

Maths

Pupil's Book

1



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Welcome back!

In • On • Under



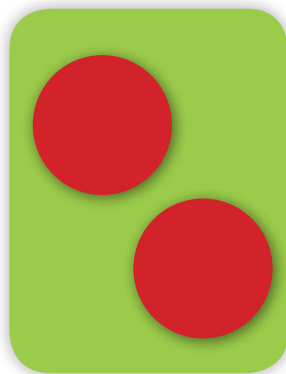
Numbers from 1 to 10



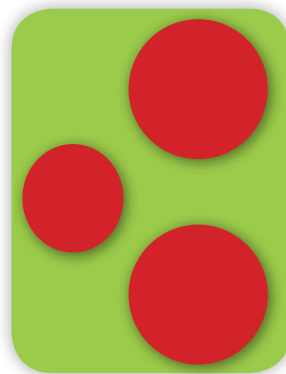
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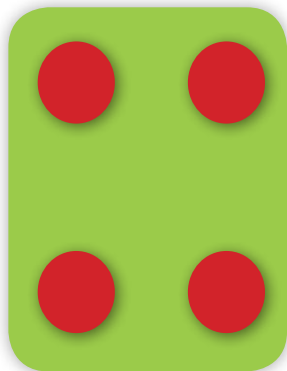
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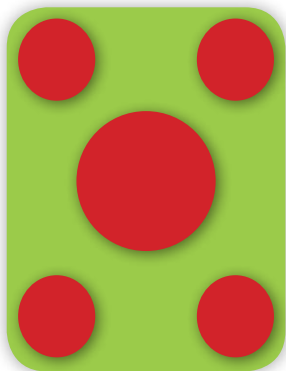
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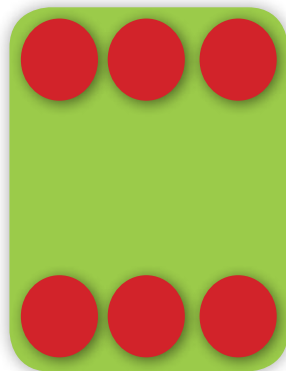
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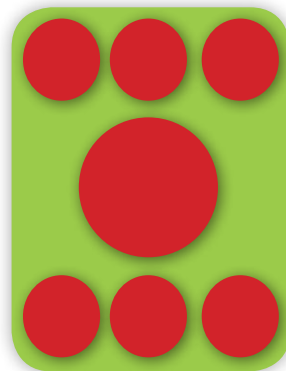
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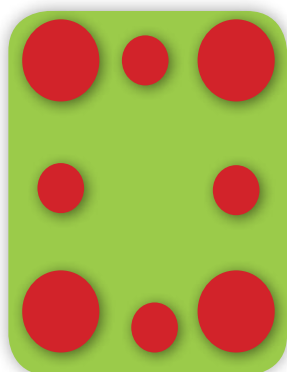
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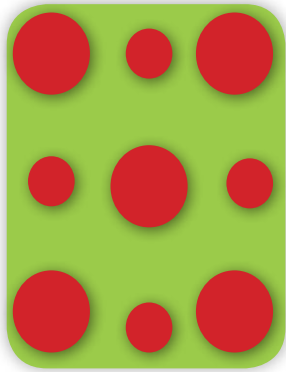
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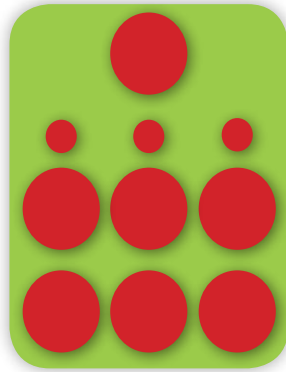
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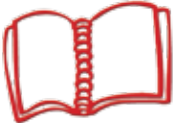
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9



10


Open your
Activity book
at page 3.

The new friends

Unit 1

Lesson 1

=

equal to

>

greater than

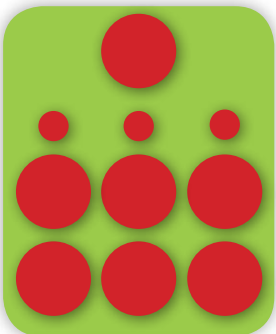
<

less than

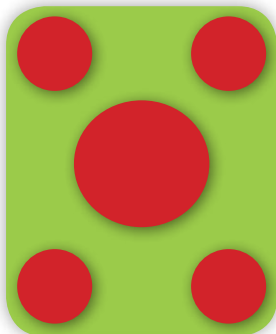
Size



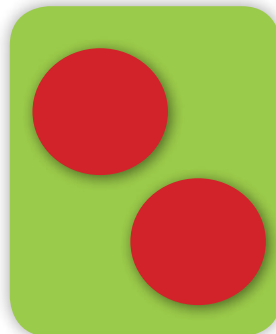
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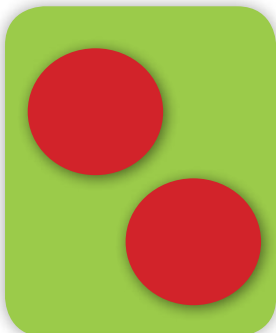
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5

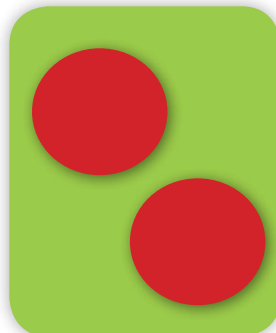


2



2

=



2



Open your
Activity book
at page 4.

The number line

Number line

A horizontal number line with numbers 1 through 10. The numbers 1, 5, and 10 are in yellow boxes, while 2, 3, 4, 6, 7, 8, and 9 are in white boxes. A green dragon is on the left, and three green arrows point to the right below the line.


Ascendent +1

A horizontal number line with numbers 1 through 10. The numbers 1, 5, and 10 are in yellow boxes, while 2, 3, 4, 6, 7, 8, and 9 are in white boxes. A purple turtle is on the left, and blue curved arrows point from each number to the next one to the right.

Descendent -1

A horizontal number line with numbers 1 through 10. The numbers 1, 5, and 10 are in yellow boxes, while 2, 3, 4, 6, 7, 8, and 9 are in white boxes. A purple turtle is on the right, and red curved arrows point from each number to the next one to the left.

A green staircase with 10 steps. The numbers 1 through 10 are written on each step, starting from the bottom left and going up to the top, then down to the bottom right. A green dragon is on the left side of the staircase, and another green dragon is on the right side. Two red arrows point downwards from the top of the staircase.

 Open your Activity book at pages 5-6.

Numbers up to 20

Green Dragon!
Come here and brush
your teeth and wash
your hands!

20 Teeth
=
20 Nails

Count the teeth.

Count your nails.

Make groups of equal
elements on your table.



Open your
Activity book
at page 7.

Colours



Green



White



Yellow



Orange



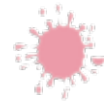
Red



Purple



Violet



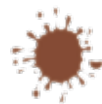
Pink



Blue



Black



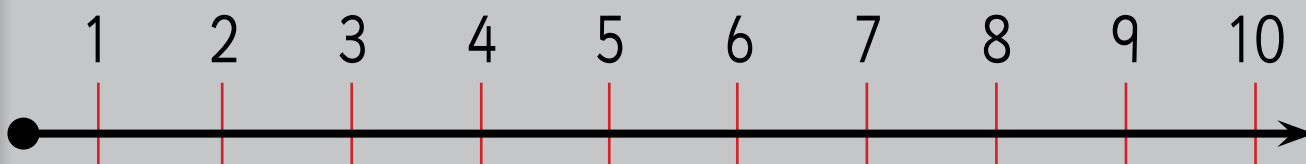
Brown



Open your
Activity book
at page 8.

Remember

Ascendent number line up to 10



Descendent number line down to 1



Numbers up to 20

1 one	2 two	3 three	4 four	5 five	6 six	7 seven	8 eight	9 nine	10 ten
11 eleven	12 twelve	13 thirteen	14 fourteen	15 fifteen	16 sixteen	17 seventeen	18 eighteen	19 nineteen	20 twenty

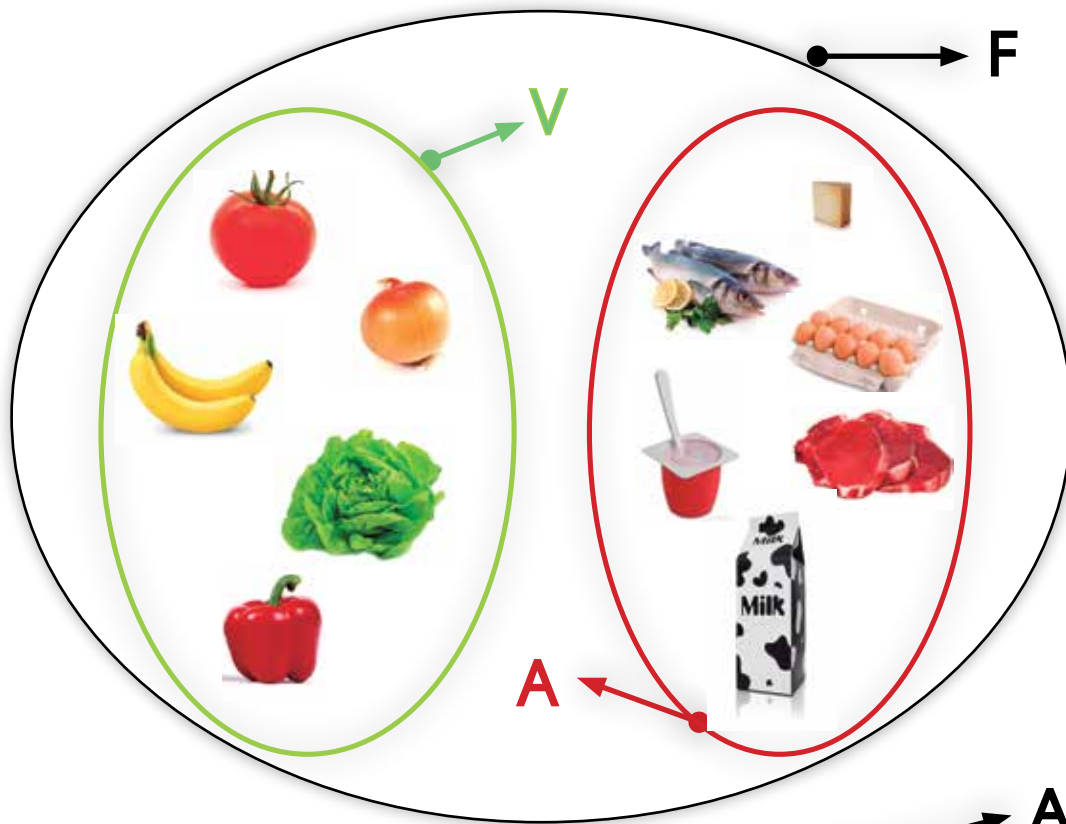
Greater than • Less than • Equal to

greater than	less than	equal to

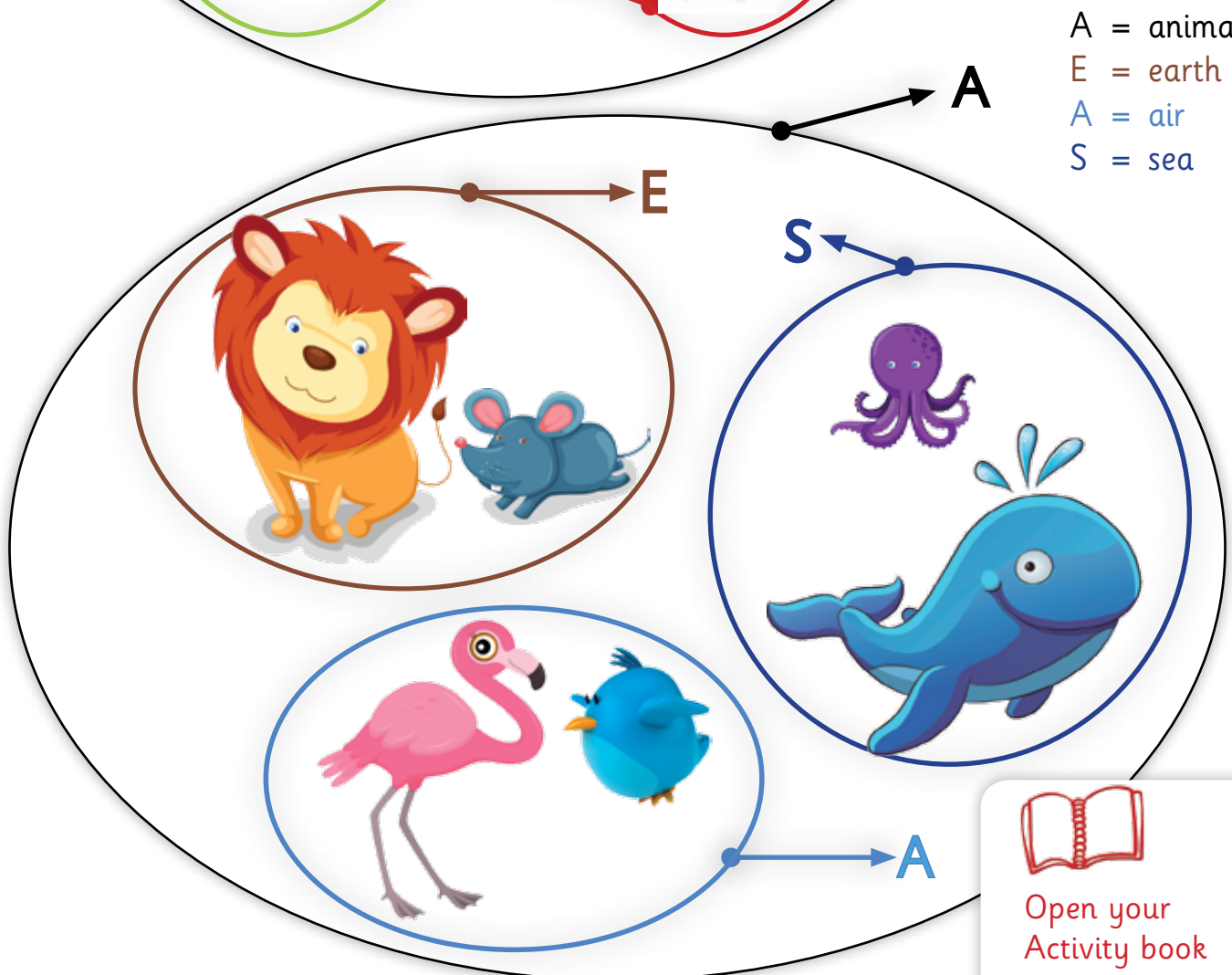
A snack

Sets and subsets

Things with the same characteristics belong to the same set.



