

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



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# Information and Guidance for Parents

Welcome to the Twinkl SATs Revision and Practice Guide for the 'reasoning' element of mathematics. This booklet is intended to help you to support your child as they learn, practise and consolidate their reasoning skills. The booklet is based on the 2016 KS1 SATs Maths Paper 2 (reasoning) test and is not a comprehensive guide to all the maths expectations at the end of KS1.

## What Is Reasoning?

Mathematical reasoning requires children to apply their learning and understanding of all aspects of maths that they have been taught so far. Although there is a separate arithmetic paper (the branch of maths that focusses on numbers and counting), children will need to continue to use their arithmetic skills in the reasoning paper as well. In key stage 1 (year 1 and year 2), children are taught the following:

### Place Value

- counting on and back in 1s, 2s, 5s and 10s to and from 100
- using a number line to order numbers and aid calculation
- understanding the value of the digits in a 2-digit number
- reading and writing numbers to 100
- comparing and ordering numbers, e.g. knowing that 56 is smaller than 65

### Calculation

- reading and understanding number sentences using the addition (+), subtraction (-), multiplication (x), division ( $\div$ ) and equals (=) signs
- using 'number bonds' for numbers to 20 (i.e. knowing pairs of numbers that make 5, 10 or 20 by heart to aid mental calculations) and using this knowledge to make calculations up to 100, e.g. if I know  $6 + 4 = 10$ , I also know that  $60 + 40 = 100$
- multiplication tables and associated division facts for 2x, 5x and 10x tables
- adding and subtracting one-digit and two-digit numbers
- adding 3 numbers
- knowing that addition and multiplication are commutative (can be done in any order) but subtraction and division are not
- understanding the relationship between addition and subtraction, and between multiplication and division so that they can solve missing number problems such as  $9 + ? = 14$  and check their own calculations
- solving problems using addition, subtraction, multiplication and division

### Fractions

- recognising, finding, naming and writing fractions:  $\frac{1}{2}$ ,  $\frac{1}{3}$ ,  $\frac{1}{4}$ ,  $\frac{2}{4}$  and  $\frac{3}{4}$  of a length, shape, set of objects or quantity
- writing simple fractions, e.g.  $\frac{1}{2}$  of 6 = 3
- understanding that  $\frac{1}{2}$  and  $\frac{2}{4}$  are the same

## Measurement

- choosing and using appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature (°C) and capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels
- comparing and ordering lengths, mass, volume/capacity and recording the results using  $>$ ,  $<$  and  $=$
- recognising and using symbols for pounds (£) and pence (p); combining amounts to make a particular value
- finding different combinations of coins that equal the same amounts of money
- solving simple problems in a practical context, involving addition and subtraction of money of the same unit, including giving change
- comparing and sequencing intervals of time
- telling and writing the time to five minutes, including quarter past/to the hour and drawing the hands on a clock face to show these times
- knowing the number of minutes in an hour and the number of hours in a day

## Properties of Shapes

- identifying and describing the properties of 2D shapes, including the number of sides and line symmetry in a vertical line
- identifying and describing the properties of 3D shapes, including the number of edges, vertices and faces
- identifying 2D shapes on the surface of 3D shapes
- comparing and sorting common 2D and 3D shapes and everyday objects

## Position & Direction

- ordering and arranging combinations of mathematical objects in patterns and sequences
- using mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)

## Statistics

- interpreting and constructing simple pictograms, tally charts, block diagrams and tables
- asking and answering simple questions by counting the number of objects in each category and sorting the categories by quantity
- asking and answering questions about totalling and comparing categorical data

## How to Use This Booklet

It is up to you how you use this booklet but your child should not attempt to plough through it all in one go. There will be areas that your child already understands well and others where they need a little more practise. You can ask the class teacher which areas they suggest you focus on and you can also ask your child to do the initial quiz on page 6, which will give you an idea of the areas where they may be weaker and which you need to concentrate on. The answers section for this quiz has page references by each question so you can find the practice pages to work on.

Children are typically taught a range of different ways to carry out calculations and solve problems in maths. At this stage, whilst many are using mental strategies, others continue to rely on what are called 'concrete' methods - i.e. using objects to help them or making marks/jottings with a pencil and paper. Encourage your child to use whichever method they find most useful and provide them with objects to use - pieces of dry pasta, beads, buttons or building bricks are all suitable. If your child needs to write things down in the space below each question, encourage them to do so if this helps them to work out the answer.

### **Supporting Your Child's Learning and Wellbeing**

Sadly, children can become anxious about the prospect of taking tests in school. Try to keep these activities fun and low-key and only complete a couple of pages when you feel your child is receptive - i.e. not when they are tired, hungry, thirsty or in need of a run around. Celebrate progress rather than scores - if your child speeds through a page with ease, that's great but if they are finding things a little trickier, celebrate their effort and determination, rather than results.

You could use the optional reward chart at the end of the pack to reward your child for effort, concentration or progress. Let your child choose a reward that they would like to receive and work towards that reward. There are also downloadable 'Reward Cheques' available on the Twinkl website - click [here](#) for this resource.

For practise and revision for Maths Paper 1 (which focuses on arithmetic), please see the Twinkl SATs Survival Year 2 Parents' Maths - Arithmetic Practice and Revision Activity Booklet. Click [here](#) to access this resource.

# Reasoning Quiz – Initial Assessment

The first part of the reasoning paper is a mental maths section (questions 1 to 5). You will need to read the following questions to your child and let them complete their answers on the paper. Explain to your child that you will read some questions aloud for them to answer. Explain that you will read each question twice only, leaving a short gap in between. Tell your child that they must listen very carefully when you read the questions. Talk to your child about where they should write their answers and explain that they can use any blank space on the page to do working out. Ask your child to turn to question 1. After reading the question, remember to repeat it. Repeat the bold text only.

## Question 1

**Circle the correct number of tens and ones to make forty-five.**

## Question 2

**There are twelve blue counters and fourteen red counters in a box. How many counters are there in total? Write your answer in the box.**

## Question 3

**Listen to the number sequence:**

**Zero, five, ten, fifteen...**

**Write the next two numbers in the sequence.**

## Question 4

**Three numbers add up to sixty-three. The first number is fifty. The second number is three. What is the third number? Write your answer in the box.**

## Question 5

**Write down all the even numbers between ten and twenty. Write them in the box.**

Once your child has completed the first five questions, they can proceed with the rest of the paper. If your child needs support with reading the questions, it is fine for you to do this as this is what would happen in the real test situation. However, you should not give your child any clues as to how to answer the question you have read out and you should not explain any mathematical terms or symbols to them.

Once the test is complete, go through it together and discuss any areas your child found tricky. The answers section, which follows on from the test, contains references to the pages in this booklet, which you can use to help your child to practise and revise any skills they have found tricky.

1

10 10 10 1 1 1  
10 10 1 1  
10 10 10 1 1 1

2

counters

3





4

50      3

5

10

20

6

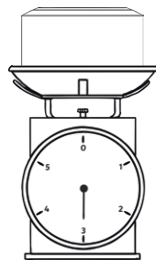
Sort the parcels from **lightest** to **heaviest**.



**A**



**B**



**C**



**D**

**lightest**

**heaviest**

7

How many pencils does Molly have?








Jack: I have 8 pencils.

Molly: I have 4 more pencils than Jack.

\_\_\_\_\_ pencils

8

Match each coin to the correct box. One has been done for you.

Less Than 		More Than 
		
		
		
	 →	
		

9

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


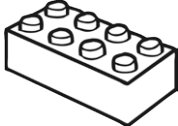


18  
eighty

29  
twenty-nine

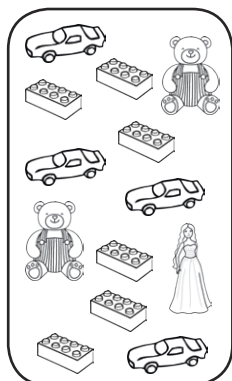
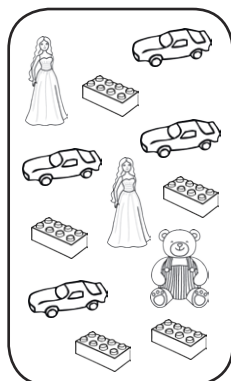
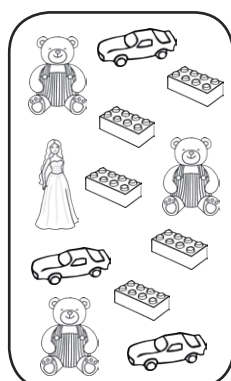
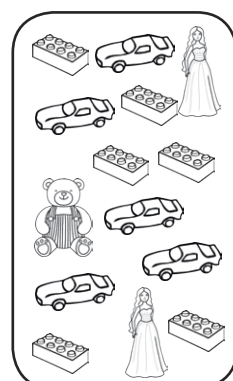
31  
thirty-one

10

Anisha makes a tally chart of her toys.

