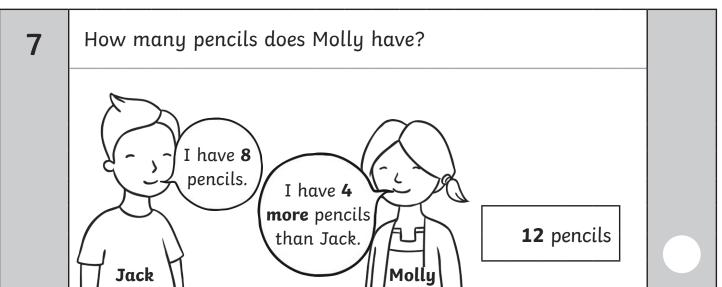
# SATs Survival Year 2 Parents' Practice and Revision Maths - Reasoning Answers

1 10 10 It is also fine to outline individual numbers. 2 26 counters 3 20 25

4 50 10 5 10 20 12 14 16 18 Sort the parcels from **lightest** to **heaviest**. 6 lightest heaviest C В D Α



Match each coin to the correct box. One has been done for you. 8 Less Than More Than



On these cards, the word should match the number. One of these cards is wrong. Draw a cross on the card that is wrong.

13 thirteen 18 X eighty

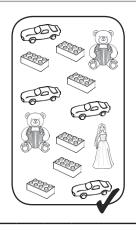
29 twenty-nine

31 thirty-one

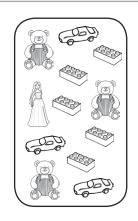
10 Anisha makes a tally chart of her toys.

Toys In My Box	Tally
	1111
	HH 1
	11
	I

Tick **one** box below that shows all of Anisha's toys.





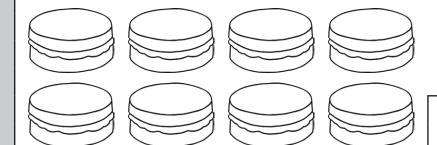






There are 20 cakes. 8 cakes are eaten.

How many cakes are left?



12 cakes

12

Tick the **two** sentences that are correct.

Tick **two**.

A circle has one side.



A circle has straight sides.



A circle has no corners.



A circle has three sides.

13

Write two numbers to make this calculation correct.

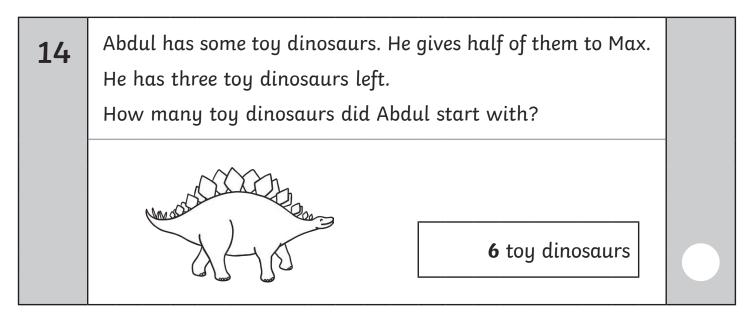


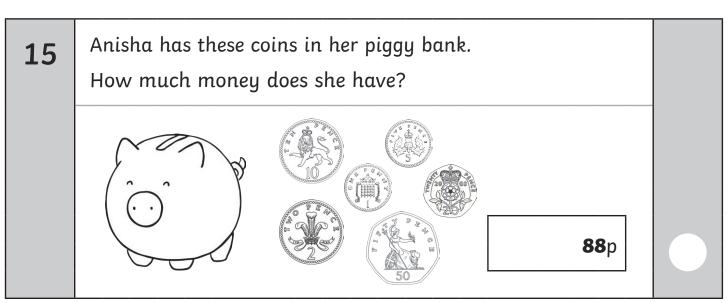
Any numbers acceptable if they total 17.

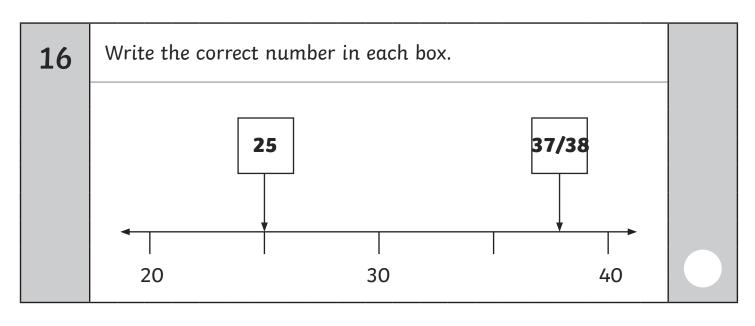
Now, write three numbers to make this calculation correct.

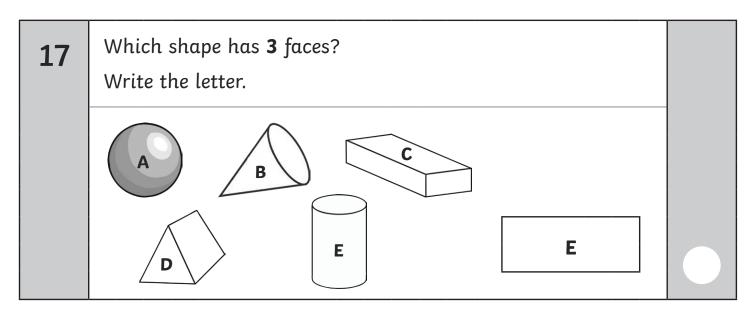


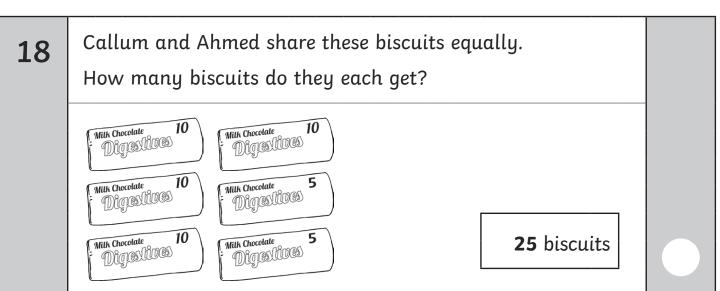
Any numbers acceptable if they total 17.

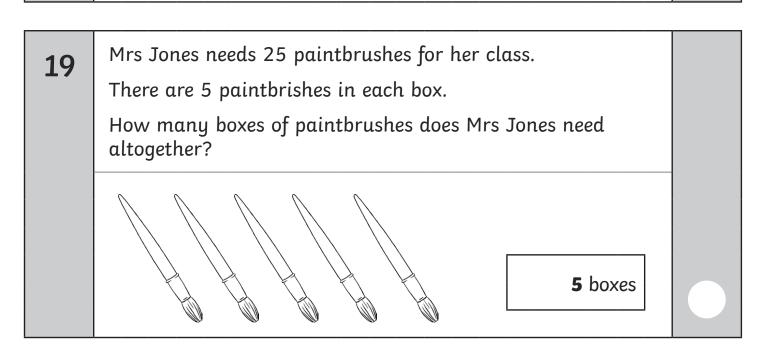










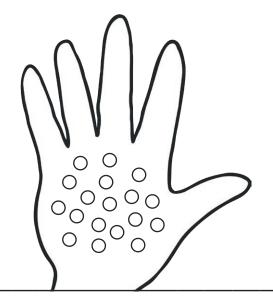




Molly has 25 beads altogether.

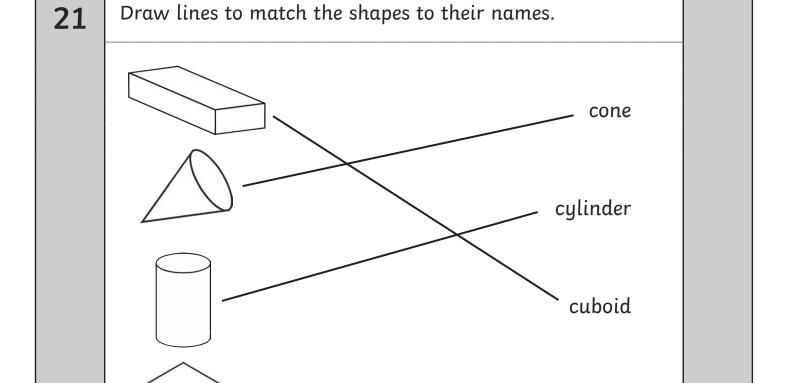
She has 18 beads in one hand.