F = foods
V = vegetable food
A = animal food



A = animals
E = earth
A = air
S = sea



Open your
Activity book
at pages 11, 12.

Make-up and breakdown of numbers up to 10

Specific breakdown	Breakdown with pictures	Breakdown with numbers												
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4	3													
1	2													
<table border="1"> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </table>					<table border="1"> <tr> <td></td> <td></td> </tr> <tr> <td></td> <td></td> </tr> </table>					<table border="1"> <tr> <td>2</td> <td>1</td> </tr> <tr> <td>3</td> <td>4</td> </tr> </table>	2	1	3	4
2	1													
3	4													

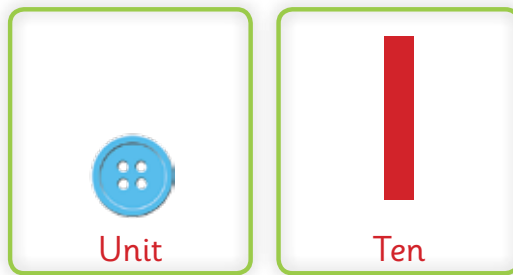
Make-up with pictures and numbers.

		10		
		10		
		10		
		10		
		10		
		10		
		10		
		10		
		10		



Open your Activity book at pages 13-14.

Position of numbers, units and tens.



10 units are 1 ten
 $10\text{ U} = 1\text{ T}$

1 ten is 10 units
 $1\text{ T} = 10\text{ U}$

Tens	Units
1	0

Tens	Units
1	3

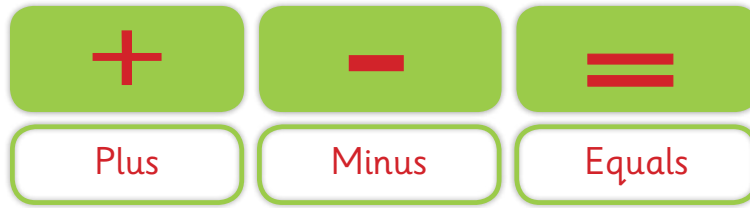
Tens	Units
2	0

Tens	Units
1	4

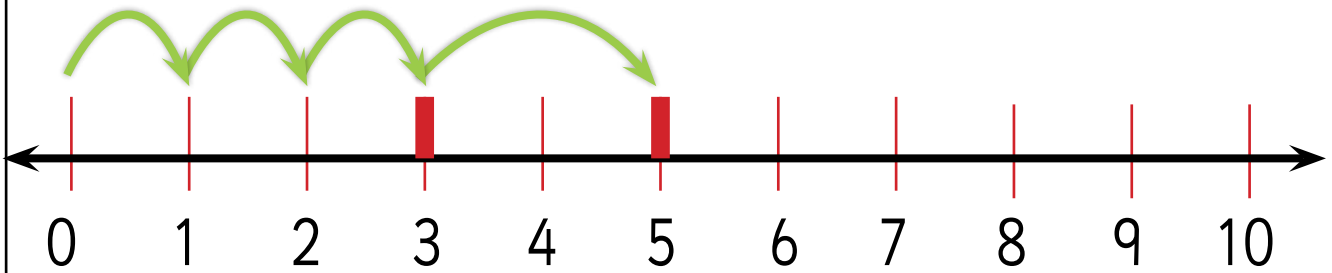


Open your Activity book at page 15.

Addition and subtraction



Addition **+**



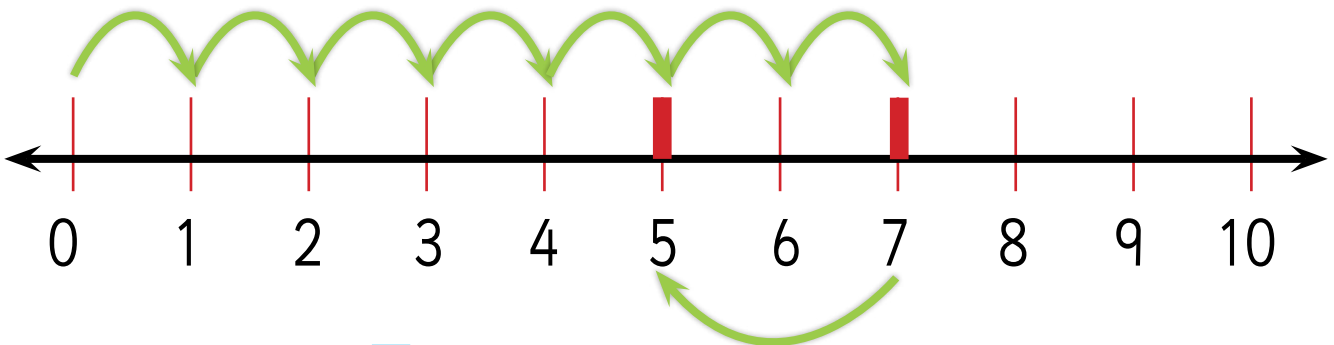
Addend **3** 

Addend **+** **2** 

Total **5** 

$$3 + 2 = 5$$

Subtraction **-**



Minuend **7** 

Subtrahend **-** **2** 

Difference **5** 

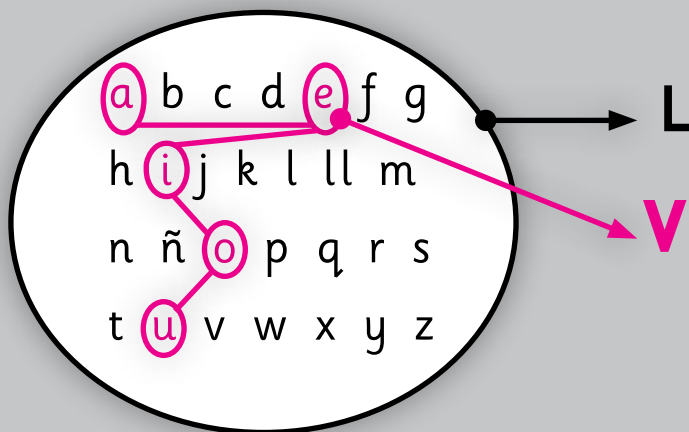
$$7 - 2 = 5$$



Open your Activity book at page 16.