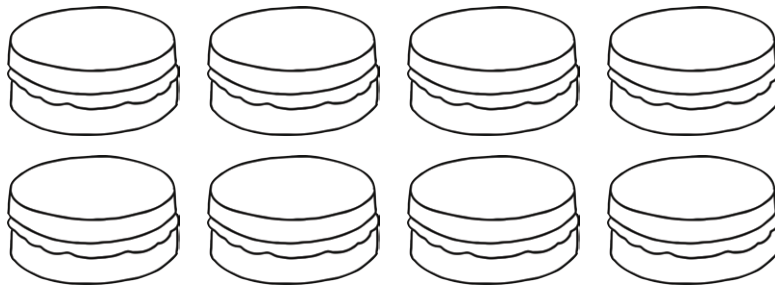
Toys In My Box	Tally
	
	I
	
	I

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

11

There are **20** cakes. **8** cakes are eaten.  
How many cakes are left?



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.

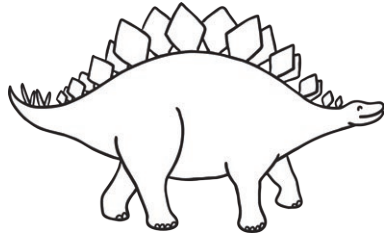
$$\square + \square = 17$$

Now, write three numbers to make this calculation correct.

$$\square + \square + \square = 17$$

14

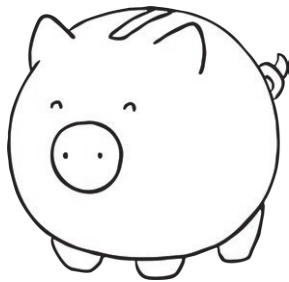
Abdul has some toy dinosaurs. He gives half of them to Max.  
He has three toy dinosaurs left.  
How many toy dinosaurs did Abdul start with?



toy dinosaurs

15

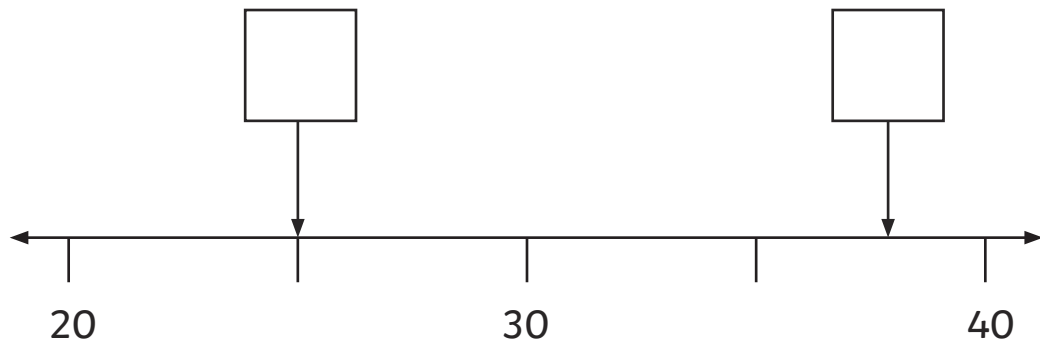
Anisha has these coins in her piggy bank.  
How much money does she have?



p

16

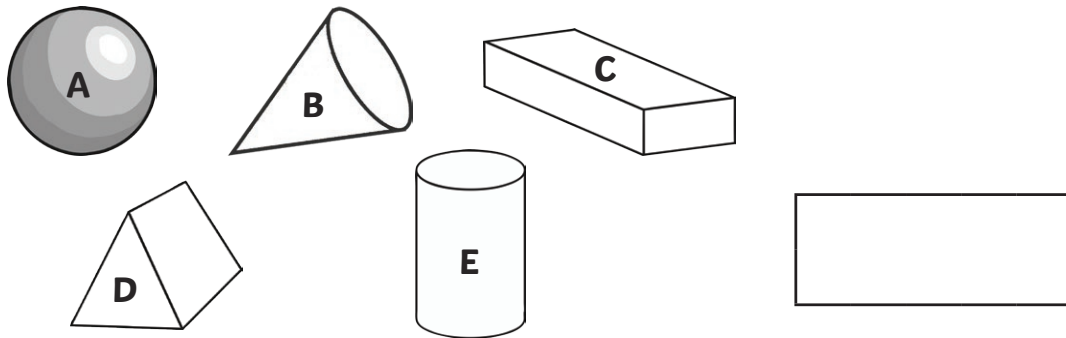
Write the correct number in each box.



17

Which shape has 3 faces?

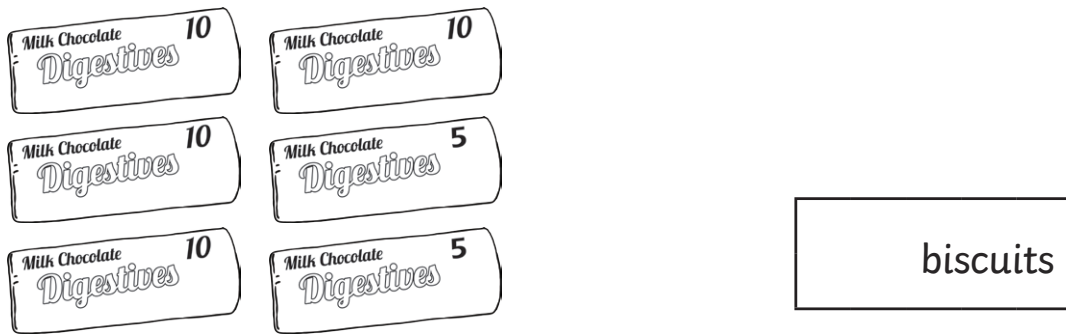
Write the letter.



18

Callum and Ahmed share these biscuits equally.

How many biscuits do they each get?

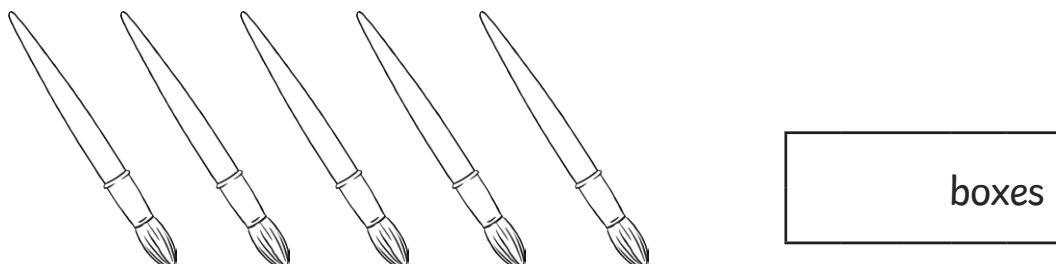


19

Mrs Jones needs 25 paintbrushes for her class.

There are 5 paintbrushes in each box.

How many boxes of paintbrushes does Mrs Jones need altogether?

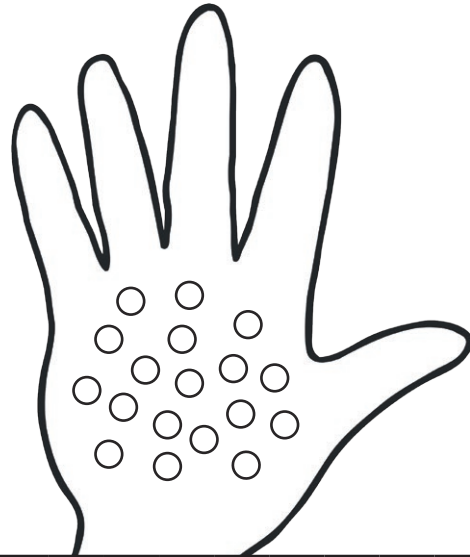


20

Molly has 25 beads altogether.

She has 18 beads in one hand.

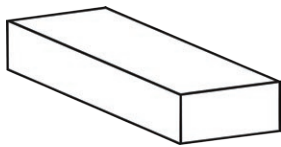
How many beads does she have in the other hand?



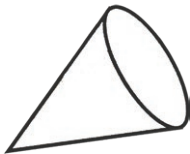
beads

21

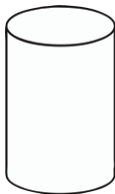
Draw lines to match the shapes to their names.