How many beads does she have in the other hand?

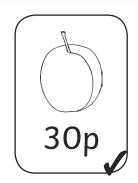


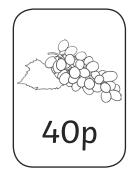
7 beads

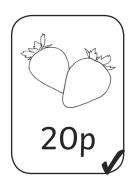
cube



Look at these four fruits:









Anisha buys three different fruits.

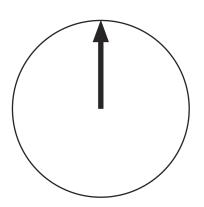
She spends exactly £1.

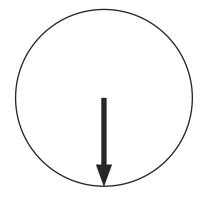
Tick the three fruits that she buys.

23

This arrow is rotated clockwise.

How much is the arrow rotated? Circle your answer.





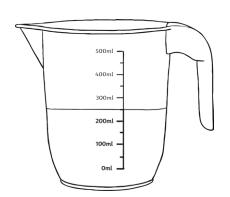
quarter turn

(half turn)

three-quarter fu

full turn

How much water is in the jug?



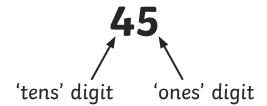
250 millilitres

25

Match the calculations that have the same answer. One is done for you.

### Tens and Ones

A 2-digit number is made up of the 'tens' digit and the 'ones' digit.



The number 45 has 4 tens and 5 ones. What we need to understand is that the 4 tens equal 40, and the 5 ones equal 5.

We can also write this as an addition number sentence.

$$45 = 40 + 5$$

Complete this table.

Number	Numbers of 'Tens'	Number of 'Ones'	Number Sentence
32	3	2	32 = 30 + 2
96	9	6	96 = 90 + 6
12	1	2	12 = 10 + 2
80	8	0	80 = 80 + 0
55	5	5	55 = 50 + 5
7	0	7	7 = 0 + 7



Complete these number sentences. The first one has been done for you.

$$30 + 5 = 20 + 15$$

$$40 + 6 = 30 + [16]$$

$$60 + 1 = 40 + (21)$$

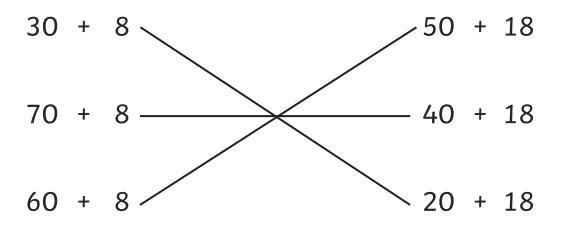
$$90 + 2 = 50 + 42$$

$$20 + 7 = (10) + 17$$

$$50 + 8 = (30) + 28$$

$$70 + 4 = (20) + 54$$

Now, match the sums that have the same answer.



# Words and Figures

Make sure you know how to write the numbers from 1 to 100 in words as well. Learn the 'tens' numbers and the 'teens' numbers, and then look for patterns when you add the numbers 1 to 9 to the 'tens' numbers.

Practise writing these numbers as numerals and words.

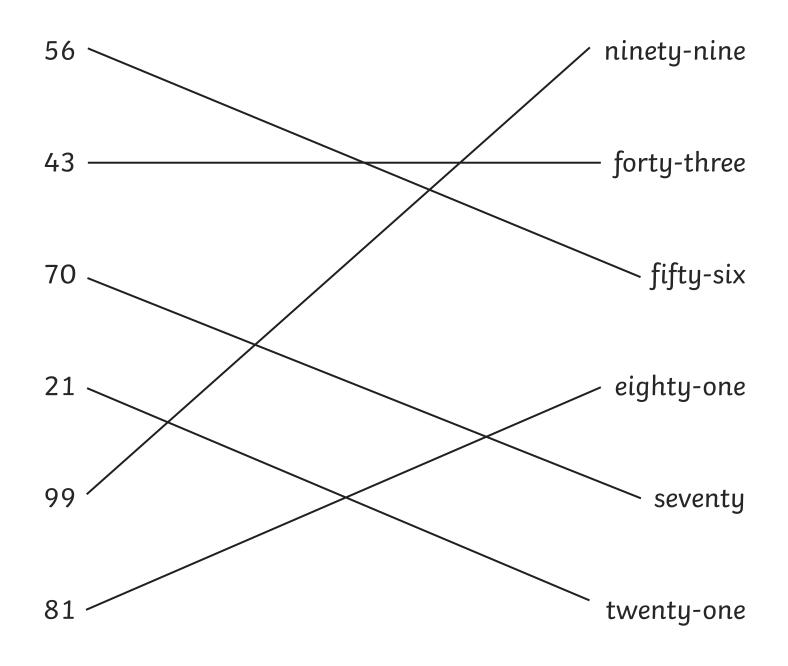
1	one	
2		
	two	
3	three	
4	four	
5	five	
6	six	
7	seven	
8	eight	
9	nine	
10	ten	
11	eleven	
12	twelve	
13	thirteen	
14	fourteen	
15	fifteen	
16	sixteen	
17	seventeen	
18	eighteen	
19	nineteen	

ten	
twenty	
thirty	
forty	
fifty	
sixty	
seventy	
eighty	
ninety	
one hundred	





Match these numbers to their names.



Two of these number cards are wrong. Which ones?





# Ordering Numbers and Reading Scales

Looking at a scale or number line helps us to understand how to order numbers. Knowing the value of the 'tens' and 'ones' in 2-digit numbers helps us see whether a number is bigger or smaller than another one, and this helps us to order them.

Put these numbers in order from smallest to largest.

43, 56, 21, 8, 99, 12, 34

8, 12, 21, 34, 43, 56, 99

29, 19, 39, 9, 99, 79, 59

9, 19, 29, 39, 59, 79, 99

23, 26, 21, 28, 29, 22, 24

21, 22, 23, 24, 26, 28, 29

Put these numbers in order from largest to smallest.

73, 16, 91, 22, 89, 52, 4

91, 89, 73, 52, 22, 16, 4

16, 36, 96, 6, 76, 26, 46

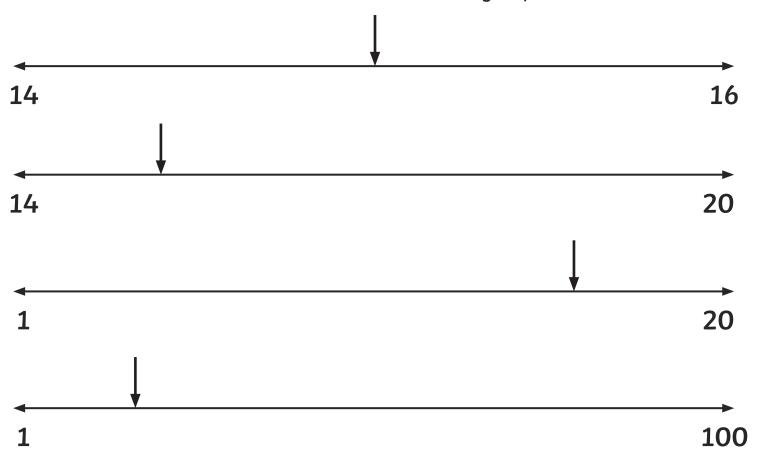
96, 76, 46, 36, 26, 16, 6

64, 65, 60, 67, 68, 63, 61

68, 67, 65, 64, 63, 61, 60



If you are asked to put numbers onto a number line, remember to look at the numbers at the start and finish of the line to help you understand what the number line is showing. For example, if you were asked to put '15' on these number lines, where would you put it?