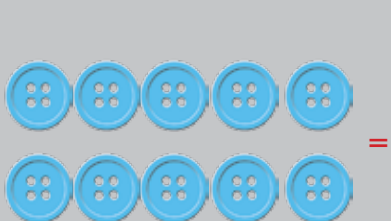
Remember

Sets and subsets



L = letters
V = vowels

Units and tens

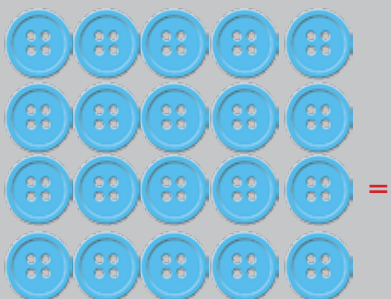


=



Tens	Units
1	0

10 U = 1 T
1 T = 10 U

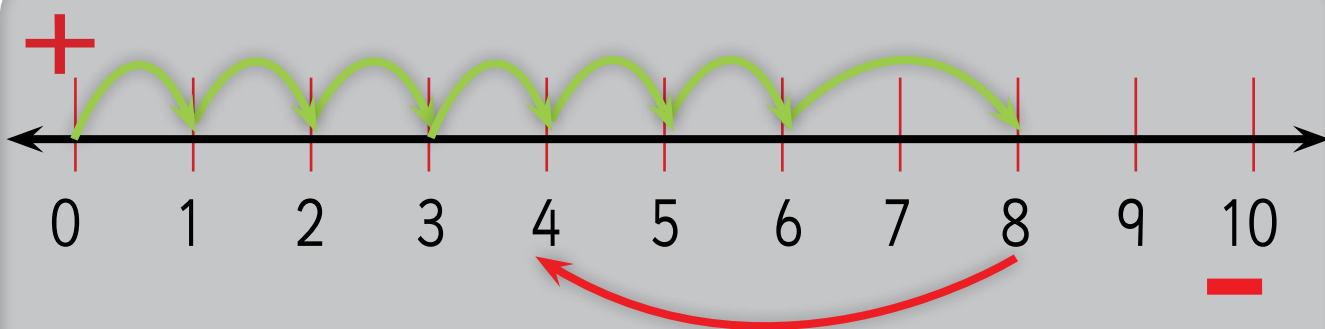


=



Tens	Units
2	0

10 U = 1 T
1 T = 10 U



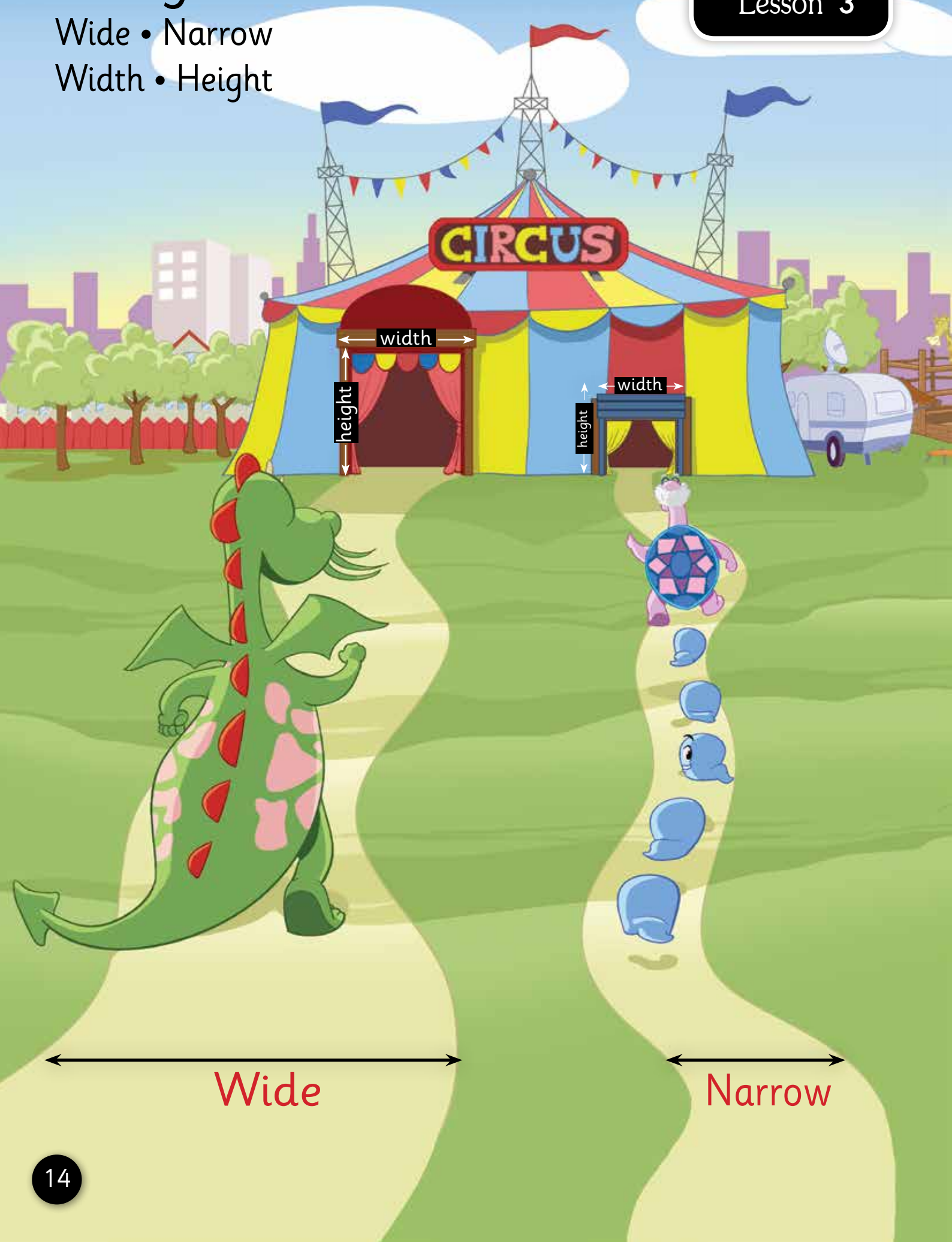
$$6 + 2 = 8$$

$$8 - 4 = 4$$

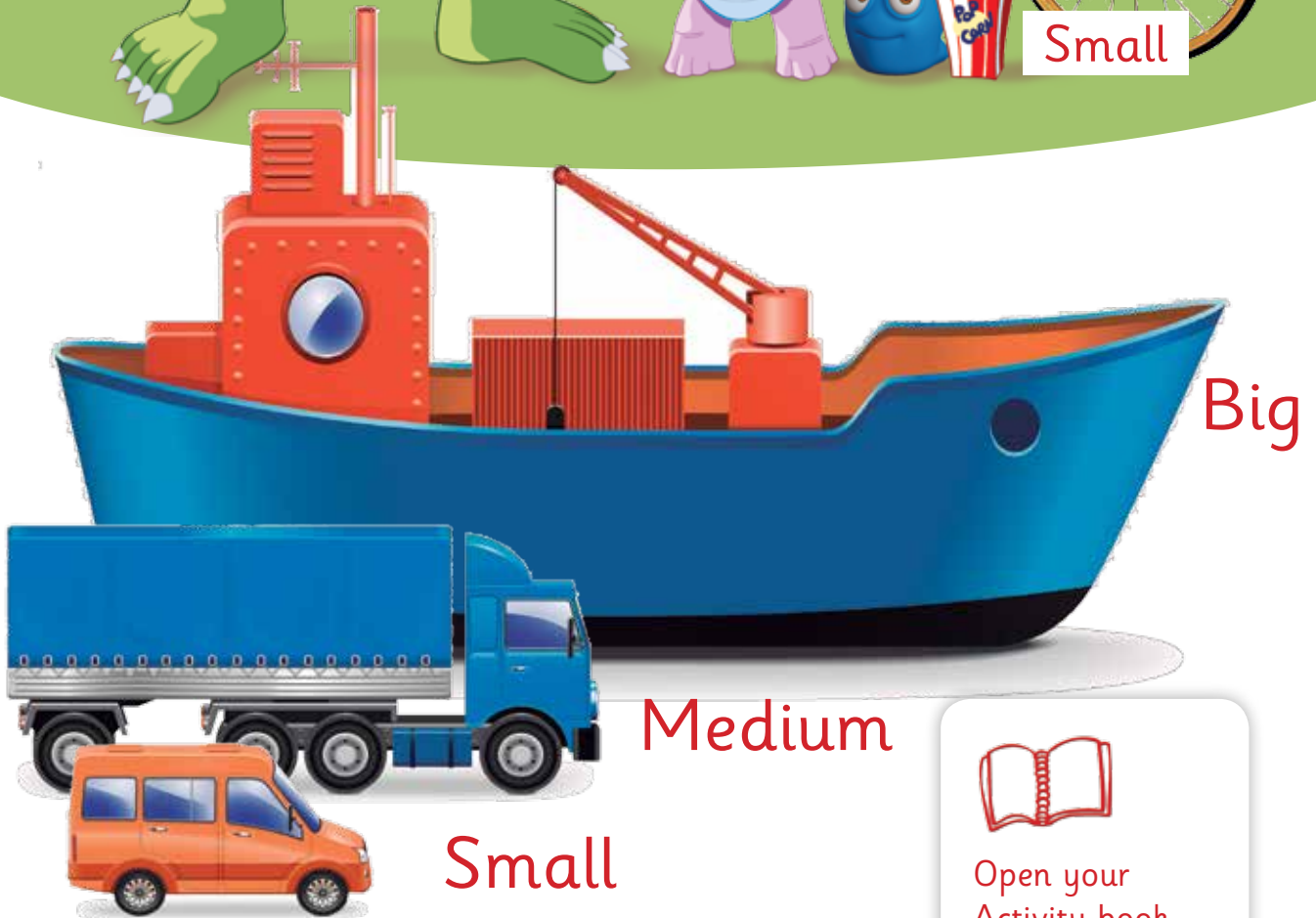
A night at the circus

Wide • Narrow

Width • Height



Big • Medium • Small




Open your
Activity book
at pages 18-19.

Height



Open your Activity book at pages 20-21.

The calendar • The date



A week has
7 days:

Monday
Tuesday
Wednesday
Thursday
Friday
Saturday
Sunday

A year has 12 months:

- | | | | |
|-------------|----------|--------------|--------------|
| 1. January | 4. April | 7. July | 10. October |
| 2. February | 5. May | 8. August | 11. November |
| 3. March | 6. June | 9. September | 12. December |

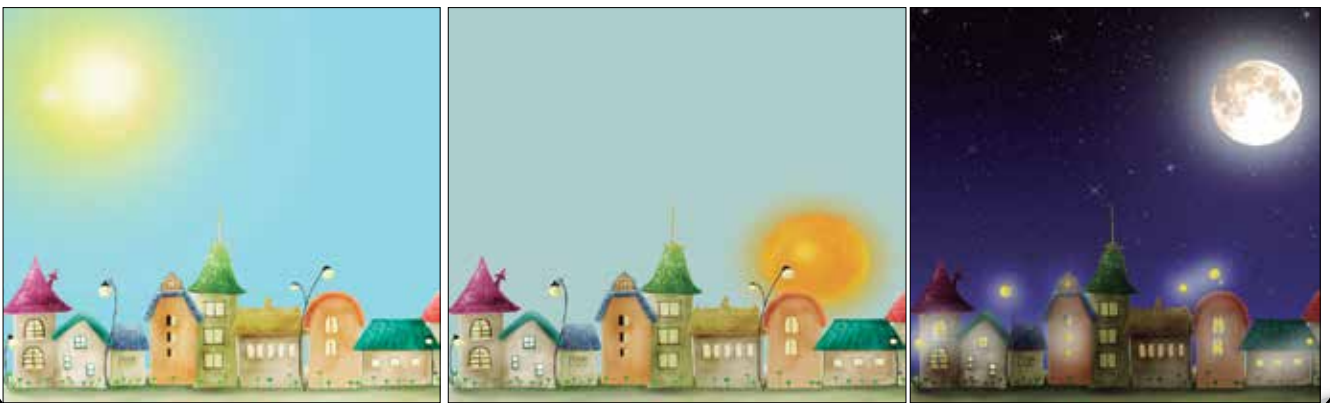
The date:

3rd of March , 2015
day month year



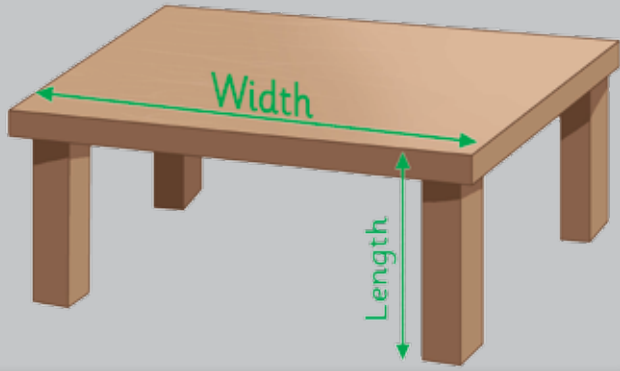
Open your
Activity book at
pages 21-22.

A day:



Remember

Width • Height



Wide • Narrow



Big • Medium • Small
Tall • Short



The calendar



A year has 12 months:

- | | | |
|----------|--------|-----------|
| January | May | September |
| February | June | October |
| March | July | November |
| April | August | December |

Maths

3

Pupil's Book



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Welcome back!



I'm helping the people in the museum do the accounts. Let's do it together!



Addition with carrying over

	H	T	U	
	1	3	3	Addends
+	1	6	2	
<hr/>				
	2	9	5	Addition

1st

Add the units: $6+5 = 11$. This addition forms a ten. That's why we add that ten to the tens column.

	H	T	U	
	2	7	6	
+	1	4	5	
<hr/>				
			11	

2nd

Then we add the tens, taking care not to forget the ten we added to this column previously ($7+4+1$). This addition forms a hundred. That's why we add this hundred to the hundreds column.

	H	T	U	
	2	7	6	
+	1	4	5	
<hr/>				
		12	1	

3rd

Finally we add the hundreds, taking care not to forget the hundred we added to this column previously ($2+1+1$).

	H	T	U	
	2	7	6	
+	1	4	5	
<hr/>				
	4	2	1	

Subtraction with carrying over

H	T	U	
5	8	6	→ Minuend
2	4	1	→ Subtrahend
<hr/>			
3	4	5	→ Difference

1st

We subtract the units, $2 - 6$. But because 2 is smaller than 6, we need to ask the tens column for help.

H	T	U
3	5	2
1	5	6
<hr/>		

2nd

We take a ten from its column ($5 - 1$) so we can give 10 units to the units column ($10 + 2$). Now we can subtract $12 - 6 = 6$

H	T	U
3	⁴ 5	¹² 2
1	5	6
<hr/>		
		6

3rd

We can't subtract 5 from 4, so we turn a hundred into 10 tens. Then we can do the operation, exactly as in the previous stage. Now it's $14 - 5 = 9$

H	T	U
² 3	¹⁴ 5	2
1	5	6
<hr/>		
	9	6

4th

Now we just have to subtract the hundreds.

H	T	U
² 3	¹⁴ 5	2
1	5	6
<hr/>		
1	9	6



Open your Activity book at pages 2-3.

Number of visits to the museum

Ordinal numbers

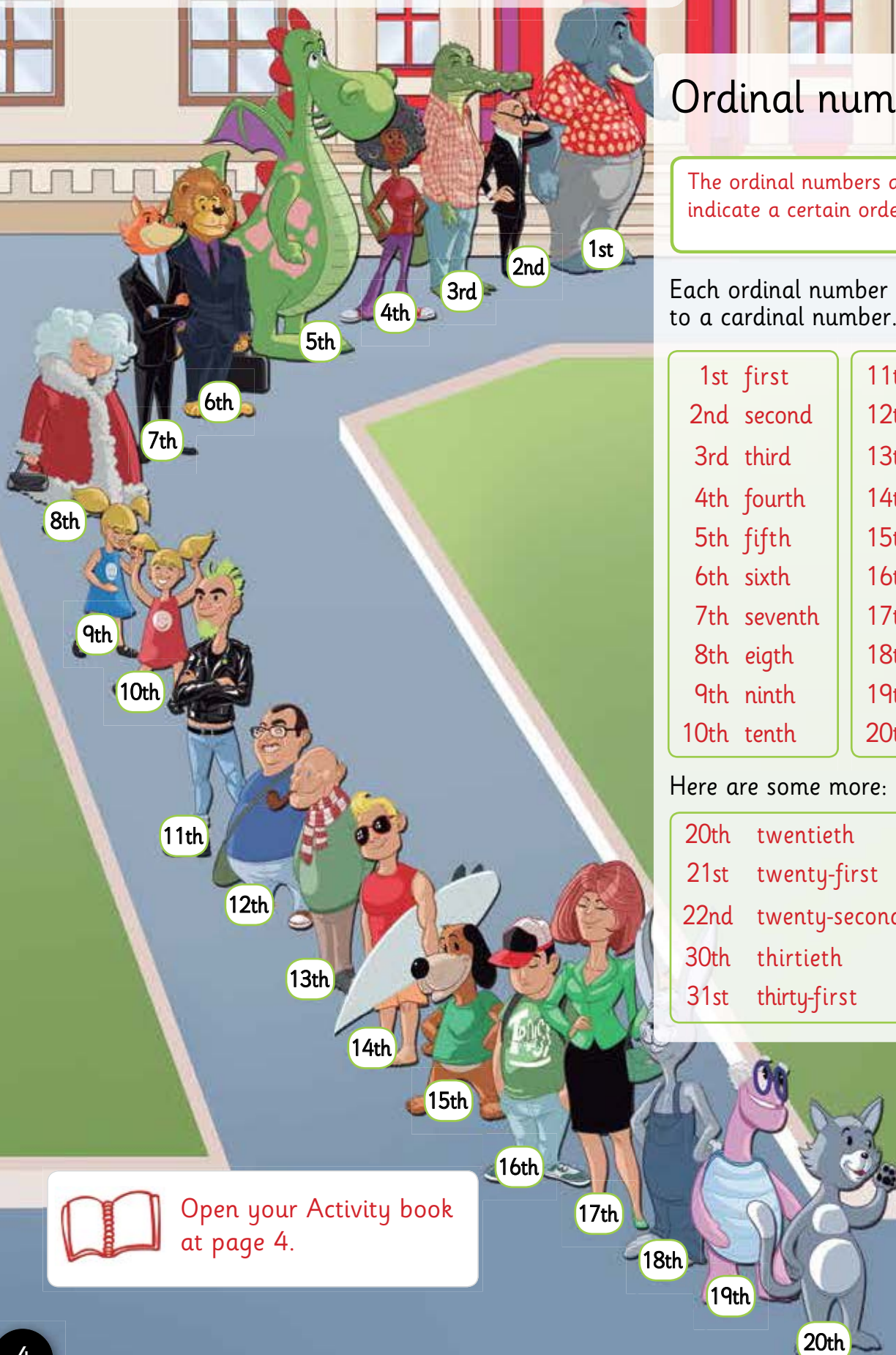
The ordinal numbers are used to indicate a certain order or position.

Each ordinal number corresponds to a cardinal number.

