Nelson International Mathematics

Student Book 3

2nd edition

Karen Morrison

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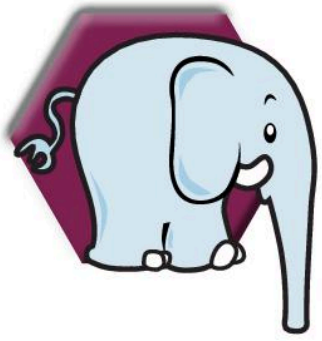

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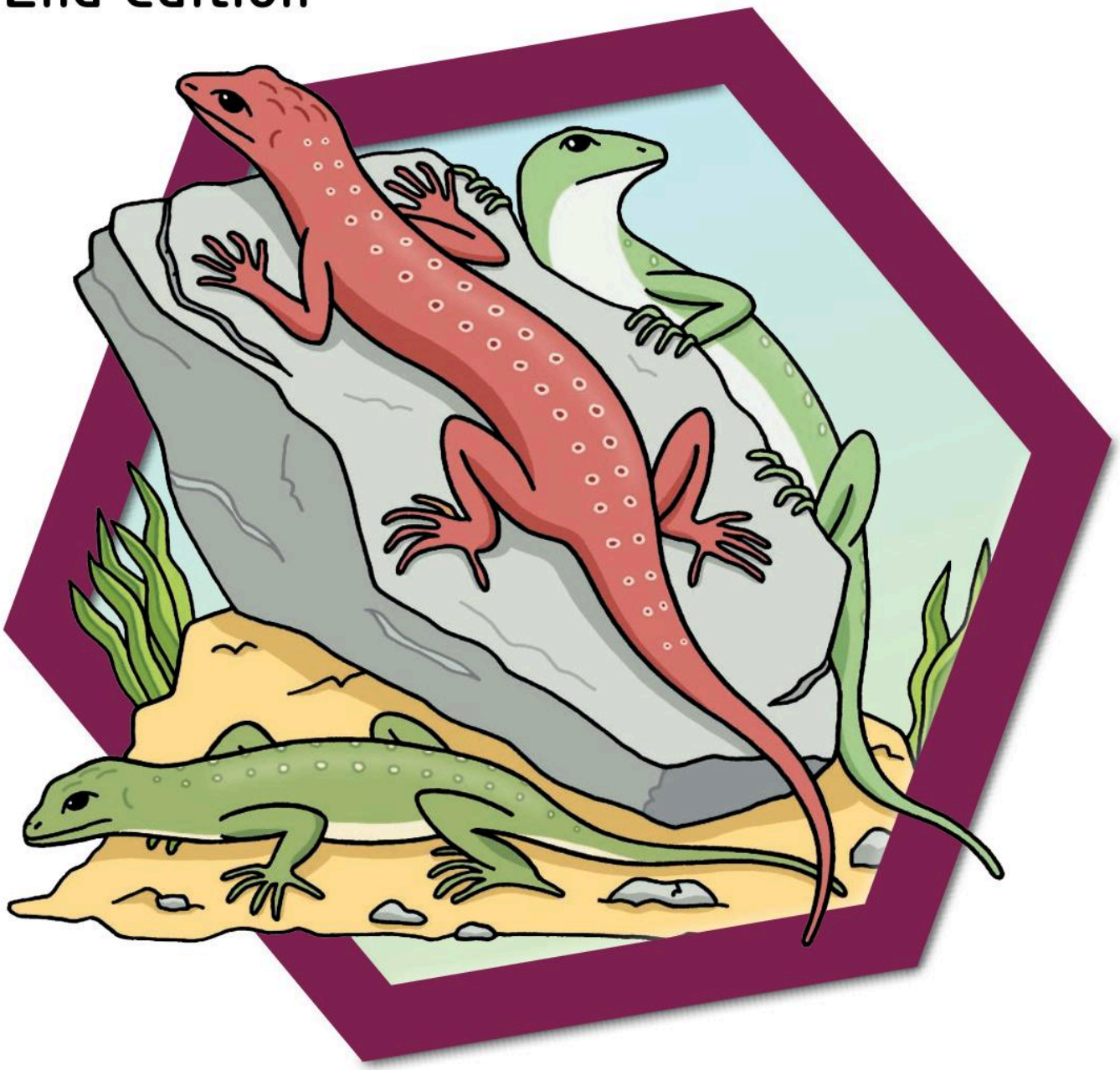

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5

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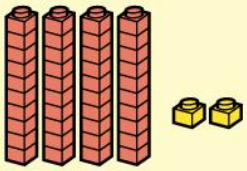
Contents

Contents

Revising place value to 100

We can use the digits 0, 1, 2, 3, 4, 5, 6, 7, 8 and 9 to write any number.

We know the value of a digit by its place in a number.



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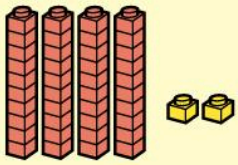


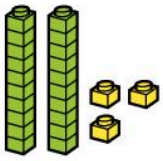
42

T	U
4	2

The 4 is in the tens place.
It has a value of 40.

The 2 is in the units place.
It has a value of 2.

1 **Write down the value of the underlined digit in each of these numbers.**

a 

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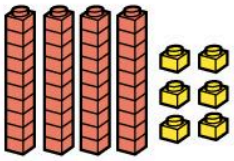
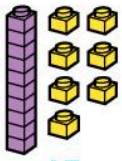
b 

46

c 

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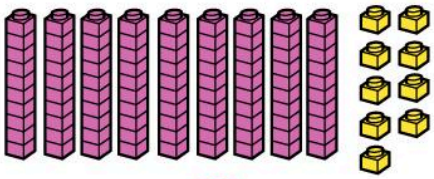
d 

99

2 **Choose the correct value for the red digit in each number.**

12 1 or 10?	98 9 or 90?	23 2 or 20?	57 5 or 50?
31 1 or 10?	39 9 or 90?	42 2 or 20?	85 5 or 50?
64 4 or 40?	89 8 or 80?	99 9 or 90?	100 1 or 10 or 100?

3 **Simpiwe arranges his counters. He makes 5 groups of ten and has 4 counters left over. How many does he have altogether?**

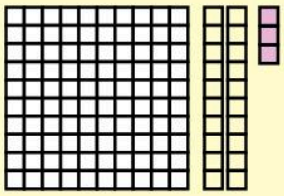
you can use Workbook page 4

Place value to 1000

This picture shows 1 hundred, 2 tens and 3 units.

The number is 123.

We say one hundred and twenty-three.

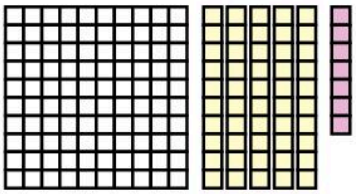


H	T	U
1	2	3

Draw a place value table to show how many hundreds, tens and units there are in each picture.

Then write and say the number.

1



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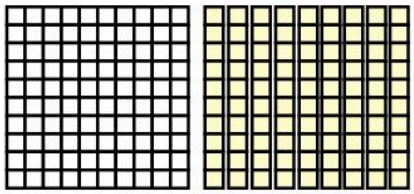

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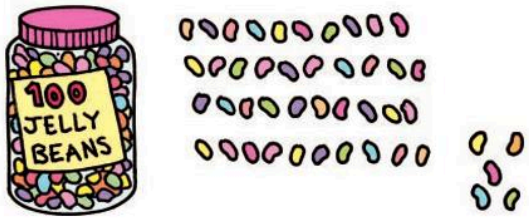

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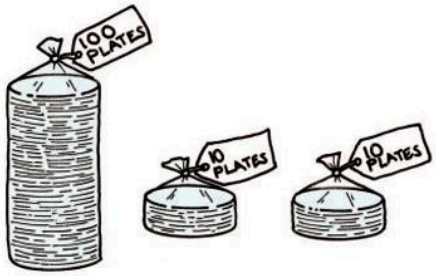

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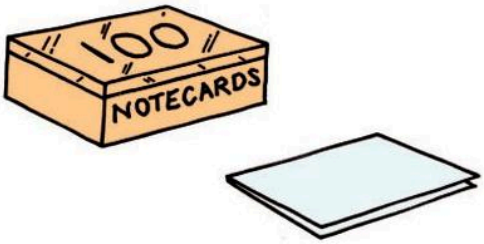

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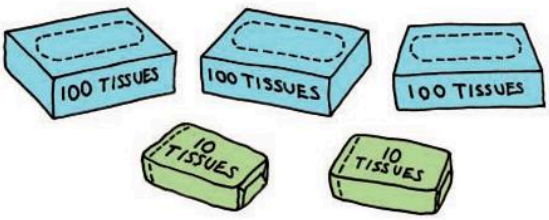

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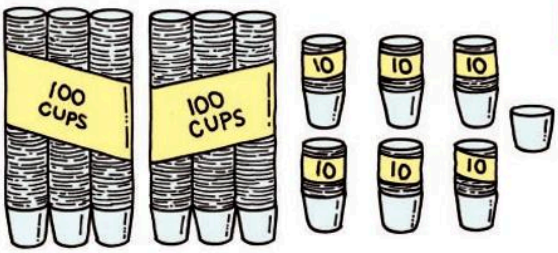

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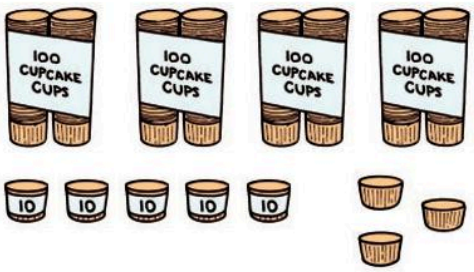
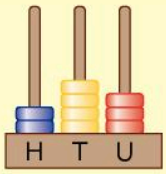


you can use Workbook page 5

Making three-digit numbers

The abacus shows the number 243.

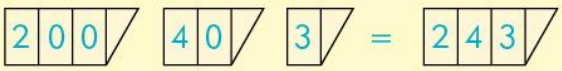


This number has:

2 hundreds, 4 tens and 3 units

We can write this as 200 + 40 + 3

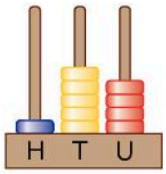
We can also make this number using place value arrow cards like this:



When you make a number with arrow cards, the arrows must all be on top of each other.

1 **Use arrow cards to make the number shown on each abacus. Write and say each number.**

a



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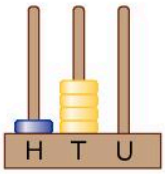

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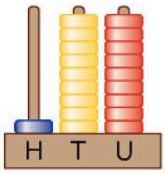

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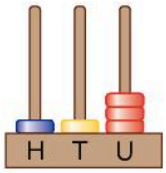
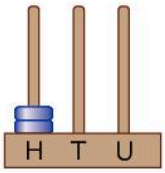
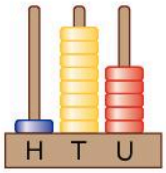


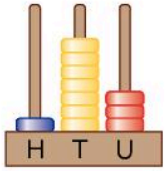
e



f



g



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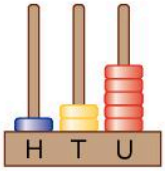
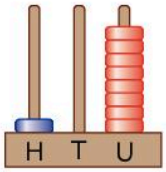


i



2 **Make each of these numbers using arrow cards. Write the value of the red digit in each number.**

a 128	**b** 245	**c** 303	**d** 137
e 490	**f** 329	**g** 187	**h** 781
i 256	**j** 526	**k** 146	**l** 164

you can use Workbook page 6

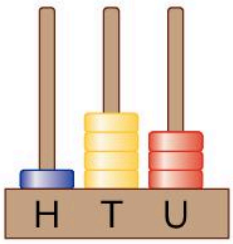
Spot the mistake

Some students were asked to show the number on the abacus using arrow cards.

Some students made mistakes.

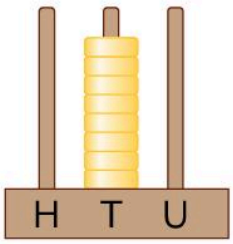
1 Work with a partner. Say what is wrong with each set of arrow cards.

a



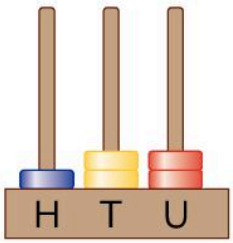
1 4 7

b



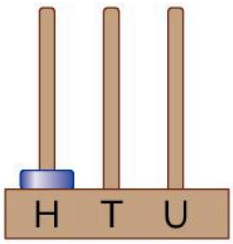
1 8 1

c



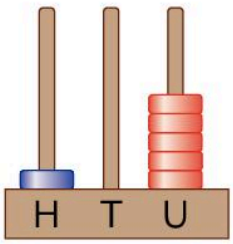
2

d



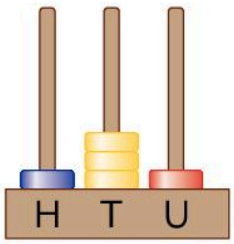
1 7 2

e



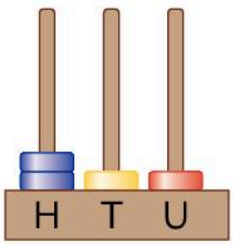
1 0 0

f



1 5 4

g



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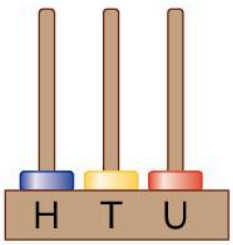
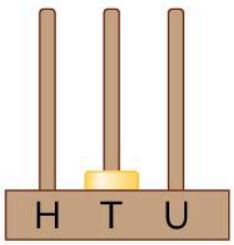


1 6 5

i



1 3 6

2 Use your own arrow cards to make each number correctly.

Write and say the numbers you make.

you can use Workbook page 7

Number lines

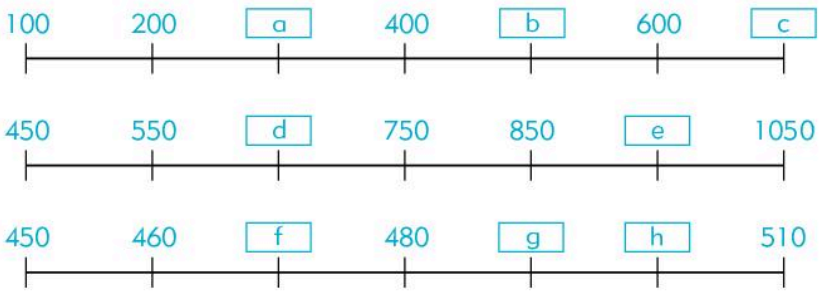
We can use number lines to show the position of numbers.

This number line shows the position of the hundreds from 0 to 1000.

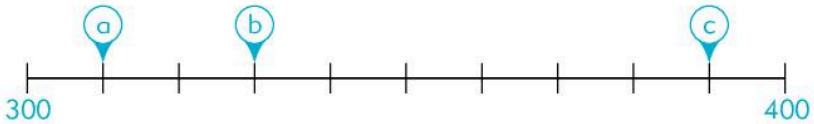
Number lines make it easy for you compare numbers and to decide which numbers are smaller or bigger than others.

- As you move left towards 0 the numbers get smaller. So 200 < 500.
- As you move right towards 1000 the numbers get bigger. So 800 > 300.

1 **Some of the numbers on these number lines have been covered up. Write the number shown by each letter.**



2 **Look at this number line.**



a What does this number line show?

b Where would you place 350 on this number line? Show your partner and say why.

c What numbers should be written at points a, b and c?

d Where would you place 395 on this number line? Show your partner and say why.

you can use Workbook page 8

Ordering numbers

1 Sort the numbers in each box.
Use a number line to help you if you need to.
Write them in order from smallest to largest.

121, 99, 89, 11, 26, 48, 62, 163	75, 125, 104, 133, 121, 165, 139, 86	111, 121, 132, 144, 194, 133, 157, 139
427, 93, 862, 112, 68, 75, 603, 222	139, 890, 504, 170, 127, 276, 149, 631	104, 103, 987, 261, 550, 702, 130, 201

2 Sort the numbers in each box.
Write them in order from largest to smallest.

162, 17, 63, 29, 35, 82, 51, 21	14, 52, 21, 37, 145, 92, 135, 42	99, 36, 108, 47, 61, 125, 22, 173
740, 850, 429, 607, 599, 961, 753, 814	399, 333, 386, 115, 311, 395, 270, 166	959, 705, 666, 1000, 840, 883, 941

Six students were each given five number cards and asked to arrange them in order from smallest to largest.
Look at each student's cards.

Marie 497 ☐ 501 ☐ 504

Josh ☐ 345 347 ☐ 351

Sammy 400 ☐ 403 ☐ 410

Nika 698 ☐ 702 ☐ 710

Malika 800 810 ☐ ☐ 830

Sheldon 900 ☐ 908 ☐ 912

Two cards in each set have been turned face down so you cannot see the numbers.

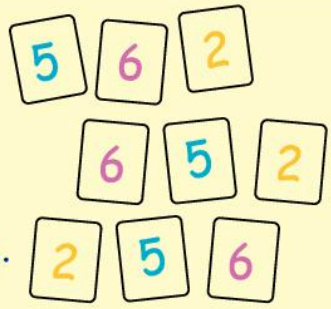
Write the smallest and largest number that could be on each face down card.

Explain to your partner how you chose those numbers.

you can use Workbook page 9

Comparing numbers

I have these three number cards:



The largest number I can make is 652

The smallest number I can make is 256

I can compare the numbers using < or > signs.

652 > 256 256 < 652

1 Make the largest and smallest numbers with each set of cards. Write the numbers using the sign >.

a 2 7 1 b 5 3 6 c 1 4 2

d 9 8 2 e 7 4 6 f 8 1 4

2 For each pair of numbers, use the same digits to make a number that is in between the largest and smallest number.

3 Make the largest and smallest numbers with each set of cards. Write the numbers using the < sign.

a 7 6 1 b 4 3 9 c 2 6 6

d 3 5 1 e 3 8 7 f 1 2 2

4 For each pair of numbers, use the same digits to make a number that is in between the largest and smallest number.

5 Write the whole numbers that are:

a greater than 200 but smaller than 210

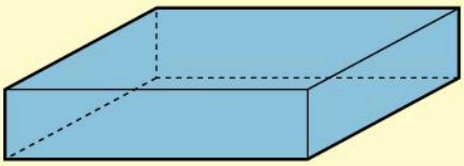
b smaller than 190 but greater than 185

c greater than 934 but smaller than 943

you can use Workbook page 10

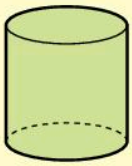
Recognising 3D shapes

Cuboid



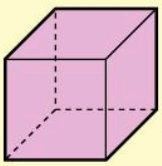
- 6 faces
- all faces rectangular

Cylinder



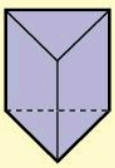
- 2 circular faces
- 1 curved rectangular surface

Cube



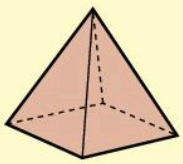
- 6 faces
- all faces square

Triangular prism



- 2 triangular faces
- 3 rectangular faces

Square-based pyramid



- 1 square face
- 4 triangular faces

1 Make a list of objects at home or school that are shaped liked cuboids.

2 List five things you can find at the supermarket that are cylinders.

3 Name three things at home or school that are shaped like a cube.

4 Draw something that is shaped like a triangular prism.

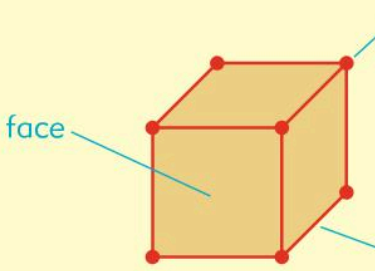
5 Use some straws and sticky tac or modelling clay to make models of the shapes you can see on this page.

Faces, edges and vertices

The parts of 3D shapes have special names.

The flat surfaces are called faces.

The places where two faces meet are called edges.



The plural of vertex is vertices.

The corners where the edges meet are called vertices.

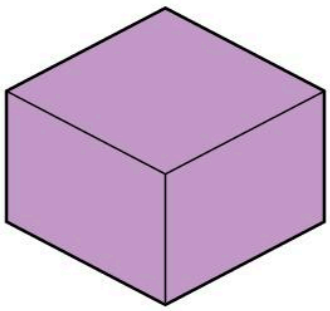
In a drawing like this one you cannot see all the faces, edges and vertices. Some are hidden from view.

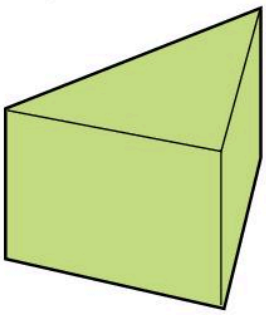
Look at a real cube.

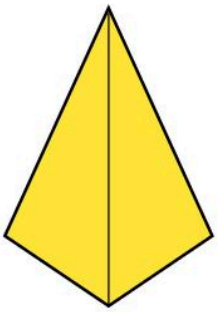
1 How many faces, edges and vertices are hidden in the picture of a cube above?

2 **a** For each shape below, write how many faces, edges and vertices you can see.

b Write how many faces, edges and vertices are hidden on each shape.







3 Read the clues. Write down the name of each shape.

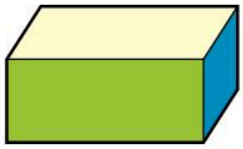
Clue 1: I have no vertices. I have two round faces. I can roll.