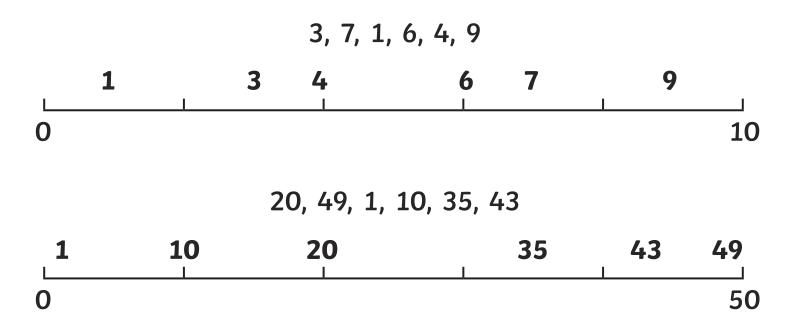


Sometimes the scales or number lines have divisions, which may not have numbers on them. What numbers do you think would go on the divisions here?



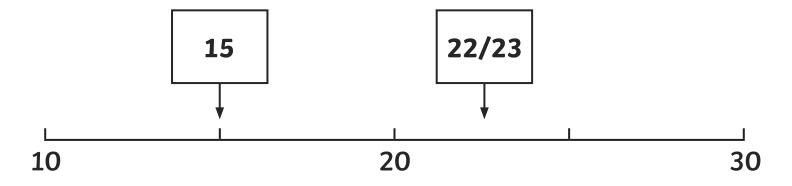
Sometimes you might be asked to put numbers on a number line.

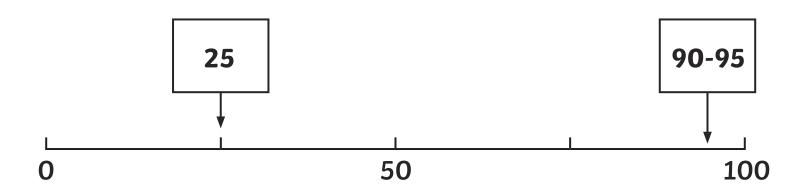
Can you put these numbers in order on the number lines?

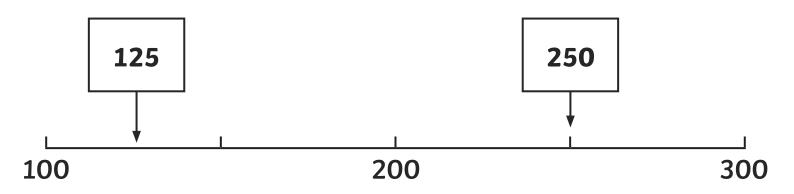


You might be asked to say which number you think is being shown on a number line. This is where looking at the numbers and divisions will really help you.

What numbers are being shown on these number lines? (Think about what the mark half way between each number is showing you).







## Greater Than and Less Than

Put the correct sign in the boxes.

Any number suitable if it makes the equation work.

Try these. Remember to solve the calculation on each side of the box before you choose the symbol.

$$5 + 5 + 5 = 5 \times 3$$

You can also solve problems using the '<', '>' and '=' signs.

The vet has come to weigh the animals at the zoo. Here are the weights he has written down.

lion	80kg
tiger	95kg
chimpanzee	50kg
red panda	45kg

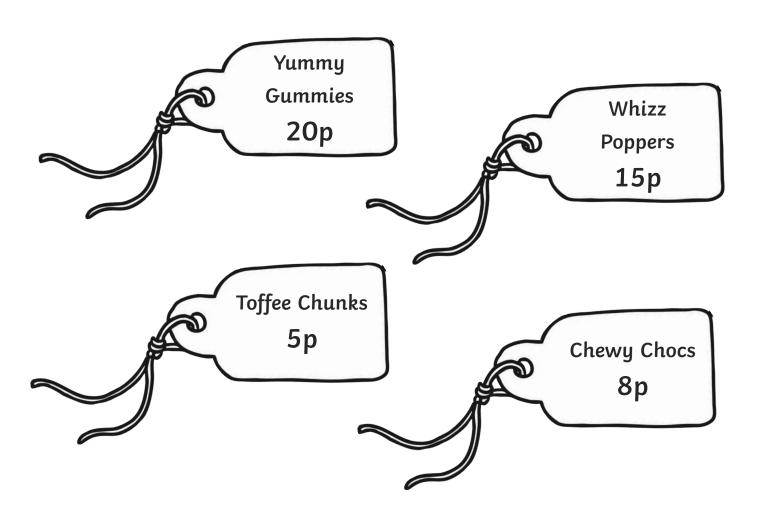
Fill in the boxes with <, > or =.

lion < tiger

chimpanzee > red panda

tiger = chimpanzee + red panda

#### Here is the price of some sweets at the shop:



Fill in the boxes with <, > or =.

Chewy Chocs > Toff

Toffee Chunks

Yummy Gummies

>

**Chewy Chocs** 

Fill in the boxes.

Chewy Chocs <

Whizz Poppers or Yummy Gummies

**Yummy Gummies** 

= Whizz Poppers + Toffee Chunks



#### **Addition Problems**

There are <u>7</u> fish in the school fish tank. Mrs Smith goes to the pet store and buys <u>7 more</u>. How many fish are there now?

$$7 + 7 = 14$$
 fish

Harry says, 'I have eaten <u>4</u> sweets.' Abdul says, 'I have eaten <u>5 more</u> than you.' <u>How many</u> sweets has Abdul eaten?

$$5 + 4 = 9$$
 sweets

Here is a chart showing the number of pencils in a pot.

red	5
blue	9
green	3

How many red and blue pencils are there altogether?

#### 5 + 9 = 14 red and blue pencils

How many red and green pencils are there altogether?

#### 5 + 3 = 8 red and green pencils

What is the total number of pencils in the pot?

$$5 + 9 + 3 = 17$$
 pencils altogether



#### **Subtraction Problems**

There are 18 butterflies on a bush. 7 fly away. How many are left?

18 - 7 = 11 butterflies

There are <u>25</u> children in the classroom. <u>10</u> children go to see the school nurse. <u>How many children are left</u> in the classroom?

25 - 10 = 15 children

Amy and Sunita are building towers from bricks. Amy's tower is <u>20cm</u> tall. Sunita's tower is <u>25cm</u> tall. <u>How much shorter</u> is Amy's tower?

25 - 20 = 5cm shorter

Green Class are measuring the temperature in their classroom over a whole day. They find that the lowest temperature was  $8^{\circ}C$  and the highest was  $14^{\circ}C$ . What is the difference between the two temperatures?

14 - 8 = 6°C



# Adding and Subtracting Tens and 2-Digit Numbers

#### Counting on in Tens

Count on in 10s from these numbers.

4	14	24	34	44	54
35	45	55	65	75	85
1	11	21	31	41	51

Try these calculations. Solve them by counting on in 10s.

$$67 + 10 = 77$$

Now, think about how many tens you need to count on.

$$35 + 20 = 55$$

$$18 + 30 = 48$$



#### **Counting Back in Tens**

Count back in 10s from these numbers.

82	72	62	52	42	32
60	50	40	30	20	10
57	47	37	27	17	7

Now, try these calculations. Solve them by counting back in 10s.

$$34 - 10 = 24$$

$$42 - 10 - 10 = 22$$

$$99 - 10 - 10 - 10 - 10 = 59$$

Now, think about how many tens you need to count back.

$$78 - 30 = 48$$

$$48 - 40 = 8$$

Now, let's try some word problems. Remember to underline the important information before you start.

There are <u>25</u> children in Red Class and <u>23</u> children in Green Class. <u>How many children are there altogether?</u>

There are <u>55</u> children playing football on the playground. <u>14</u> of them are <u>called in</u> for lunch. <u>How many children are left?</u>

$$55 - 14 = 41$$
 children

Ahmed reads <u>16</u> pages of his new book. There are <u>25</u> pages <u>left</u> to read. <u>How many pages does the book have altogether</u>?