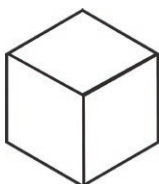
cone



cylinder



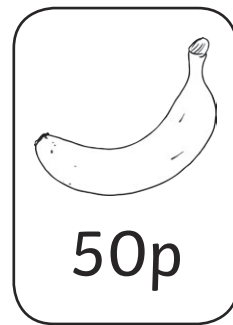
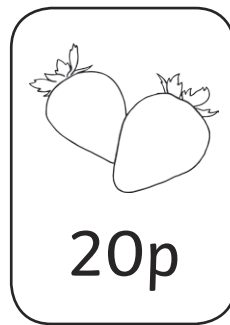
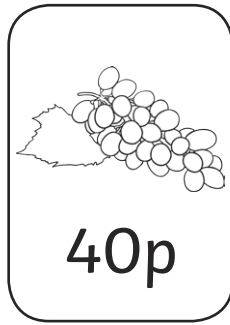
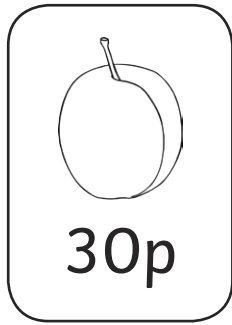
cuboid



cube

22

Look at these four fruits:



Anisha buys **three different fruits**.

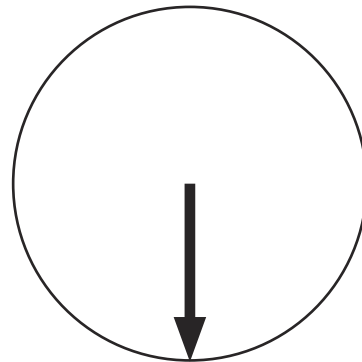
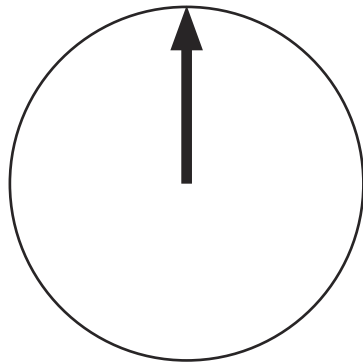
She spends exactly **£1**.

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

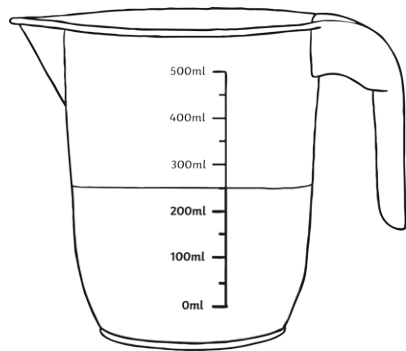
three-quarter  
turn

full turn



24

How much water is in the jug?



millilitres

25

Match the calculations that have the same answer.

One is done for you.

$30 + 3$

$30 + 33$

$60 + 3$

$60 + 23$

$80 + 3$

$20 + 13$

$70 + 3$

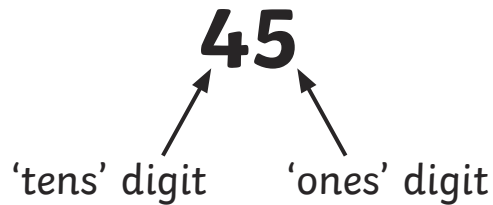
$40 + 33$

# Place Value

What you need to know: By the end of year 2, children need to be able to understand the value of the digits in a 2-digit number. They should be able to order numbers, match words and figures and use their understanding of place value to add and subtract tens and add and subtract 2-digit numbers. They will also learn about locating numbers on a number line or scale and will use their understanding of place value to better understand the relationships between numbers.

# 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			
12			
80			
55			
7			

We can also use our knowledge of place value to write other related number sentences. For example, if I know that:

$$50 + 4 = 54$$

I can move tens from one side of the '+' sign to the other and still make the same answer.


$$40 + 14 = 54$$


$$30 + 24 = 54$$


$$20 + 34 = 54$$


$$10 + 44 = 54$$

As long as our 'tens' digits continue to add up to 5 (50) and our 'ones' digit doesn't change, the answer will remain the same.

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

$$30 + 5 = 20 + \boxed{15}$$

$$40 + 6 = 30 + \boxed{\phantom{00}}$$

$$60 + 1 = 40 + \boxed{\phantom{00}}$$

$$90 + 2 = 50 + \boxed{\phantom{00}}$$

$$20 + 7 = \boxed{\phantom{00}} + 17$$

$$50 + 8 = \boxed{\phantom{00}} + 28$$

$$70 + 4 = \boxed{\phantom{00}} + 54$$

Now, match the sums that have the same answer.

$$30 + 8$$

$$50 + 18$$

$$70 + 8$$

$$40 + 18$$

$$60 + 8$$

$$20 + 18$$

$$40 + 8$$

$$20 + 18$$

# 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	
2	
3	
	four
5	
6	
7	
	eight
9	
10	
11	
	twelve
13	
14	
15	
	sixteen
	seventeen
18	
19	

	ten
20	
30	
	forty
50	
60	
	seventy
80	
90	
100	

Match these numbers to their names.

56

ninety-nine

43

forty-three

70

fifty-six

21

eighty-one

99

seventy

81

twenty-one

Two of these number cards are wrong. Which ones?

50

fifteen

13

thirteen

21

twenty-one

96

sixty-nine

# 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

— ' — ' — ' — ' — ' — ' —

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

— ' — ' — ' — ' — ' — ' —

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

— ' — ' — ' — ' — ' — ' —

Put these numbers in order from **largest to smallest**.

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

— ' — ' — ' — ' — ' — ' —

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

— ' — ' — ' — ' — ' — ' —

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

— ' — ' — ' — ' — ' — ' —



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?



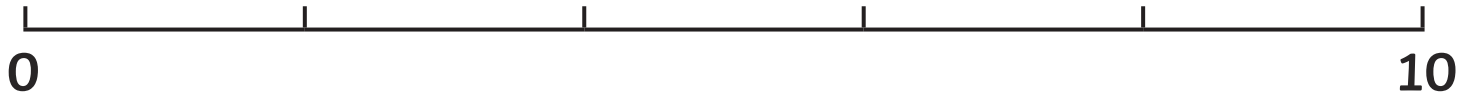
There are four markers so it makes sense that they would be numbered in 10s. It is now easier to see where 15 would go on this line.