Clue 2: I have 6 faces. They are all square.

you can use Workbook page 11

Investigating 3D shapes

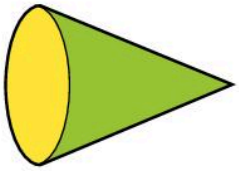
1 **This is a cuboid. The blue face is a square.**



a What shape is the green face?

b How many faces are there altogether?

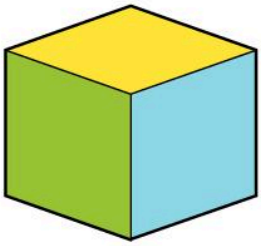
2 **This is a cone.**



a What shape is the yellow face?

b How many vertices does a cone have?

3 **This is a cube.**



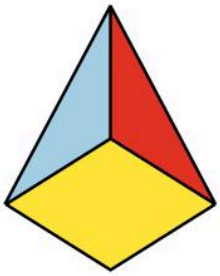
a What shape is the blue face?

b What shape is the green face?

c How many faces does a cube have?

d How many vertices does a cube have?

4 **This is a square-based pyramid.**



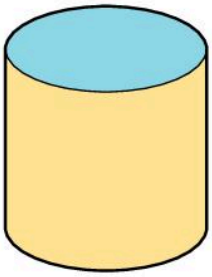
a What shape is the yellow face?

b What shape is the red face?

c How many faces are there altogether?

d How many vertices are there?

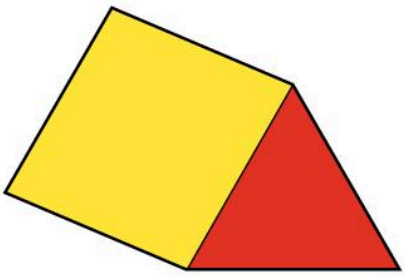
5 **This is a cylinder.**



a What shape are the end faces?

b How many vertices does a cylinder have?

6 **This is a triangular prism.**



a What shape is the red face?

b How many faces are shaped like this?

c What shape is the yellow face?

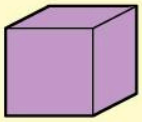
d How many faces are shaped like this?

e How many edges are there on the prism?

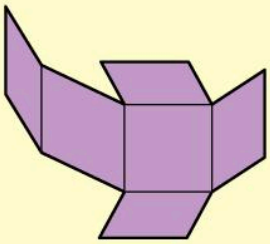
you can use Workbook pages 12–13

Nets of cubes

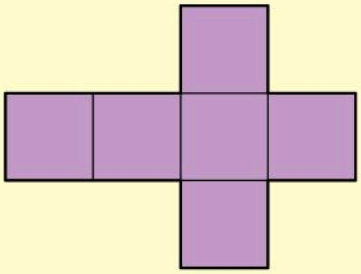
Cardboard boxes are made from flat pieces of cardboard.
The cardboard is folded up to make the 3D boxes you see.
If you cut along the edges of a box and flatten the cardboard you can see how the box was made.



A solid box



Opening the box by cutting the edges

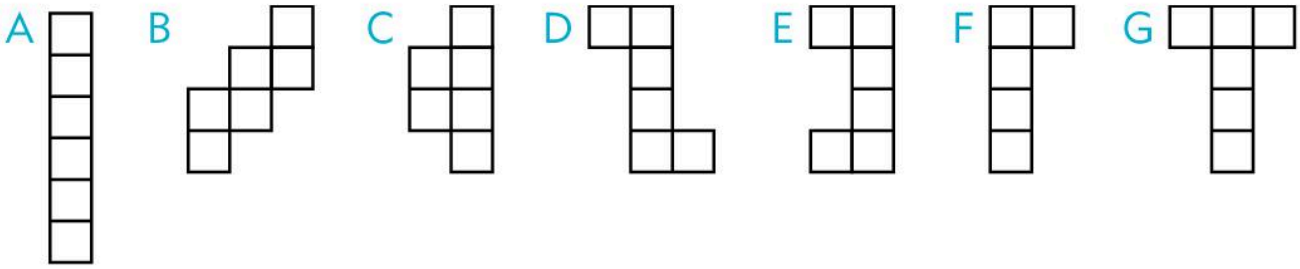


The flattened cardboard

A flat shape that you can fold up to make a solid is called the net of the solid. The flattened cardboard on the right is an example of a net for a cube. You can see the six square faces of the cube on the net.

1 **Mr George asked his class to cut open a cube-shaped box and to draw its net. Some students didn't cut the box; they just drew what they thought the net would look like.**

These are some of the nets that Mr George's students drew.



a Which of these are nets of a cube?

b How did you decide?

c How can you tell without building the cube that net F is not the net of a cube?

2 **There are 11 different nets of a cube. Besides the ones you have seen on this page, try to find one other net. Draw it on squared paper.**

you can use Workbook page 14

Counting on and back

You can use the 1–100 square to help you count on and back in steps of different sizes.

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

1 Count in twos from 0 to 40.

2 Count in fives from 10 to 50.

3 Count back in twos from 49 to 29.

4 Count back in fives from 50 to 0.

5 These patterns were made by counting on or back in steps of equal size. Copy the patterns. Write the next three numbers.

a 2, 4, 6, 8, 10, ___ ___ ___

b 25, 24, 23, 22, 21, ___ ___ ___

c 0, 3, 6, 9, 12, ___ ___ ___

d 1, 3, 5, 7, 9, ___ ___ ___

e 15, 20, 25, 30, 35, ___ ___ ___

f 100, 90, 80, 70, 60 ___ ___ ___

6 These patterns work by counting on or back in equal steps. For each one, work out the size of the steps. Count on or back to find the missing numbers.

a 4, 8, ___ ___ ___ ___ ___ ___

b 12, 9, ___ ___ ___ ___ ___ ___

c 95, 85, ___ ___ ___ ___ ___ ___

d 18, 15, ___ ___ ___ ___ ___ ___

e 0, 10, ___ ___ ___ ___ ___ ___

you can use Workbook page 15

More counting

1 **Copy the patterns. Write the next three numbers.**

a 45 50 55 ___ ___ ___

b 85 80 75 ___ ___ ___

c 27 30 33 ___ ___ ___

d 24 28 32 ___ ___ ___

e 39 36 33 ___ ___ ___

f 40 36 32 ___ ___ ___

2 **Read the instructions. Write the first six numbers in each pattern.**

a Start at 20 and count in tens.

b Start at 35 and count in fives.

c Start at 19 and count in threes.

d Start at 50 and count back in fours.

e Start at 45 and count back in fives.

f Start at 45 and count back in threes.

3 **Tell your partner how each of these patterns was made.**

a 25 30 35 40

b 26 36 46 56

c 89 79 69 59

d 3 13 23 33

e 34 36 38 40

f 37 39 41 43

4 **Play with a partner. Take turns to throw two dice.**

- Write down the two-digit numbers you can make with the scores.
- Write the number that is five less than each number.
- Write the number that is five more than each number.
- Write the number that is ten more than each number.
- Write the number that is ten less than each number.

Why can you sometimes make two two-digit numbers, but other times you can only make one?

you can use Workbook page 16

Missing numbers

1 **Write the number:**

a after 34 **b** after 81 **c** after 99
d before 27 **e** before 88 **f** before 40

2 **Write the numbers:**

a between 134 and 136 **b** between 269 and 271
c between 366 and 370 **d** between 386 and 391

3 **Write the number that is 1 more than:**

a 335 **b** 450 **c** 639 **d** 789

4 **Write the number that is 10 more than:**

a 135 **b** 250 **c** 339 **d** 489

5 **Write the number that is 1 less than:**

a 991 **b** 845 **c** 700 **d** 673

6 **Write the number that is 10 less than:**

a 291 **b** 345 **c** 700 **d** 673

7 **What number is:**

a one more than fifty? **b** a hundred more than forty?
c ten more than four hundred? **d** a hundred less than eight hundred?

8 **Write the missing numbers.**

a 500 → 100 more is ☐ **b** ☐ → 100 less is 600
c 340 → 100 more is ☐ **d** ☐ → 100 less is 450
e 990 → 10 more is ☐ **f** ☐ → 10 less is 125
g 865 → 10 more is ☐ **h** ☐ → 10 less is 183

you can use Workbook page 17

Counting patterns to 1000

1 **Write the numeral that is one more than:**

a four hundred and twenty-three
b two hundred and sixteen
c five hundred and fifty
d six hundred and eighty-two
e nine hundred and thirty-five
f seven hundred and four

2 **To get from 150 to 160 you could count on in tens. How would you count to get from the first to the second number in each pair?**

a 647, 654
b 500, 501
c 835, 836
d 942, 952
e 750, 740
f 429, 430
g 316, 416
h 514, 504
i 609, 599

3 **Write the number that is 10 more than:**

a 655
b 399
c 999

4 **Write the number that is 10 less than:**

a 875
b 600
c 749

5 **Write the number that is 100 more than:**

a 200
b 139
c 650

6 **Write the number that is 100 less than:**

a 500
b 550
c 490

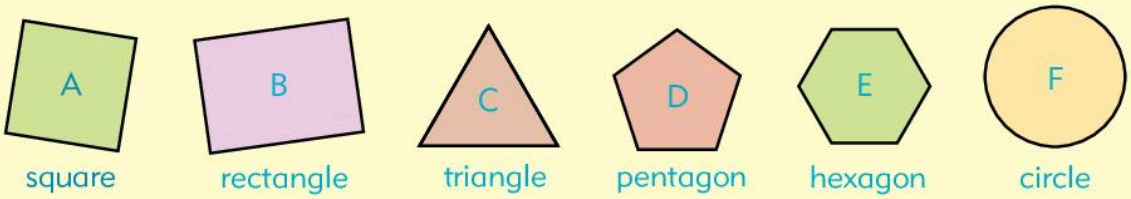
7 **Would you count on or back to get from:**

a 397 → 379
b 641 → 614
c 534 → 543
d 650 → 615
e 837 → 873
f 768 → 786

you can use Workbook page 18

Revising 2D shapes

Do you remember the names of these shapes?



square rectangle triangle pentagon hexagon circle

The straight edges of a 2D shape are called sides.

The corners of a 2D shape are called vertices. One corner is a vertex.

Circles are 2D shapes but they don't have straight sides or vertices.

1 **There are many shapes in the things around us. Look at these children's toys.**

a Write the names of the shapes you can find.

b Next to the name of each shape, write how many you can find in the pictures.

2 **Look around you. What shapes can you see?**

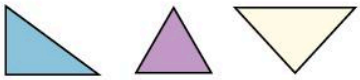
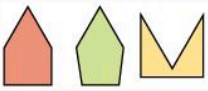
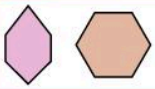
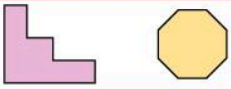
a Place a tick next to the names of the shapes you can see.

b Which shapes are most difficult to find when you look around?

you can use Workbook page 19

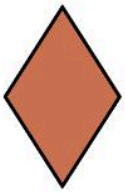
Naming 2D shapes

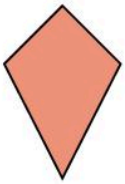
Shapes have different names. Some shapes are named by how many sides they have.

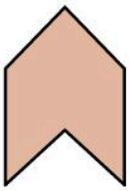
Shape	Number of sides	Examples
Triangle	3	
Quadrilateral	4	
Pentagon	5	
Hexagon	6	
Octagon	8	

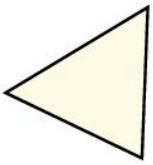
1 Count the sides. Write down the name of each shape.

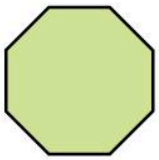
a 

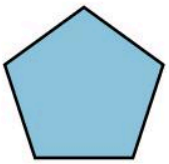
b 

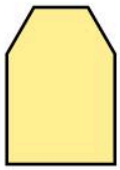
c 

d 

e 

f 

g 

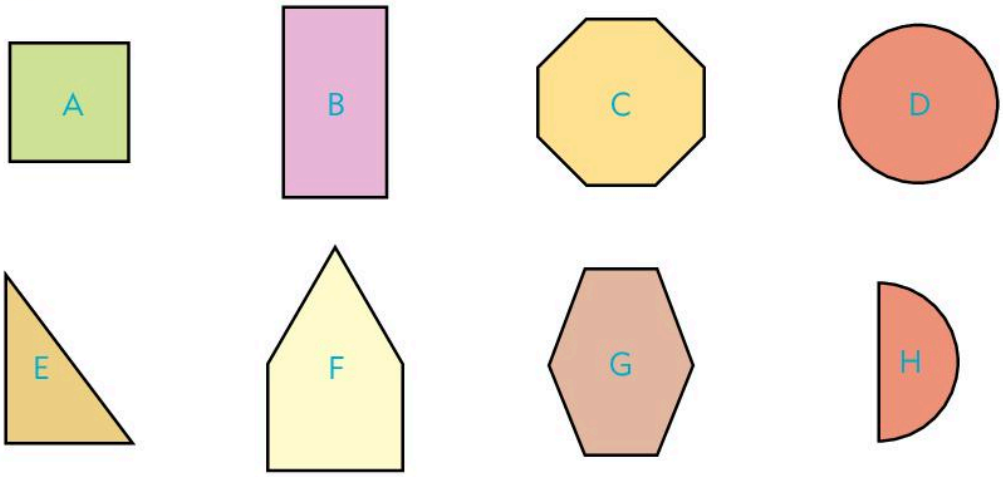
h 

2 **a** Use a ruler and pencil. Draw four shapes of your own.

b Swap your shapes with a partner. Count the sides and name each other's shapes.

you can use Workbook page 20

Investigating 2D shapes



1 **Which shape is a:**

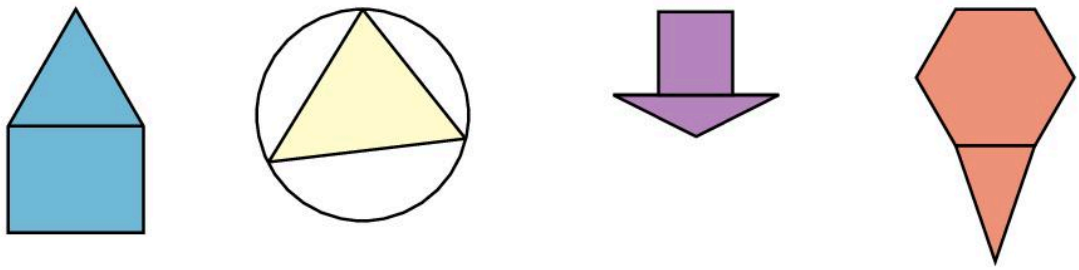
a circle **b** square **c** triangle
d pentagon **e** hexagon **f** rectangle?

2 **Which of the shapes have:**

a three sides **b** four sides
c eight sides **d** five corners
e six corners **f** equal sides
g no straight sides **h** opposite sides that are equal?

3 **Shape H is a semi-circle. What do you think the word 'semi' means?**

4 **Look at these combined shapes.**



a Write the names of the shapes in each combination.

b Which of these are symmetrical?

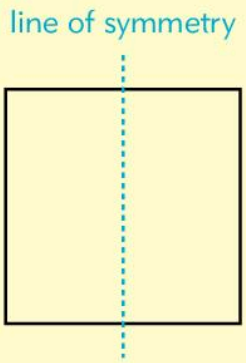
Symmetry

Here is a square piece of paper.

The line shows where it has been folded in half.

The fold line is a line of symmetry.

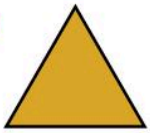
When you fold a shape along a line of symmetry, the two parts match.



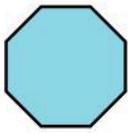
1 Cut out a square piece of paper. How many different ways can you fold it to get two matching parts?

Look at these shapes. How many different ways could you fold each one in half?

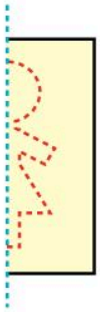
a 

b 

c 

d 

2 Fold a piece of paper and cut out a shape like this. What happens when you open the shape?



3 How many lines of symmetry does this shape have?

4 Work with a partner.

Try to cut out a shape with more than one line of symmetry.

you can use Workbook pages 21–22

Addition and subtraction facts

$4 + 6 = \square$ I know the answer by heart. $4 + 6 = 10$

$12 + \square = 20$ I know that $2 + 8 = 10$, so $12 + 8 = 10 + 2 + 8 = 20$

$2 + 14 = \square$ I can find this by counting on. I will start with the biggest number. 14, 15, 16

$9 + 8 = \square$ I know that double 8 is 16 and the next number is 17

$5 + 9 = \square$ Take 1 from the 5 to make 10, then add $10 + 4 = 14$

$17 - 8 = \square$ I re-order the calculation to make easier numbers. $17 - 7 = 10$, $10 - 1 = 9$

1 **Copy the number sentences. Fill in the missing numbers.**

a $7 + 3 = \square$ **b** $\square - 7 = 3$ **c** $13 + \square = 20$

d $15 + \square = 20$ **e** $20 - 15 = \square$ **f** $20 - 5 = \square$

g $19 + 1 = \square$ **h** $1 + \square = 20$ **i** $20 - 19 = \square$

j $14 + \square = 20$ **k** $16 + \square = 20$ **l** $20 - 8 = \square$

2 **Use the three numbers in each box to write four different number sentences. For example:**

13	7	20

$13 + 7 = 20$ $7 + 13 = 20$ $20 - 13 = 7$ $20 - 7 = 13$

a

15	2	17

b

13	4	17

c

17	3	14

d

18	3	15

e

9	9	18

f

13	18	5

g

5	6	13

h

4	13	9

i

12	13	1

j

9	5	14

k

11	14	3

l

14	1	13

you can use Workbook page 23

Addition and subtraction problems

Use cubes or counters to help you if you need them.

1 **Copy the sums. Write the missing numbers.**

a ___ + 6 = 13

b ___ + 9 = 15

c ___ + 4 = 12

d 5 + ___ = 14

e 3 + ___ = 11

f 8 + ___ = 17

2 **Write a number sentence for each problem. Work out the answers.**

a A soccer team needs 11 players. It has only 3. How many more players are needed?

b Ranjit has 5 marbles. He wins another 8 in a game. How many does he have altogether?

c A gardener planted 15 seeds. Only 8 seedlings came up. How many did not grow?

d Sally scored 16 points. Ricky scored 9. What is the difference?

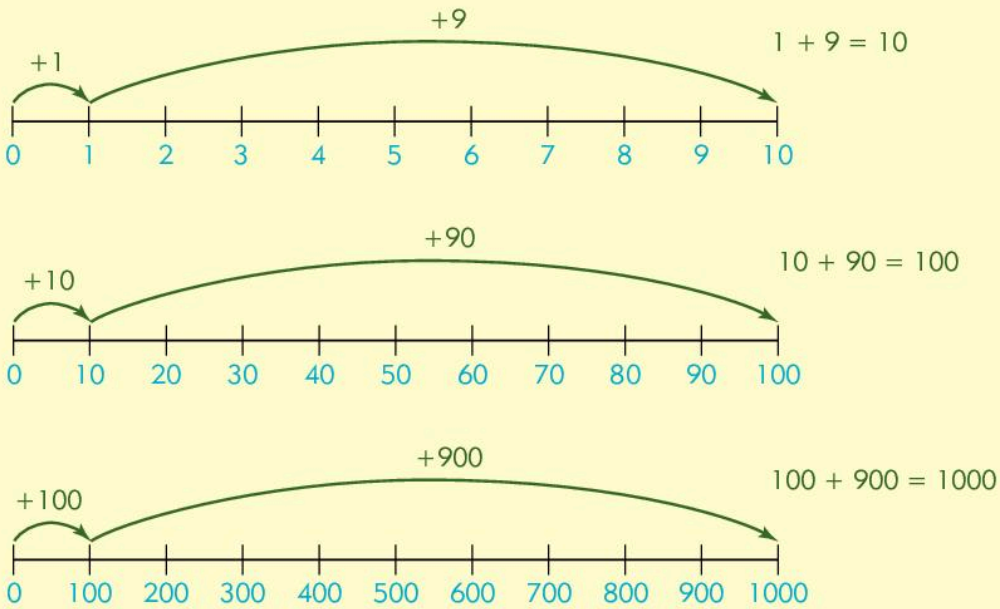
e There were 18 boxes of crayons in the class. 9 children each took a box. How many were left?

f Busi needs 8 more counters to make 14. How many does she have already?

you can use Workbook page 24

Addition and subtraction patterns

1 + 9 = 10 So 10 + 90 = 100 And 100 + 900 = 1000



100 + 900 = 1000 So 1000 – 100 = 900 and 1000 – 900 = 100

1 **Copy and complete the number sentences.**

a 8 + 2 = ☐ **b** 80 + 20 = ☐ **c** 800 + 200 = ☐

d 3 + ☐ = 10 **e** 30 + ☐ = 100 **f** 300 + ☐ = 1000

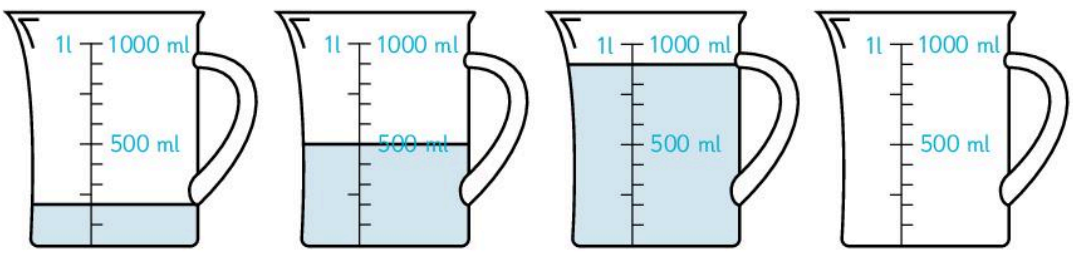
g ☐ + 5 = 10 **h** ☐ + 50 = 100 **i** ☐ + 500 = 1000

2 **Copy and complete the number sentences.**

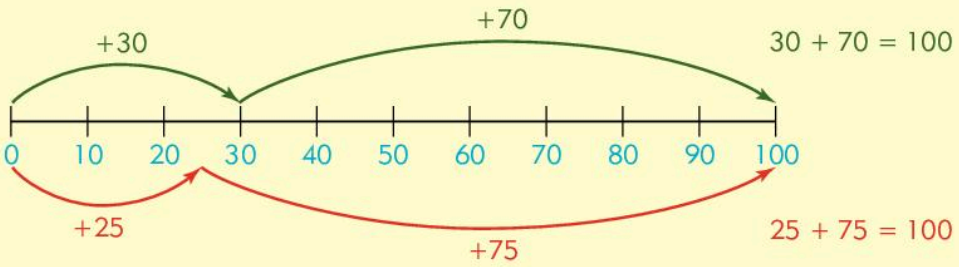
a 1000 – 100 = ☐ **b** 1000 – 500 = ☐ **c** 1000 – 400 = ☐

d 1000 – ☐ = 200 **e** 1000 – ☐ = 700 **f** ☐ – 1000 = 0

3 **How much liquid must be added to each jug to fill it up?**



Making 100



Look at these examples to see how to make 100 when both numbers have a 5 in the units place.