Mrs Smith has a box of 35 new pencils. She gives out 18 of them to her class. How many pencils are left?

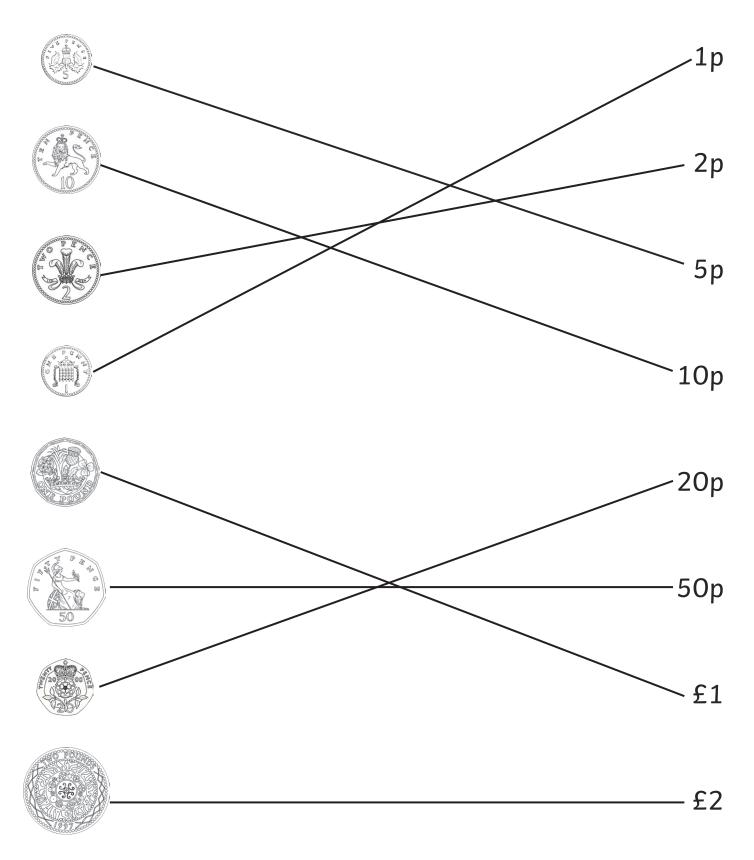
$$35 - 18 = 17$$
 pencils





# Value of Coins

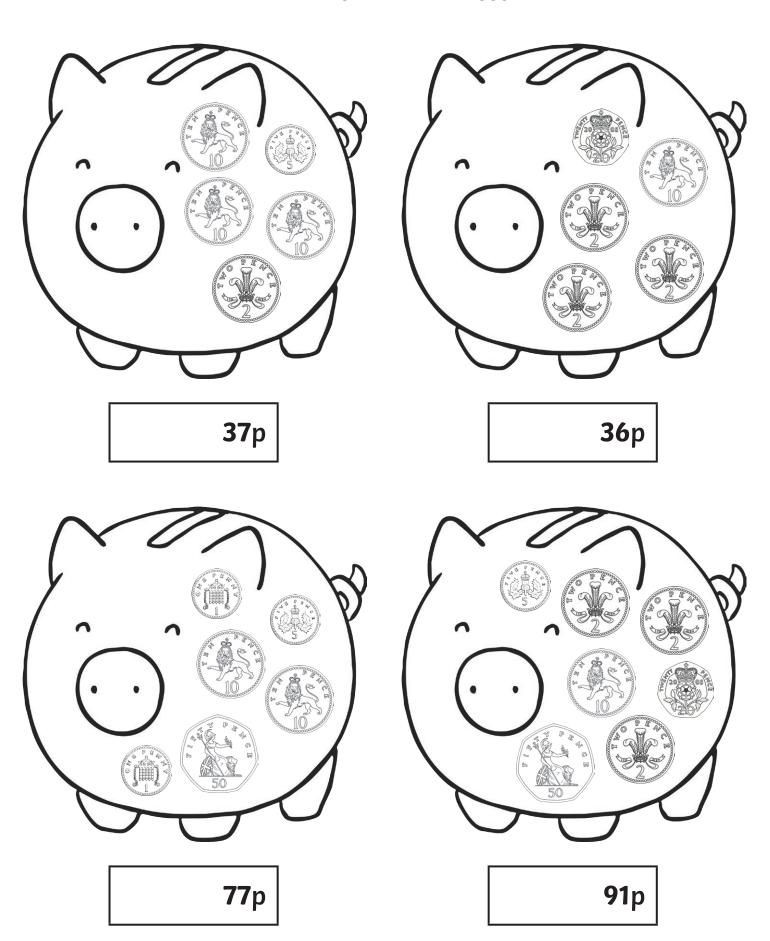
First, let's recap the value of all our different coins. Draw lines to join these coins to their values.





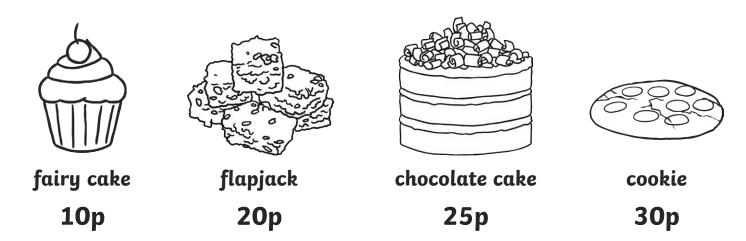


#### How much money is in these piggy banks?

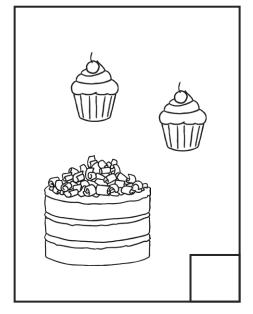


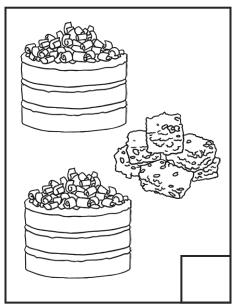


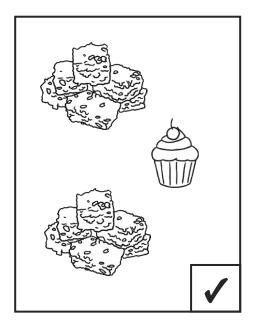
There are some cakes for sale at the summer fair.



Jack spends exactly 50p on cakes. Tick the box that shows the cakes he bought.





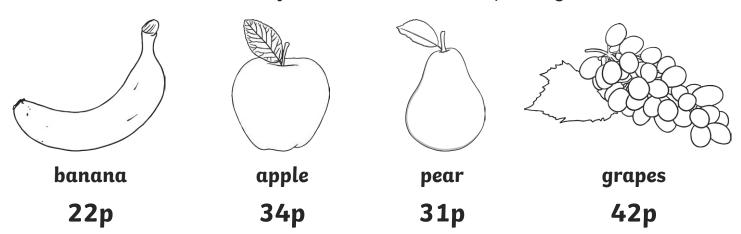


Jack only has 5p pieces in his pocket. He says, 'I will not be able to pay exactly with 5p pieces.' Is he right? Explain how you know.

No, he is not right because he needs to pay 50p and 50 is divisible by 5 (in the 5x table) so he can pay with 5p pieces. He will need 10 of them because  $10 \times 5 = 50$ .



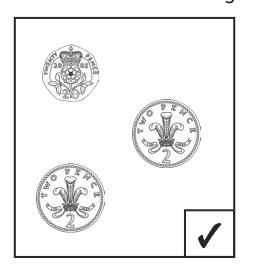
Here is the fruit on sale at the shop today:

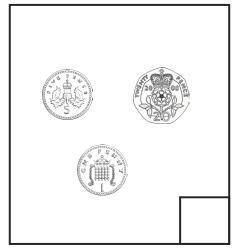


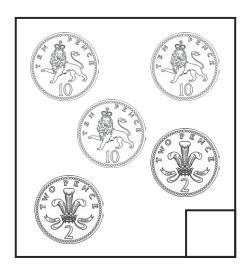
Show the change you would receive if you bought each piece of fruit and paid with a 50p piece.

