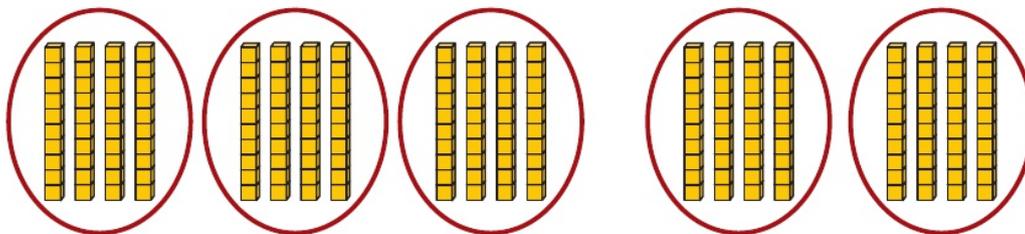
b) 4×5 5×3

d) 8×2 3×5

Use equipment or draw a picture to explain your thinking.

CHALLENGE

- 3 a) Use $<$, $>$ or $=$ to make the **statement** correct.



$$3 \times 40 \bigcirc 2 \times 40$$

- b) Compare each number sentence without working out any calculations.

i) $7 \times 30 \bigcirc 30 \times 7$

ii) $6 \times 20 \bigcirc 3 \times 40$

iii) $4 \times 30 \bigcirc 5 \times 20$

I wonder if I need to use groups of 10 building blocks every time, or if there is another way.



Multiply 2-digits by 1-digit – no exchange

Discover



1 a) How many flowers did each person buy?

Show this with base 10 equipment.

b) How many flowers did the three people buy altogether?