Using a number line and counting on	Reordering and using known facts
25 + 75 Start with the bigger number Count 5 Count the rest in tens.	25 + 75 = 25 + 5 + 70 = 30 + 70 = 100

1 **Copy the number sentences. Write the missing number.**

a $\square + 25 = 100$ **b** $\square + 60 = 100$ **c** $\square + 95 = 100$

d $30 + \square = 100$ **e** $45 + \square = 100$ **f** $20 + \square = 100$

2 **Nisha joined pieces of yellow and blue ribbon to make 100 cm strips. Work out the length of the blue piece of ribbon.**

45 cm

3 **Fill in the missing number to make these number sentences true.**

a $35 + \square = 95 + 5$ **b** $50 + 50 = 45 + \square$

c $20 + 80 = 85 + \square$ **d** $75 + \square = 90 + 10$

you can use Workbook page 25

Adding several small numbers

How would you do this sum?

3 + 5 + 7 + 11

I'd look for pairs that make ten and add those first.

10 + 5 + 1
21 + 5
26

I'd start with the biggest number and count on

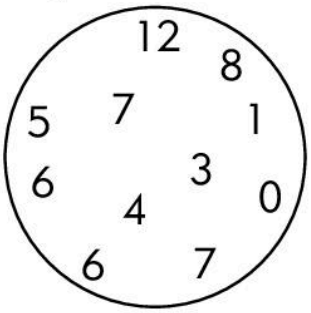
11 + 7 + 5 + 3
11 + 7 = 18
18 + 5 = 23
23 + 3 = 26

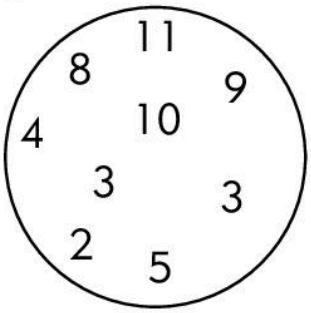
I'd add in steps
3 and 5 is 8
8 and 7 is double 7 plus 1 = 15
15 and 11 is the same as 16 and 10 which is 26

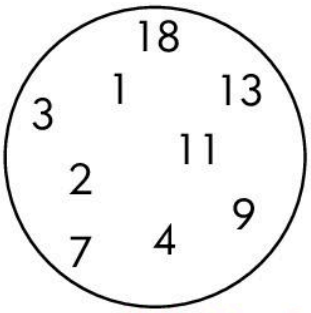
1 **Add these numbers. Look at the numbers before you add them to decide which method to use.**

a 3 + 4 + 6	**b** 3 + 5 + 5	**c** 1 + 7 + 3
d 2 + 8 + 4	**e** 9 + 8 + 12	**f** 7 + 13 + 7
g 15 + 7 + 5	**h** 10 + 11 + 9	**i** 12 + 9 + 2
j 9 + 7 + 7 + 3	**k** 8 + 8 + 7 + 2	**l** 3 + 2 + 6 + 3
m 9 + 6 + 3 + 1	**n** 5 + 10 + 4 + 6	**o** 2 + 17 + 8 + 13

2 **Choose one number from each circle. Add them together and write the number sentence. Repeat this eight times choosing different combinations each time.**







you can use Workbook page 26

Calculating mentally

Do these calculations mentally.

Try to write the answers only.

Time how long it takes you to complete each set.

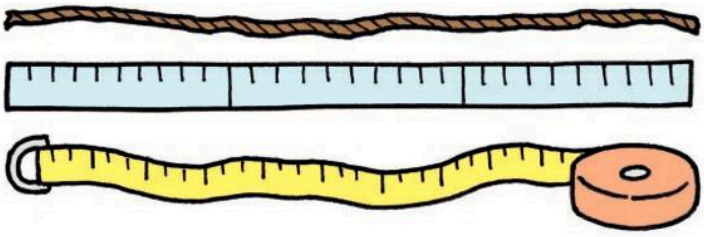
Set 1	Set 2	Set 3
8 + 2 + 1 _____	12 – 2 – 4 _____	20 – 3 + 4 _____
4 + 4 + 4 _____	11 – 3 – 6 _____	15 – 7 + 4 _____
9 + 1 + 1 _____	16 – 4 – 2 _____	15 + 5 – 9 _____
2 + 13 + 4 _____	20 – 5 – 3 _____	13 + 6 – 10 _____
3 + 3 + 3 _____	18 – 3 – 5 _____	15 – 5 + 9 _____
6 + 5 + 3 _____	19 – 4 – 1 _____	15 – 6 + 11 _____
9 + 1 + 4 _____	13 – 0 – 5 _____	12 + 7 – 8 _____
10 + 2 + 1 _____	14 – 2 – 4 _____	13 + 6 – 12 _____
6 + 6 + 3 _____	18 – 5 – 4 _____	12 – 8 + 9 _____
7 + 4 + 4 _____	19 – 9 – 9 _____	16 – 2 + 4 _____
9 + 2 + 9 _____	15 – 7 – 2 _____	18 – 9 + 9 _____
10 + 3 + 5 _____	14 – 4 – 8 _____	20 – 5 + 2 _____
6 + 7 + 4 + 2 _____	20 – 1 – 9 _____	19 + 1 – 10 _____
8 + 8 + 2 + 2 _____	20 – 6 – 3 _____	12 + 7 – 6 _____
12 + 4 + 0 + 3 _____	19 – 2 – 2 – 2 _____	13 + 3 – 5 _____
3 + 2 + 1 + 9 _____	18 – 3 – 2 – 1 _____	18 – 7 + 3 _____
4 + 5 + 1 + 6 _____	17 – 4 – 3 – 5 _____	19 – 9 + 4 _____
6 + 6 + 4 + 4 _____	19 – 2 – 2 – 4 _____	20 – 12 + 7 _____
6 + 5 + 5 + 3 _____	20 – 9 – 4 – 2 _____	13 – 2 + 4 _____
7 + 7 + 3 + 2 _____	20 – 10 – 4 – 4 _____	15 – 6 + 8 _____

you can use Workbook page 27

Metres

You will need:

- a metre stick
- a measuring tape or a piece of string that is 1 metre long.

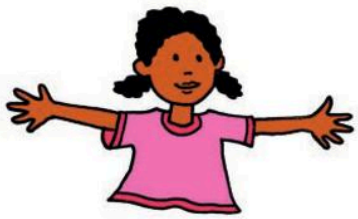


1 **Use your metre measure to measure each thing.**

a

the length of a rug

b

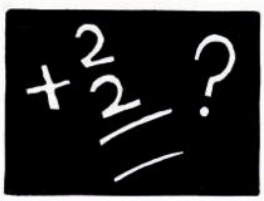


the width of an arm span

c

the length of a shoe

d



the length of the board

e two more things you can measure in the classroom

2 **Draw a chart like this one in your exercise book. Tick the right box for each measurement.**

	What I measured	Less than 1 metre	About 1 metre	More than 1 metre
a	rug			
b	arm span			
c	shoe			
d	board			

Estimate and measure in metres

You will need:

- a metre stick
- a measuring tape or a piece of string that is 1 metre long.

1 **Estimate the length or height of each object in metres. Write your estimate in the chart on page 28 of your Workbook.**

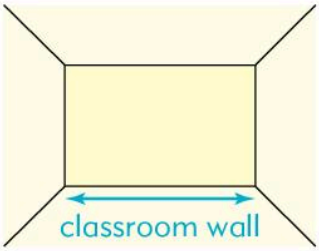
a

skipping rope

b

notice board

c



classroom wall

d

door

2 **Measure the length or height of each object to the closest half metre. Write your measurements in the chart on page 28 of your Workbook.**

3 **Choose two lengths, two heights, and two widths around the school. Use the chart on page 28 of your Workbook to record your work.**

a Estimate each measurement in metres.

b Measure in metres.

c Work out the difference between your estimate and your answer.

Answer these questions in your group.

4 **When do people need to estimate in metres in their everyday life?**

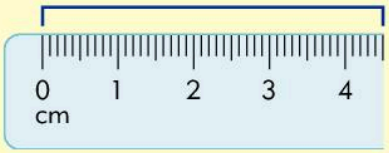
5 **How can you become better at estimating in metres?**

you can use Workbook page 28

Measuring in centimetres

Do you remember how to use your ruler to measure to the nearest centimetre?

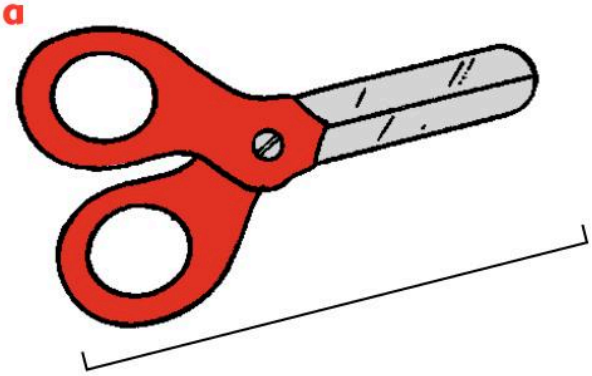
- Start measuring from the 0 line on the ruler.
- Read the measurement in centimetres from the ruler scale.



1 Estimate how long these are in centimetres. Write down your estimates.

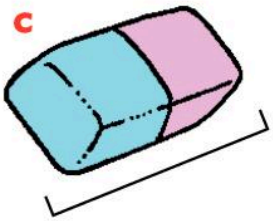
2 Measure. Write your answer to the nearest centimetre.

a



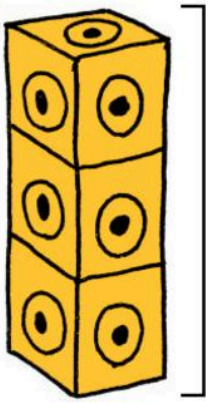
b

c



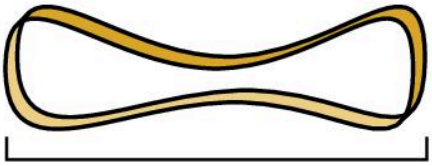
d

e



f

g



h

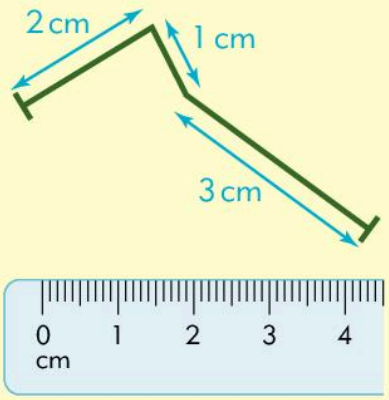
Measure the paths

To measure a path:

- Measure each part of the path.
- Write down the measurements.
- Add up the measurements to get the total length.

$2\,cm + 1\,cm + 3\,cm = 6\,cm$

Remember: 'cm' is short for centimetres.



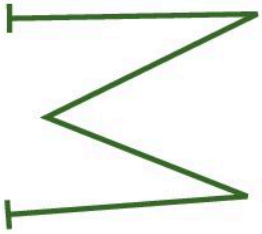
1 How long is each path?

a

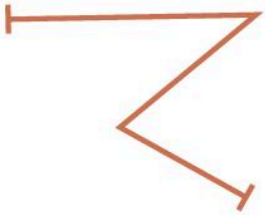
b

c

d



e



2 Write the lengths of the paths in order from longest to shortest.

3 Use your ruler and coloured pencils. Measure and draw these paths. Write the total length under each path.

a $6\,cm + 1\,cm$

b $7\,cm + 9\,cm$

c $8\,cm + 3\,cm + 2\,cm$

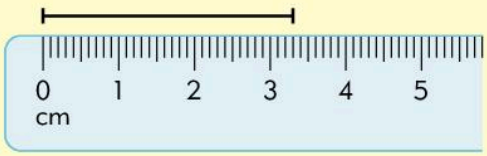
d $4\,cm + 5\,cm + 3\,cm$

e $6\,cm + 3\,cm + 4\,cm$

f $2\,cm + 4\,cm + 5\,cm$

you can use Workbook page 29

The nearest centimetre



This line is between 3 cm and 4 cm long.

It is nearer to 3 cm than to 4 cm.

We say it is 3 cm to the nearest centimetre.

This means it is approximately 3 cm long.

1 Estimate the length of each bar in centimetres. Write down your estimate.

a

b

c

d

e

f

2 Now measure. Give each length correct to the nearest centimetre.

3 Write the lengths in order from shortest to longest.

4 Use a ruler. Draw lines that are approximately:

a 4 cm long **b** 12 cm long **c** 8 cm long

d 9 cm long **e** 2 cm long **f** 5 cm long

Rounding to ten

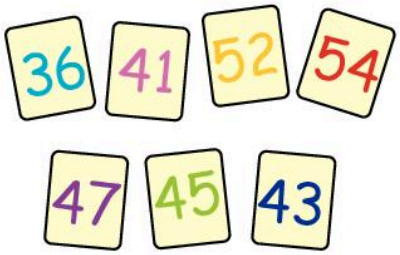
Look at these number cards.

We can sort the numbers by putting them into groups like this:

Closer to 10	Closer to 20
10 12 13 9	16 15 19

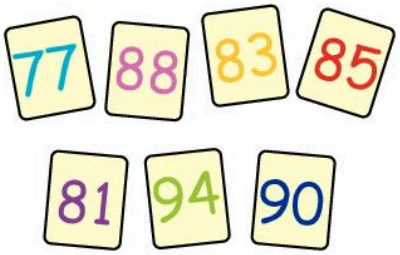
Remember that two-digit numbers which end in 5 are rounded up to the next ten.

1 Round each number to the nearest 10.
Write them in the correct columns.



Closer to 40	Closer to 50

2 Round each number to the nearest 10.
Write them in the correct columns.



Closer to 80	Closer to 90

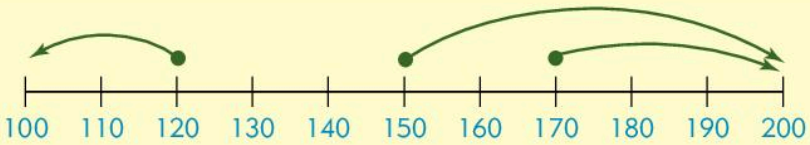
3 Round these numbers to the nearest 10.

a 16 **b** 39 **c** 28 **d** 91 **e** 55

f 24 **g** 78 **h** 42 **i** 99 **j** 89

Rounding to the nearest 100

We can round numbers to the nearest 100.



The number 120 is closer to 100 than to 200. We round it down to 100.

The number 170 is closer to 200 than to 100. We round it up to 200.

The number 150 is half-way. Half-way numbers are always rounded up to the next 100.

All the numbers from 101 to 149 get rounded down to 100.

All the numbers from 150 to 199 get rounded up to 200.

1 **Write the answers.**

a Is 189 closer to 100 or to 200? **b** Is 393 closer to 300 or to 400?

c Is 529 closer to 500 or to 600? **d** Is 264 closer to 200 or to 300?

e Is 345 closer to 300 or to 400? **f** Is 364 closer to 300 or to 400?

g Is 751 closer to 700 or to 800? **h** Is 599 closer to 500 or to 600?

2 **Round each number to the nearest 100.**

a 137 **b** 356 **c** 635 **d** 379 **e** 219

f 799 **g** 890 **h** 850 **i** 670 **j** 909

3 **Write all the numbers from the box that round off to 400.**

435, 496, 378, 416, 351, 387, 421, 395, 463, 480

4 **Write all the numbers from the box that round off to 900.**

924, 881, 838, 937, 892, 945, 973, 876, 915, 869, 950

you can use Workbook page 30

Estimate and count

An estimate is a guess about a number.

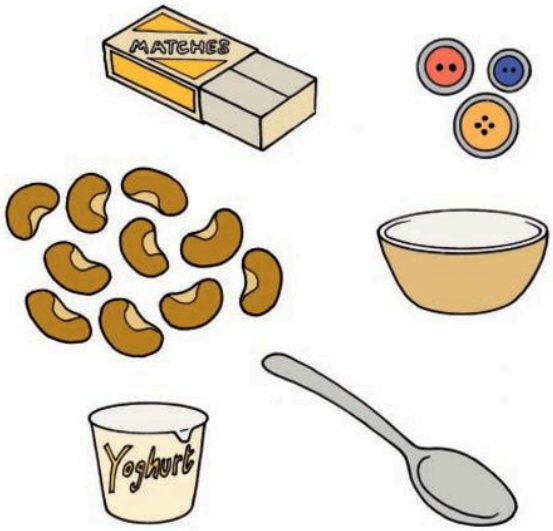
I **estimate** that he is holding between 10 and 20 marbles.

The estimate 10 to 20 is a range. It tells you he is holding between 10 and 20 marbles. This is correct because he is holding 15 marbles exactly.

It is useful to estimate before you count.

You will need:

- a box of matches
- a bag of beans
- a bag of big buttons or counters
- small containers (cups, bowls, spoons or jars).



Work with your group.

1 **Estimate and then count. Give your estimate as a range.**

a How many beans in a handful?

b How many buttons in a handful?

c How many beans in a cup?

d How many buttons in a spoonful?

e How many buttons in a bowl?

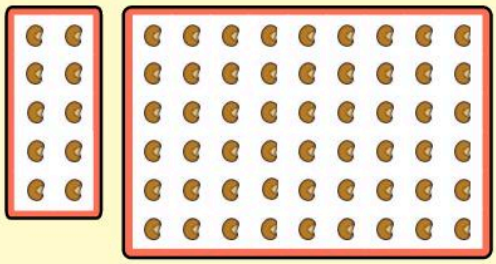
f How many beans in a spoonful?

g How many matches in a box?

Estimate by counting in groups

When you have a large number of items you can group them in tens to make it easier to estimate how many there are.

The small box shows what ten beans looks like.



Estimate how many beans are in the big box.

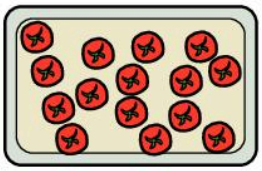
You can see that there are more than five small boxes but less than six small boxes worth of beans in the bigger box.

We estimate there are 50 to 60 beans in the bigger box.

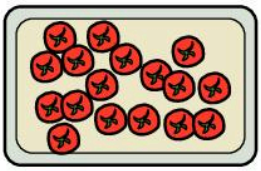
To use this method of estimating you need to work out what ten items looks like before you start.

Estimate how many tomatoes there are in each box.
Give your answer as a range.

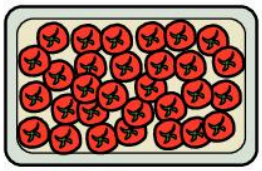
a



b



c



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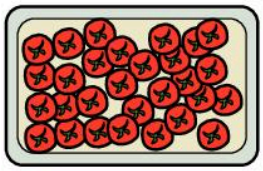
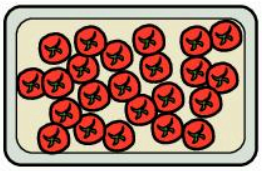
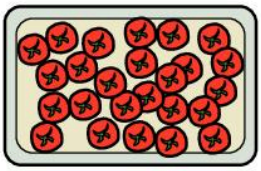


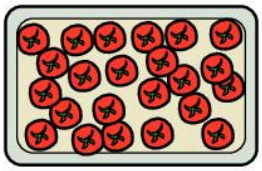
e



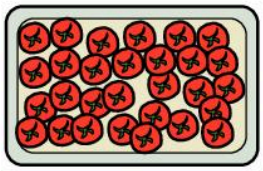
f



g



h



you can use Workbook page 31

Time in minutes

Look at this clock.

The hour hand has just passed 11.
To read the minute hand, start at 12.

Count forward in fives to 25.

The time is twenty-five minutes past 11.

We write 11:25.

Four teams took part in a searching competition. They started at different times. They finished at different times. The table shows their start and finish times.