Fruit	Price	Change from 50p
banana	22p	28p
apple	34p	<b>16</b> p
pear	31p	19p
grapes	42p	8р

Lucy buys an apple and some grapes. She pays with a £1 coin. Tick the box which shows the change she receives.











Use whichever method you prefer to solve these problems.

There are 12 children in the room. How many legs are there?

Each child has 2 legs, which makes 12 lots of 2.

 $12 \times 2 = 24 \text{ legs}$ 

Bananas cost £2 a bunch. William buys 4 bunches. How much does he pay?

 $4 \times 2 = £8$ 

Maddy swims <u>6</u> widths of the pool. Each width is <u>10</u> metres. <u>How far</u> does she swim altogether?

 $6 \times 10 = 60 \text{ metres}$ 

There are 7 days in one week. How many days are there in 5 weeks?

 $7 \times 5 = 35 \text{ days}$ 

Laura needs <u>15</u> litres of cola for a party. One bottle of cola holds <u>2</u> litres and she has <u>8 bottles</u>. <u>Does she have enough cola?</u> Show how you know.

She does have enough. We know this because  $8 \times 2 = 16$  litres so this is more than the 15 litres that she needs.





Use whichever method you prefer to solve these problems.

There are <u>50 toes</u> in the room. <u>How many people</u> are there?

Each person has 10 toes.

 $50 \div 10 = 5$  people.

Joe put <u>three</u> scoops of ice cream onto <u>each</u> cone. He made <u>21</u> scoops altogether. <u>How many cones</u> were there?

 $21 \div 3 = 7 \text{ cones}$ 

A box holds 5 pencils. Mrs Brown needs <u>30</u> pencils for her class. <u>How many boxes</u> does she need?

 $30 \div 5 = 6$  boxes

Ben spends £1 on raffle tickets. He is given 10 tickets. How much is each ticket?

£1 is the same as 100p.

 $100 \div 10 = 10p$ 

Ruby shares <u>23</u> sweets equally between <u>5</u> of her friends. Any sweets left over, she keeps for herself. <u>How many sweets</u> does Ruby get?

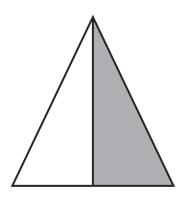
Ruby gets 3 sweets.

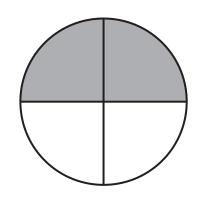
 $23 \div 5 = 4$  (remainder 3)

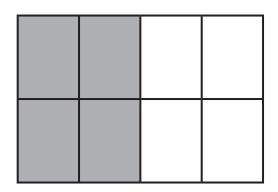


# Fractions of Shapes

First, let's look at finding fractions of shapes. Shade  $\frac{1}{2}$  of each of these shapes.

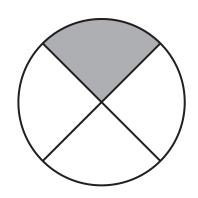


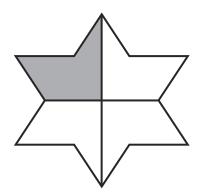


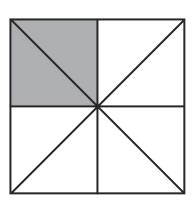


1 section of the triangle, 2 sections of the circle and 4 sections of the rectangle should be shaded. It doesn't matter which sections you shade, as long as the correct number of sections are shaded.

Now shade  $\frac{1}{4}$  of these shapes.



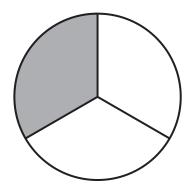


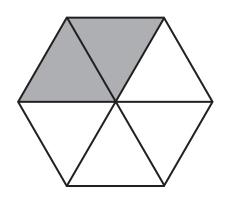


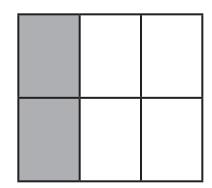
1 section of the first two shapes and 2 sections of the last shape should be shaded. It doesn't matter which sections you shade, as long as the correct number of sections are shaded.



#### Shade $\frac{1}{3}$ of these shapes.

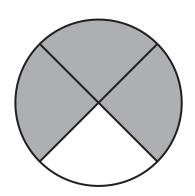


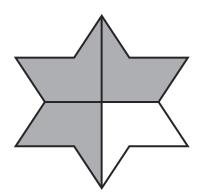


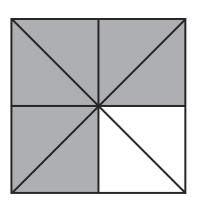


1 section of the circle, 2 sections of the hexagon and 2 sections of the square should be shaded. It doesn't matter which sections you shade, as long as the correct number of sections are shaded.

Shade  $\frac{3}{4}$  of these shapes.







3 sections of the first two shapes, and 6 sections of the last shape should be shaded. It doesn't matter which sections you shade, as long as the correct number of sections are shaded.

# Fraction of Quantities

The same thing applies when we are finding fractions of quantities. You need to make sure you know your 2× and 3× tables and that you are confident with halving. Let's practise. Use objects like buttons, beads or pieces of pasta if this helps you.

	Find ½
2	1
4	2
6	3
8	4
10	5
12	6
14	7
16	8
18	9
20	10





Now, let's try finding  $\frac{1}{4}$ . Remember to find half and then halve again.

	Find ½	Find ½
4	2	1
8	4	2
12	6	3
16	8	4
20	10	5
24	12	6
28	14	7
32	16	8
36	18	9
40	20	10



Now, see if you can find  $\frac{3}{4}$ . Remember, find  $\frac{1}{4}$  then multiply this by 3.

	Find ½	Find ½	Find 3/4
4	2	1	3
8	4	2	6
12	6	3	9
16	8	4	12
20	10	5	15
24	12	6	18
28	14	7	21
32	16	8	24
36	18	9	27
40	20	10	30

#### Finally, let's find $\frac{1}{3}$ .

	Find $\frac{1}{3}$
3	1
6	2
9	3
12	4
15	5
18	6
21	7
24	8
27	9
30	10





There are <u>24</u> children in Gold Class. <u>Half</u> of them are girls. <u>How many are boys</u>?

 $\frac{1}{2}$  of 24 is 12, so there must be 12 girls and 12 boys.

Molly has <u>some</u> pens. She gives <u>half</u> of them to Chloe. Molly has <u>6 pens left</u>. <u>How many did she start with</u>?

6 is half of 12, so she had 12 pens to start with.

Jack has saved £12. He spends  $\frac{1}{4}$  of his money on a new toy car. How much does the car cost? How much does Jack have <u>left</u>?

 $\frac{1}{4}$  of £12 is £3

The car cost £3.

£12 - £3 = £9

He has £9 left.

My cake recipe says I need <u>60ml</u> of milk. I have to add  $\frac{1}{3}$  of the milk to the mixture. How much do I need to add?

 $\frac{1}{3}$  of 60ml is 20ml.

Kim has a piece of ribbon, which is  $\underline{28cm}$  long. She cuts  $\underline{\frac{3}{4}}$  of it off. How long are her two pieces of ribbon?

 $\frac{3}{4}$  of 28 cm is 21cm (1/4 is 7cm, 3 x 7cm is 21cm) so the pieces of ribbon are 21cm and 7cm long.