1st	first	11th	eleventh
2nd	second	12th	twelfth
3rd	third	13th	thirteenth
4th	fourth	14th	fourteenth
5th	fifth	15th	fifteenth
6th	sixth	16th	sixteenth
7th	seventh	17th	seventeenth
8th	eighth	18th	eighteenth
9th	ninth	19th	nineteenth
10th	tenth	20th	twentieth

Here are some more:

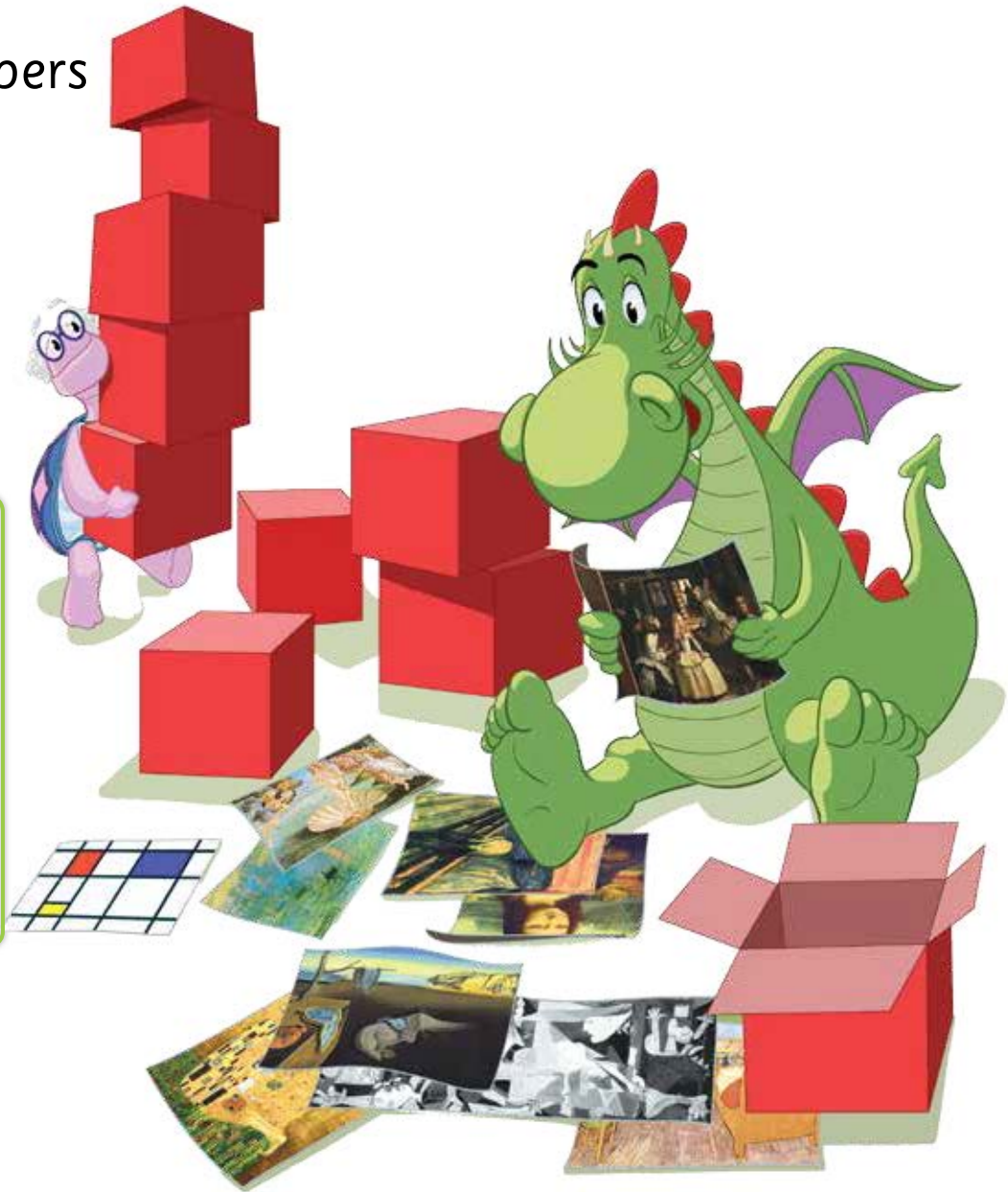
20th	twentieth
21st	twenty-first
22nd	twenty-second
30th	thirtieth
31st	thirty-first



Open your Activity book at page 4.

Three-digit numbers

Green Dragon has bought 10 packets of photos.
Each packet contains 10 photographs of museum paintings.
How many photos are there in total?



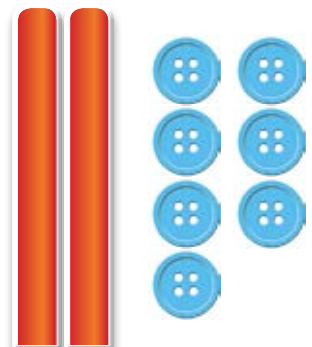
10 tens = 1 hundred

Hundreds	Tens	Units
1	0	0

1H = 10T = 100U

Three-figure numbers are made up of hundreds, tens and units.

Hundreds	Tens	Units
3	2	7



$$327 = 3 \text{ H} + 2 \text{ T} + 7 \text{ U}$$

$$327 = 300 + 20 + 7$$

327 is read: three hundred and twenty-seven.



Open your Activity book at pages 5-6.

Comparing three-digit numbers

Bigger or smaller?

First we compare the hundreds. The bigger number is the one with the most hundreds.

H	T	U
6	5	7
3	8	9

$$6 > 3$$

$$657 > 389$$

If the numbers in the hundreds column are the same, we compare the numbers in the tens column.

H	T	U
6	5	7
6	8	9

$$8 > 5$$

$$689 > 657$$

When we compare two numbers and see that one of them has fewer digits than the other, we know that it's the smaller number.

H	T	U
	7	9
1	0	4

$$104 > 79$$

Remember

>

greater than

<

less than

=

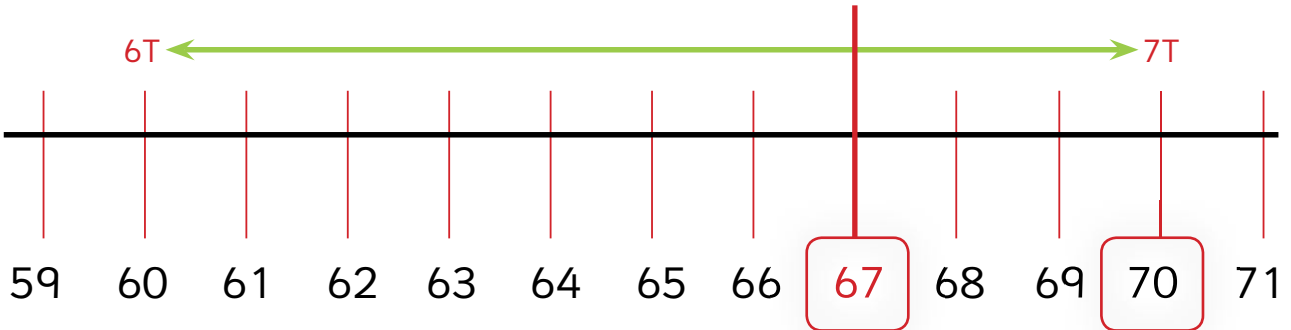
equal to



Open your Activity book at page 7.

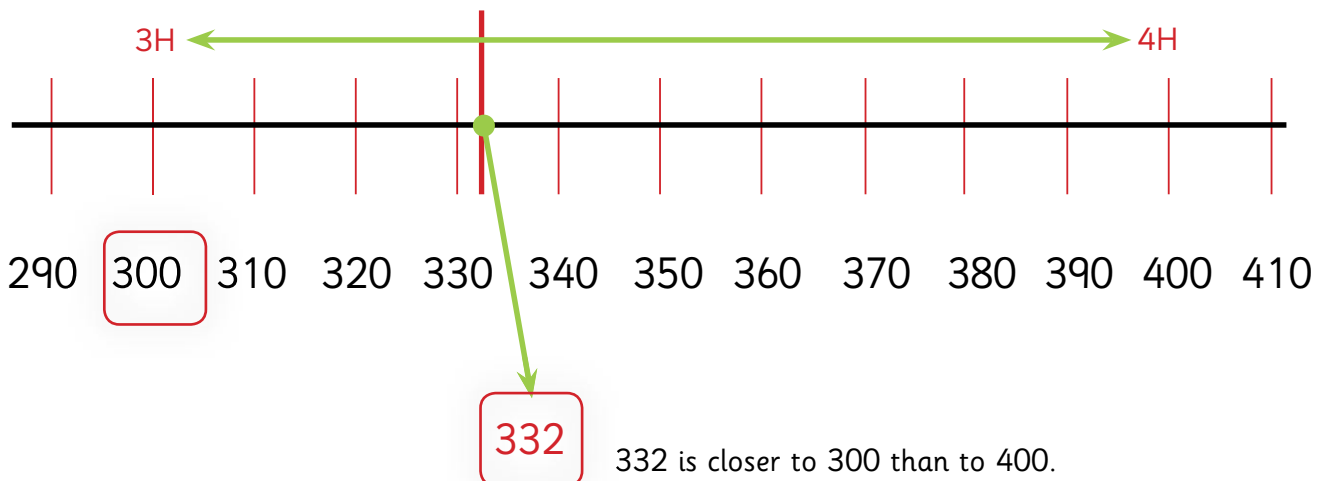
Rounding off three-digit numbers

To round off a number to the nearest ten, we must see which tens it is situated between and then choose the one which is closer.



67 is closer to 70 than 60.

To round off a number to the nearest hundred, we must see which hundreds it is situated between and then choose the one which is closer.



332 is closer to 300 than to 400.



Open your Activity book
at page 8.

Remember

Ordinal numbers

Ordinal numbers indicate a certain order or position.

1st	first
2nd	second
3rd	third
4th	fourth
5th	fifth
6th	sixth
7th	seventh
8th	eighth
9th	ninth
10th	tenth

11th	eleventh
12th	twelfth
13th	thirteenth
14th	fourteenth
15th	fifteenth
16th	sixteenth
17th	seventeenth
18th	eighteenth
19th	nineteenth
20th	twentieth

Three-digit numbers

Hundreds	Tens	Units
3	0	0

$$1H = 10T = 100U$$

$$3H = 30T = 300U$$

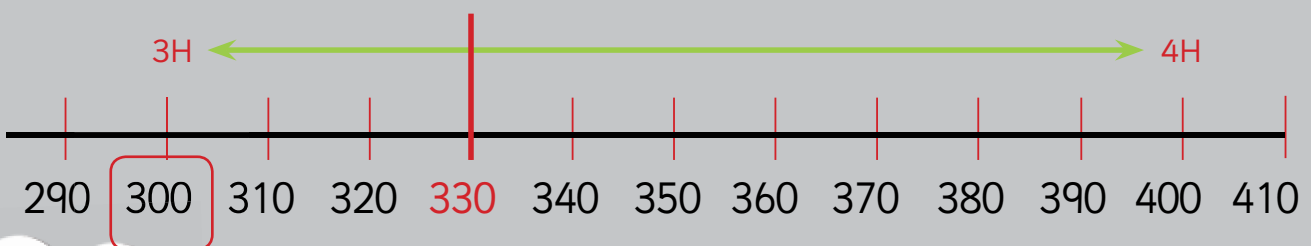
Comparing numbers

Hundreds	Tens	Units
4	6	2
1	9	6

$$4 > 1$$

$$462 > 196$$

Rounding off numbers



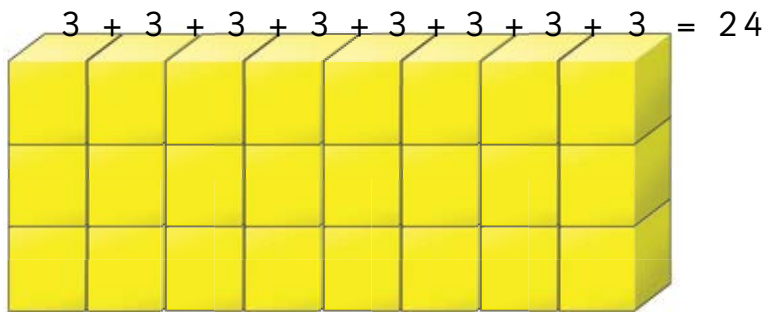
Group offers

Unit 1

Lesson 2

Multiplication

Multiplication is like adding the same number several times.



Multiplication



8

Multiple

x 3

Multiplier

24

Product

Multiplication properties

Commutative

The order of the factors doesn't change the product.

$$2 \times 3 = 3 \times 2$$

Associative

The way the factors are put into groups doesn't change the result.

$$\begin{aligned}(3 \times 2) \times 5 &= 3 \times (2 \times 5) \\ 6 \times 5 &= 3 \times 10 \\ 30 &= 30\end{aligned}$$

Distributive

If we multiply a number by an addition, it's the same as if we multiply each addend of the addition.

$$\begin{aligned}2 \times (3 + 5) &= 2 \times 3 + 2 \times 5 \\ 2 \times 8 &= 6 + 10 \\ 16 &= 16\end{aligned}$$

Removing common factor

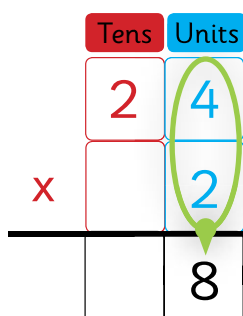
If several addends have a common factor, we can transform the addition into a product, removing the common factor.

$$\begin{aligned}(2 \times 7) + (3 \times 7) &= 7 \times (2 + 3) \\ 14 + 21 &= 7 \times 5 \\ 35 &= 35\end{aligned}$$

Two-digit numbers multiplication without carrying over

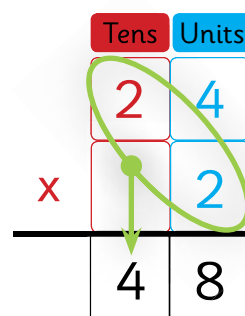
1st

The units are multiplied by the multiplier and the product is written underneath the line.



2nd

The tens are multiplied by the multiplier and the product is written underneath the line.



Open your Activity book at pages 11-12.

Two-digit numbers multiplication with carrying over

1st

We multiply the units by two ($9 \times 2 = 18$). We write the 8 under the line and carry over the 1 to add it to the product of the next multiplication.

	Tens	Units
	8	9
x		2
<hr/>		
		18

2nd

We multiply the tens by two ($8 \times 2 = 16$) and add the 1 we carried over from the previous operation ($16 + 1 = 17$). We write 7 under the line and add the 1 to the hundreds column.