Team	Starting time	Finishing time
Red	10:20	11:35
Blue	10:25	11:30
Green	10:30	11:40
Yellow	10:35	11:45

1 **Which team started earliest?**

2 **Which team finished latest?**

3 **Which team started at half past ten?**

4 **Which team finished at quarter to twelve?**

5 **Which team took the longest time?**

6 **Which team finished in the shortest time?**

7 **If each team had started 10 minutes later, what time would they each have started?**

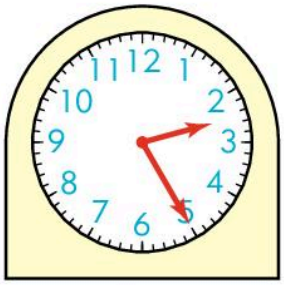
8 **If each team had finished five minutes earlier, what time would they each have finished?**

you can use Workbook page 32

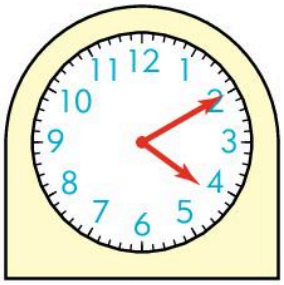
Telling and showing time

1 Write down the time shown on each clock.

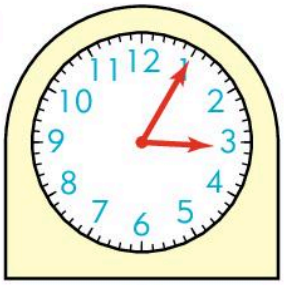
a



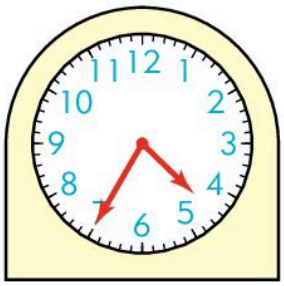
b



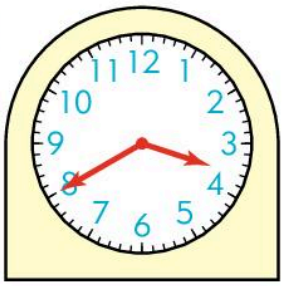
c



d



e



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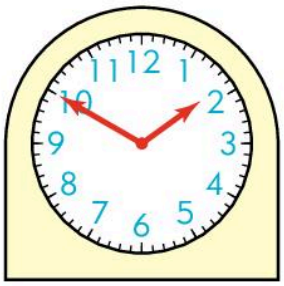


2 Write each of these times in words.

a

b

c

d

e

f

3 Draw digital clock faces to show each of these times:

a twenty to five

b five to twelve

c quarter to eight

d fifty-five minutes past three.

4 How many minutes is it from:

a 10:25 to 10:50

b 8:55 to 9:05

c 4:15 to 4:45

d 1:20 to 2:10

you can use Workbook pages 33–34

Estimating time

1 **Look at these activities. How long do you think each one would take? Choose the best estimate.**

a Eating a meal

30 seconds
5 minutes
30 minutes
5 hours

b Reading two pages of a story book

10 seconds
10 minutes
50 minutes
10 hours

c Drinking a glass of water

15 seconds
10 minutes
15 minutes
15 hours

d Having a bath

5 seconds
50 seconds
20 minutes
3 hours

e Opening a parcel

1 second
30 seconds
30 minutes
30 hours

f Changing into your sports clothes

5 seconds
15 seconds
5 minutes
5 hours

2 **Write down five things that you do each day.**

a Estimate how long it takes you to do each activity. Write your estimates.

b Time yourself as you do each thing today.

c Write how long you took.

d How close were your estimates to your actual times?

you can use Workbook page 35

Calendars and dates

Use this calendar to answer the questions.

August						
Mon	Tues	Wed	Thurs	Fri	Sat	Sun
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

1 **Write the date of:**

a the first Sunday in August
b the last Sunday in August
c the third Friday in August.

2 **Write the dates for one week in August starting with:**

a the 3rd of August
b the 13th of August.

3 **Which day of the week is:**

a the 1st of August?
b the 16th of August?
c the 30th of August?

4 **Write the day and the date five days after:**

a the 10th of August
b the 23rd of August
c the 26th of August.

5 **What is the day and date 14 days before:**

a the 27th of August?
b the 17th of August?

You will need a calendar for this year to do this activity.

6 **For each date, write the day of the week.**

a 10 January
b 1 March
c 8 May
d 4 August
e 9 October
f 31 December

7 **Write the date for each day:**

a the first Sunday in April
b the second Friday in September
c the third Wednesday in July
d the last Thursday of November.

8 **What date is your birthday? What day is that on this year?**

you can use Workbook page 36

Calendar problems

FEBRUARY						
M	T	W	Th	F	Sa	Su
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28		

MARCH						
M	T	W	Th	F	Sa	Su
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

APRIL						
M	T	W	Th	F	Sa	Su
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

1 **Sandra visits her grandparents every two weeks. Her last visit was on 8 February. When will she visit them again?**

2 **Ishmael gets his pocket money on the last Friday of each month. On which dates did he get his pocket money during these three months?**

3 **On 1 March Indira is invited to a party on 15 March. How many school days are there from 1 March to 15 March?**

Indira has to ask her friend if she can come a week before the party.
What date is this?

4 **Use the calendar for April. Read the clues to work out each date.**

• The date is an even number. • It is in the fourth week of the month. • It is the fourth day of the week. The date is _____	• The date is an odd number. • The tens digit is an even number. • It is in the last three days of the month. The date is _____

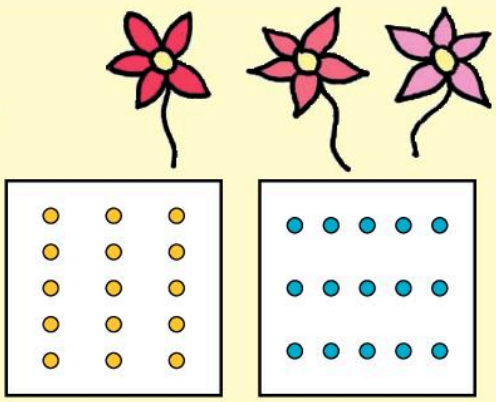
Revise multiplication and division

Each flower has 5 petals.

Here are the multiplication and division facts for this picture.

$5 \times 3 = 15$
$3 \times 5 = 15$
$15 \div 3 = 5$
$15 \div 5 = 3$

You can also show these facts as arrays.

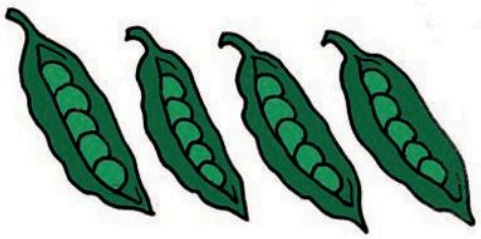


Write the multiplication and division facts for each picture.

1

Each seedling has two leaves

2



Each pod has five peas.

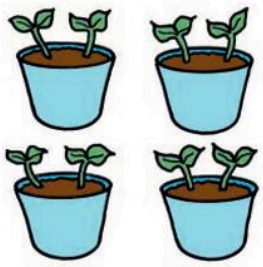
3

Each vase has three flowers.

4

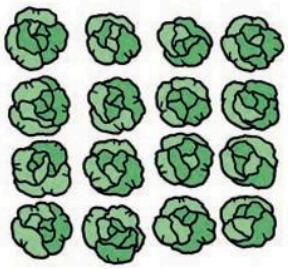
Each fork has four tines.

5



Each pot has two seedlings.

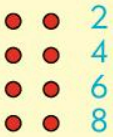
6



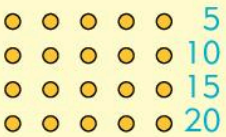
Each row has four cabbages.

you can use Workbook page 37

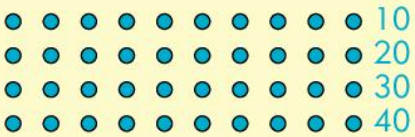
Tables, ×2, ×5 and ×10



These dots are arranged in twos.



These dots are arranged in fives.



These dots are arranged in tens.

You can count the dots in groups to find the answers if you can't remember your tables.

1 **Copy and complete.**

a $2 \times 1 = \_\_\_$ $1 \times 2 = \_\_\_$ **b** $2 \times 2 = \_\_\_$

c $2 \times 3 = \_\_\_$ $3 \times 2 = \_\_\_$ **d** $2 \times 4 = \_\_\_$ $4 \times 2 = \_\_\_$

e $2 \times 5 = \_\_\_$ $5 \times 2 = \_\_\_$

2 **Multiplying by 2 is the same as doubling. Write the answers.**

a double 6 **b** double 8 **c** double 10

d double 9 **e** double 7

3 **Multiply each of these numbers by 5.**

a 0 **b** 3 **c** 6 **d** 8 **e** 10 **f** 9

4 **Write out the five times table with the answers. Ask a partner to check your work.**

5 **Copy and complete.**

a $10 \times 6 =$ **b** $10 \times 3 =$ **c** $10 \times 8 =$

d $10 \times 10 =$ **e** $10 \times \_\_\_ = 50$ **f** $\_\_\_ \times 4 = 40$

g $10 \times \_\_\_ = 0$ **h** $10 \times \_\_\_ = 90$

you can use Workbook page 38

Recognising multiples

When you multiply by a number your answer is a multiple of that number.

- Multiples of 2 always have 2, 4, 6, 8 or 0 in the units place.
- Multiples of 5 always have 5 or 0 in the units place.
- Multiples of 10 always have 0 in the units place.

1 **Find the numbers in each set that are not multiples of 2.**

a 18 20 28 32 35 40 14 39

b 12 18 23 26 28 30 50 93

c 120 124 132 123 144 145 146 150

d 232 223 245 254 261 216 244 280

2 **Which of these numbers are multiples of 10?**

120	300	235	90	128	500	320
125	308	900	40	675	432	600

3 **Write all the multiples of five that are:**

a between 29 and 32

b greater than 41 but less than 50

c between 125 and 135

d greater than 200 but less than 215

e between 300 and 321

f less than 400 but greater than 380

you can use Workbook page 39

The ×3 table

Nisha has arranged her blocks in groups of three.

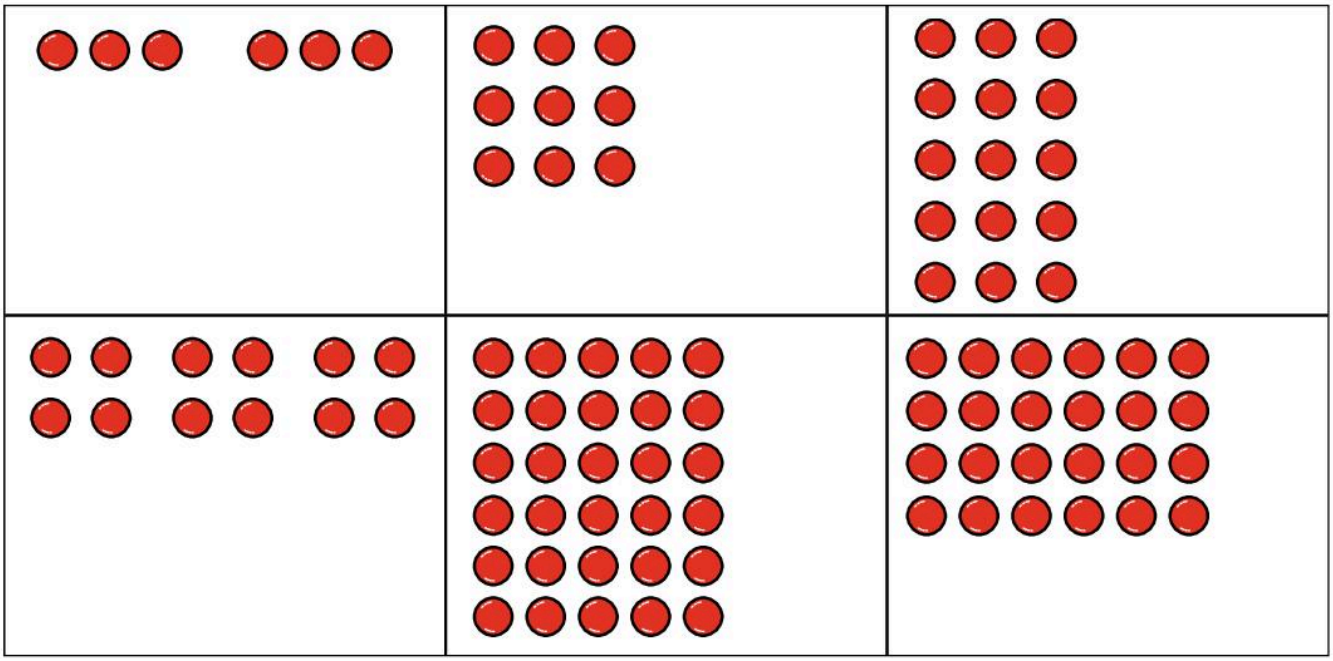
1 group of 3 = 3

2 groups of 3 = 6

1 Copy and complete the 3× table. Count in three or use the blocks to help you find the answers if you need to.

1 × 3 =	6 × 3 =
2 × 3 =	7 × 3 =
3 × 3 =	8 × 3 =
4 × 3 =	9 × 3 =
5 × 3 =	10 × 3 =

2 Write two multiplication facts and two division facts for each set of counters.



3 Sally gives 9 students three counters each. How many counters is this altogether?

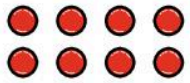
4 Six students have 18 pencils to share equally. How many pencils will they each get?

you can use Workbook page 40

Multiplying by 4

1 Use the pictures to work out the answers.
Write the number sentence and the answer.

a

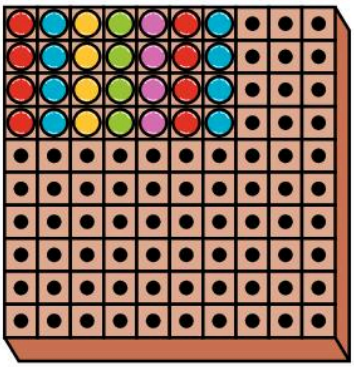


$2 \times 4 =$

b

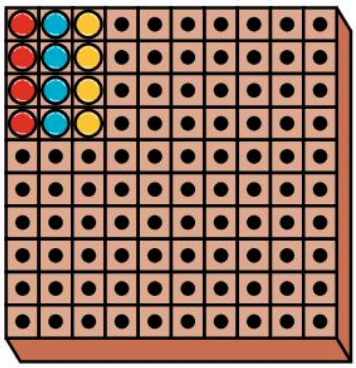
$5 \times 4 =$

c



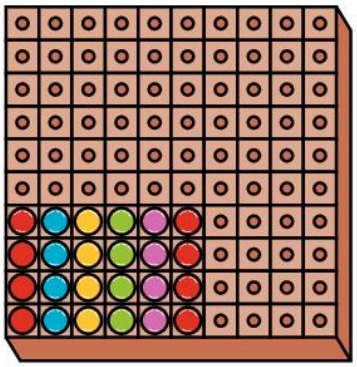
$4 \times 7 =$

d



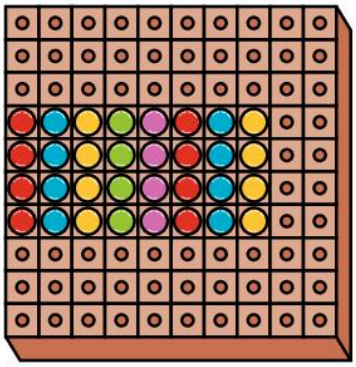
$4 \times 3 =$

e



$4 \times 6 =$

f



$4 \times 8 =$

2 Draw your own pictures to show these multiplications. Write the number sentence and the answer below each picture.

a $4 \times 4 =$

b $10 \times 4 =$

c $9 \times 4 =$

d $6 \times 4 =$

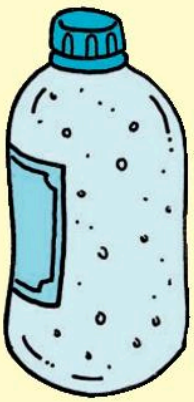
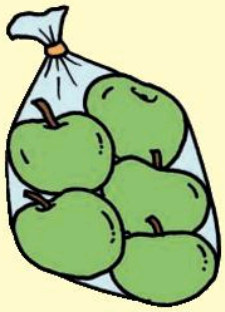
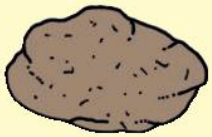
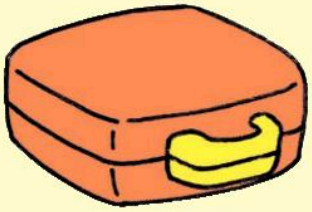
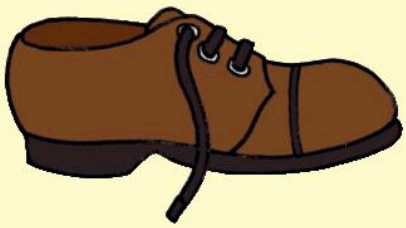
you can use Workbook page 41

Weighing in kilograms

You will need:

- a balance scale
- some kilogram weights
- five objects to weigh.

Here are some ideas of the things you can weigh.


1 Make a chart like this one. Write the names of the things you have found to weigh in the first column.

Objects	Estimate	Actual weight
Bag of apples	____ kg	____ kg
Stone	____ kg	____ kg
Lunch box	____ kg	____ kg
Bottle of water	____ kg	____ kg
Shoe	____ kg	____ kg
Book	____ kg	____ kg

2 Estimate how many kilograms each object weighs. Write your estimate in the second column.

3 Use the balance scale and the kilogram weights to find the actual weight of each object. Write the weight in the last column.

Kilograms and grams

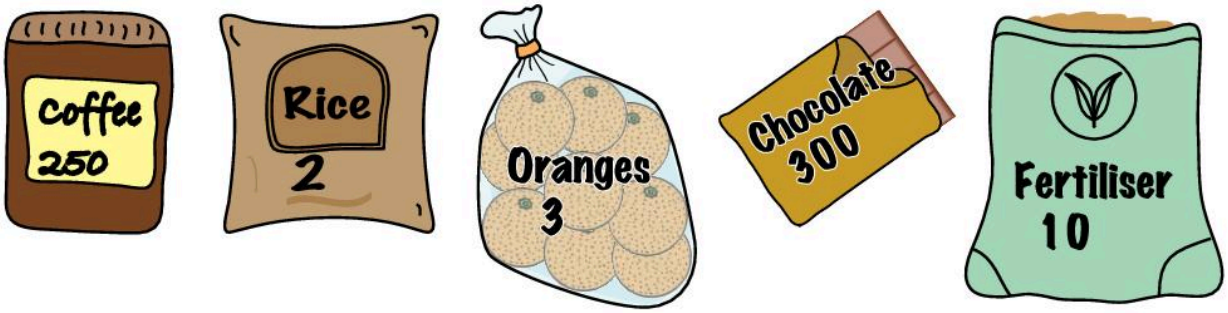
Each kilogram on this scale has been divided into smaller units. These smaller units are called grams.

There are 1000 grams in 1 kilogram. We use the symbol g to write grams in a short way.

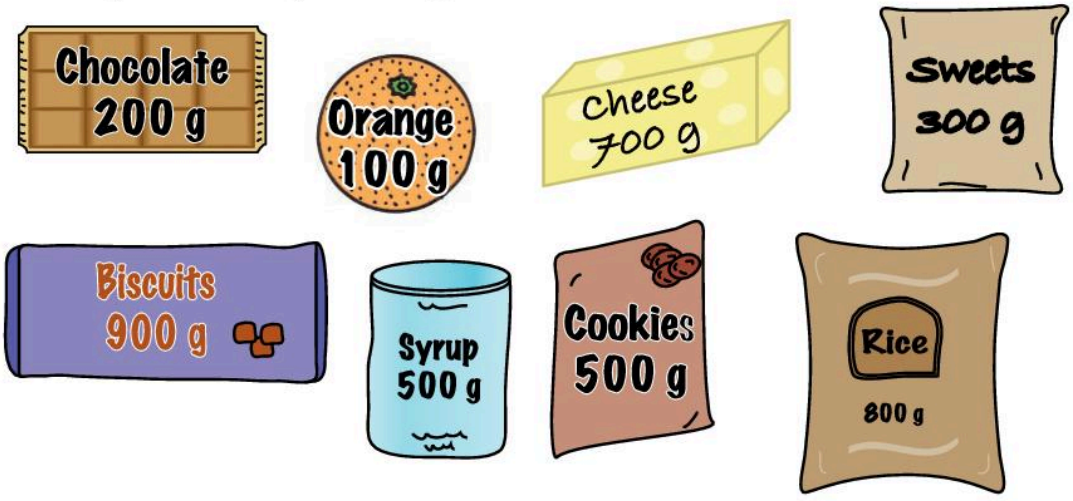
1 kg = 1000 g $\frac{1}{2}$ kg = 500 g

On this scale, each small division represents 100 grams. The fruit on the scale weighs 1 kg and 500 grams. We can write this as 1 kg 500 g or 1500 g.