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

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

**3, 7, 1, 6, 4, 9**

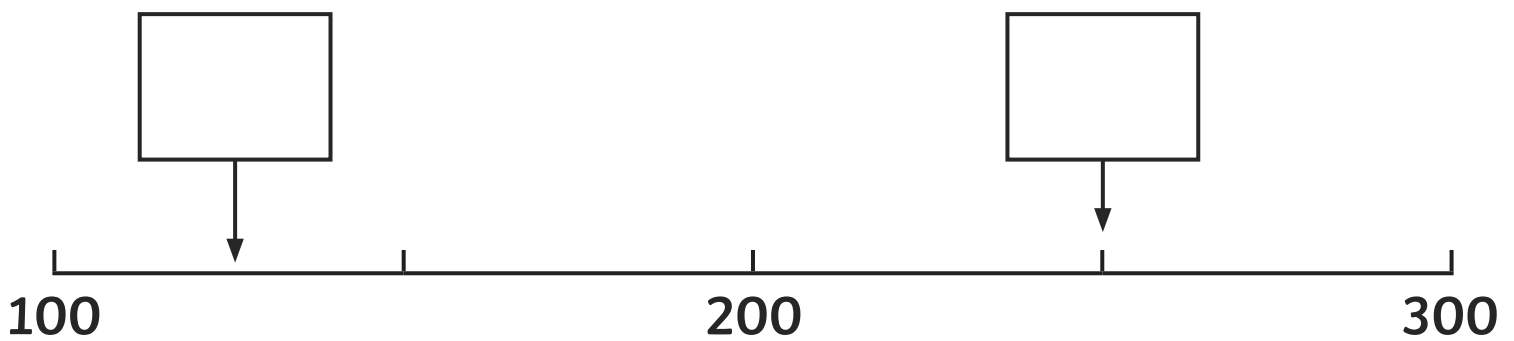
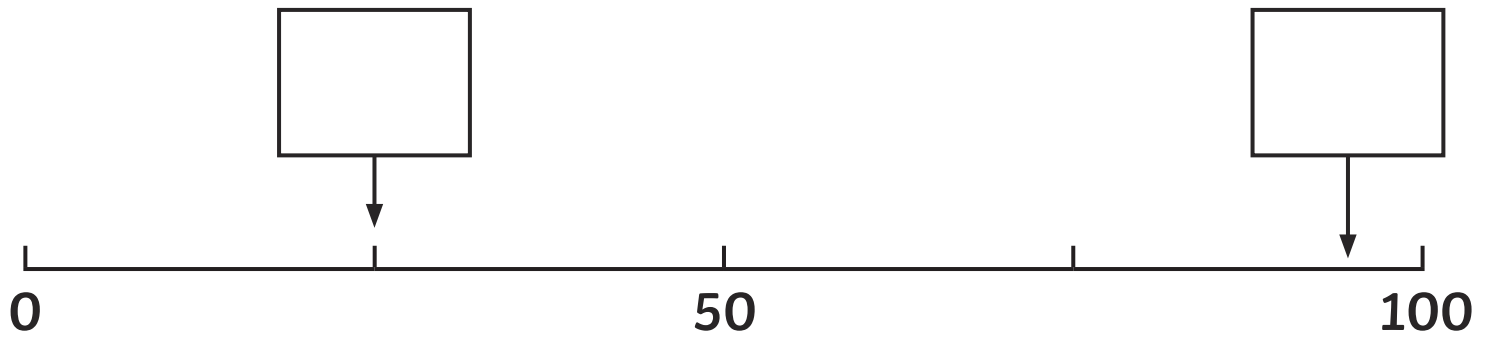
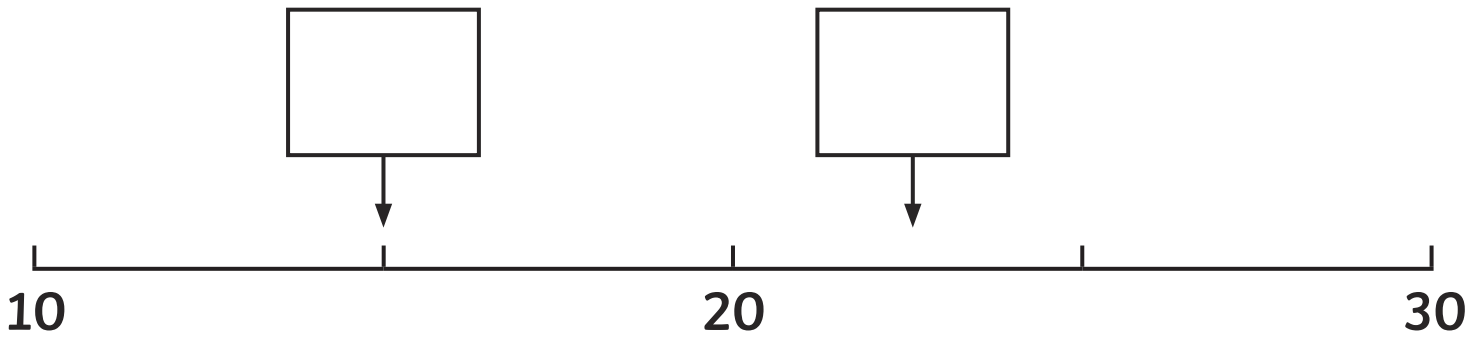


**20, 49, 1, 10, 35, 43**



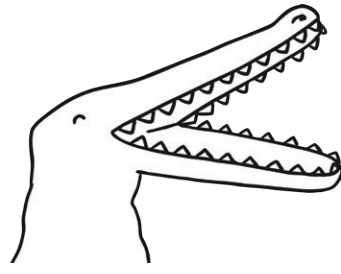
You might be asked to say which number you think is being shown on a number line. This is where looking at the numbers and divisions will really help you.

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



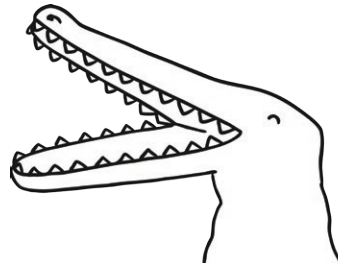
# Greater Than and Less Than

Sometimes, instead of being asked to put a set of numbers in order, you might be asked to use the 'greater than', 'less than' and 'equals' symbols. When looking at the 'greater than' and 'less than' symbols, it helps to think of them as the mouths of crocodiles. Remember that the greedy crocodile always wants to eat the bigger number.



<

less than



>

greater than

We can write a number sentence like this:

$$35 < 53$$

or

$$53 > 35$$

You might be asked to answer questions like this:

Put the correct sign in the boxes.

$25 \square 32$

$41 \square 14$

$99 \square 45$

$14 \square 35$

$16 > \square$

$30 > \square$

$\square < 99$

$54 > \square$

Sometimes, there is a calculation to do on each side of the symbol.

$$4 + 3 \quad \square \quad 6 + 5$$

The easiest way to work these out is to do each calculation first so that you end up with a number on each side.

$$4 + 3 \quad \square \quad 6 + 5$$

$$7 \quad < \quad 11$$

Then you can work out which sign belongs in the box.

$$4 + 3 \quad \square < \quad 6 + 5$$

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

$$3 + 5 \quad \square \quad 4 + 6$$

$$21 + 5 \quad \square \quad 20 + 6$$

$$7 + 8 \quad \square \quad 9 + 3$$

$$30 + 40 \quad \square \quad 20 + 60$$

$$4 + 3 \quad \square \quad 4 \times 3$$

$$5 + 5 + 5 \quad \square \quad 5 \times 3$$

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

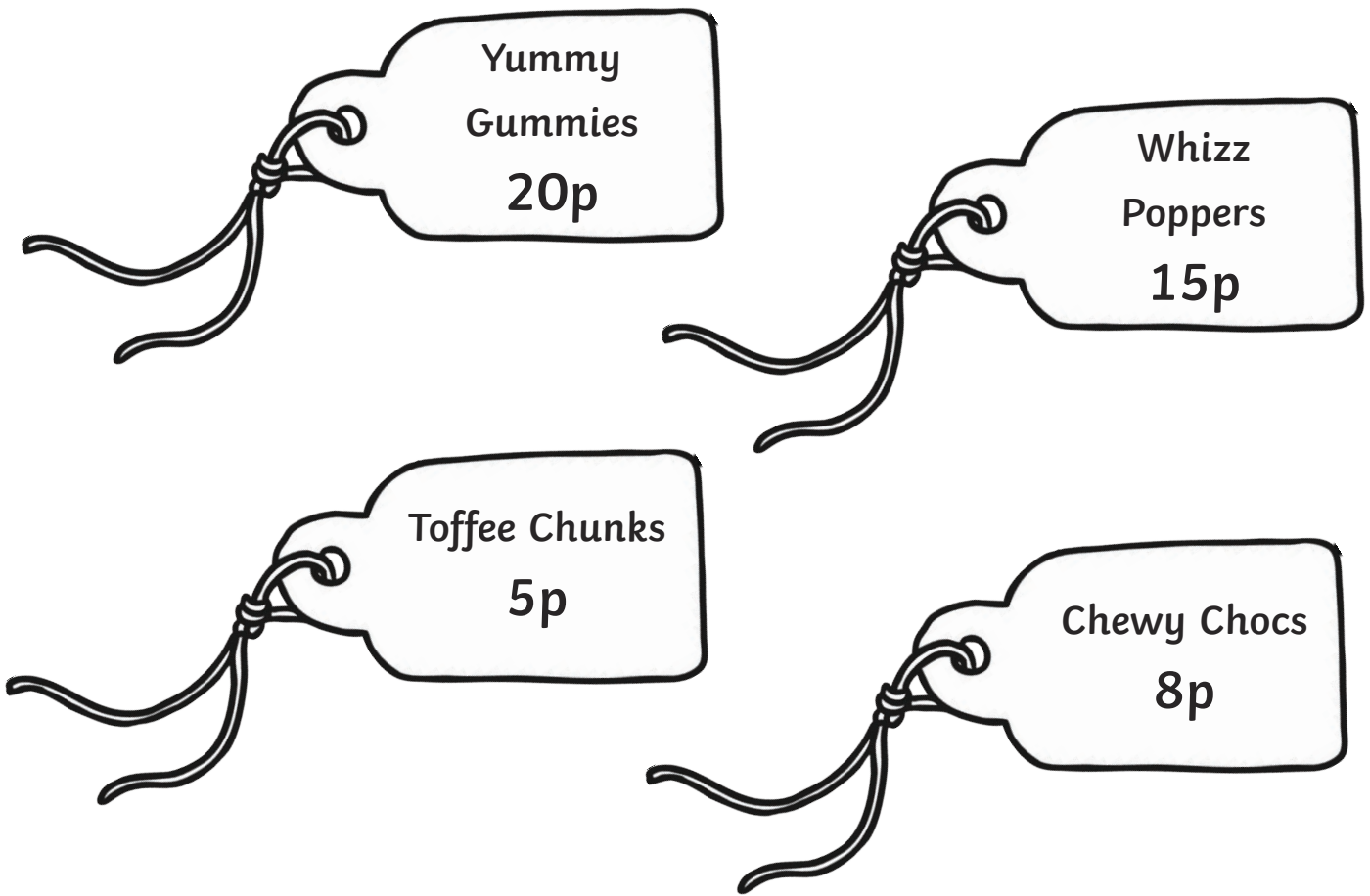
Fill in the boxes with <, > or =.