	Tens	Units
	18	6
x		2
<hr/>		
1	7	2

Three-digit numbers multiplication with carrying over

1st

We multiply the units by two ($6 \times 2 = 12$). We write 2 under the line and carry over the 1 from the tens column to add it to the product of the next operation.

	H	T	U
	4	⁺¹ 8	6
x			2
<hr/>			
			12

2nd

We multiply the tens by two ($8 \times 2 = 16$) and add the 1 we carried over from the previous operation ($16 + 1 = 17$). We write 7 under the line and carry over the 1 to add it to the product of the next operation.

	H	T	U
	⁺¹ 4	8	6
x			2
<hr/>			
		17	2

3rd

We multiply the hundreds by two ($4 \times 2 = 8$) and add the 1 carried over from the previous operation ($8 + 1 = 9$). We write 9 under the line and the multiplication is complete.

	H	T	U
	4	8	6
x			2
<hr/>			
	9	7	2



Open your Activity book at page 13.

Division

Division is sharing out in equal parts or groups.
Division is the opposite of multiplication.



Take your buttons and do the division shown below.

$12 \div 4 = 3$

$12 \div 4 = 3$

$12 \div 4 = 3$

$12 \div 4 = 3$

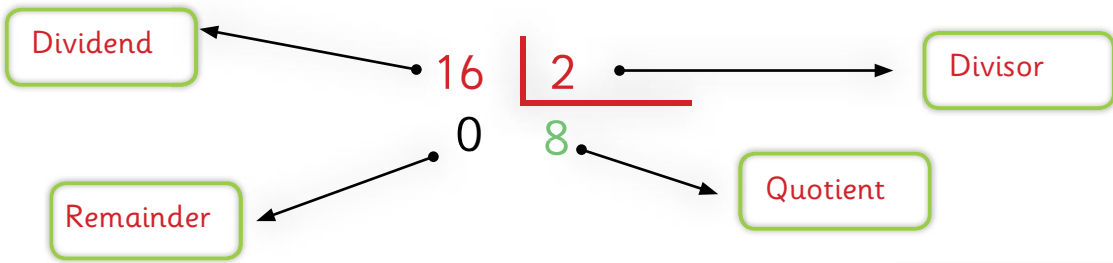
Division terms

Dividend:
Amount to share out.

Divisor:
Number of parts it's divided into.

Quotient:
The result of the division.

Remainder:
Amount that remains or that's left over.



The division test

divisor	x	quotient	+	remainder	=	dividend
2	x	8	+	0	=	16



Traditional division

1st We look for a number that, when multiplied by 2, gives us a result of 16.

$$2 \times 6 = 12$$

$$2 \times 7 = 14$$

$$2 \times 8 = 16$$

The quotient is 8.

2nd We write the quotient and place the product under the dividend.

$$\begin{array}{r} 16 \quad | \quad 2 \\ 16 \quad 8 \end{array}$$

3rd We subtract the product from the dividend.

$$\begin{array}{r} 16 \quad | \quad 2 \\ - 16 \quad 8 \\ \hline 0 \end{array}$$

The remainder is 0.

When the remainder is 0, the division is exact.

When the remainder is different from 0, the division is called an integer division.

Division using breakdown

This is a division which is split into several parts:

$$36 \div 3 = 12$$

$$\begin{array}{r} \boxed{30} \boxed{6} \quad | \quad 3 \\ - 30 \quad 10 + 2 \\ \hline 0 + 6 \\ \hline - 6 \\ \hline 0 \end{array}$$

$$156 \div 3 = 52$$

$$\begin{array}{r} \boxed{100} \boxed{50} \boxed{6} \quad | \quad 3 \\ - 90 \quad 30 + 20 + 2 \\ \hline 10 + 50 \\ \hline 60 \\ - 60 \\ \hline 0 + 6 \\ \hline - 6 \\ \hline 0 \end{array}$$

Multiplying by 10, 100, 1 000

$$5 \times 10 = 50$$

$$3 \times 100 = 300$$

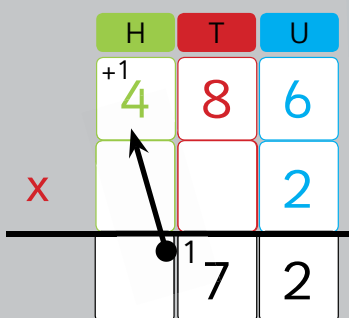
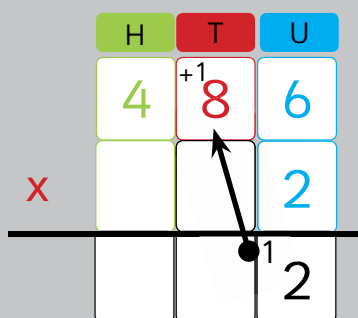
$$2 \times 1000 = 2000$$



Open your Activity book at page 15.

Remember

Multiplication terms



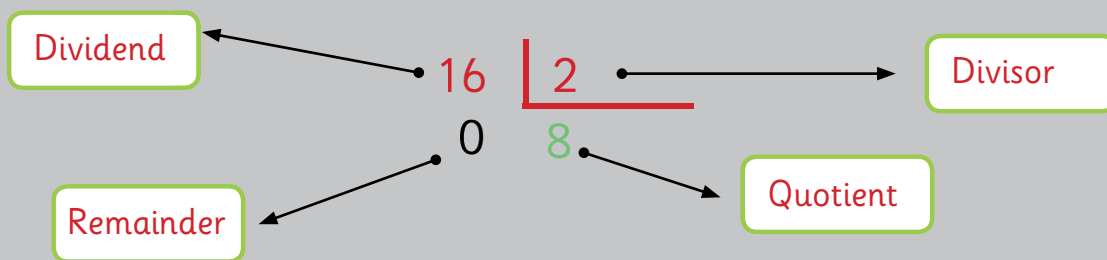
Division terms

Dividend:
Amount to share out.

Divisor:
Number of parts it's divided into.

Quotient:
The result of the division.

Remainder:
Amount that remains or that's left over.



Division is the opposite of multiplication.

$$4 \times 6 = 24$$

$$24 \div 4 = 6$$

x ÷	1	2	3	4	5	6	7	8	9	10
1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	64	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100

Guernica and the Mona Lisa

Unit 1 Lesson 3

Length measurement
The metre



It's much longer than 1 metre.

The metre is the main unit for measuring length.

It's much shorter than 1 metre.

Multiples and submultiples of the metre

To measure objects or distances that are shorter than a metre, we use smaller units. These are called submultiples.

Decimetre (dm)

If 1 metre is divided into 10 equal parts, each part is a decimetre.

$$1 \text{ m} = 10 \text{ dm}$$

Centimetre (cm)

If we divide a decimetre into 10 equal parts, each part is a centimetre.

$$1 \text{ m} = 100 \text{ cm}$$

Millimetre (mm)

If we divide a centimetre into 10 equal parts, each part is a millimetre.

$$1 \text{ m} = 1\,000 \text{ mm}$$

To measure big objects or large distances, we use measuring units that are larger than a metre. These are called multiples.

Decametre (dam)

One decametre is 10 metres.

$$1 \text{ dam} = 10 \text{ m}$$

Hectometre (hm)

One hectometre is 100 metres.

$$1 \text{ hm} = 100 \text{ m}$$

Kilometre (km)

One kilometre is 1 000 metres.

$$1 \text{ km} = 1\,000 \text{ m}$$



Open your Activity book at pages 18-19.

Equivalences between units of length

1 metre
is equivalent
to 1 000 mm

1 metre
is equivalent
to 100 cm

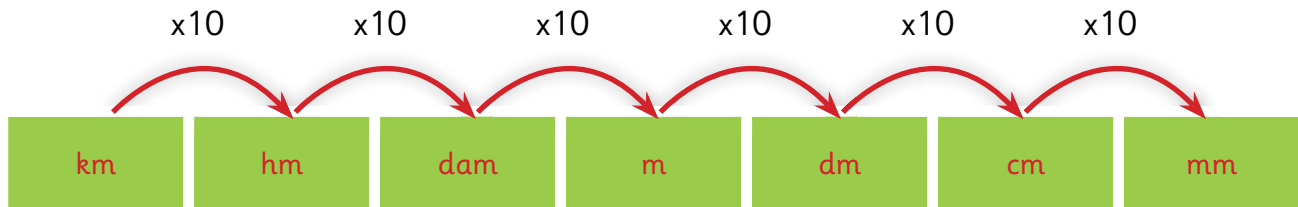
1 metre
is equivalent
to 10 dm

1 dam
is equivalent
to 10 m

1 hm
is equivalent
to 100 m

1 km
is equivalent
to 1 000 m

To convert one unit of length to another, we can use the following diagram:



To convert metres to decimetres, centimetres or millimetres, multiply by 10, 100, and 1 000 respectively.

Length in metres	Multiply by 10 for decimetres.	Multiply by 100 for centimetres.	Multiply by 1 000 for millimetres.
1	10	100	1 000
3	30	300	3000
10	100	1 000	10 000

Length in kilometres	Multiply by 10 for hectometres	Multiply by 100 for decametres	Multiply by 1 000 for metres
5	50	500	5000
6	60	600	6000
10	100	1 000	10 000



Open your Activity book
at page 20.

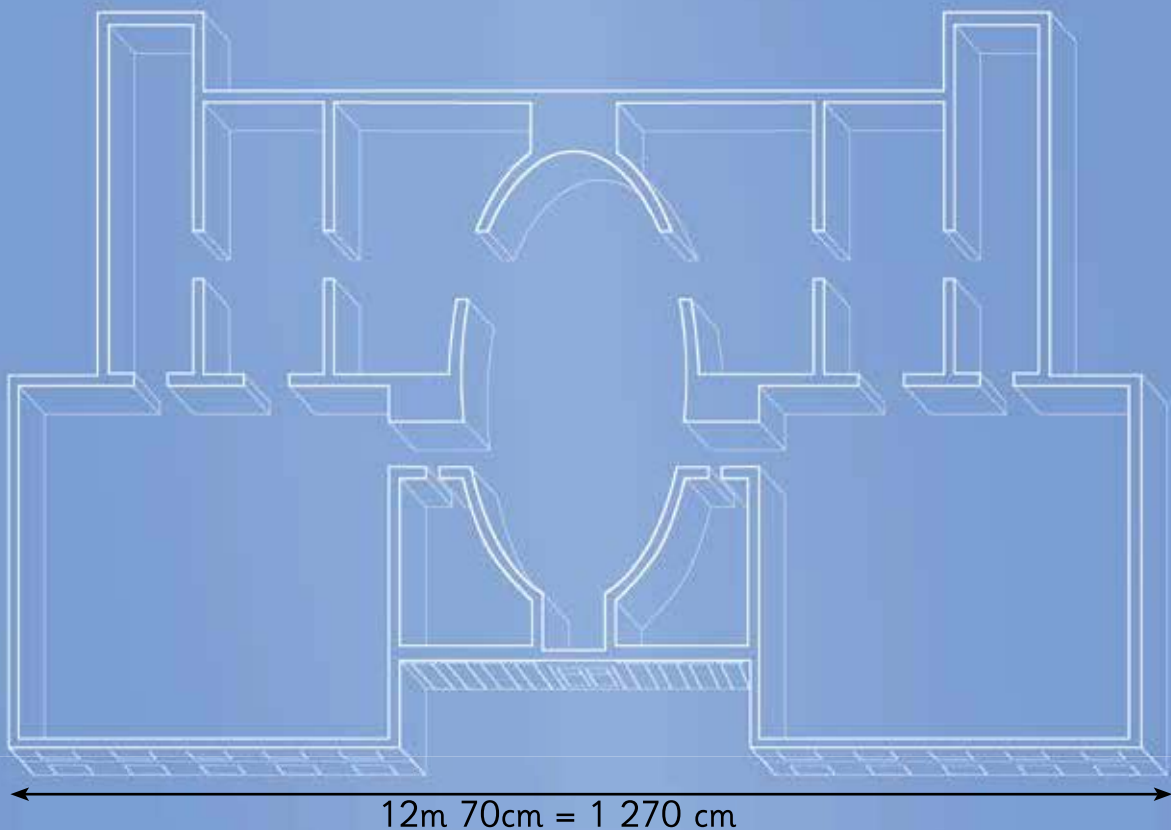
Adding and subtracting units of length

To add and subtract different measurements of length, we must make sure that all the measurements are using the same units. So, for example, we must add metres to metres and centimetres to centimetres, or subtract metres from metres and centimetres from centimetres.

Here is the blueprint of the museum. It is 12 metres and 70 centimetres long.
What is its length in centimetres?

1st
We convert the metres into centimetres:
 $12 \text{ m} \times 100 = 1\,200 \text{ cm}$

2nd
We add centimetres and centimetres:
 $1\,200 \text{ cm} + 70 \text{ cm} = 1\,270 \text{ cm}$



Open your Activity book
at pages 21-22.

Remember

Length measurement Metres

- **Metre**

The metre is the main unit for measuring length.

- **Submultiples of the metre**

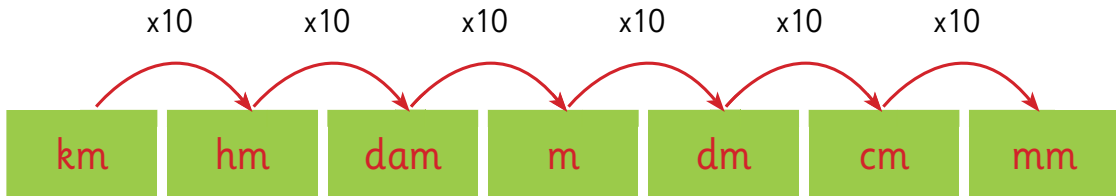
We use these to measure lengths that are shorter than a metre: decimetre (dm), centimetre (cm) and millimetre (mm).

$$1 \text{ m} = 10 \text{ dm} = 100 \text{ cm} = 1\,000 \text{ mm}$$

- **Multiples of the metre**

We use these to measure distances that are longer than a metre: decametre (dam), hectometre (hm) and kilometre (km).

$$1 \text{ km} = 10 \text{ hm} = 100 \text{ dam} = 1\,000 \text{ m}$$



Add and subtract units of length

To add and subtract different measurements of length, we must convert all the measurements to the same units.