1 **The units (kilograms or grams) are missing from these objects. Write each weight with the correct unit.**



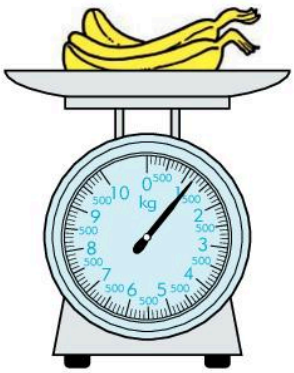
2 **Arrange these items in pairs so that each pair weighs exactly 1 kilogram.**



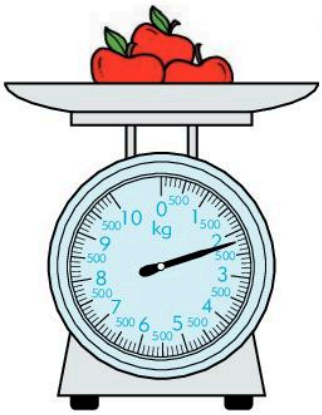
Reading scales

1 **What is the weight of the items on each of the scales? Round to the nearest kilogram.**

a

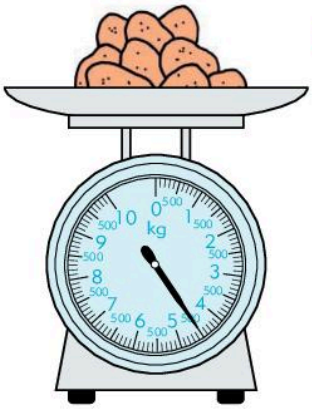


b



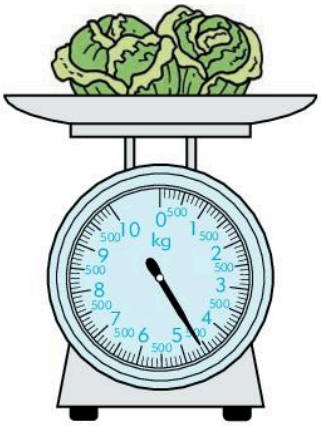
c

d



e

f



2 **Work out how much your bag would weigh if you bought:**

a the bananas, potatoes and carrots

b the apples, pears and potatoes

c the cabbages, apples and bananas

d everything.

3 **Choose four scales.**

a What is the total weight of the items on the four scales?

b How much would you need to carry if you bought two lots of each thing?

you can use Workbook page 42

Working with weights

You will need:

- a set of bathroom scales
- a partner.

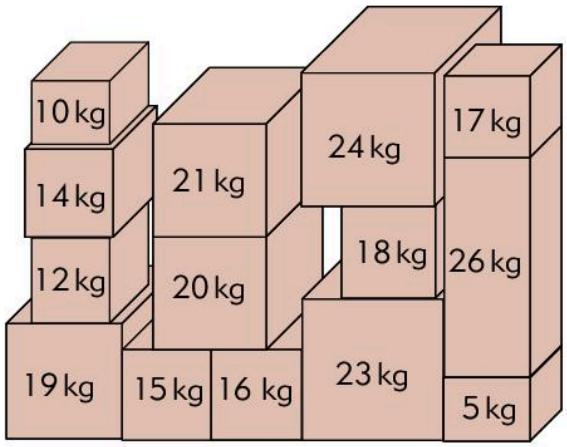
1 Do you know what you weigh in kilograms? Weigh yourself and write your weight to the nearest half kilogram.

2 What is the difference between your weight and your partner's weight?

3 How much do you weigh together?

4 Work with another pair. Arrange your weights from heaviest to lightest.

5 Juanita needs to carry all these boxes to her van.



The most she can carry in one trip is 40 kg.

On her first trip she carries the 20 kg box, the 15 kg box and the 5 kg box.

She needs to make 5 more trips.

Write down the weights of the boxes she carries on each trip.

you can use Workbook page 43

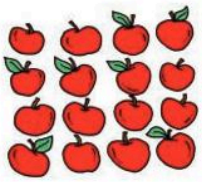
Revise dividing into groups

Equal sharing is called division.
Divide these flowers into groups of two.

We can make 6 equal groups of 2.

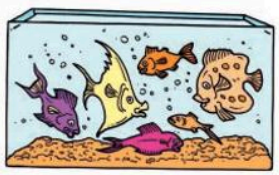
$12 \div 2 = 6$

1 a



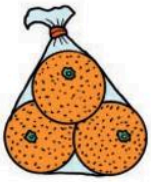
There are 12 apples.
There are 4 in each row.
How many rows are there?

b



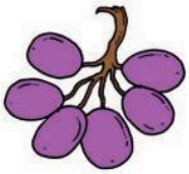
There are 24 fish.
There are 6 fish in each tank.
How many tanks are there?

c



There are 9 oranges.
There are 3 in each bag.
How many bags are there?

d



There are 18 grapes.
Each child eats 6.
There are none left.
How many children had grapes?

2 **There are 20 pencils. There are 10 in each packet. How many packets?**

3 **There are 24 biscuits. There are 8 on each plate. How many plates?**

4 **There are 20 children in a class. The teacher makes groups of 5. How many groups can she make?**

5 **Sandy puts 2 spoons of sugar in each cup. She uses 18 spoonfuls. How many cups?**

you can use Workbook page 44

Division facts

Division is the inverse of multiplication. So if you know your times tables, you already know some division facts.

$16 \div 8 = \square$

To find out how many 8s there are in 16, ask yourself, what times 8 gives 16?

$2 \times 8 = 16$ so $16 \div 8 = 2$

$30 \div 6 = \square$

To find out how many 6s there are in 30, ask yourself, what times 6 gives 30?

$5 \times 6 = 30$ so $30 \div 5 = 6$

1 **Use the multiplication fact to find the answers to each pair of divisions.**

a $3 \times 10 = 30$
$30 \div 10 = \square$
$30 \div 3 = \square$

b $8 \times 3 = 24$
$24 \div 8 = \square$
$24 \div 3 = \square$

c $5 \times 9 = 45$
$45 \div 5 = \square$
$45 \div 9 = \square$

d $4 \times 7 = 28$
$28 \div 4 = \square$
$28 \div 7 = \square$

e $5 \times 10 = 50$
$50 \div 5 = \square$
$50 \div 10 = \square$

f $3 \times 7 = 21$
$21 \div 3 = \square$
$21 \div 7 = \square$

2 **Do these divisions. Use the times tables facts you know to help you.**

a $15 \div 3 = \square$ **b** $12 \div 3 = \square$ **c** $14 \div 2 = \square$

d $18 \div 6 = \square$ **e** $24 \div 8 = \square$ **f** $20 \div 4 = \square$

g $18 \div 3 = \square$ **h** $20 \div 2 = \square$ **i** $32 \div 4 = \square$

j $16 \div 4 = \square$ **k** $25 \div 5 = \square$ **l** $90 \div 10 = \square$

you can use Workbook page 45

Division with some left over

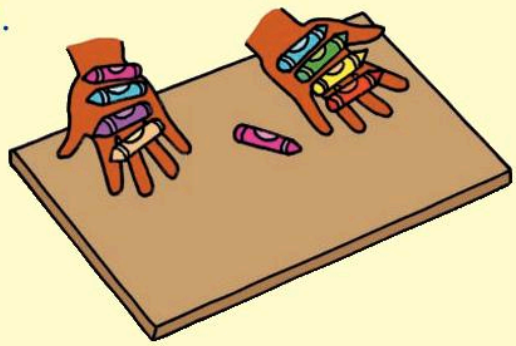
9 crayons are shared between 2 children.

Each child gets 4 crayons.

There is 1 crayon left over.

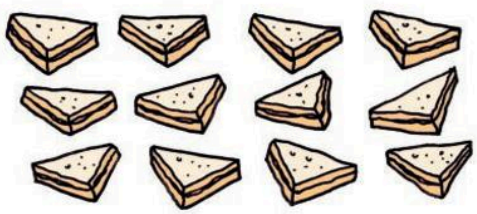
We can write $9 \div 2 = 4$ rem. 1

'rem.' is short for remainder.
It means 'there is 1 left over'.



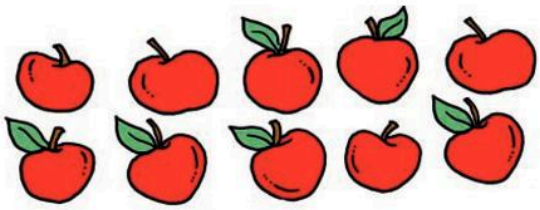
1 **Write a division sentence for each question. Write the answer and the remainder.**

a

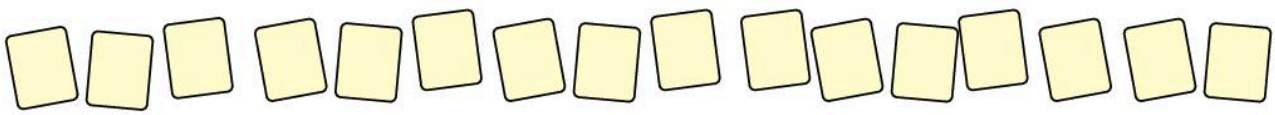


12 sandwiches are shared between 5 children. How many does each child get? How many are left over?

b



10 apples are shared between 3 children. How many does each child get? How many are left over?



c 16 cards are shared among 5 children. How many does each child get? How many are left over?

d 16 cards are shared among 7 children. How many does each child get? How many are left over?

2 **Copy these division sentences. Write the answer and the remainder.**

a $9 \div 2 =$ **b** $13 \div 2 =$ **c** $16 \div 3 =$

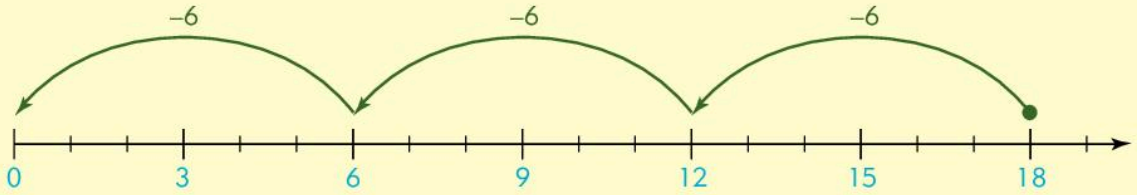
d $14 \div 3 =$ **e** $18 \div 4 =$ **f** $23 \div 4 =$

you can use Workbook page 46

Use a number line to divide

You can use a number line to help you divide.

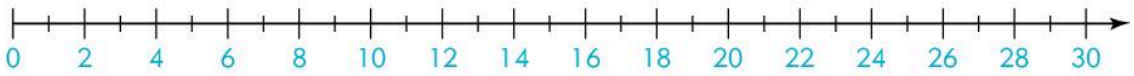
$18 \div 6 = \square$



Remember that you can divide a number into equal groups by repeatedly subtracting the number in the group.

1 **Use the number line to find:**

a $18 \div 3 = \square$ **b** $18 \div 9 = \square$ **c** $18 \div 2 = \square$



2 **Use the number line to help you do these divisions.**

a $20 \div 5 = \square$ **b** $30 \div 5 = \square$ **c** $25 \div 5 = \square$

d $27 \div 9 = \square$ **e** $16 \div 4 = \square$ **f** $24 \div 4 = \square$

g $28 \div 4 = \square$ **h** $30 \div 10 = \square$ **i** $20 \div 10 = \square$

j $21 \div 3 = \square$ **k** $32 \div 4 = \square$ **l** $30 \div 6 = \square$

3 **Cards are sold in packs of 4.**

a You need 16 cards. How many packs is this?

b You need 28 cards. How many packs is this?

c How many packs do you need if you want 24 cards?

d How many packs do you need if you want 48 cards?

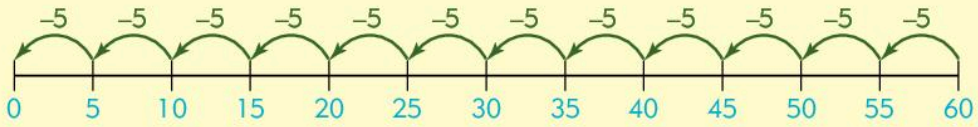
e Sally needs 33 cards. How many packs does she need to buy?

Dividing bigger numbers

Josie has 60 chairs. She wants to arrange them in groups so that there are five chairs per group. How many groups can she make?

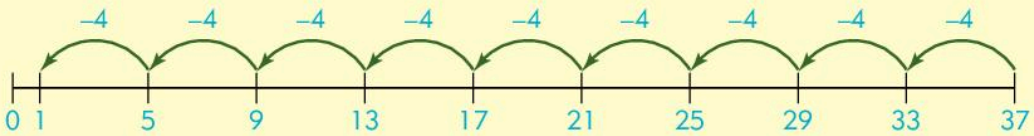
We can write this as a division: 60 ÷ 5 = ☐

Use a number line and subtract 5s



There are 12 groups of 5, so 60 ÷ 5 = 12

Remember, some divisions will leave a remainder.
For example: 37 ÷ 4



9 groups of 4 and 1 left over. So, 37 ÷ 4 = 9 remainder 1

1 **Draw your own number lines to help you do these divisions.**

a 56 ÷ 4	**b** 63 ÷ 3	**c** 70 ÷ 5
d 72 ÷ 6	**e** 99 ÷ 9	**f** 65 ÷ 5
g 52 ÷ 4	**h** 66 ÷ 6	**i** 88 ÷ 8

2 **Do these divisions. Write the answers and the remainders.**

a 54 ÷ 10	**b** 49 ÷ 5	**c** 63 ÷ 4
d 39 ÷ 3	**e** 45 ÷ 4	**f** 56 ÷ 5
g 62 ÷ 6	**h** 73 ÷ 7	**i** 59 ÷ 6

3 **What is the remainder when 59 is divided by 5?**

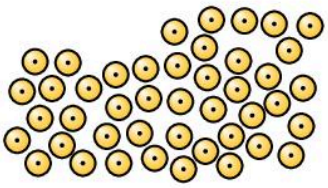
4 **How many sevens are there in 56?**

5 **How many groups of 8 can you make with 64?**

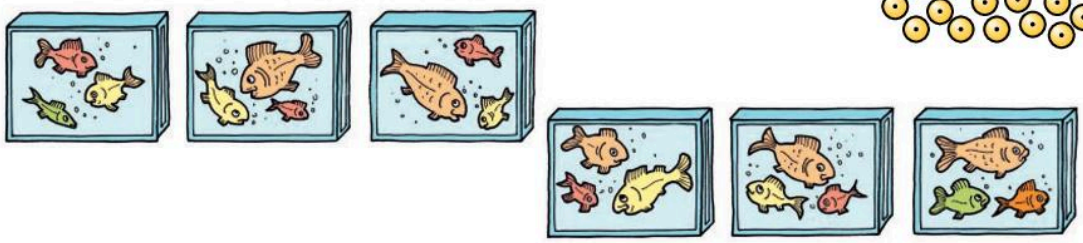
6 **Seven times a number is 84. What is the number?**

Multiplication and division problems

1 Rukshana, Alice and Maryam share 45 beads. How many beads does each one get?



2



There are 6 fish tanks. Each has 3 fish. How many fish are there altogether?

3 4 children ate 4 biscuits each. How many biscuits is this altogether?

4 There are 4 rows of plants with 5 plants in each row. How many plants are there altogether?

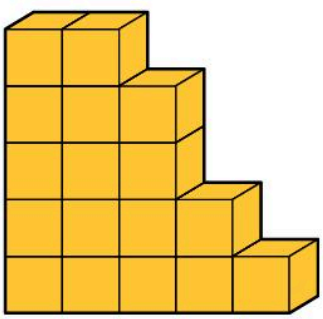
5 2 boys ate some grapes. They ate 10 each. How many grapes did they eat altogether?

6 58 dominoes were shared among 5 children. How many did each child get? How many were left over?

7 There are 10 pencils in a box. How many boxes can you fill with 70 pencils?

8 Josh arranged 48 ten-cent coins in 4 equal piles. How many coins were in each pile? How many were left over?

9 Here are 17 cubes. Use the cubes to answer the divisions.



a $17 \div 2 =$ **b** $17 \div 3 =$

c $17 \div 4 =$ **d** $17 \div 5 =$

Reading tables

1 **Some children wrote down how much television they watched each day for a week.**

They recorded the information in this table.

Hours of TV watched							
Day / Name	Sun	Mon	Tues	Wed	Thurs	Fri	Sat
Sarah	0	2	2	0	1	2	2
Ranjit	1	1	3	1	2	3	0
Mark	2	2	2	3	3	4	6
Tara	3	1	3	1	1	0	3

a For how long did Tara watch TV on Friday?

b For how long did Mark watch TV on Saturday?

c For how long did Ranjit watch TV on Wednesday?

d For how long did Tara watch TV on Sunday?

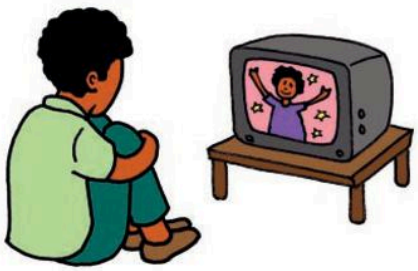
e Who watched the most TV during this week?

f On which days did Sarah watch no TV?

g Who didn't watch TV at all on Saturday?

h Which day was the most popular for watching TV?

2 **Make your own table to record how long you watch TV or listen to music each day.**



a Estimate before you start.

b Which days do you watch or listen most?

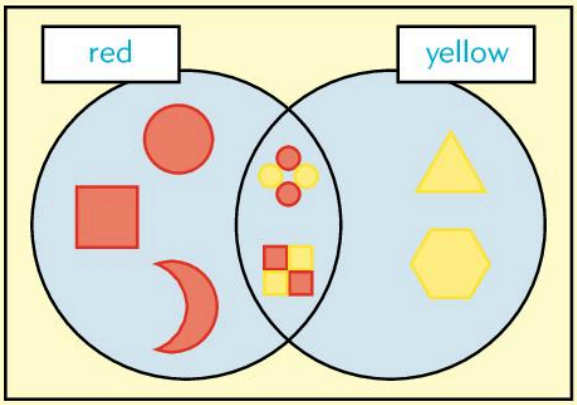
c Are there any days when you don't watch TV or listen to music?

d Compare your table with your friends. Do you spend more or less time watching TV than your friends?

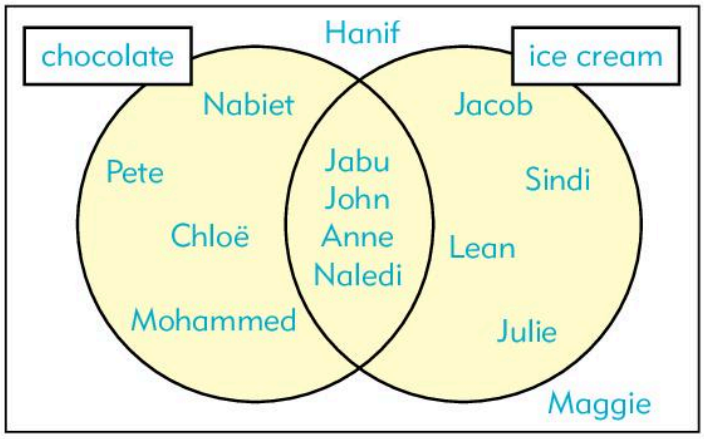
you can use Workbook pages 47–48

Venn diagrams

You can use a Venn diagram to sort information. This one is used to sort red and yellow shapes. Some of the shapes are both red and yellow, so they go into the shared section.



1 **Jamal drew this Venn diagram to show which children in his class like chocolate and which children like ice cream.**



a How many of his friends like ice cream only?

b How many of his friends like chocolate only?

c How many of his friends like both ice cream and chocolate?

d Why are Hanif and Maggie's names outside the circles?

2 **a** Ask six friends if they are scared of spiders, snakes, both spiders and snakes or neither spiders nor snakes.

b Draw a Venn diagram to show what you find out.

you can use Workbook page 49

Carroll diagrams

A Carroll diagram is a table that is used to sort information. Look at this Carroll diagram. Where would you fit into it?

	I am a girl	**I am not a girl**
I have brown hair	Indira	James
I do not have brown hair	Melissa	Leroy

Each box in the Carroll diagram has two rules. If you put something in the box, it must fit both rules. In this table Indira is in the box for being a girl and having brown hair. You can only fit into that box if you are a girl and you have brown hair. Can you work out the rules for the other boxes?

1 **Jacobus asked his friends if they liked oranges and apples. He used this Carroll diagram to record their answers.**

	Like apples	**Don't like apples**
Like oranges	Sandy Koos Maria Peter	Ahmed Mandy
Don't like oranges	Mandla Sarah Annie	Teresa

a How many friends like apples and oranges?

b Who doesn't like apples or oranges?

c Who likes apples, but not oranges?

d Who likes oranges, but not apples?

2 **Make a Carroll diagram to find out which of your friends like carrots and peas. Ask at least six friends.**

you can use Workbook pages 50–51

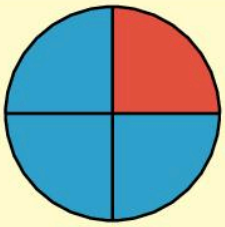
Writing fractions

This shape is divided into four equal parts.

One-quarter of the shape is shaded red.

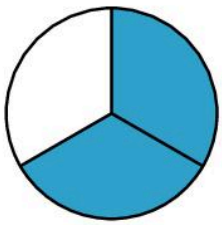
We write $\frac{1}{4}$.

Three-quarters of the shape is shaded blue. We write $\frac{3}{4}$.