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  Toffee Chunks

Yummy Gummies  Chewy Chocs

Fill in the boxes.

Chewy Chocs  $<$

= Whizz Poppers + Toffee Chunks

# Calculation

## Addition and Subtraction

What you need to know: There are two aspects to children's understanding of calculation. The first is the understanding of addition and subtraction and their relationship with one another. The second is the development of skills to support quick and accurate mental and written calculation. All these skills are tested in a separate arithmetic test at the end of KS1, as well as in the mental arithmetic questions at the start of the Reasoning paper. There are lots of practice and revision opportunities for these areas in the Twinkl SATs Survival Year 2 Parents' Arithmetic Practice and Revision Activity Booklet - click [here](#) to access this booklet. The other aspect to calculation is being able to apply knowledge to solve problems, and this is what is tested in the main part of the reasoning paper, and what we will look at here. Children need to be able to find key information in word problems in order to establish what kind of calculation they are being asked to do. Teachers will often ask children to underline the key points in a worded problem and look for vocabulary that suggests the type of calculation that needs to be done - for example, 'How many altogether?' often points to an addition calculation, whereas, 'How many are left?' might point to a subtraction. Many schools are now teaching the 'bar method' and 'part-part-whole' methods of understanding addition and subtraction. There is lots of information on these methods in the Arithmetic Revision Guide mentioned above. Children also need to be able to apply their understanding of calculation to other areas of maths, for example, adding amounts of money together or calculating difference in temperature.

## Adding and Subtracting Tens and 2-Digit Numbers

What you need to know: Once children are confident with calculations involving single digit numbers, they can move on to calculations with two-digit numbers, provided their understanding of place value is also secure. Children are taught to count on and back in 10s from any number, e.g. 4, 14, 24 and so on. This is helpful when they are adding or subtracting a 'tens' number to or from another number. They are also taught to add and subtract two 2-digit numbers by adding or subtracting the tens and the ones numbers, or using a number line to subtract where it is not possible to subtract the digits individually. There are lots of practice and revision opportunities for these areas in the Twinkl SATs Survival Year 2 Parents' Arithmetic Practice and Revision Activity Booklet - click [here](#) to access this booklet. We will look at some word problems involving 2 digit numbers here. Children need to be able to find key information in word problems in order to establish what kind of calculation they are being asked to do. Teachers will often ask children to underline the key points in a worded problem and look for vocabulary that suggests the type of calculation that needs to be done. For example, 'How many altogether?' often points to an addition calculation, whereas, 'How many are left?' might point to a subtraction. Many schools are now teaching the 'bar method' and 'part-part-whole' methods of understanding addition and subtraction. Again, there is lots of information on these methods in the Arithmetic Revision Guide mentioned above. Children also need to be able to apply their understanding of calculation to other areas of maths, for example, adding amounts of money together or calculating difference in temperature.



# Addition and Subtraction

First, let's look at some addition problems.

There are 8 birds in a tree. 3 more birds land on the tree. How many birds are there altogether?

**The first thing we need to do is read the problem carefully and then underline the important information. See if you can underline what is important in this word problem.**

There are 8 birds in a tree. 3 more birds land on the tree. How many birds are there altogether?

The important information tells us what numbers we are using and what we need to do with them. The phrase, '**How many altogether?**' tells us that this is an addition problem. The phrase '**3 more**' also gives us a clue that we are adding.

Here are some ways that you can solve the problem now that you know the key information.

- Firstly, you could solve the problem in your head by bridging 10.

$$8 + 3 =$$

$$8 + 2 + 1 = ?$$

- Or you could count on in your head or using your fingers.

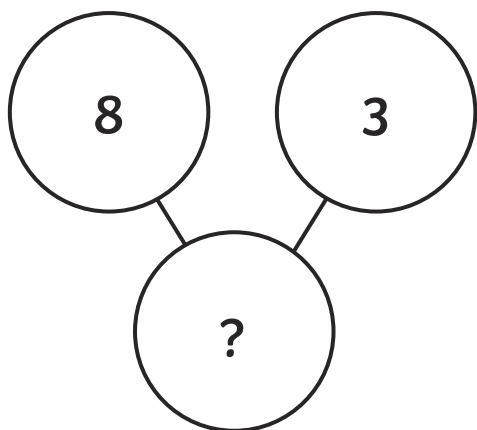
8, 9, 10, \_

- You might want to use the 'bar method'.

8	3
?	

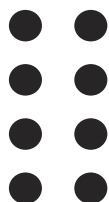
$$8 + 3 = ?$$

- Or the 'part-part-whole' method.



$$8 + 3 = ?$$

- Finally, it might help you to quickly draw dots to represent whichever objects are mentioned in the problem.



8 birds

+



3 birds

=

Use whichever methods work for you to solve the addition word problems on the next page.

## Addition Problems

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

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

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

<b>red</b>	<b>5</b>
<b>blue</b>	<b>9</b>
<b>green</b>	<b>3</b>

How many red and blue pencils are there altogether?

How many red and green pencils are there altogether?

What is the total number of pencils in the pot?

Now, let's look at some subtraction problems.

Sammy has 12 cakes. He eats 4 of them. How many are left?

**Read the problem carefully and underline the important information.**

Sammy has 12 cakes. He eats 4 of them. How many are left?

The important information tells what numbers we are using and what we need to do with them. The phrase, '**How many are left?**' tells us that this is a subtraction problem. The fact that some cakes are being eaten also gives us a clue that we are 'taking away'.

Something important to remember about subtraction is that it is also sometimes called 'finding the difference' between two numbers. For example, in the number sentence...

$$10 - 4 = 6$$

...we are **finding the difference** between 10 and 4 and the difference is 6. Sometimes, word problems will use the word 'difference' instead of subtraction. Here is an example:

Last week, 12 children came to netball club. This week, 9 children came. What is the difference in the number of children attending?

$$12 - 9 = 3 \text{ children}$$

Sometimes, a subtraction word problem may use the words, '**How many more...?**' or '**How many fewer...?**'. These phrases may also disguise themselves as, '**How much older/younger...?**', '**How much heavier/taller/shorter...?**' and so on. Again, look out for these as they are a sign of a subtraction problem.

Sunil has 12 football cards. Jack has 8. How many more cards does Sunil have?

$$12 - 8 = 4 \text{ cards}$$

Joanna is 8. Her cousin Lucy is 10. How much older is Lucy than her cousin?

$$10 - 8 = 2 \text{ years older}$$

Here are some ways that you can solve subtraction problems now that you know the important information.

- Firstly, you could solve the problem in your head, perhaps by bridging 10.

$$12 - 4 =$$

$$12 - 2 - 2 = ?$$

- You could count back in your head or using your fingers.

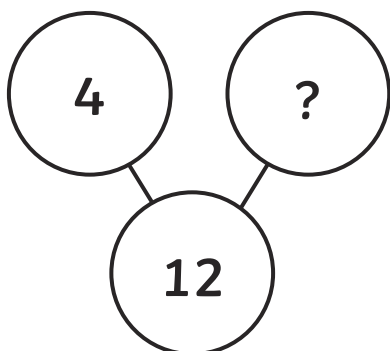
12, 11, 10, 9, \_

- You might want to use the 'bar method'. Remember that in a subtraction, you already know the largest number.

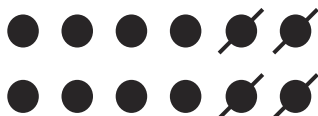
?	4
12	

$$12 - 4 = ?$$

- You could use the 'part-part-whole' method. Again, remember that in a subtraction, you already know the 'whole' and one of the 'parts'.