Addition

$$\begin{array}{r}
 (8 \text{ dam } 35 \text{ m}) \\
 \swarrow \quad \searrow \\
 (80 \text{ m} + 35 \text{ m}) \\
 \hline
 115 \text{ m}
 \end{array}
 +
 \begin{array}{r}
 (5 \text{ hm } 7 \text{ m}) \\
 \swarrow \quad \searrow \\
 (500 \text{ m} + 7 \text{ m}) \\
 \hline
 507 \text{ m}
 \end{array}
 =
 \begin{array}{r}
 (3 \text{ Km } 1 \text{ dam}) \\
 \swarrow \quad \searrow \\
 (3\,000 \text{ m} + 10 \text{ m}) \\
 \hline
 3\,010 \text{ m}
 \end{array}
 -
 \begin{array}{r}
 (9 \text{ hm } 6 \text{ dam}) \\
 \swarrow \quad \searrow \\
 (900 \text{ m} + 60 \text{ m}) \\
 \hline
 960 \text{ m}
 \end{array}
 =
 \textcircled{622 \text{ m}}$$

Subtraction

Primary

6

Maths

Pupil's Book



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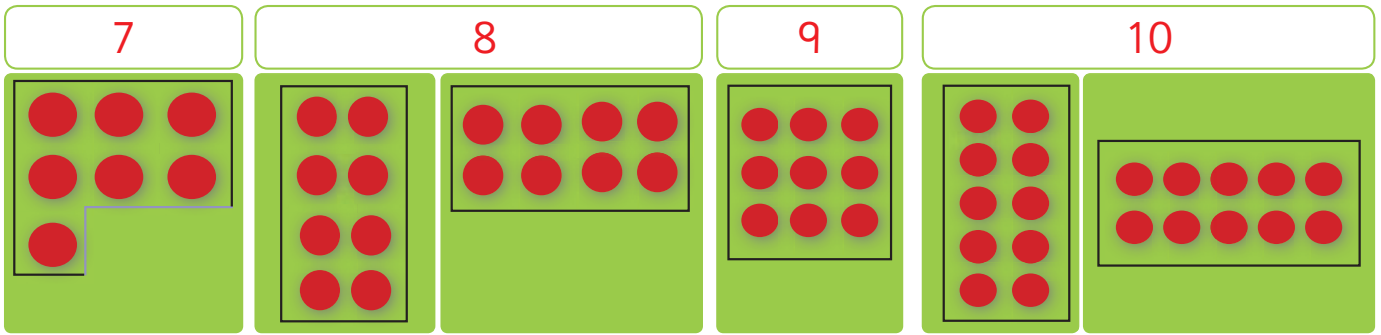
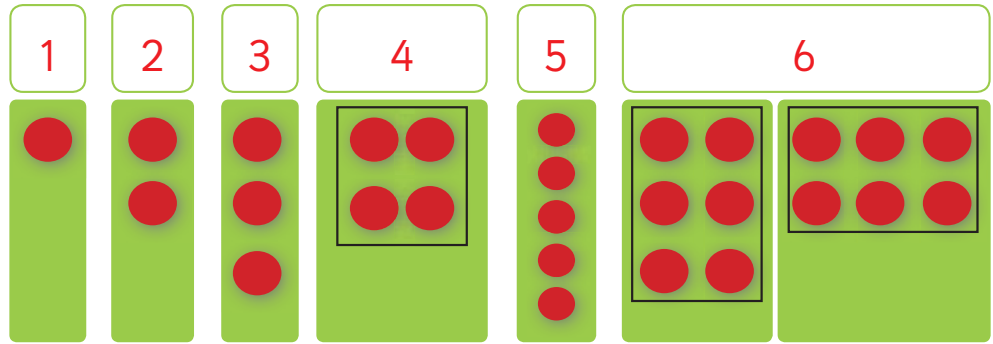
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Welcome back!

Showing numbers as rectangles

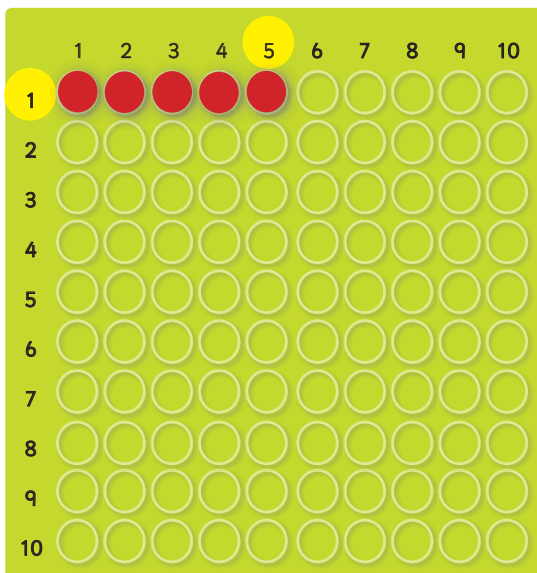
Some numbers can be represented as a series of columns that form a rectangle. Other numbers can't be shown in this way because they don't form exactly matching columns. Let's look at the numbers from 1 to 10.



Numbers that can't be put into several columns of exactly the same length are called prime numbers.

5

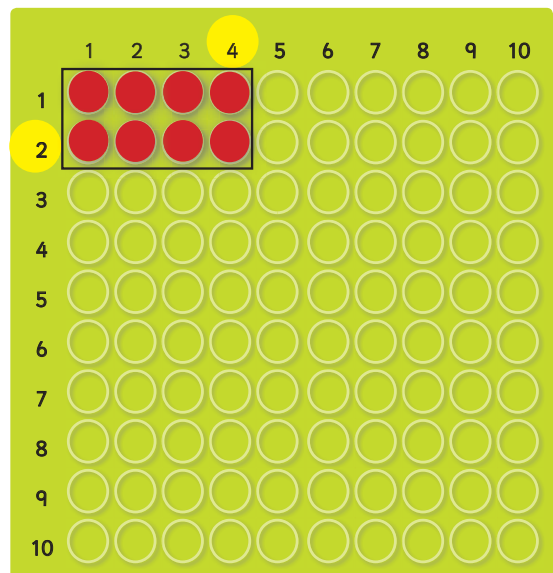
Prime number



Numbers that can be shown as rectangles with more than one column are called composite numbers.

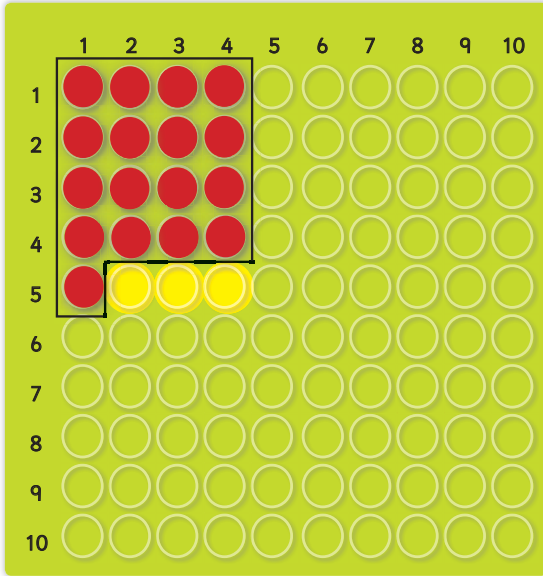
8

Composite number



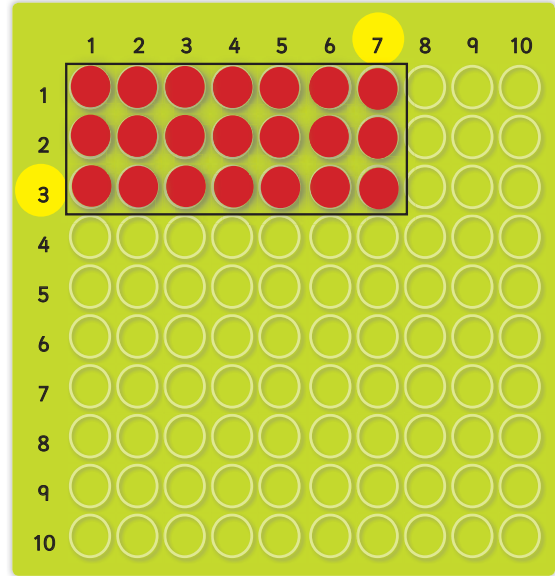
17

Prime number



21

Composite number



The product rule

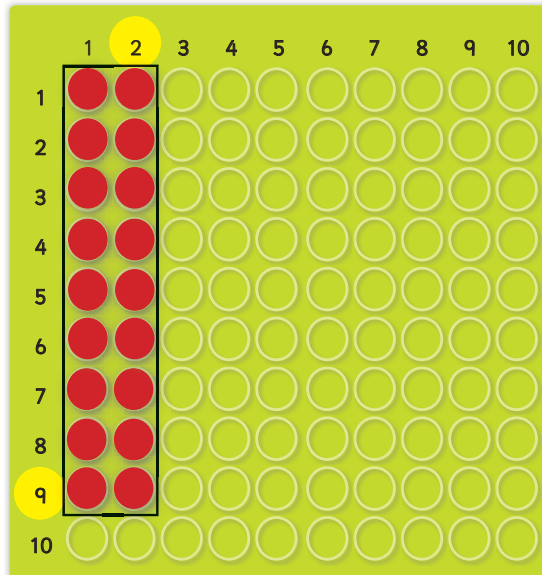
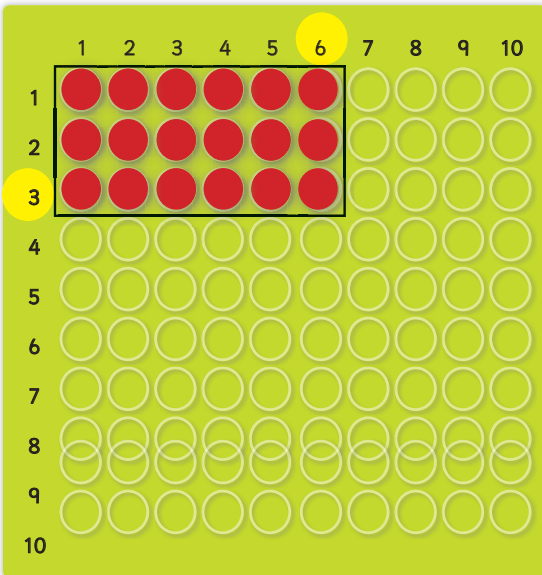
A number can be written as a product of two factors.

$$6 \times 3 = 18 = 3 \times 6$$

$$9 \times 2 = 18 = 2 \times 9$$

The order of the factors can be changed but the number remains the same.