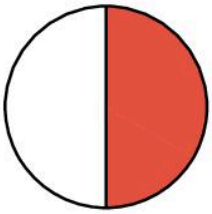


1 **What fraction of each shape is shaded?**

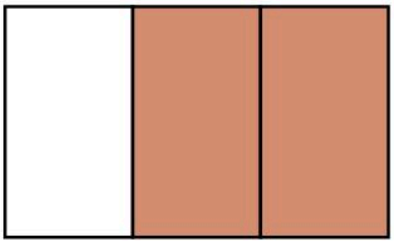
a



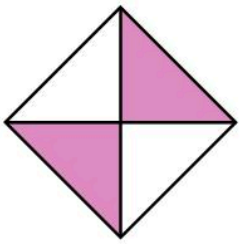
b



c

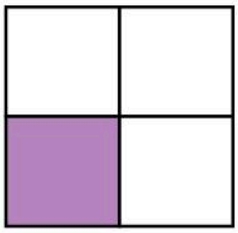


d



e

f



2 **Draw your own shapes. Colour the fractions given.**

a one-half, $\frac{1}{2}$

b two-thirds, $\frac{2}{3}$

c three-quarters, $\frac{3}{4}$

d four-fifths, $\frac{4}{5}$

3 **Look at the shapes you have drawn.**

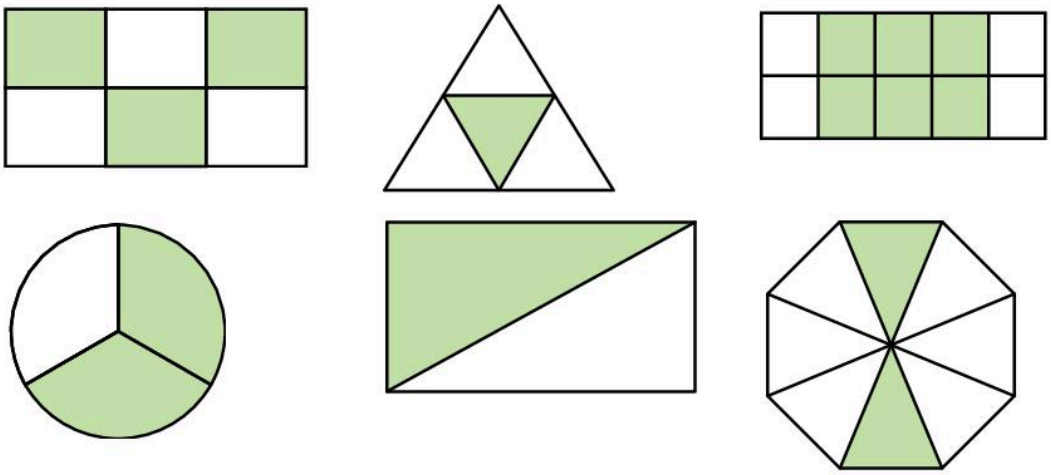
a What fraction of each shape is not coloured?

b Tell a partner how you worked this out.

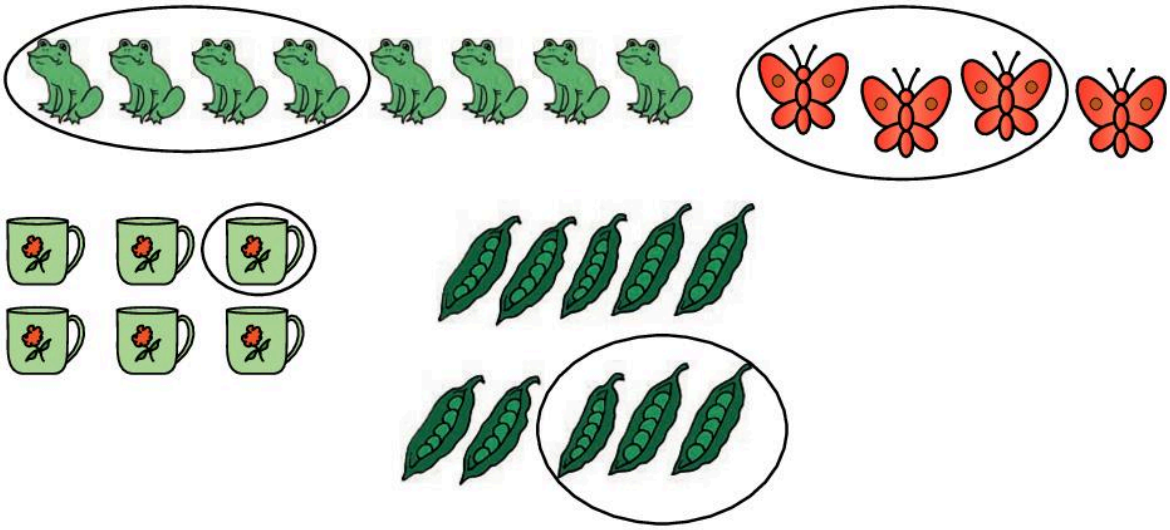
you can use Workbook page 52

More fractions

1 **Write the fraction of each shape that is shaded green.**



2 **What fraction of each set has been circled?**



3 **Write a fraction to describe each situation.**

a Seven out of eight students have finished their homework.

b Two out of five books have been covered.

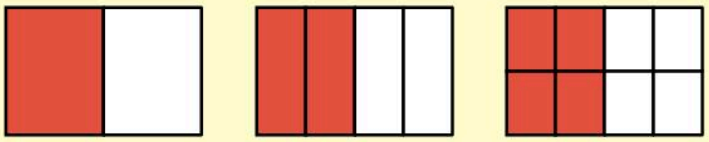
c Six of the ten pencils need to be sharpened.

d Out of eight crayons, three were broken.

you can use Workbook page 53

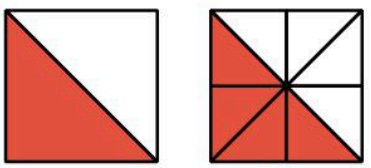
Equivalent fractions

Equivalent fractions are the same size.

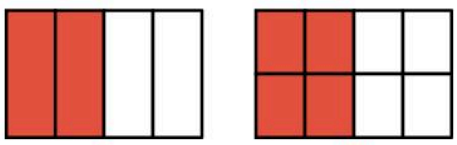


$\frac{1}{2}$ $= \frac{2}{4}$ $= \frac{4}{8}$

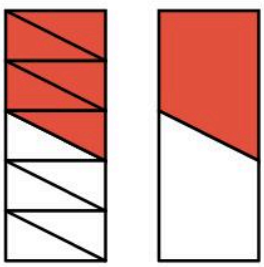
1 Write the equivalent fractions.



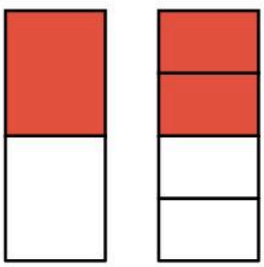
$\frac{1}{2} = \frac{\square}{8}$



$\frac{2}{4} = \frac{\square}{8}$

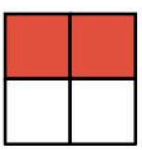


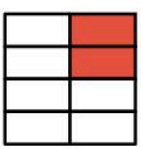
$\frac{5}{10} = \frac{\square}{2}$

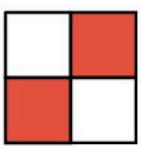


$\frac{1}{2} = \frac{\square}{4}$

2 Which diagrams have the same fraction shaded? Write the letters.

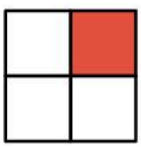
A 

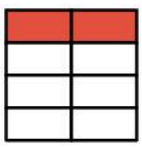
B 

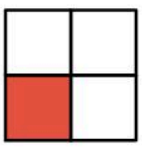
C 

D 

E 

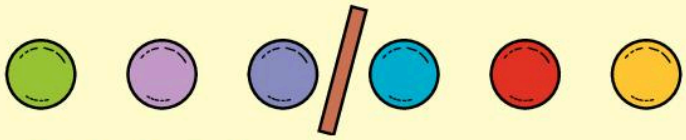
F 

G 

H 

Half of an amount

Here are six counters.



The counters have been divided into two equal groups.
Each group has half the counters. One half of 6 is 3.

We write: $\frac{1}{2}$ of 6 = 3

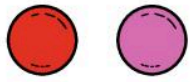
Use a small stick or a piece of string to divide these sets of counters into halves.

Copy the number sentences and complete them.

1

$\frac{1}{2}$ of 4 =

2



$\frac{1}{2}$ of 2 =

3

$\frac{1}{2}$ of 8 =

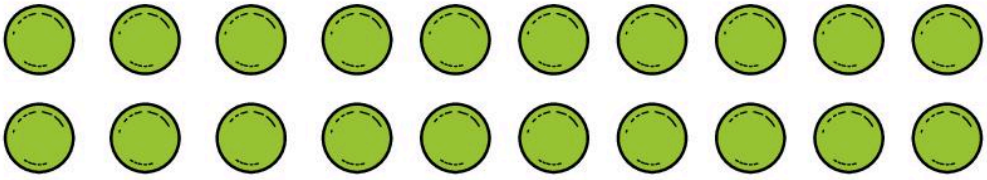
4

$\frac{1}{2}$ of 10 =

5

$\frac{1}{2}$ of 12 =

6



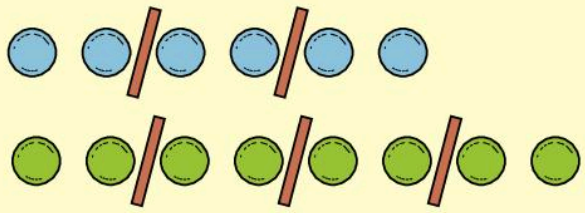
$\frac{1}{2}$ of 20 =

Finding fractions of amounts

You have seen that you can find $\frac{1}{2}$ of an amount by dividing it into 2 equal groups.

You can find any fraction of an amount if you divide it by the denominator of the fraction.

- $\frac{1}{2}$ of 6 is the same as $6 \div 2 = 3$
- $\frac{1}{3}$ of 6 is the same as $6 \div 3 = 2$
- $\frac{1}{4}$ of 8 is the same as $8 \div 4 = 2$



1 **Copy the number sentences and complete them.**

a $\frac{1}{4}$ of 4 = ☐ **b** $\frac{1}{4}$ of 8 = ☐ **c** $\frac{1}{4}$ of 12 = ☐

d $\frac{1}{4}$ of 16 = ☐ **e** $\frac{1}{4}$ of 20 = ☐ **f** $\frac{1}{4}$ of 40 = ☐

g $\frac{1}{3}$ of 3 = ☐ **h** $\frac{1}{3}$ of 9 = ☐ **i** $\frac{1}{3}$ of 12 = ☐

j $\frac{1}{3}$ of 15 = ☐ **k** $\frac{1}{3}$ of 18 = ☐ **l** $\frac{1}{3}$ of 36 = ☐

2 **How much money will you get if you are given:**

a $\frac{1}{2}$ of 40c **b** $\frac{1}{4}$ of 24c **c** $\frac{1}{3}$ of 30c

d $\frac{1}{2}$ of 36c **e** $\frac{1}{3}$ of 48c **f** $\frac{1}{4}$ of 48c

g $\frac{1}{3}$ of 27c **h** $\frac{1}{4}$ of 28c **i** $\frac{1}{2}$ of 22c

3 **Mary has a piece of rope that is 48 cm long.**

a How long would each piece be if she cut it in half?

b How much would she cut off if she cut off a third of the length?

c How long is $\frac{1}{4}$ of the rope?

4 **a** What does $\frac{2}{3}$ mean?

b What is $\frac{2}{3}$ of 15?

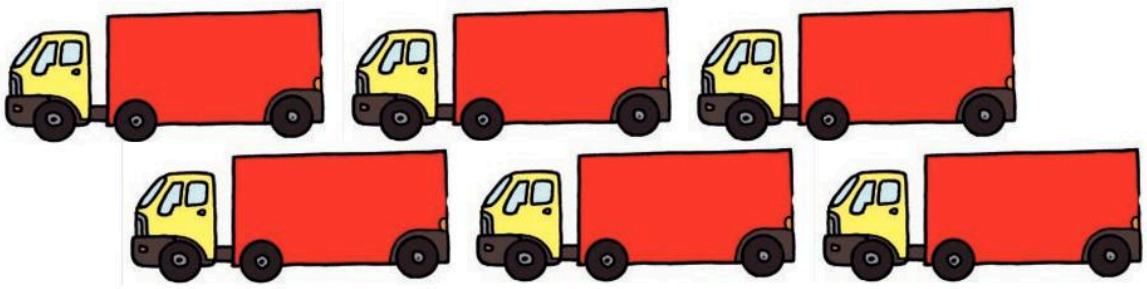
c How can you find $\frac{3}{4}$ of 40?

you can use Workbook page 54

Making fractions

Divide these sets into equal groups.

Copy and complete the sentences.

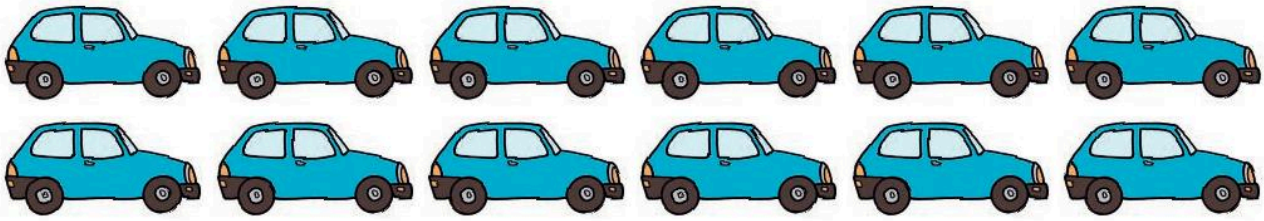


1 One-half of … is ….

2 One-third of … is ….

3 One-half of … is ….

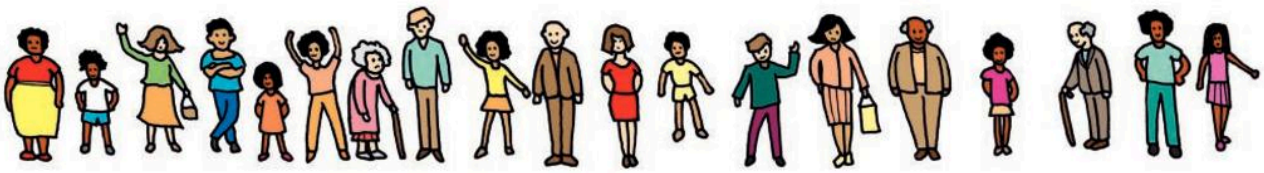
4 One-quarter of … is ….



5 $\frac{1}{2}$ of … = ….

6 $\frac{1}{4}$ of … = ….

7 $\frac{1}{3}$ of … = ….



8 $\frac{1}{2}$ of … = ….

9 $\frac{1}{3}$ of … = ….

10 $\frac{2}{3}$ of … = ….

you can use Workbook page 55

Measuring capacity

We use litres to measure how much a large container holds.

We use millilitres to measure how much a small container holds.

There are 1000 millilitres in 1 litre.

$1\,l = 1000\,ml$

1 **Find 10 containers at home. Draw them and write how much they hold in litres or millilitres.**

2 **A carton of juice holds 200 ml.**

a Is this a small or a large carton?

b Will it fill a cup?

c Will it fill a mug?

3 **Use a measuring jug and pour 500 ml of water into a container.**
Leave your container on the windowsill.
Measure the water every day.
Are there still 500 ml at the end of the week?
Why is this?
Use the leftover water to water some plants.

4 **Measure and record how much liquid you drink in a day.**

a Make a class chart to show how many millilitres of liquid each student in the class drinks in a day.

b Do the students drink more than 1 litre or less than 1 litre each day?

5 **Make a list of 10 containers that you use at home to hold liquids.**

a Write the containers in order from the one that holds least to the one that holds most.

b What do you use each one for? Tell a partner.

you can use Workbook page 56

Litres and millilitres

1 teaspoon holds 5 millilitres.

One litre equals one thousand millilitres.

1 l = 1000 ml

1 **Would you measure these in millilitres or litres?**

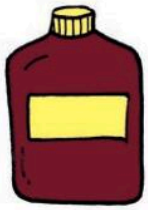
a

petrol in a can

b

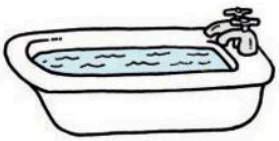
one serving of yoghurt

c



a bottle of medicine

d



water in a bath

e

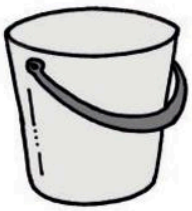
juice in a cup

f

juice in a bottle

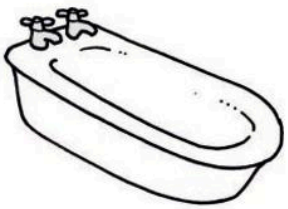
2 **Choose the best estimate for each of these.**

a



100 ml or 10 l

b



100 ml or 100 l

c

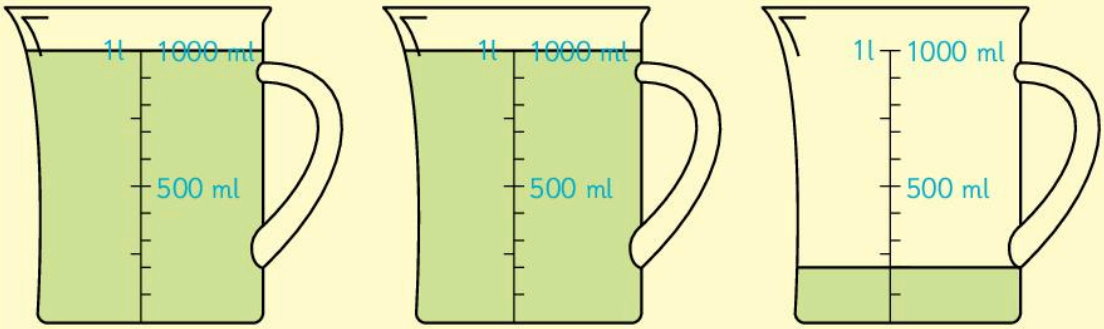
250 ml or 250 l

3 **How could you use a litre container and sand to find out whether another container holds more or less than a litre?**

you can use Workbook page 57

Reading scales

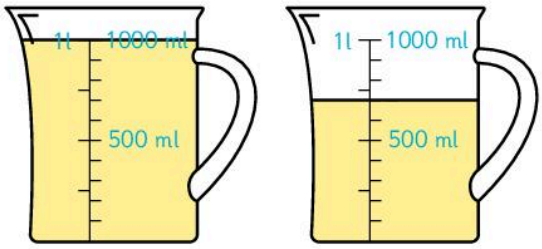
In this set of jugs there are 2 litres and 200 ml of liquid.



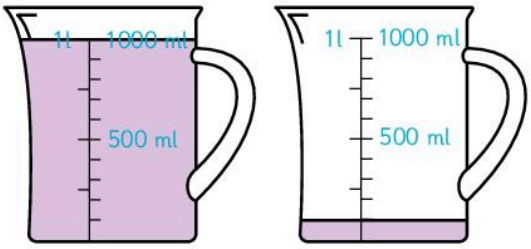
We can write this as 2 l 200 ml or 2200 ml.

How much liquid is in each set of jugs? Write the answer in two ways.

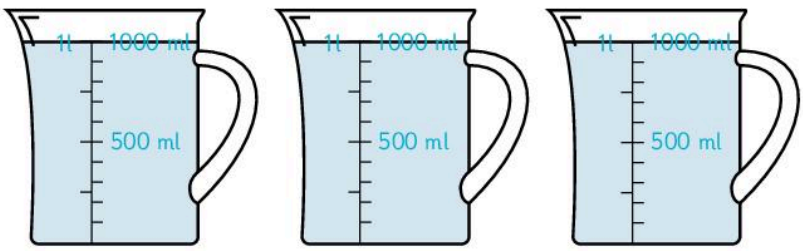
1



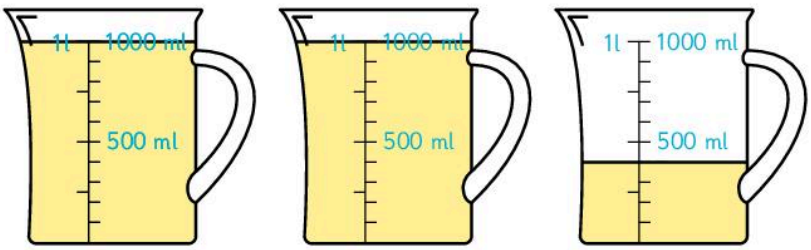
2



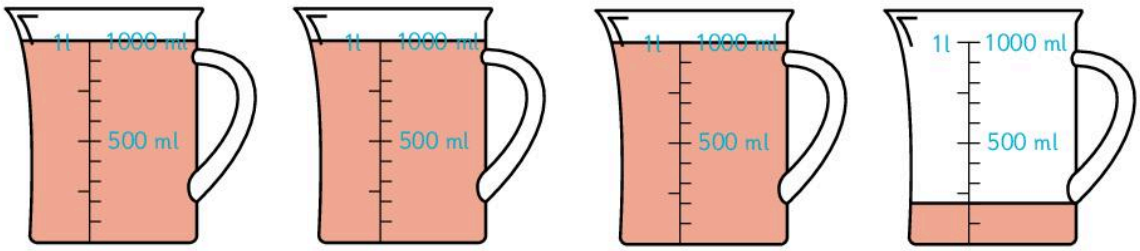
3



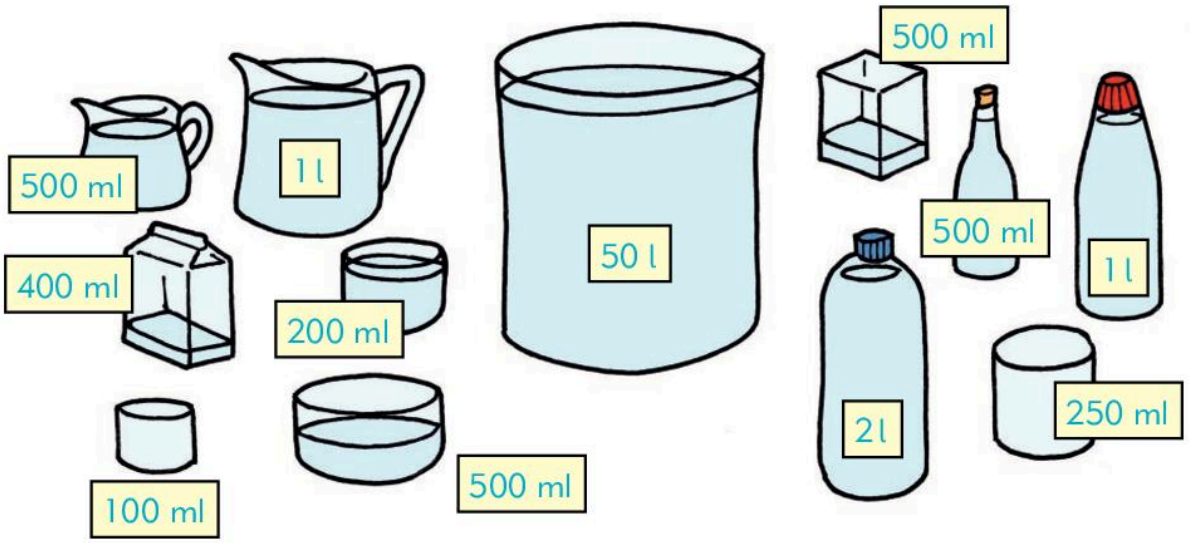
4



5



Capacity problems



1 **Look at the containers and answer the questions.**

a How many containers can hold exactly 1 litre?

b How many containers can hold exactly $\frac{1}{2}$ a litre?

c How much can the smallest container hold?

d How many of the smallest containers will you need to fill a litre container?

e How much can the largest container hold?

f How many 2-litre containers will you need to fill the largest container?

g How many $\frac{1}{2}$-litre containers can you fill from the largest container?