- Finally, it might help you to draw dots to represent the objects in the problem and then cross out the ones that are being taken away.



12 cakes with 4 taken away. How many are left?

Use whichever methods work for you to solve the subtraction word problems on the next page.

## Subtraction Problems

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

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

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

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

# Adding and Subtracting Tens and 2-Digit Numbers

## Counting on in Tens

Count on in 10s from these numbers.

4	14				54
---	----	--	--	--	----

35					85
----	--	--	--	--	----

1	11				
---	----	--	--	--	--

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

$$67 + 10 =$$

$$54 + 10 + 10 =$$

$$20 + 10 + 10 + 10 =$$

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

$$35 + 20 =$$

$$18 + 30 =$$

## Counting Back in Tens

Count back in 10s from these numbers.

82	72				32
----	----	--	--	--	----

60					10
----	--	--	--	--	----

57	47				
----	----	--	--	--	--

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

$$34 - 10 =$$

$$42 - 10 - 10 =$$

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

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

$$78 - 30 =$$

$$48 - 40 =$$



## Adding 2-Digit Numbers

Now, let's look at adding two 2-digit numbers. Usually, you can do this by adding the 'tens' digits and adding the 'ones' digits, like this:

$$34 + 23 =$$

$$30 + 20 + 4 + 3 = 57$$

or

$$\begin{array}{r} 34 + 23 = \\ \diagdown \quad \diagup \\ 50 + 7 = 57 \end{array}$$

Sometimes, the calculation is a little more complicated, for example, when the 'ones' digits add up to 10 or more, like this:

$$56 + 27 =$$

$$50 + 20 + 6 + 7 =$$

$$70 + 13 = 83$$

or

$$\begin{array}{r} 56 + 27 = \\ \diagdown \quad \diagup \\ 70 + 13 = \\ \diagdown \quad \diagup \\ 80 + 3 = 83 \end{array}$$

Subtracting two 2-digit numbers can also be straightforward.

$$67 - 34 =$$

$$(60 - 30) + (7 - 4) = 33$$

or

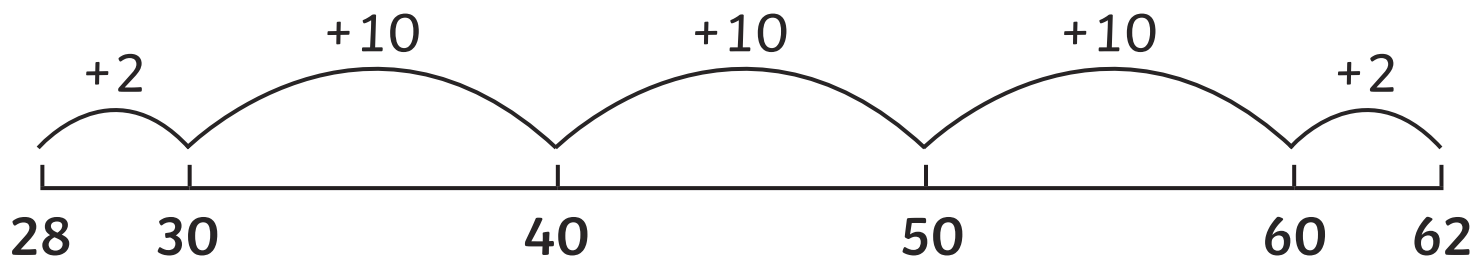
$$\begin{array}{r} 67 - 34 = \\ \begin{array}{l} \diagdown \quad \diagup \\ \diagup \quad \diagdown \end{array} \\ 30 + 3 = 33 \end{array}$$

Did you notice that you need to add the two numbers you calculate from the 'tens' and 'ones' digits, even though this is a subtraction? That's because you're only subtracting the 'tens' from each other and the 'ones' from each other, then 'putting them back together' by adding.

Sometimes, the subtractions can be a little more complicated. Can you see what might be tricky about this one?

$$62 - 28 =$$

If you look carefully, you can see that if we try to subtract the 'ones' digits, we'll end up with a number less than zero. In this case, try using a number line to 'find the difference' instead, like this:



$$2 + 10 + 10 + 10 + 2 = 34 \text{ so the difference between 28 and 62 is } 34, \text{ or } 62 - 28 = 34.$$

Now, let's try some word problems.

Remember to underline the important information before you start.

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

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

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

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

# Money

What you need to know: Learning about money is a key life skill. In year 2, children continue to learn about the values of different coins, as well as how to carry out calculations involving money, such as working out the total value of a set of coins, adding amounts of money together and giving change. They also begin to learn about the concept of £1 being the same as 100p and this gives them a very simple introduction to decimals. The understanding of addition, counting in 'tens' and 'finding the difference' is really important when working with money.

# Value of Coins

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



1p



2p



5p



10p



20p



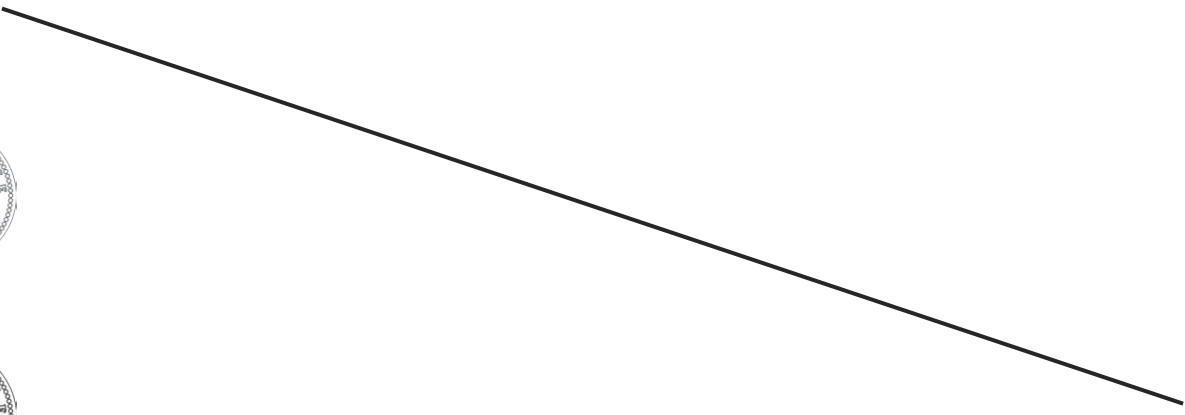
50p



£1



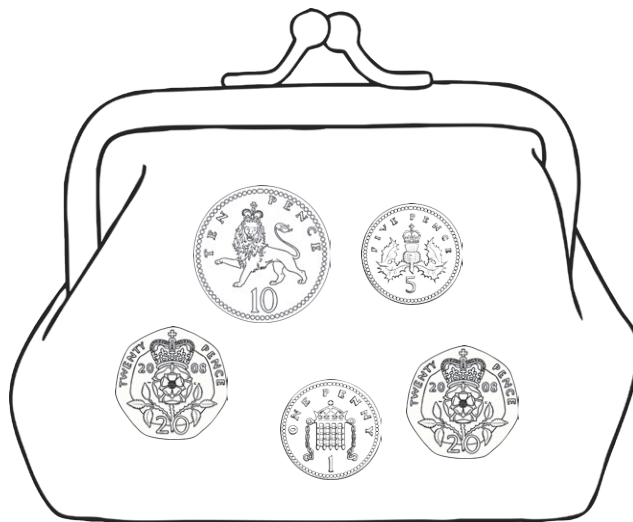
£2



# Adding Coins

Now, let's have a look at some 'adding coins' problems. Remember, when adding coins together, it is easiest to start with the largest coins and to add by counting on in 10s, 5s, 2s and 1s.

How much money is in the purse?