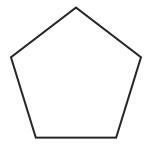




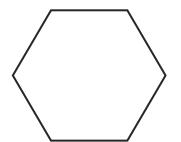
### Properties of 2D Shapes

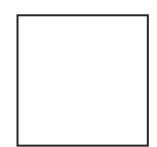
First, let's remind ourselves of the shape names. Label these shapes.

circle square triangle rectangle pentagon hexagon octagon









Name **pentagon** 

Sides 5

Corners 5

Name rectangle

Sides 4

Corners 4

Name **hexagon** 

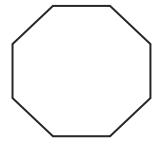
Sides 6

Corners 6

Name **square** 

Sides 4

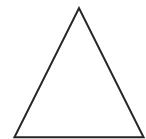
Corners 4



Name octagon

Sides 8

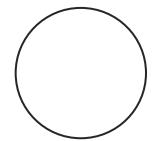
Corners 8



Name triangle

Sides 3

Corners 3



Name circle

Sides 1

Corners no corners

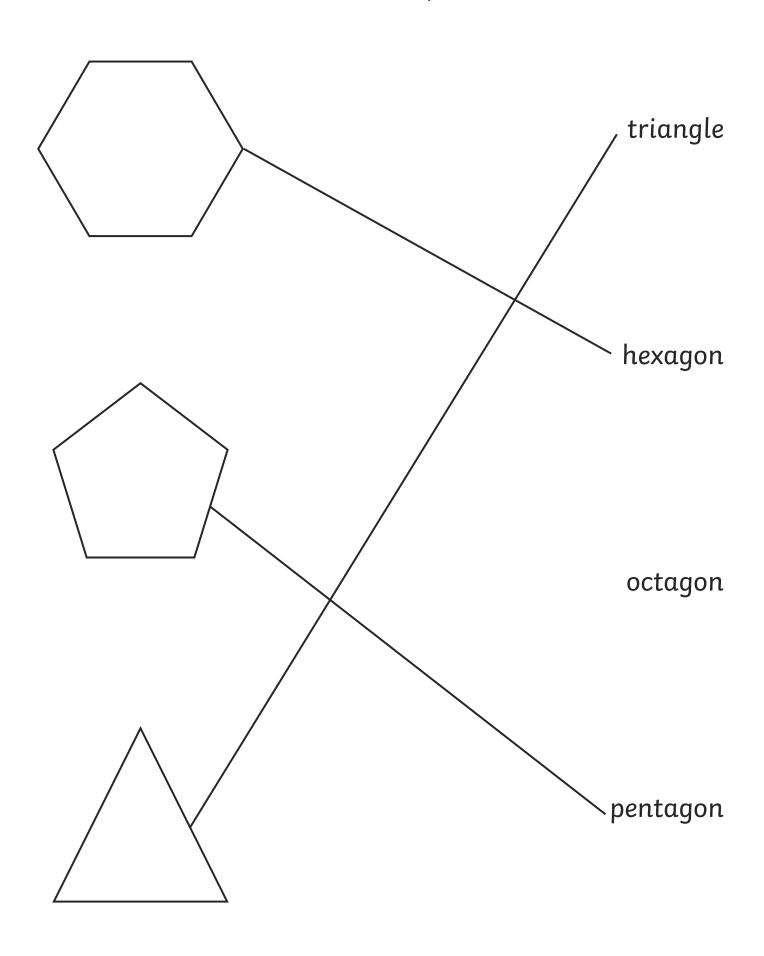
Now, write how many sides and how many corners each shape has.

Try some questions on the next page.





Draw lines to match these shapes to their names.







Write these shape names in the correct place in the Carroll diagram.

square hexagon rectangle circle

4 Sides or Less	More Than 4 Sides
square rectangle circle	hexagon

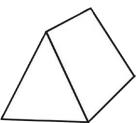
Which statements are correct? Tick <b>two</b> .	
A square has four sides.	<b>✓</b>
A square is symmetrical.	<b>✓</b>
The sides of a square are not the same length.	
A square has one curved side.	



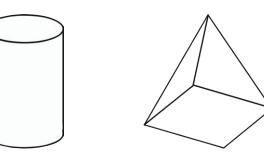
## **Properties of 3D Shapes**

First, let's remind ourselves of the 3D shape names. Label these shapes.

sphere cuboid cylinder triangular prism cube cone square-based pyramid triangular-based pyramid







Edges 8

Vertices 5



Name **triangular prism** Faces 5

Name cylinder Faces 3 Edges 2

square Name **based-pyramid** Faces 5

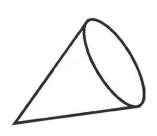
Faces 1 Edges 0 Vertices 0

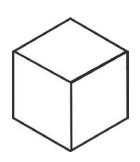
Name **sphere** 

Vertices 6

Edges 9

Vertices 0







Name **based-pyramid** 

Name **cuboid** 

Faces 6

Edges 12

Vertices 8

Faces 2 Edges 1 Vertices 1

Name cone

Name cube Faces 6 Edges 12

Vertices 8

Faces 4 Edges 6 Vertices 4

Now, write how many faces, edges and vertices each shape has.

#### **Shape Problems**

Adam is painting by printing with a 3D shape. His 3D shape is a triangular prism. What two 2D shapes can he make?



He can make triangles and rectangles.

Mo says, 'A cone has no vertices.' Is he correct? Explain your answer.

No he is not right. A cone has one vertex.

Priya is holding a 3D shape. She says, 'My shape has five faces. Four of the faces are the same shape and one is different.' What shape is Priya holding?

She is holding a square-based pyramid.





Write these shape names in the correct place in the Venn diagram.

sphere cube cone cylinder pyramid

sphere cube

cube

cylinder pyramid

All Curved Faces All Flat Faces

Which statements are correct? Tick two.

A square has four sides.

/

A square is symmetrical.

**/** 

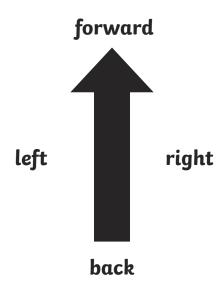
The sides of a square are not the same length.

A square has one curved side.



#### **Position and Direction**

First, let's look at movement and turning. Look at this arrow:



Draw what the arrow would look like if it turned to the left.

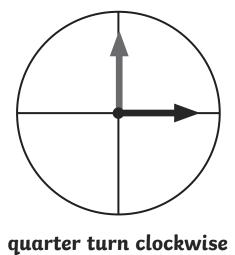


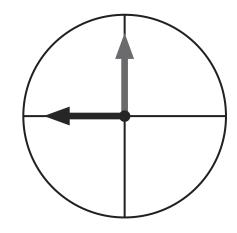
Now, draw what it would look like if it turned to the right.



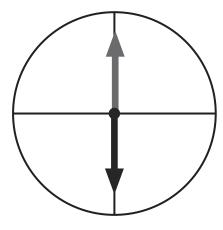


Draw arrows to show these movements. The grey arrow shows where to start. The first one has been done for you.

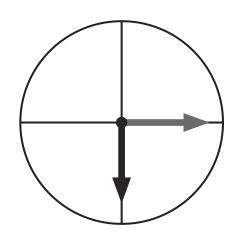




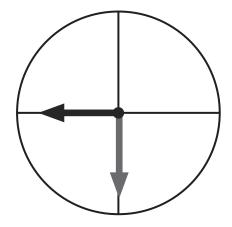
three-quarter turn clockwise



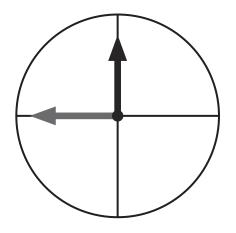
half turn anti-clockwise



quarter turn clockwise



three-quarter turn anti-clockwise

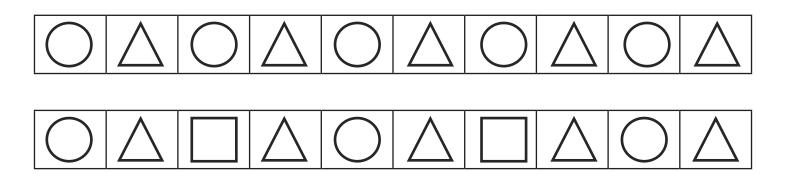


quarter turn clockwise



**15, 20,** 25, 30, 35, **40, 45, 50** 

1, 3, 5, **7, 9, 11, 13,** 15



Look at this sequence. What would the 10th term be? 20

2, 4, 6, 8, 10, 12

Look at this sequence. What would the 8th term be? 24

3, 6, 9, 12

Look at this sequence. What would the 9th term be?