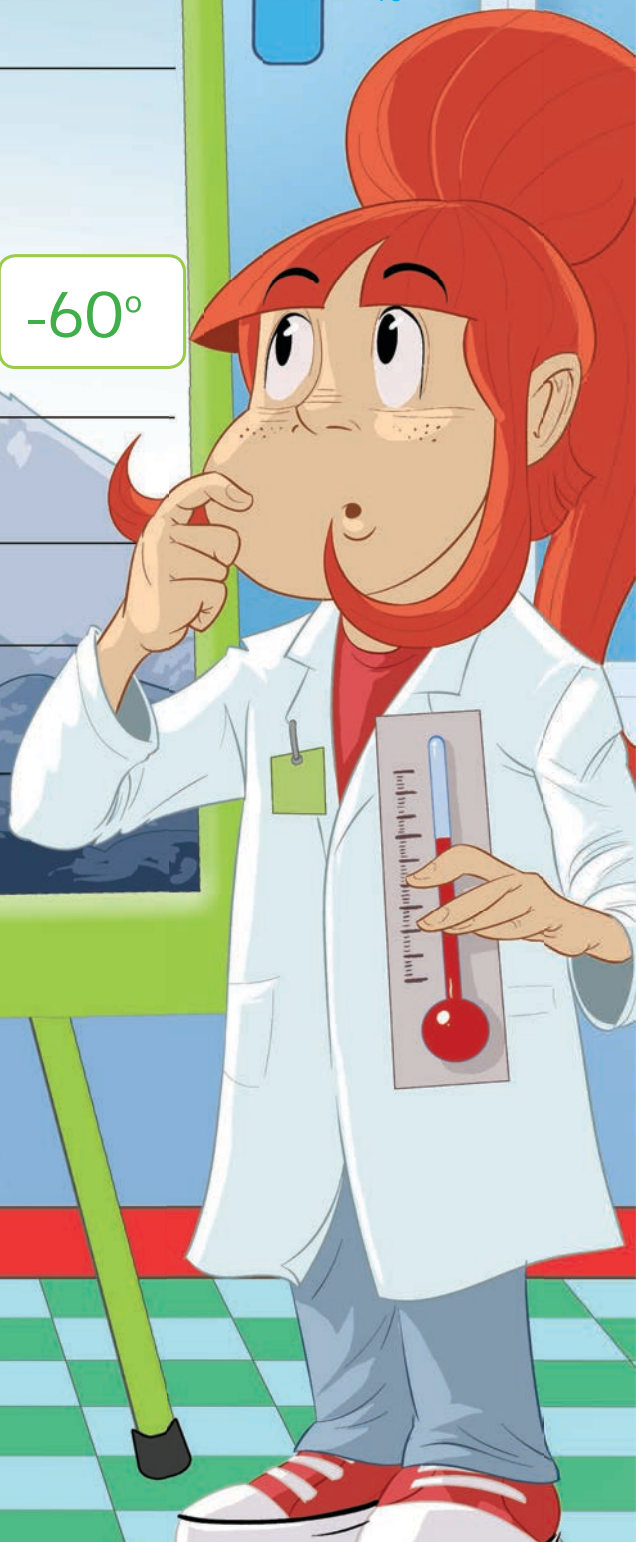
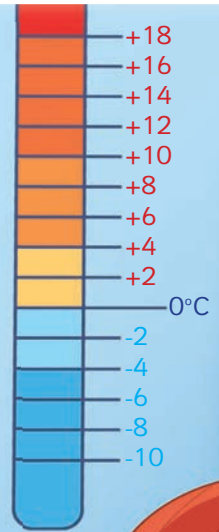
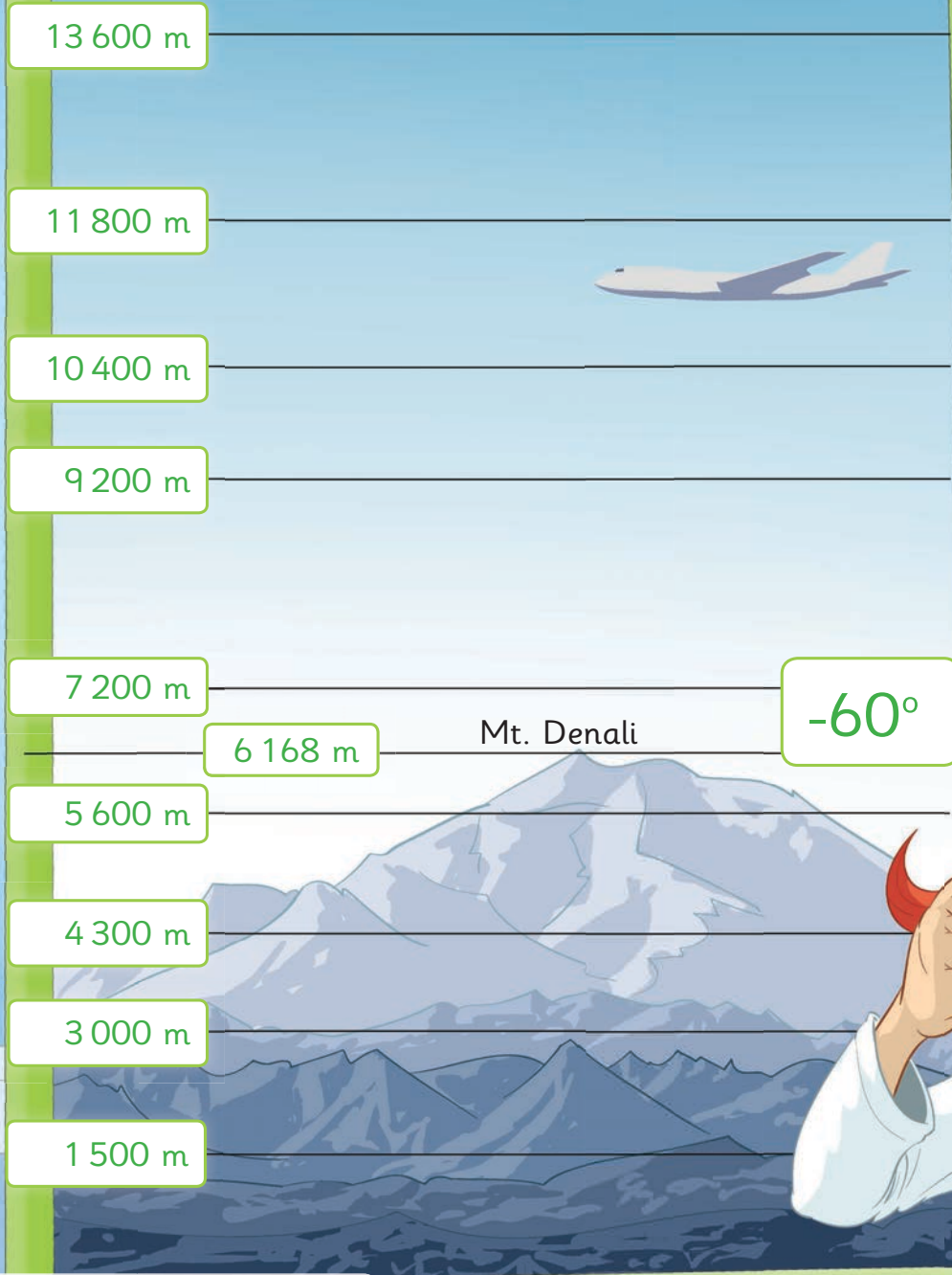
Different rectangular patterns can be made in accordance with the product rule.



Open your Activity book at pages 2-3.

Sky

What numbers can we see?



Mount Denali is the highest mountain in North America. It is 6 168 metres above sea level.

Natural numbers

Numbers of up to twelve figures. Place value.

Natural numbers are all the numbers that are made with the digits from 0 to 9.

$N = 0, 1, 2, 3, \dots$



Do they have the same properties as smaller numbers?

123 456 789 012

123 456 789 012

We can place them like smaller numbers.

Billions			Millions			Thousand			Hundreds		
H	T	U	H	T	U	H	T	U	H	T	U
1	2	3	4	5	6	7	8	9	0	1	2

We can break them down into their additive form as well as their additive/multiplicative form.

$$123\,456\,789\,012 =$$

$$100\,000\,000\,000 + 20\,000\,000\,000 +$$

$$3\,000\,000\,000 + 400\,000\,000 + 50\,000\,000 + 6\,000\,000 +$$

$$700\,000 + 80\,000 + 9\,000 + 10 + 2 =$$

$$1 \times 100\,000\,000\,000 + 2 \times 10\,000\,000\,000 + 3 \times 1\,000\,000\,000$$

$$+ 4 \times 100\,000\,000 + 5 \times 10\,000\,000 + 6 \times 1\,000\,000 +$$

$$7 \times 100\,000 + 8 \times 10\,000 + 9 \times 1\,000 + 1 \times 10 + 2$$

How do we read big numbers?

491564598213

First, put the figures in the big number into groups of three, like this:

491564598213

Second, leave a space in between the groups.

491 564 598 213

Now we are ready to read a twelve-figure number.

491 564 598 213
 billion million thousand

491 564 598 213

Four hundred and ninety-one billion, five hundred and sixty-four million, five hundred and ninety-eight thousand, two hundred and thirteen.



Open your Activity book at pages 4-5.

Rounding off

Rounding off to the nearest **ten**

8 6 7

7 > 5

8 6 7

+ 1T

$$6 + 1 = 7$$

8 7 0

Rounded off

8 6 2

2 < 5

8 6 2

+ 0T

$$6 + 0 = 6$$

8 6 0

Rounded off

To the nearest **hundred**

8 6 7

6 > 5

8 6 7

+ 1H

$$8 + 1 = 9$$

9 0 0

Rounded off

8 4 3

4 < 5

8 4 3

+ 0H

$$8 + 0 = 8$$

8 0 0

Rounded off

To the nearest thousand

1 7 5 3

7 > 5

1 7 5 3

+ 1Th

1 + 1 = 2

2 0 0 0

Rounded off

1 2 5 6

2 < 5

1 2 5 6

+ 0Th

1 + 0 = 1

1 0 0 0

Rounded off

1 5 8 8

5 < 5

1 5 8 8

+ 1Th

1 + 1 = 2

2 0 0 0

Rounded off

To the nearest million

2 9 6 5 3 5 6

9 > 5

2 9 6 5 3 5 6

+ 1 Million

2 + 1 = 3

3 0 0 0 0 0 0

Rounded off

3 1 2 5 3 5 4

1 < 5

3 1 2 5 3 5 4

+ 0 Million

3 + 0 = 3

3 0 0 0 0 0 0

Rounded off

3 5 5 6 3 5 4

5 = 5

3 5 5 6 3 5 4

+ 1 Million

3 + 1 = 4

4 0 0 0 0 0 0

Rounded off



Open your Activity book at page 6.

Combined operations



Which operation should I do first if I want to do an additive/multiplicative breakdown of a number?

Order

1st

Do the calculations in brackets.

2nd

Do the multiplications and divisions in the order they appear.

3rd

Do the additions and subtractions in the order they appear.

$$5 + 12 \div (5 - 1) =$$

$$5 + 12 \div 4 =$$

$$5 + 3 =$$

8

$$(25 \div 5) - (6 \div 3) + (2 \times 3) =$$

$$5 - 2 + 6 =$$

$$3 + 6 =$$

9



Open your Activity book at page 7.

Remember

Place value

Billions			Millions			Thousands			Hundreds		
H	T	U	H	T	U	H	T	U	H	T	U
1	2	3	4	5	6	7	8	9	0	1	2

Natural numbers
N

Breakdown

$$523 = 500 + 20 + 3 = 5 \times 100 + 2 \times 10 + 3$$

Additive

Additive/
multiplicative

Rounding off

If the number is
< 5
→ + 0

If the number is
> 5
→ + 1

If the number is
= 5
→ + 1

Combined operations

Order

1st

Do the calculations in brackets.

2nd

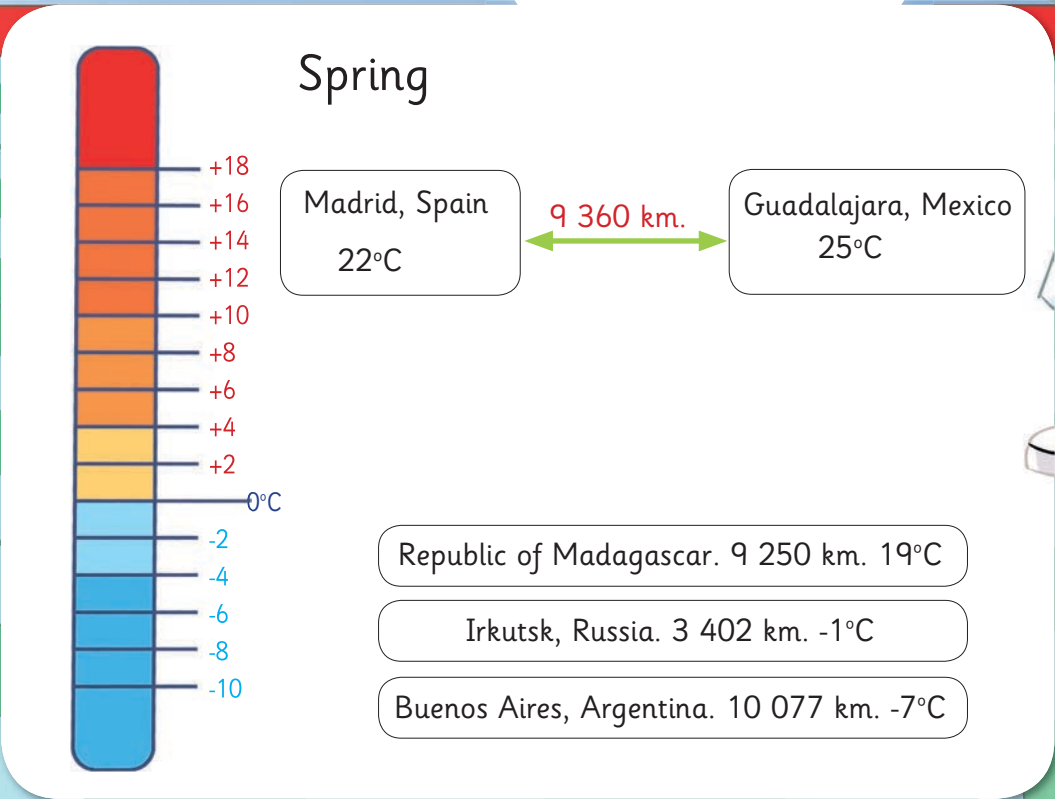
Do the multiplications and divisions in the order they appear.

3rd

Do the additions and subtractions in the order they appear.



What numbers can we see?

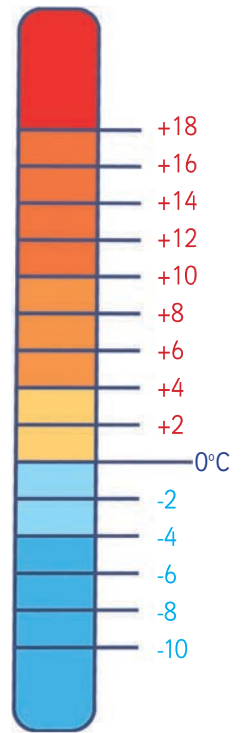


Integers

We measure the temperature during a whole day, with its highest and lowest points.

If the temperature in my city is -2°C at 7 am and $+4^{\circ}\text{C}$ at 1:00 pm, how many degrees has it risen?

It's risen by 6°C .



Natural numbers (sometimes called positive integers) are all the numbers formed with the digits from 0 to 9.

N

Natural numbers

All positive whole numbers.

$N = 0, 1, 2, 3, 4, 5, \dots$

If the minuend is lower than the subtrahend, we must use integers (Z) to express the difference.

Z

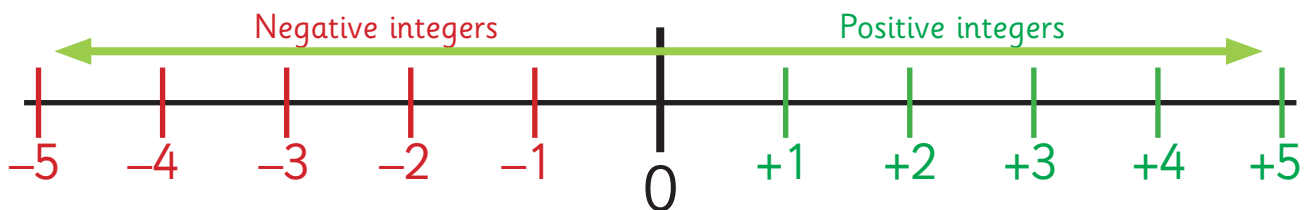
Integers

All the natural numbers, including zero, and their opposites.