If we start with the coins with the highest value and work our way down, we need to do this calculation:

$$20 + 20 + 10 + 5 + 1 =$$

We can do this by adding the 'tens' numbers first.

$$20 + 20 + 10 = 50$$

Then we just add the 5p and the 1p.

$$5 + 1 = 6$$

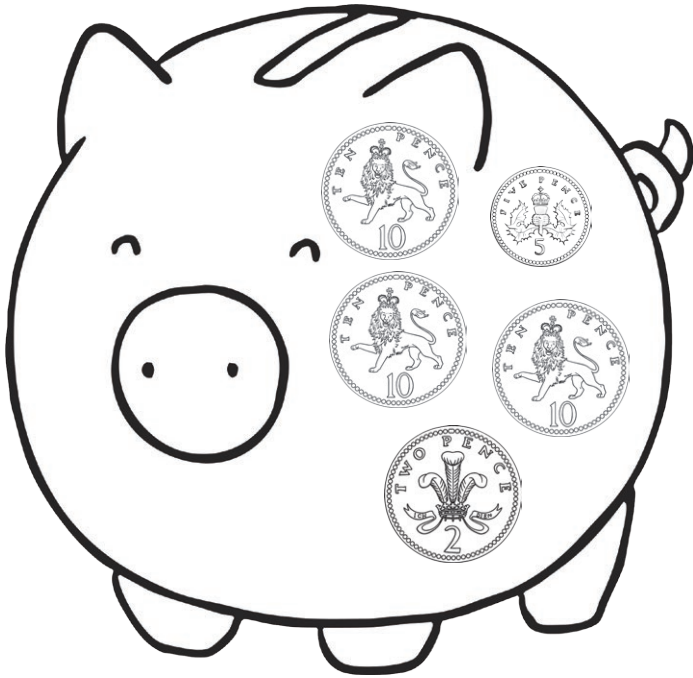
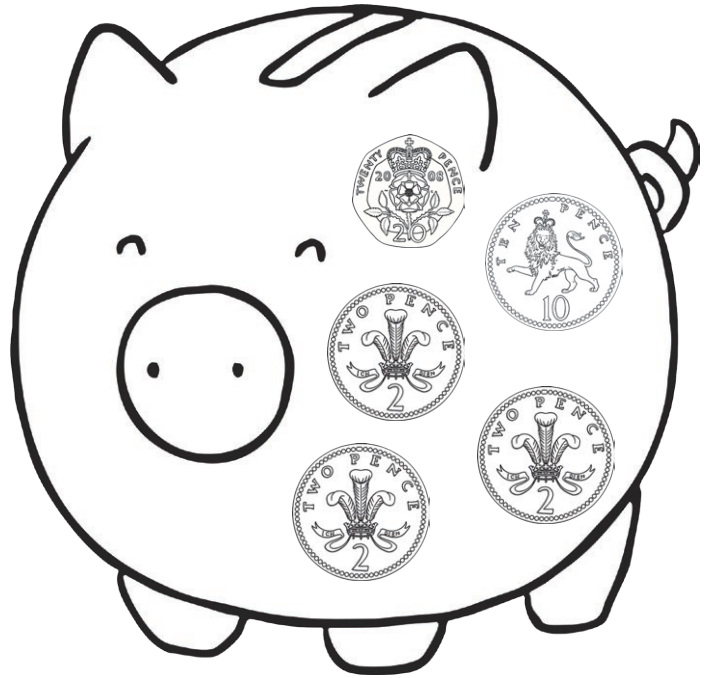
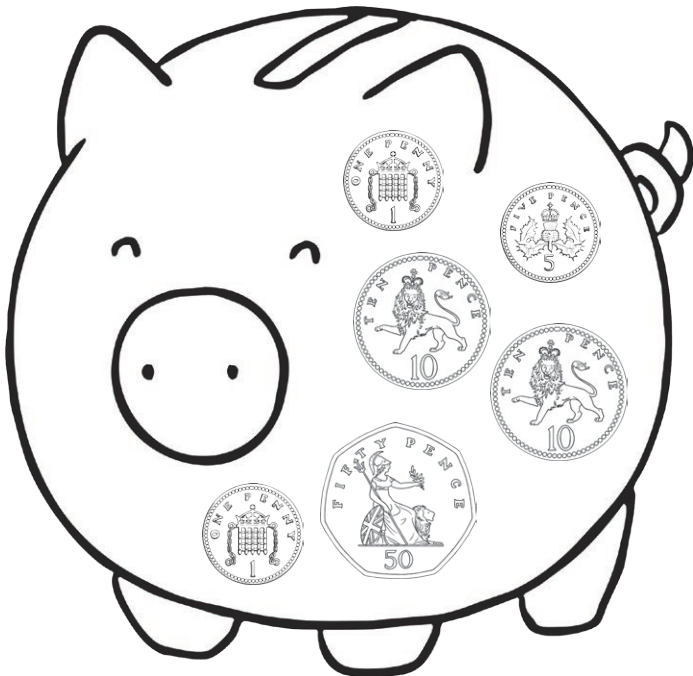
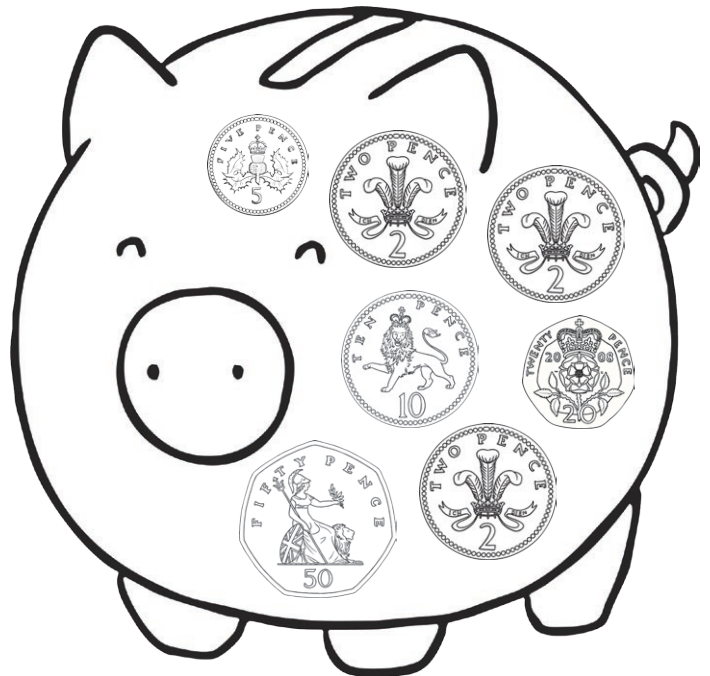
Finally, add the numbers to find the total.

$$50 + 6 = 6p$$

Don't forget to include the unit you are using in your answer - in this case, it is 'p' for 'pence'.

Try some more 'adding coins' calculations on the next page.

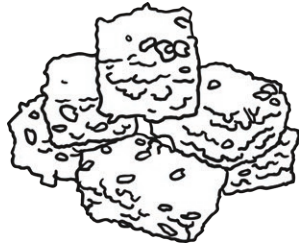
How much money is in these piggy banks?

 p p p p

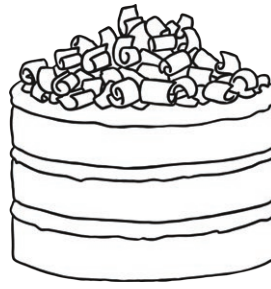
There are some cakes for sale at the summer fair.



**fairy cake**  
**10p**



**flapjack**  
**20p**



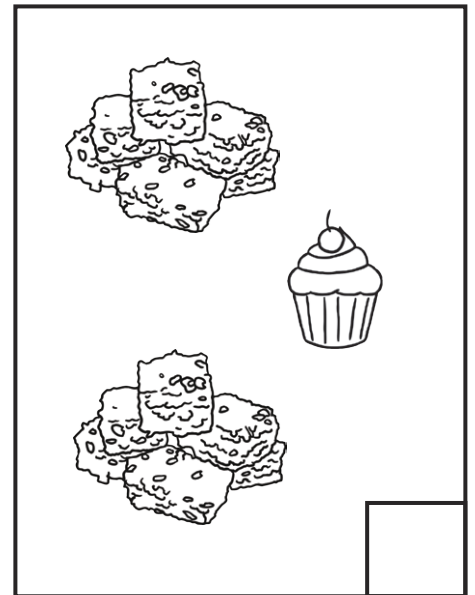
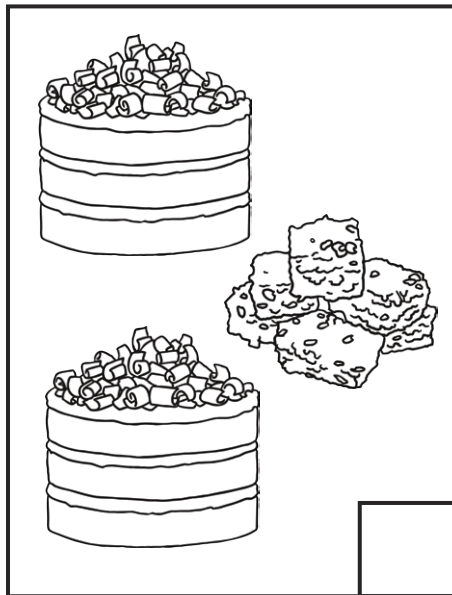
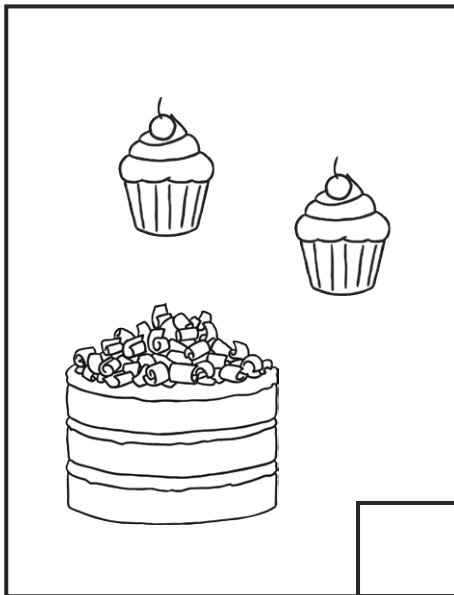
**chocolate cake**  
**25p**



**cookie**  
**30p**

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.