2 **Mrs Singh wants to buy juice for her family. 500 ml of juice costs $3.50 and 1 litre costs $6.50.**

a Is it cheaper to buy two 500 ml juices or one 1 litre juice?

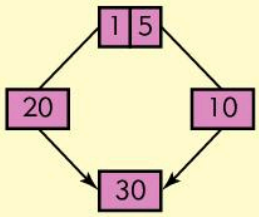
b Mrs Singh has $20.00. How many 500 ml containers of juice can she buy?

c How many 1 litre bottles can she buy with her $20.00?

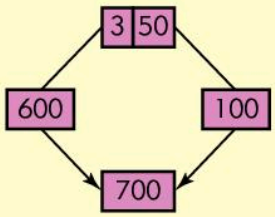
Doubling numbers

You can use the addition and other facts you know to help you double bigger numbers.

What is double 15?
15 = 10 + 5
Double 10 = 20
Double 5 = 10
20 + 10 = 30



What is double 350?
350 = 300 + 50
Double 300 = 600
Double 50 = 100
600 + 100 = 700

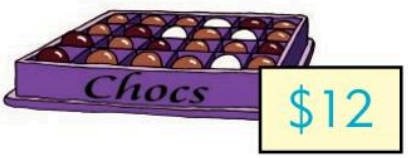


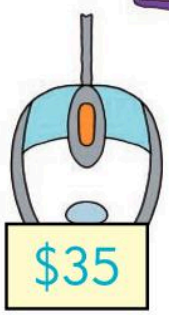
1 **Double each number.**

a 9	**b** 9	**c** 10	**d** 11
e 13	**f** 17	**g** 19	**h** 20

2 **The prices of eight items are given. What would it cost to buy two of each item?**

3 **These items have been marked half price in a sale. Work out what each one cost before the price was halved.**





Ten more, ten less

It is very easy to add or subtract 10.

$6 + 10 = 16$ $27 + 10 = 37$ $143 + 10 = 153$

$16 - 10 = 6$ $37 - 10 = 27$ $153 - 10 = 143$

Adding and subtracting 10 can help you add or subtract 9 and 11, which are close to 10.

$27 + 9 \rightarrow 27 + 10 = 37 \rightarrow 37 - 1 = 36$

You have added 1 more than you need to, so you have to take away 1 to get the answer.

$57 - 9 \rightarrow 57 - 10 = 47 \rightarrow 47 + 1 = 48$

You have taken away 1 more than you need to, so you have to add 1 back to get the answer.

1 **Try these in your head. Write the answers only.**

a $87 + 10$ **b** $97 - 10$ **c** $38 - 10$

d $10 + 83$ **e** $73 + 10$ **f** $75 - 10$

2 **Try to do these in your head.**

a $36 + 9$, $36 + 10$, $36 + 11$ **b** $57 - 9$, $57 - 10$, $57 - 11$ **c** $64 + 9$, $64 + 10$, $64 + 11$ **d** $43 - 9$, $43 - 10$, $43 - 11$

e $219 - 9$ **f** $219 - 11$ **g** $97 + 9$ **h** $216 - 11$

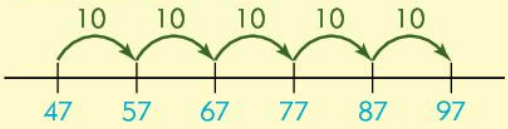
i $95 + 11$ **j** $120 - 9$ **k** $78 + 9$ **l** $218 - 11$

3 **Why is it easier to add 10 than to count on when you are adding 9 or 11?**

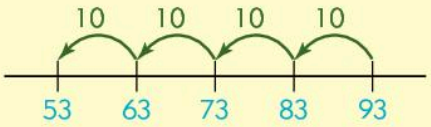
Add or subtract multiples of 10 and 100

You can use counting on and back to help you add or subtract multiples of 10 and 100 to any number.

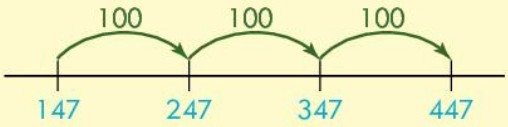
47 + 50 50 is five tens
Answer is 97



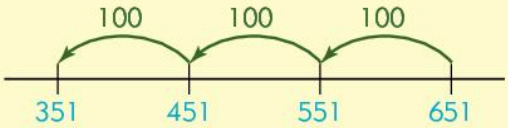
93 – 40 40 is four tens
Answer is 53



147 + 300 300 is three hundreds
Answer is 447



651 – 300 300 is three hundreds
Answer is 351



You can also use place value and re-ordering to do calculations involving multiples of 10 and 100.

87 + 40 80 + 7 + 40 = 80 + 40 + 7
8 tens plus 4 tens gives 12 tens → 120 → 120 + 7 = 127

134 + 400 100 + 34 + 400 = 100 + 400 + 34
1 hundred plus 4 hundred gives 5 hundred → 500
500 + 34 = 534

1 **Add.**

a 23 + 70	**b** 37 + 60	**c** 94 + 10
d 51 + 60	**e** 40 + 48	**f** 30 + 91
g 124 + 30	**h** 80 + 224	**i** 90 + 365
j 342 + 40	**k** 254 + 60	**l** 803 + 80

2 **Subtract.**

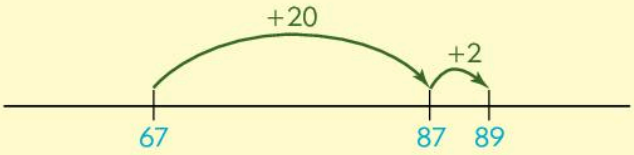
a 187 – 20	**b** 342 – 90	**c** 504 – 200
d 421 – 300	**e** 876 – 50	**f** 420 – 200

you can use Workbook page 58

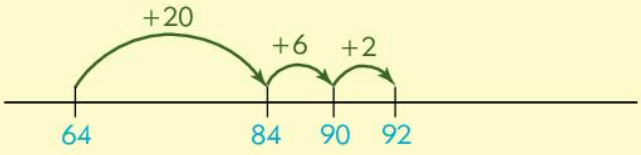
More adding

Do you remember how to use a number line to add?

22 + 67



64 + 28



Start with the bigger number.

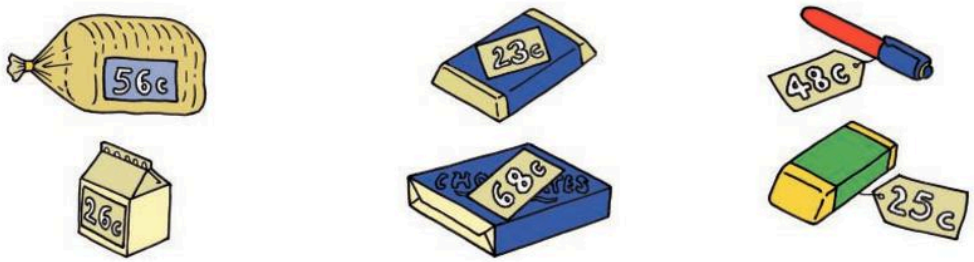
Count on in groups.

Partition the numbers if you need to.

1 **Add. Use a number line if you need to.**

a 23 + 45	**b** 37 + 26	**c** 49 + 17
d 53 + 28	**e** 35 + 45	**f** 24 + 47
g 123 + 19	**h** 324 + 98	**i** 88 + 217

2 **Write a sum. Work out how much each pair of items costs.**



3 **Amit used these cards to make a sum.**
The answer is 55.

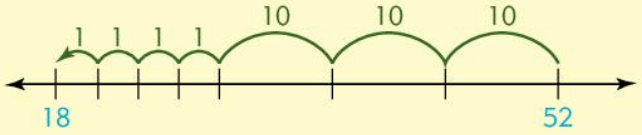
a Use the same cards to make another sum that gives 55.

b Use the same cards. Make two sums that give 64.

More subtracting

You can also use a number line to help you subtract.

52 – 34



Start at 52.

Count back in groups.

1 **Subtract. Draw number lines to help you if you need to.**

a 44 – 12	**b** 63 – 25	**c** 48 – 23
d 24 – 17	**e** 84 – 25	**f** 56 – 28
g 99 – 42	**h** 86 – 49	**i** 87 – 68

2 **How much change would you get from 50 c if you bought these items?**

a

b

c

3 **Precious starts with 75. She turns the number around to make 57.**

75 – 57 = 18

She sees she can do this with 42 as well.

42 – 24 = 18

Try to find some more two-digit numbers that you can turn around and subtract to get 18.

Rounding and estimating

You can use rounding to help you estimate what an answer is going to be.

What is 28 + 21?
28 rounds to 30
21 rounds to 20
30 + 20 = 50
So 28 + 21 must be close to 50.

1 **Round each number to the nearest 10.**
Use the rounded numbers to estimate the answers.

a 49 + 32	**b** 53 + 18	**c** 62 + 33	**d** 29 + 51
e 33 + 62	**f** 12 + 87	**g** 47 + 28	**h** 50 + 14
i 48 + 37	**j** 82 + 21	**k** 51 + 38	**l** 79 + 14

2 **Round each number to the nearest 10. Use the rounded numbers to estimate the answers.**

a 96 – 63	**b** 89 – 26	**c** 38 – 29	**d** 58 – 18
e 98 – 67	**f** 77 – 35	**g** 93 – 12	**h** 91 – 59

3 **Find the actual answers for questions 1 and 2 above.**
Write the answers next to your estimates.

4 **Mr James is a taxi driver. These are the numbers of passengers he carried each day for a week.**

a Round to the nearest 10 the number of passengers carried on each day.

b Estimate how many passengers Mr James carried altogether this week.

Day	Number of passengers
Monday	67
Tuesday	49
Wednesday	81
Thursday	55
Friday	72
Saturday	94
Sunday	98

you can use Workbook page 59

Adding bigger numbers

You can partition both numbers and use place value to add.

255 + 167 200 + 50 + 5
100 + 60 + 7
300 +110 +12 → 410 + 12 → 422

You can also re-order numbers to make it easier to add them.

241 + 54 200 + 40 + 1 + 50 + 4
200 + 90 + 5 → 295

1 **Add. Use the method you find easiest.**

a 246 + 189 **b** 497 + 268 **c** 245 + 347
d 632 + 299 **e** 490 + 324 **f** 718 + 145

2 **Add. Show your working.**

a 74 + 83 + 56 **b** 204 + 193 + 48 **c** 451 + 34 + 29

3 **The students at a school sold cupcakes, cookies and brownies to raise money for charity.**

a Class A sold 45 cookies and 57 cupcakes. How many did they sell altogether?

b Class B sold 32 cupcakes, 39 brownies and 90 cookies. How many did they sell altogether?

c The visitors to the sale bought 249 cupcakes, 145 brownies and 346 cookies. How many did they buy altogether?

d Mrs Jafta made 60 cupcakes and 80 brownies for the sale. How many did she make altogether?

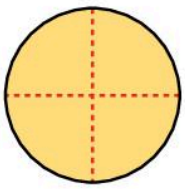
e Her sister made double this amount. How many did she make?

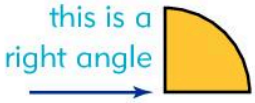
f How many did Mrs Jafta and her sister make together?

you can use Workbook page 60

Making right angles

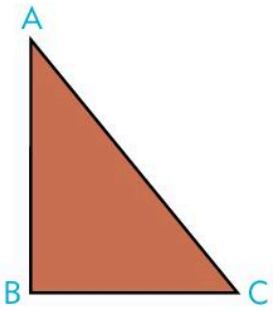
1 Cut out a circle. Fold it into quarters like this to make a right angle.



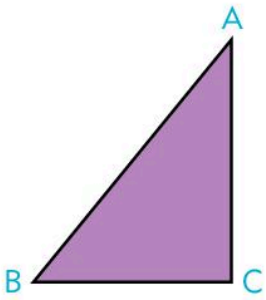


2 Use your right angle to measure the angles in each shape. Write down the letters of the right angles.

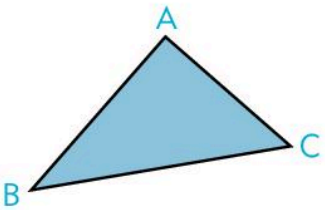
a



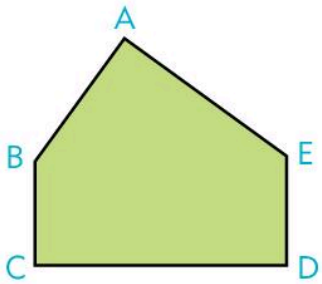
b



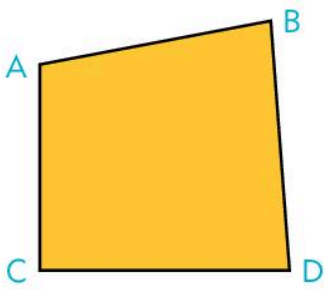
c



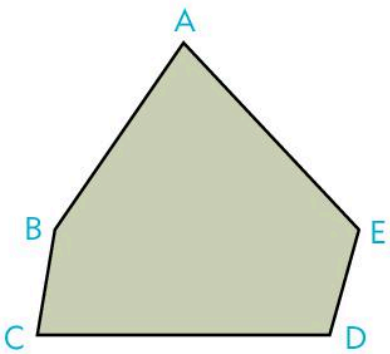
d



e



3 In this shape, write which angles are greater than a right angle and which are smaller than a right angle.



you can use Workbook page 61

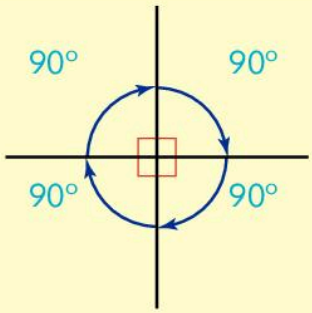
Investigating angles

You need your right-angle measure for this page.

A right angle is a quarter turn.

A right angle is measured in degrees. One right angle is equal to 90 degrees. We write 90°.

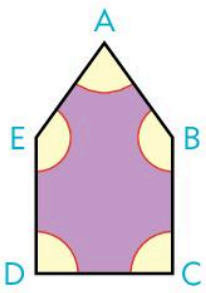
Two right angles are equivalent to a straight line.



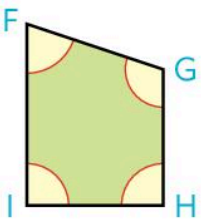
1 Measure the angles in these shapes.

2 Write the letters of the angles. Write <90°, 90° or >90° next to each one.

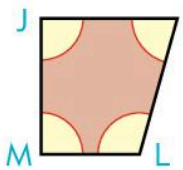
a



b



c



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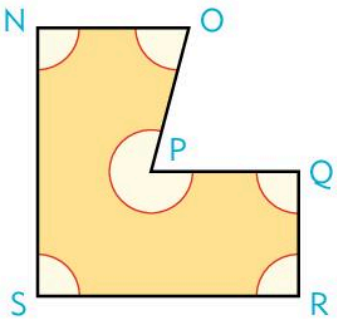
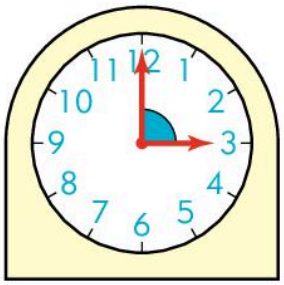


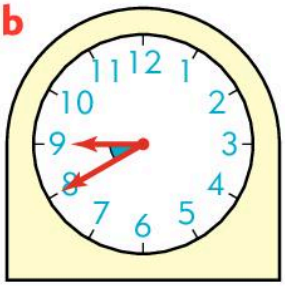
3 Look at the clocks. For each one write whether the marked angle between the hands is <90°, 90° or >90°.

a



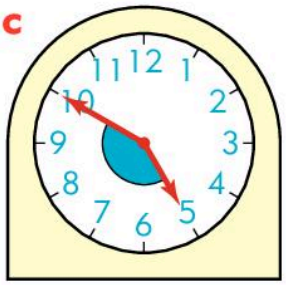
3 o'clock

b



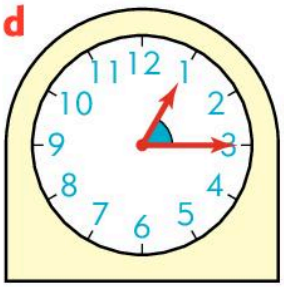
9:40

c



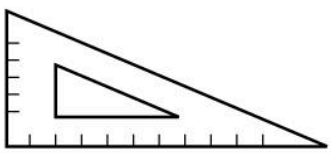
5:50

d



1:15

4 A set square is a special type of ruler. Tell your partner how you could use one to draw and measure right angles.



you can use Workbook page 62

Writing money amounts

Every country has its own coins and notes. Do you know all the coins and notes used in your country?

Many countries use dollars and cents.

There are 100 cents in $1.00.

We write money amounts with a decimal point to show the dollars and cents. For example four dollars and 25 cents would be written as $4.25.

When there are no cents, we write zeros as place holders. For example, five dollars can be written as $5.00.

$5.00 = 500 cents $4.25 = 425 cents.

1 **Write these money amounts in figures:**

a seventy-five cents

b four dollars fifty

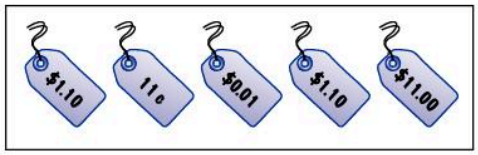
c three dollars and six cents

d ten dollars and ninety-nine cents.

2 **Write the prices in order from cheapest to most expensive.**

a

b



c

d

3 **Mika has 150 2c coins. How much money is this?**

4 **Josh has 63 5c coins. How much money is this?**

5 **A bag of sweets costs 85c. What do two bags cost?**

6 **Nico paid 90c for two lollies. How much did one cost?**

you can use Workbook page 63

Making 100

You already know addition and subtraction facts for multiples of 5 and 10 with a total of 100.

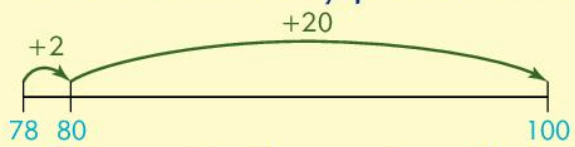
For example: 50 + 50 = 100 and 25 + 75 = 100

You also know all the addition facts for making 10.

1 + 9 = 10 2 + 8 = 10 3 + 7 = 10 4 + 6 = 10 5 + 5 = 10

You can combine these facts to find any pair of numbers with a total of 100.

78 + ☐ = 100



78 + 2 = 80 Count on 2 to get to the next multiple of 10

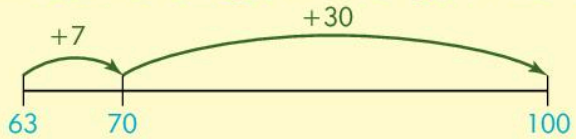
80 + 20 = 100 Use your known facts to get to 100

So 78 + 22 = 100

These facts are very useful when you have to work with money because there are 100 cents in $1.00.

Pete has $1.00. How much change will he get if he buys an apple for 63 cents?

63 + ☐ = 100



He will get 37 cents change.

1 **The students in a class are collecting small coins for a charity. Each student is trying to collect $1.00. Work out how much more each student needs to collect.**

Nick 43 c	Jenna 29 c	Patience 55 c	Zayed 39 c	Mariam 79 c
Petros 71 c	Job 92 c	Zuki 84 c	Mildred 76 c	Josh 49 c
Zulfah 68 c	Terry 67 c	Lizzie 51 c	Susan 64 c	Will 93 c
Mike 99 c	Jess 19 c	Pumla 57 c	Jo 48 c	Ann 68 c

you can use Workbook page 64

Money problems

SALE

These items all $5 each

These items all $10 each

1 **Work out how much it will cost to buy:**

a one of each item on the $5 sale

b one of each item on the $10 sale

c two cars and three teddies

d six calculators

e a plane, a doll and a windmill.