Look at this sequence. What would the 12th term be?















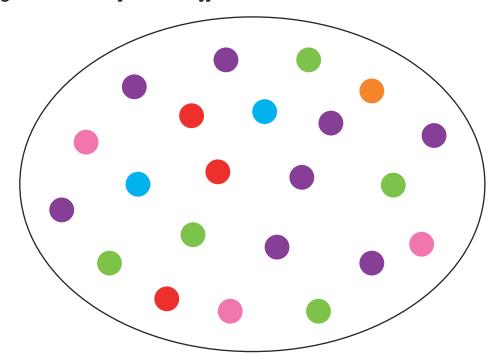


Fill in the missing sections in these sequences.

Fill in the missing sections in these sequences.

## **Tally Charts**

Lily has a pack of coloured sweets. She empties them out and looks at how many there are of each different colour. Here are her sweets:



Lily decides to count the colours and record this information in a tally chart. Can you finish the tally chart for her?

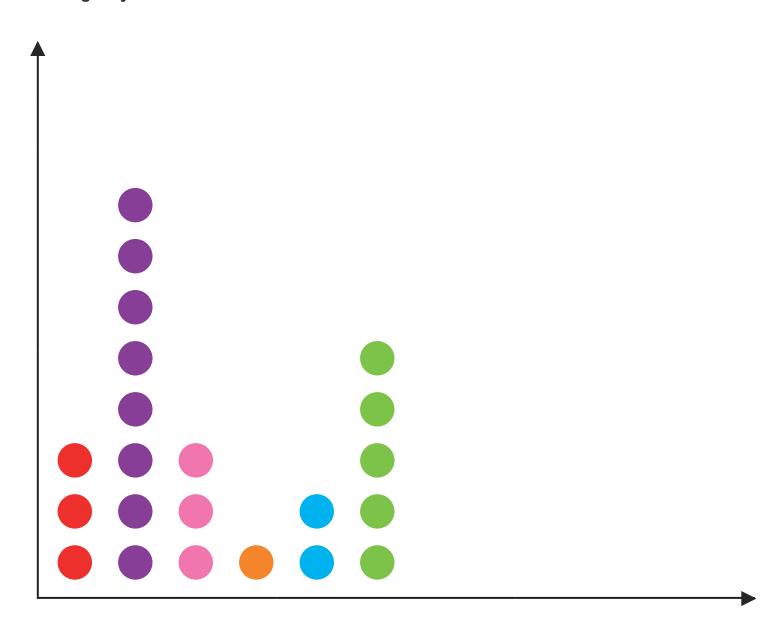
Colour	Tally	Number
red	111	3
purple	HH III	8
pink	111	3
orange	I	1
blue	11	2
green	тн	5





# Pictograms

Next, Lily decides to make a pictogram. She has made a start. Can you finish it?

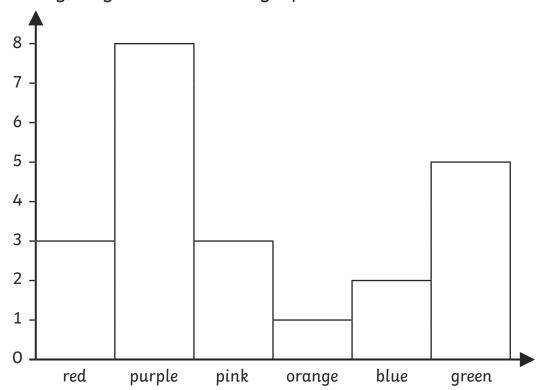






### **Block Graphs**

Finally, Lily makes a block graph.



Which colour is the most popular? purple

Which two colours have the same number of sweets? red and pink

How many sweets are there altogether? 22

How many more purple sweets are there than blue? 6

Lily eats 3 purple sweets, 2 green sweets and 2 red sweets. What will the tally chart look like now?

Colour	Tally	Number
red	1	1
purple	ш	5
pink	111	3
orange	1	1
blue	11	2
green	111	3

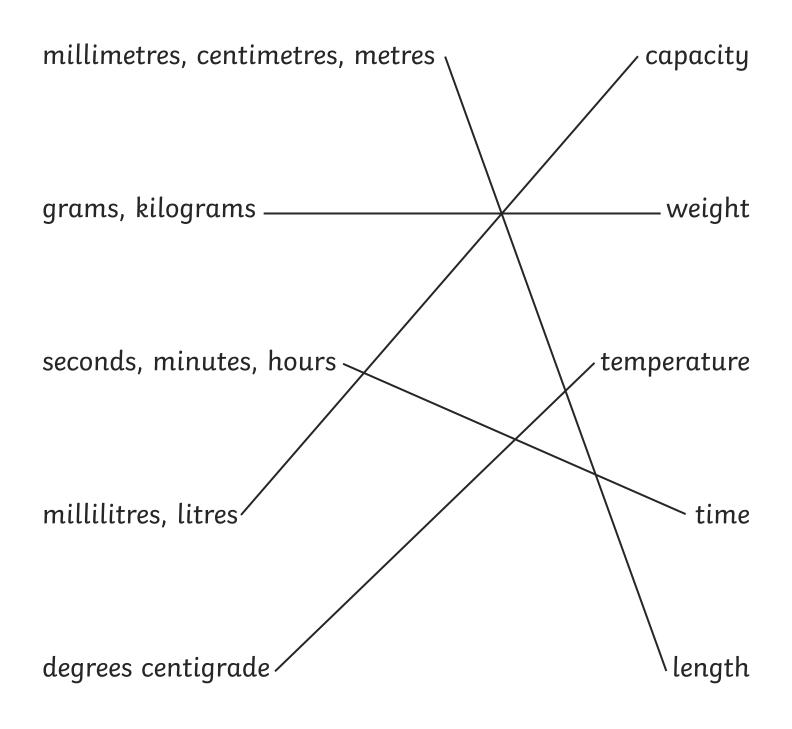
How many sweets are left? 15





# Units of Measurement

First, let's look at the units we use to measure. Draw lines to match the units to the measures. The first one has been done for you.





To save time, we can write some units of measurement in a shorter way. Can you complete the table?

metres	m
millilitres	ml
centimetres	cm
kilograms	kg
degrees Centigrade	°C
grams	g
millimetres	mm
litres	Į.

It is important to use the right unit when you are measuring. What unit would you use to measure these things?

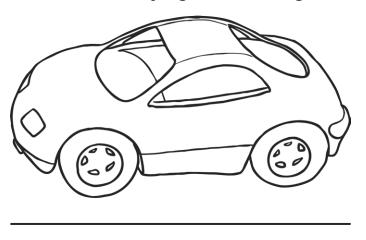
the water in a swimming pool	litres
a pencil	centimetres
the temperature in your classroom	degrees Centigrade
the liquid in a cup of tea	millilitres
the distance from your home to Australia	kilometres



## Measuring Length

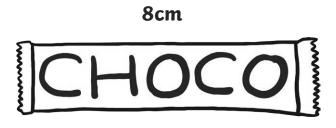
Use a centimetre ruler to measure these objects. Remember that you need to measure from the 'zero' marker (not the end of the ruler).

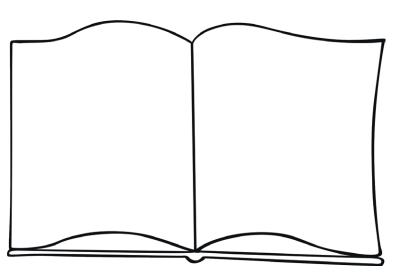
Don't forget to write your answer using 'cm', e.g. '5cm'.