Integers consist of all the natural numbers, their opposites and zero.

$Z = \dots, -5, -4, -3, -2, -1, 0, 1, 2, 3, 4, 5, \dots$

N & Z



Opposite numbers and absolute value

The absolute value of a number

$$\begin{array}{l} | 5 | = +5 \\ | 5 | = -5 \end{array}$$

The opposite of a number

$$\begin{array}{l} -5 \longrightarrow +5 \\ +5 \longrightarrow -5 \end{array}$$



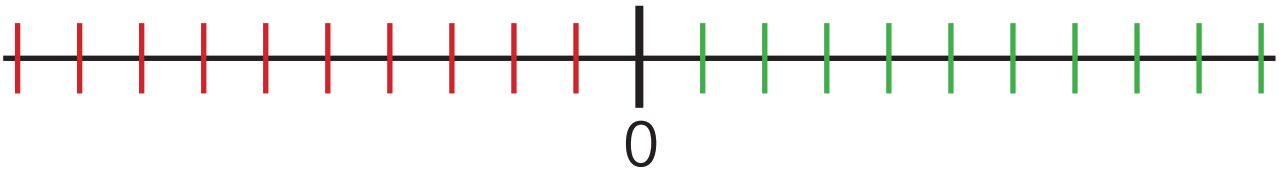
Open your Activity book at page 10.

The order of integers

To put integers in order, we need to follow these steps.

1st step

We draw a number line.



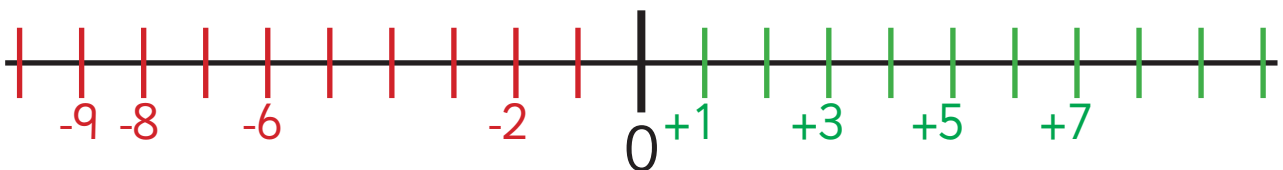
2nd step

Now we find the correct position for each number.

$-6, +7, -9, +3, +1, -2, +5, -8$

Negative numbers go on the left of the zero: $-6, -9, -2, -8$.

Positive numbers go on the right of the zero: $+7, +3, +1, +5$.



The bigger the negative number is, the farther away it is from the zero.



Open your Activity book at page 11.

Cartesian coordinates

This is a system based on two lines (or axes) which cross each other. They are perpendicular to each other. The place where they intersect is called the origin of the coordinates.

To the right of the origin of the coordinates on the X axis, values are positive. To the left, they are negative. Similarly, on the Y axis, values are positive above the origin and negative below it.

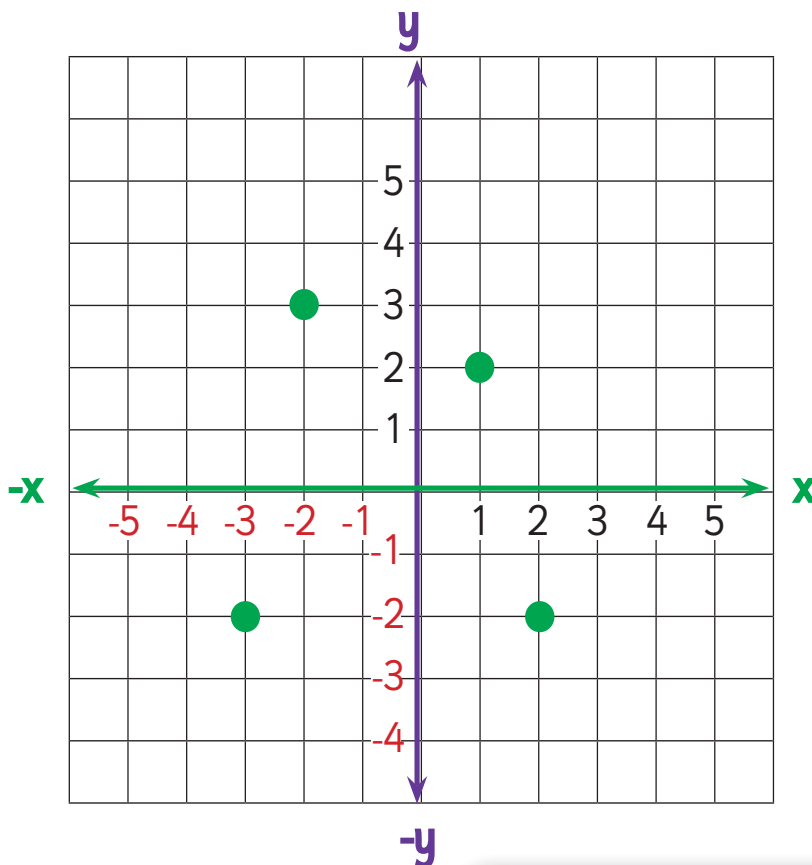
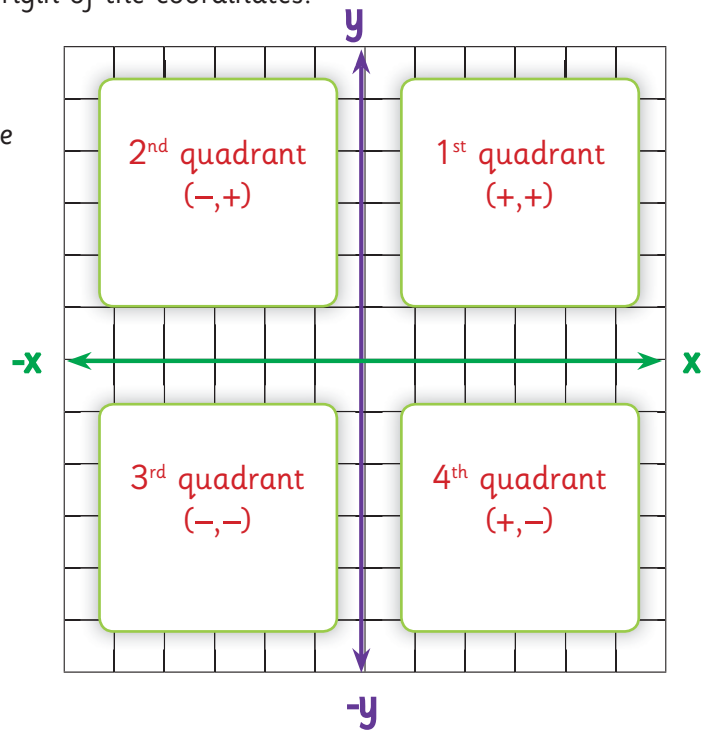
The two axes divide the plane into four quadrants ordered as follows:

First quadrant:
above the x axis, to the right of the y axis. (+;+)

Second quadrant:
above the x axis, to the left of the y axis. (-;+)

Third quadrant:
below the x axis, to the left of the y axis. (-;-)

Fourth quadrant:
below the x axis, to the right of the y axis. (+;-)



1st (1,2)

First we look for 1 on the X axis and then for 2 on the Y axis. We mark a dot on the grid.

2nd (-2,3)

We look for -2 on the -X axis and then the 3 on the Y axis. We mark a dot on the grid.

3rd (-3,-2)

We look for -3 on the -X axis and then -2 on the -Y axis. We mark a dot on the grid.

4th (2,-2)

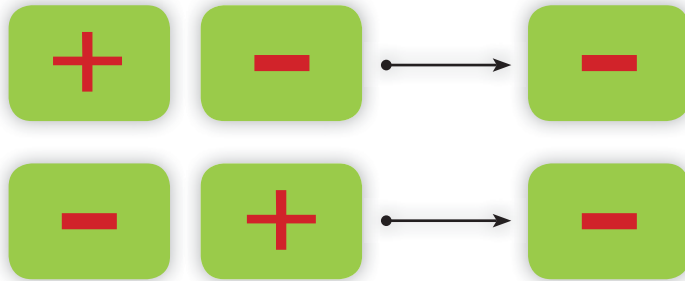
We look for 2 on the X axis. and then -2 on the -Y. We mark a dot on the grid.



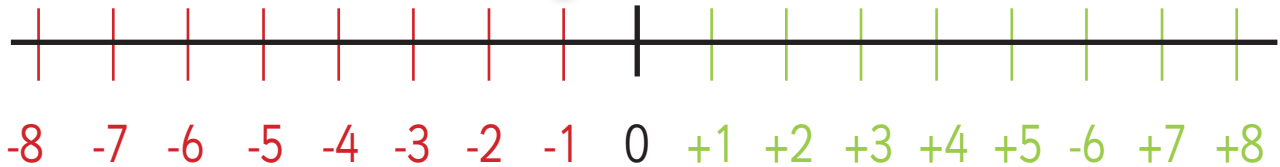
Open your Activity book at page 12.

Adding and subtracting integers

To add and subtract with positive and negative numbers:



$$(+2) + (-3) =$$

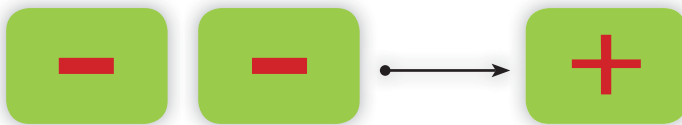


We move the number of spaces of the positive integer to the right: 2 right.

We move the number of spaces of the negative integer to the left: 3 left.

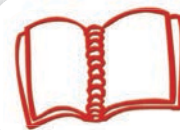
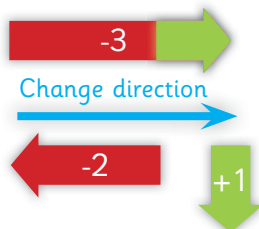
$$(+2) + (-3) = (-1)$$

Subtracting with negative numbers:

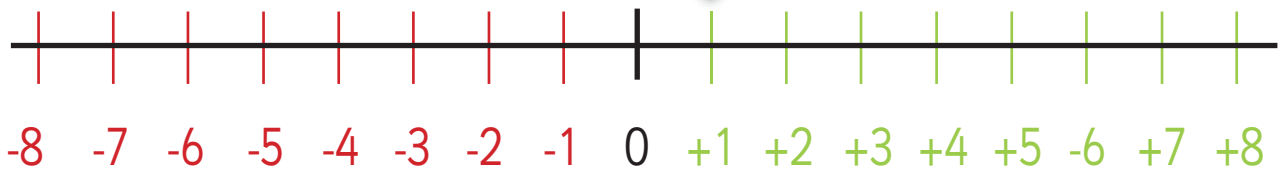


We look at the symbols and move to the right (+) or to the left (-).

$$(-2) - (-3) =$$



Open your Activity book at page 13.



$$(-2) - (-3) = +1$$

Integers

N & Z

N

Natural numbers

All positive whole numbers.

$N = 0, 1, 2, 3, 4, 5, \dots$

Z

Integers numbers

All the natural numbers, their opposite and zero.

$Z = \dots -3, -2, -1, 0, +1, +2, +3 \dots$

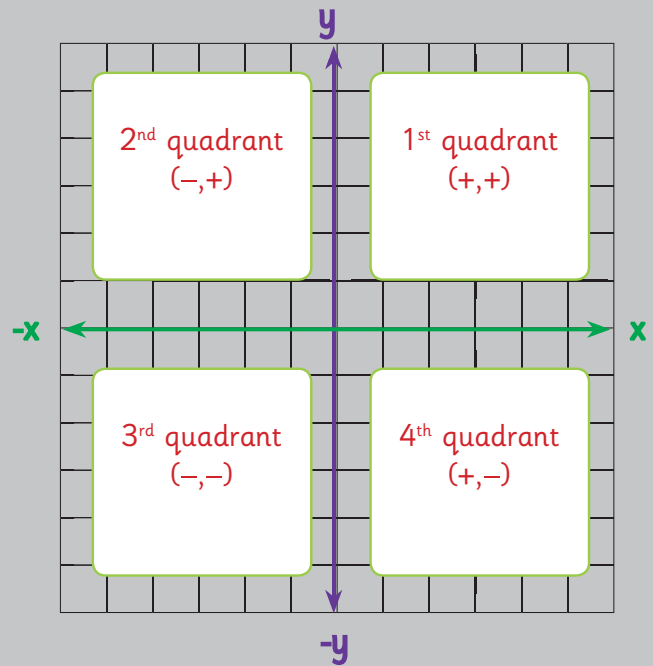
Rounding off

If the number is < 5
 $\rightarrow +0$

If the number is > 5
 $\rightarrow +1$

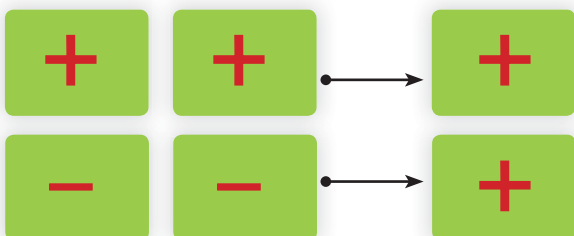
If the number is $= 5$
 $\rightarrow +1$

Cartesian coordinates



Adding and subtracting in Z

Two symbols that are the **same** are **positive**.



Two symbols that are **different** are **negative**.