2 **There are five children in a group. They each buy one item in the $5 sale. How much do they spend altogether?**

3 **Amina spends $35 dollars on items that cost $5 each. How many items does she buy?**

4 **Nick bought eight items. Three cost $10 each and the others cost $5 each. How much did he spend?**

5 **Cynthia has $30. What is the biggest amount of toys she can buy?**

6 **Tami wants to buy new calculators for him and four friends. How much will this cost?**

7 **Jenny bought a doll and a car. Sally bought two teddies and a plane. How much did the two girls spend altogether?**

8 **Write three sets of items you could buy with $25 and get no change.**

9 **Make up your own word problems to suit these calculations:**

a $3 \times 10 = 30$

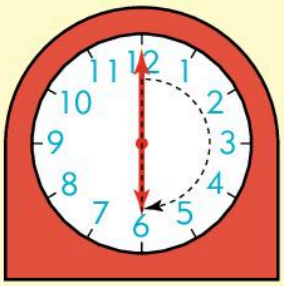
b $30 \div 5 = 6$

c $10 + 10 + 5 + 5 = 30$

d $55 \div 5 = 11$

you can use Workbook page 65

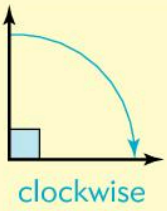
Clockwise and anti-clockwise

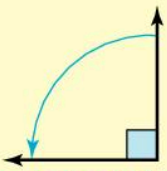


The hands of a clock always turn in the same direction so that they pass through the numbers on the clock face in order from 1 to 12.

This direction is called **clockwise**.

The opposite direction is called **anti-clockwise**.


clockwise


anti-clockwise

Play this game. Work in groups of five. One student calls out instructions using any of these directions:

clockwise, anti-clockwise,
quarter-turn, half-turn,
three-quarters turn, full turn.

Every time the 'caller' gives an instruction, the group must follow correctly. Anyone who gets the direction wrong must sit down. The winners are the last three people standing.

Here are some examples of directions:

- Walk clockwise in a circle.
- Walk anti-clockwise in a circle.
- Make a clockwise movement with your right hand.
- Make a quarter-turn to the right.
- Make a full turn, then take one step forward.
- Make a half-turn, then take two steps to the left.
- Make anti-clockwise circles with your head.

Make up any other directions that you wish!

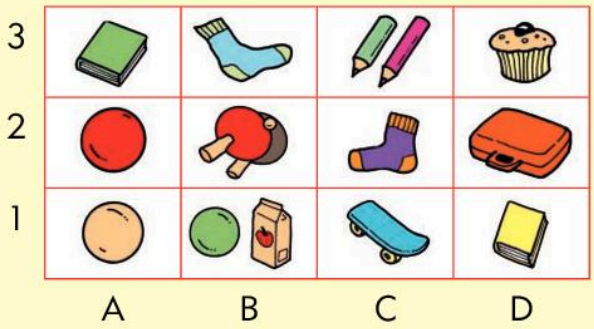
you can use Workbook pages 66–67

Position on a grid

In this classroom, each student has a locker.

The lockers are labelled A to D across each row.

The shelves are labelled 1, 2 and 3.



Each locker has its own name made from a letter and a number.

To find the name you have to go across from a letter and up from a number.

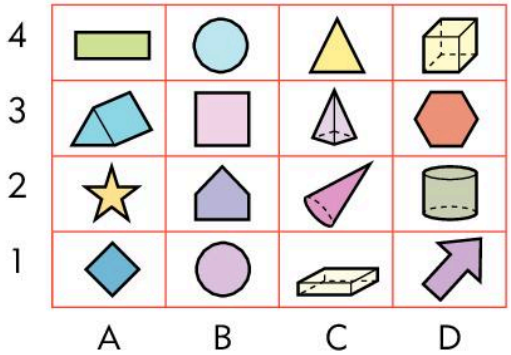
The green book is in locker A3.

1 **Look at the lockers above.**

a What is in B1?
b What is in C3?
c In which locker is the red ball?
d In which locker is the blue sock?

2 **Write down the position of:**

a the rectangle
b the cylinder
c the arrow
d the pentagon
e the cube
f the cuboid.



3 **What shape is in:**

a B3 **b** D2 **c** A1
d C4 **e** B1 **f** C2?

you can use Workbook pages 68–69

Mixed numbers

Jess has a whole cookie.

1 whole

Mika has half a cookie.

$\frac{1}{2}$

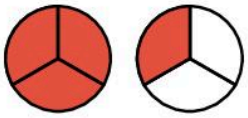
Together they have one and a half cookies.

We can write this as a mixed number: $1\frac{1}{2}$

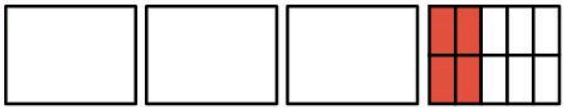
A mixed number has two parts – a whole number and a fraction.

1 **What mixed number is shown?**

a

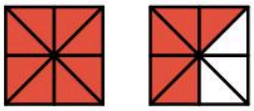


b

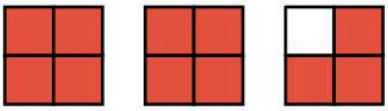


c

d

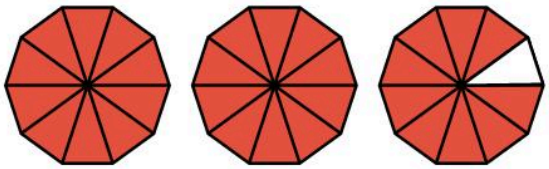


e



f

g



h

2 **Draw your own shape diagrams to show the following mixed numbers.**

a $1\frac{1}{4}$ **b** $3\frac{1}{2}$ **c** $2\frac{1}{8}$

you can use Workbook page 70

Showing mixed numbers on a number line

You can show a mixed number on a number line.

The arrow shows $1\frac{1}{2}$.

You can see that $1\frac{1}{2}$ is halfway between the whole numbers 1 and 2.

1 **Which mixed numbers are shown on these number lines?**

a

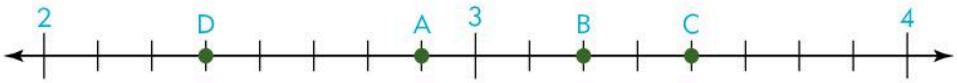
b

c

d

e

2 **Write the letter that matches each mixed number.**



a $2\frac{3}{8}$ **b** $3\frac{2}{8}$ **c** $2\frac{7}{8}$ **d** $3\frac{1}{2}$

3 **Show your partner where these mixed numbers would be on the number line above.**

a $2\frac{1}{2}$ **b** $3\frac{1}{4}$ **c** $3\frac{7}{8}$

d $2\frac{3}{4}$ **e** $3\frac{5}{8}$ **f** $2\frac{1}{4}$

you can use Workbook pages 71–72

Favourite flavours

Rina drew a pictogram to show which ice cream flavours were most popular at her shop.

Remember that each symbol  means 2 ice creams.

Half a symbol  means half of 2, which is 1.

Ice cream cones sold	
Vanilla	
Chocolate	
Strawberry	
Neapolitan	
Banana	
Choc-mint chip	
Key:  means 2 cones	

1 **Write how many of each of these flavours were sold.**

a vanilla **b** banana

c choc-mint chip **d** Neapolitan

2 **Which flavour was most popular?**

3 **Which flavour sold the least?**

4 **How many ice creams do these pictures show?**

a 

b 

c 

5 **Draw your own pictures to show sales of:**

a 4 cones **b** 10 cones **c** 13 cones **d** 11 cones

6 **Do a survey in your class to find out which flavour your friends would buy.**

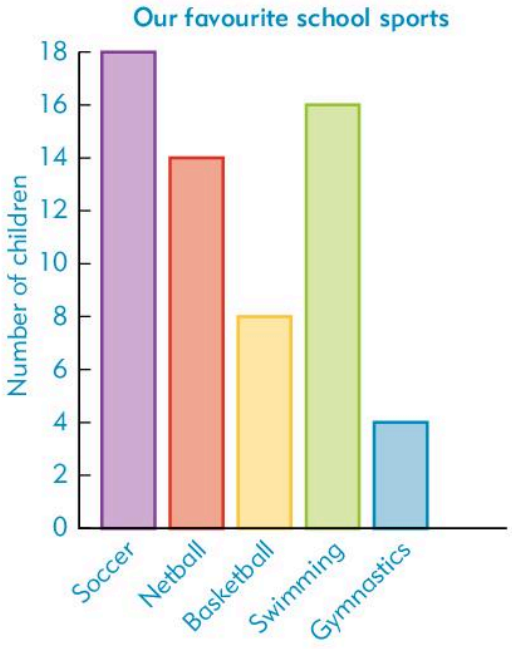
Draw your own pictogram to show your results.

You can make your own symbol to show two children.

you can use Workbook pages 73–74

Reading a bar chart

This bar chart shows the favourite sports of students in a class.



1 Write the answers to these questions.

a Which sport is most popular?

b How many students like swimming best?

c How many students like gymnastics best?

d What is the third most popular sport?

e How many students chose basketball as their favourite sport?

f How many more students like soccer than netball?

2 Draw a Carroll diagram like this one in your exercise book.

	Like basketball	Don't like basketball
Like swimming		
Don't like swimming		

a Ask 10 friends if they like basketball and swimming.

b Add tallies to the table to show their answers.

3 Use the mini-beast survey you did earlier this year. Draw a bar chart to show your results.

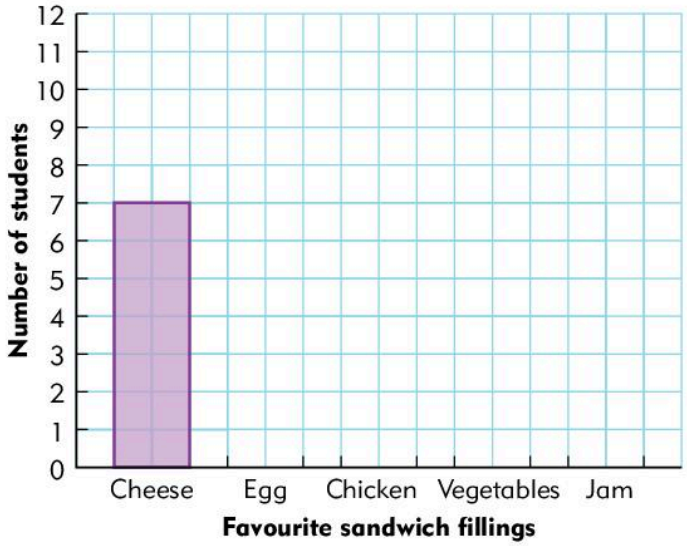
you can use Workbook pages 75–76

Sandwich survey

You will need squared paper.

Amy asked everyone in her class what they liked in their sandwiches. She started to show her results.

Cheese	𝍸 //	7
Egg	𝍸	
Chicken	𝍸 /	
Vegetables	//	
Jam	𝍸 𝍸 //	



1 **Copy Amy's tally table and fill in the missing totals.**

2 **Copy Amy's bar chart and complete it for her.**

3 **Find out which sandwiches your class like.**

a Make a tally table to record the information.

b Draw a bar chart to show the information.

you can use Workbook pages 77–78

Multiplying by 10

What is 9 × 10?
Think of this as 9 tens. Write the 9 in the tens place.
Write a 0 in the units place as a place holder.

Tens	Units	
	9	
9	0	9 × 10 = 90

The answer is 90.

What is 18 × 10? Think of this as 18 tens.
18 tens is the same as 1 hundred and 8 tens

Hundreds	Tens	Units	
	1	8	
1	8	0	18 × 10 = 180

When you multiply a number by 10, the digits move one place left and you write 0 as a place holder in the units place.

1 **Try to multiply these numbers in your head.**

a 16 × 10 **b** 18 × 10 **c** 19 × 10
d 20 × 10 **e** 22 × 10 **f** 25 × 10
g 34 × 10 **h** 36 × 10 **i** 45 × 10
j 52 × 10 **k** 59 × 10 **l** 61 × 10

2 **Crayons are sold in boxes of 10. How many crayons are there in:**

a 12 boxes **b** 21 boxes **c** 39 boxes

3 **A school ordered some boxes of crayons. They received 420 crayons. How many boxes did they order?**

4 **66 children each get a box of crayons. How many crayons is this altogether?**

you can use Workbook page 79

Multiply 'teens' numbers

The numbers from 11 to 19 are 'teens' numbers.

You can partition teens numbers into tens and units. For example:

$11 = 10 + 1 \quad 15 = 10 + 5 \quad 16 = 10 + 6$

Partitioning the numbers makes it very easy for you to multiply them using the times tables facts you already know.

$18 \times 3 = 10 \times 3 + 8 \times 3$
$= 30 + 24$
$= 54$

You can also use a grid to do this.

	10	8
3	30	24

$30 + 24 = 54$

1 **Multiply. Show your working.**

a 12×3 **b** 11×5 **c** 12×5
d 13×3 **e** 14×3 **f** 14×5

2 **Safia buys pens in packs of three. How many pens in:**

a 10 packs **b** 15 packs **c** 19 packs?

3 **There are five sweets in a packet. How many sweets in:**

a 13 packets **b** 16 packets **c** 19 packets?

4 **A bus ticket costs $3.00. How much will it cost for:**

a 11 tickets **b** 17 tickets **c** 18 tickets?

5 **A mini-bus carries 15 passengers. How many passengers in:**

a 3 mini-buses **b** 5 mini-buses?

6 **Salma has saved $18 dollars. Her sister has saved three times as much. How much has her sister saved?**

7 **Josh travels 19 km to work and back each day.**

a How far will he travel in a 5-day working week?

b How far will he travel in 2 working weeks? Tell your partner how you worked this out?

Doubling and halving

What is double 15?

$20 + 10 = 30$

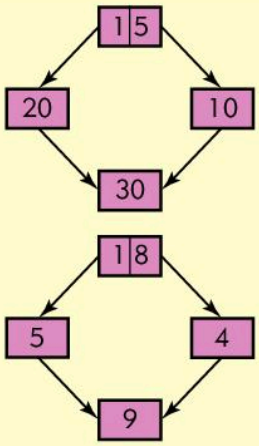
Halving is the inverse of doubling.

What is half of 18?

$\frac{1}{2}$ of $10 = 10 \div 2 = 5$

$\frac{1}{2}$ of $8 = 8 \div 2 = 4$

$5 + 4 = 9$



1 **Double each number.**

a 11 **b** 12 **c** 13 **d** 14
e 15 **f** 16 **g** 17 **h** 18

2 **Complete these statements.**

a ☐ is half of 20 **b** ☐ is half of 50
c ☐ is half of 100 **d** ☐ is half of 70

3 **What is half of each amount?**

a \$12 **b** \$16 **c** \$18 **d** \$30

4 **Mrs Smith uses 13 metres of fabric to make a set of curtains.**

a How much fabric does she need to make two sets?
b How much fabric will she need to make four sets?

5 **Mr Jonas has 28 metres of rope. He wants to cut the rope in half. How long will each piece be?**

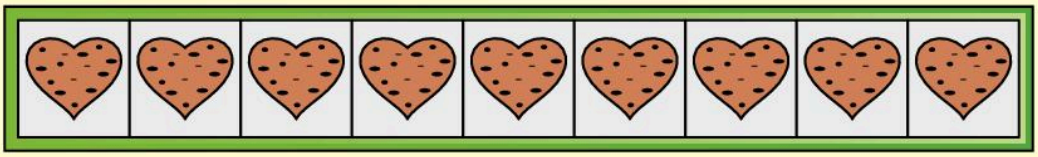
6 **Salman plans to cycle 32 kilometres. He stops for a rest after 12 kilometres.**

a Has he cycled half the distance when he stops?
b How much further does he need to cycle to be half way?

you can use Workbook page 80

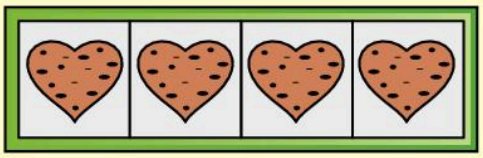
Halving an odd number

Jess baked 9 cookies.



She wants to give half of the cookies to her friend Hannah.

Jess asks: What is half of 9?



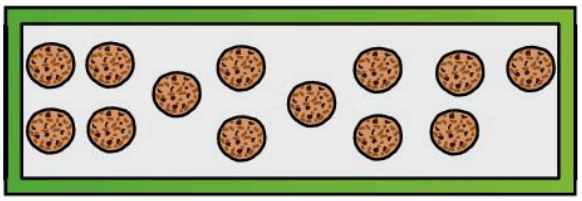
Half of 8 is 4

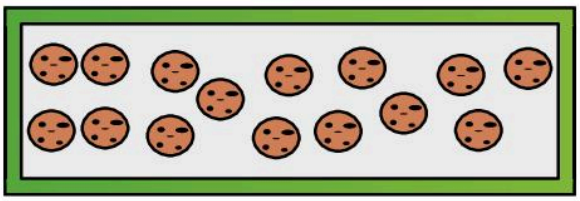
Half of 1 is $\frac{1}{2}$

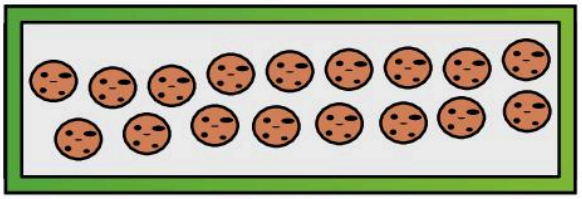
So half of 9 cookies is $4\frac{1}{2}$ cookies.

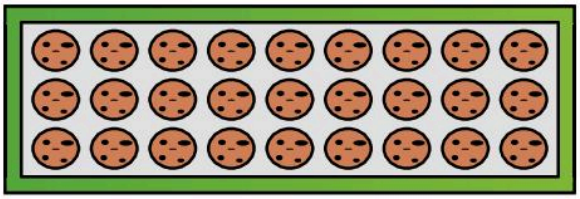
To find half of an odd number find half of the previous even number then add half to compensate for the extra 1.

1 **What is half of each batch of cookies?**









2 **Find:**

a $\frac{1}{2}$ of 29 **b** $\frac{1}{2}$ of 40 **c** $\frac{1}{2}$ of 25

d 33 ÷ 2 **e** 27 ÷ 2 **f** 37 ÷ 2

you can use Workbook page 80

Glossary

B

Bar graph – a graph where bars are used to show numbers or measurements

Block graph – a graph where columns are in blocks, each block shows one thing

C

Centimetre (cm) – a unit of length, your thumb is about 1cm wide

Circle – a round flat shape

Cone – a solid shape with a pointed end and flat circle face

Cube – a solid shape with all its faces square

Cuboid – a solid shape with six faces; all the faces are rectangles

Cylinder – a solid shape with two circular end faces; a tin is a cylinder

E

Estimate – a guess, what you think an answer will be

F

Fraction – a part; one half, one quarter and one third are all fractions

G

Gram (g) – a unit of mass used for light objects

H

Half – when you share things equally into two parts, each part is one half

Hexagon – a six-sided flat shape

Hour – a measure of time; there are 60 minutes in one hour

K

Kilogram (kg) – a unit of mass used for heavy objects

L

Litre (l) – a unit of capacity, how much a container holds

M

Metre (m) – a unit of length used for larger measurements

Millimetre (mm) – a unit of length used for small measurements

Minute – a measure of time, there are 60 minutes in one hour

P

Pentagon – a flat shape with five sides

Pictogram – a type of graph where pictures are used to show information

Prism – a solid shape that is the same all the way through

Pyramid – a solid shape with a flat base and faces that meet at a point

Q

Quadrilateral – a four-sided flat shape

Quarter – one of four equal parts of a whole; when you divide something into four equal parts each part is one quarter

Glossary

R

Rectangle – a four-sided shape with four right-angled corners and opposite sides equal

Right angle – a quarter turn, like the corner of this page

S

Second – a unit of time, there are 60 seconds in one minute

Sphere – a solid round shape, a ball is a sphere

Square – a four-sided flat shape with all sides equal

Subtract – take away or minus

Symbol – a picture used to represent something on a pictogram

Symmetrical – able to be divided into two identical parts

T

Tally – a small mark used to count one object; every fifth mark is drawn across the previous four tallies 𝍸

Third – a fraction, one of three equal parts; if you divide something into three equal parts, each part is one third

Triangle – a flat shape with three sides

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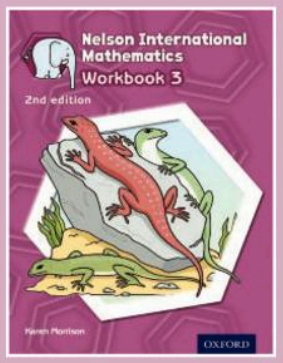

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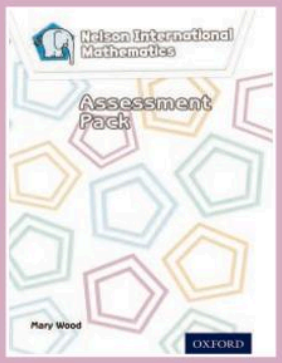

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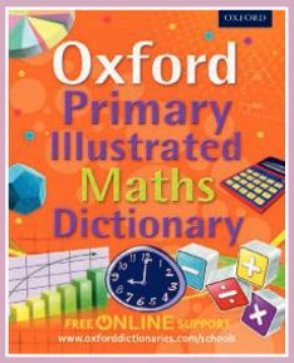

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