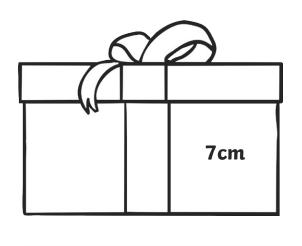




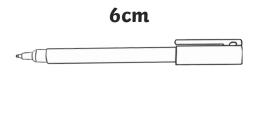








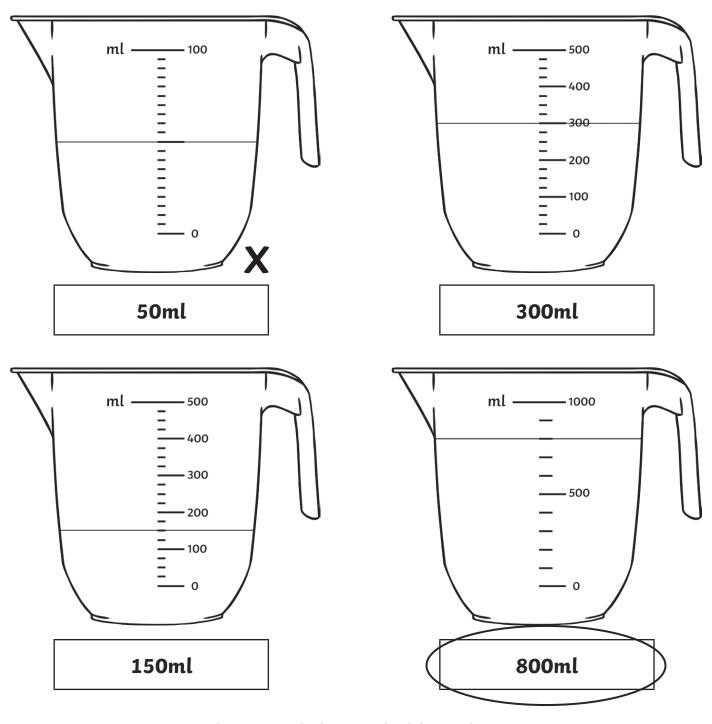






#### **Measuring Capacity**

Being able to read a scale is important when you are measuring. Measuring jugs will have a scale on them but they will not show every single millilitre. Have a go at reading the scales on these jugs. Don't forget to write your answers in millilitres (ml).



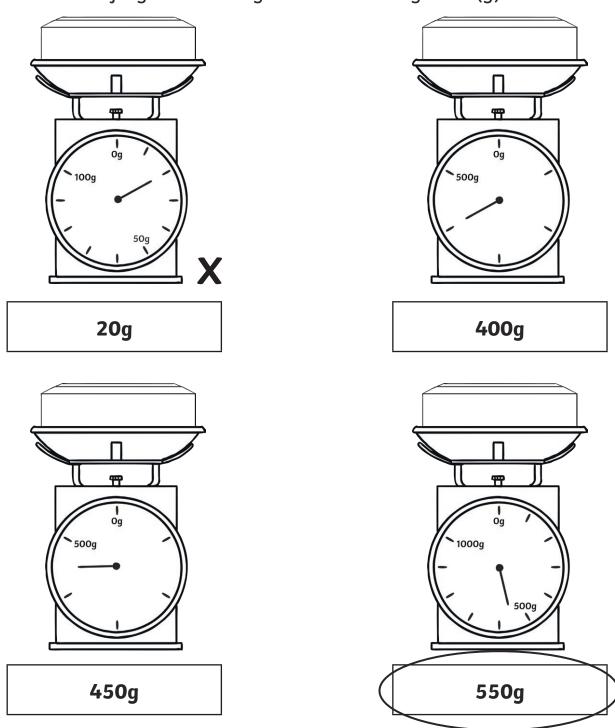
Draw a circle around the jug holding the most water.

Put a cross next to the jug holding the least water.



### Measuring Weight

Being able to read a scale is important when you are measuring. Weighing scales will have a numbered scale on them but they will not show every single gram. Have a go at reading the weights shown by these scales. Don't forget to write your answers in grams (g).



Draw a circle around the scale with the heaviest parcel.

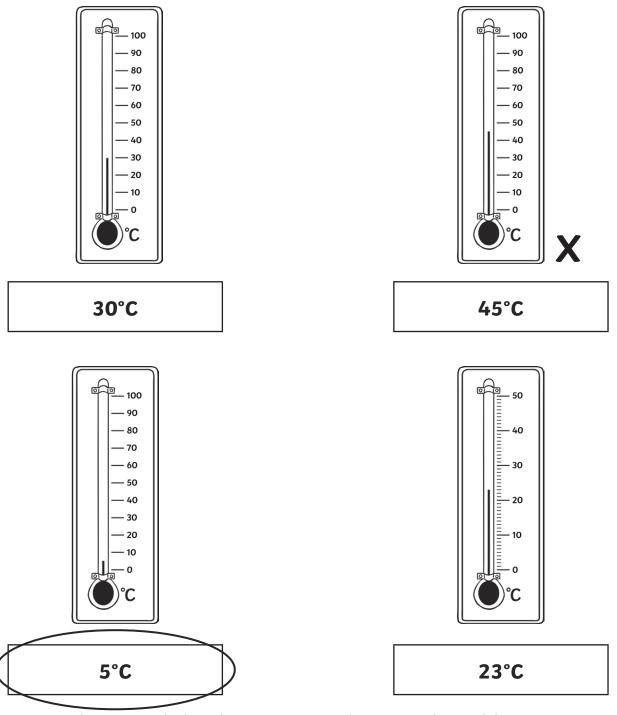
Put a cross next to the scale with the lightest parcel.





#### Measuring Temperature

Being able to read a scale is important when you are measuring. Thermometers will have a numbered scale on them but they will not show every single degree. Have a go at reading the temperatures shown by these thermometers. Don't forget to write your answers in degrees Celcius (°C).



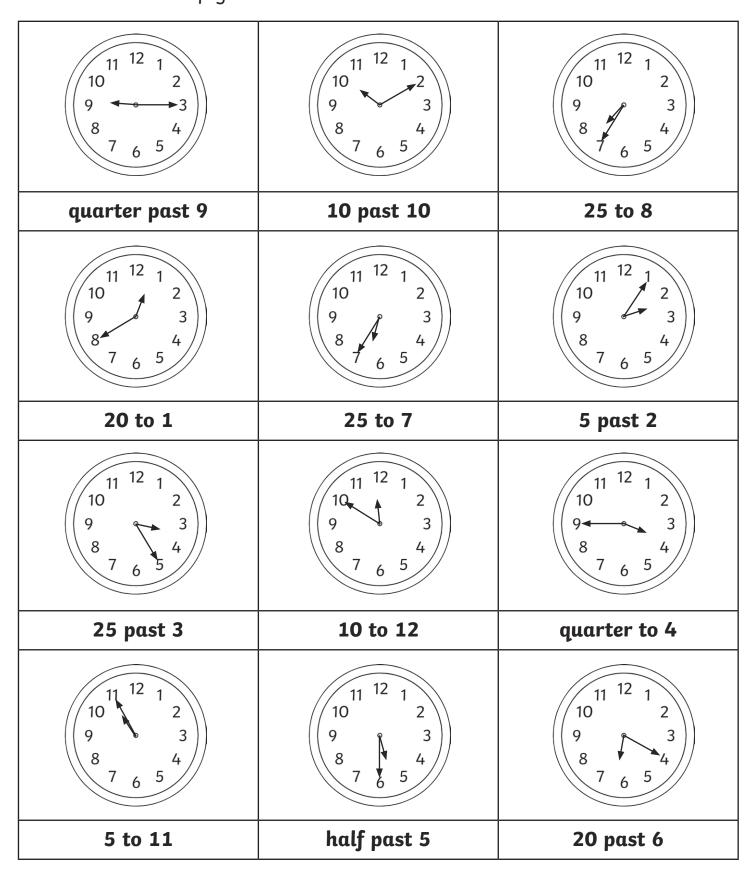
Draw a circle around the thermometer showing the coldest temperature.

Put a cross next to the thermometer showing the hottest temperature.



#### What Time Is It? - Times Past and To

Use the clock to help you draw hands on each clock to show the correct time.



**Challenge:** Choose four of the times shown above. What might you be doing at these times?