# Giving Coins

Now, we will look at giving change. Sometimes, when you want to pay for something, you don't have the exact money. If you give the shopkeeper more than the cost of what you are buying, they will give you difference between the amount that you have paid and the cost of your items back.

This is called 'giving change'.

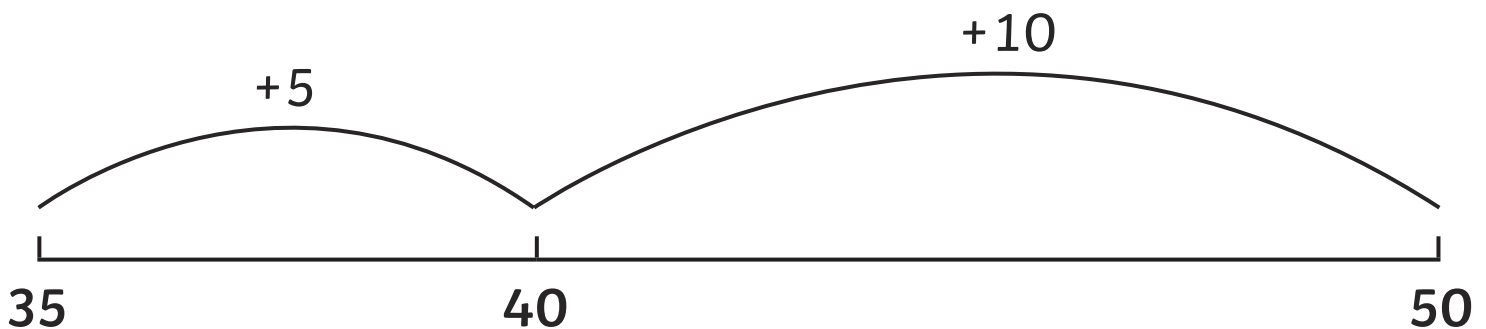
Hannah buys a drink and an apple at the school snack bar. The total cost is 35p. Hannah pays with a 50p coin. How much change does she get?

**To find the answer, we need to find the difference between 35 and 50.**

**We can do this by counting on in our heads:**

**35, 40, 45, 50 is 3 jumps of 5, which is 15**

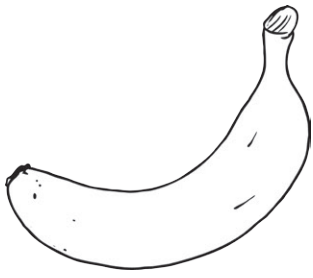
or, we can use a number line.



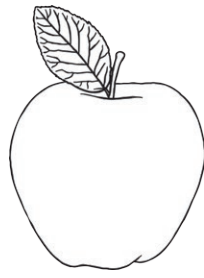
Hannah receives 15p change.

Try finding the change on the word problems on the next page.

Here is the fruit on sale at the shop today:



**banana**  
**22p**



**apple**  
**34p**



**pear**  
**31p**

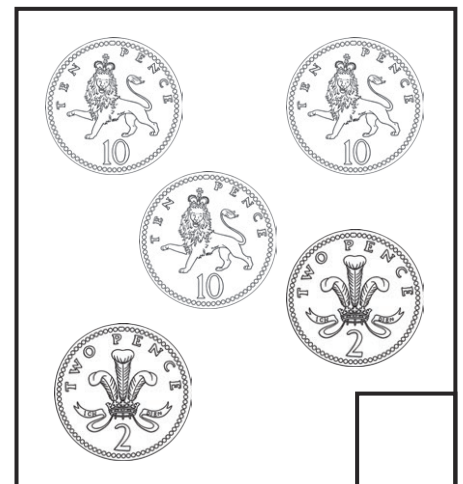
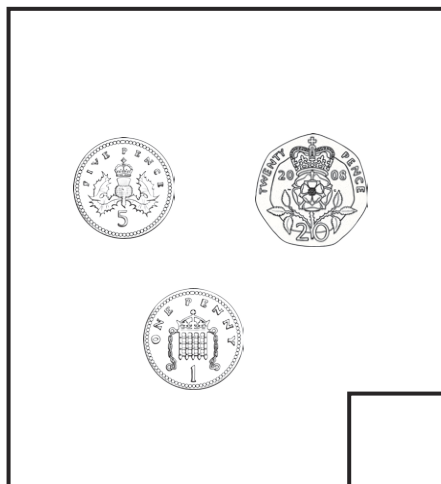
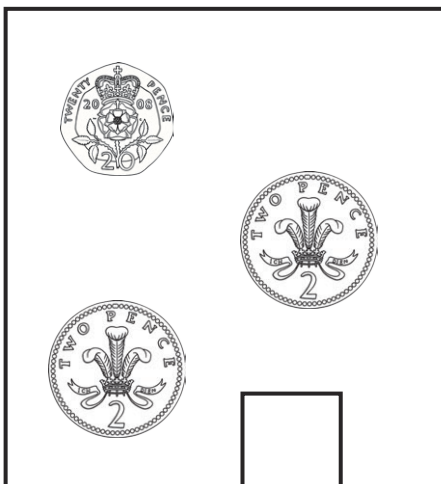


**grapes**  
**42p**

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	
apple	34p	
pear	31p	
grapes	42p	

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



# Multiplication and Division

What you need to know: There are two aspects to children's understanding of multiplication and division calculations. The first is the understanding of multiplication and division and their relationship with one another. The second is the development of skills to support quick and accurate mental and written calculation. All these skills are tested in a separate arithmetic test at the end of KS1, as well as in the mental arithmetic questions at the start of the reasoning paper. There are lots of practice and revision opportunities for these areas in the Twinkl SATs Survival Year 2 Parents' Arithmetic Practice and Revision Activity Booklet – click [here](#) to access this booklet. The other aspect of calculation is being able to apply knowledge to solve problems and this is what is tested in the main part of the reasoning paper and what we will look at here. Children need to be able to find key information in word problems in order to establish what kind of calculation they are being asked to do. Teachers will often ask children to underline the key points in a worded problem and look for vocabulary that suggests the type of calculation that needs to be done. This can be trickier with multiplication and division so children are taught to look for clues that a number of objects are being grouped or shared. Another clue is when the number of objects in one group is given and children are asked to calculate how many would be in more than one group. For example, 'One alien has 3 eyes. How many eyes do 5 aliens have altogether?' There is lots of information on multiplication and division methods in the Arithmetic Revision Guide mentioned above and one of the best things children can do is to learn the 2x, 5x and 10x multiplication tables and associated division facts so that they can recall them quickly and efficiently. Children also need to be able to apply their understanding of calculation to other areas of maths, i.e. money and measure.

# Multiplication and Division

## Multiplication Problems

Joe bakes 5 trays of cakes. There are 10 cakes on each tray. How many cakes does he make altogether?

**The first thing we need to do is read the problem carefully and then underline the important information. Underline the important information in this word problem.**

Joe bakes 5 trays of cakes. There are 10 cakes on each tray. How many cakes does he make altogether?

The important information tells us what numbers we are using and what we need to do with them. The phrase, '**How many altogether?**' could make us think that this is an addition problem and in fact, we could do it as an addition,

$$10 + 10 + 10 + 10 + 10$$

but it is actually much quicker to use multiplication. The words, '5 trays' tells us that we need 5 groups, and '10 on each tray' tells us that we need 5 groups of 10. In other words, multiply:

$$5 \times 10$$

Here are some ways that you can solve the problem now that you know the important information.

- Firstly, you could solve the problem in your head if you know your 5× or 10× tables.

$$5 \times 10 = ?$$

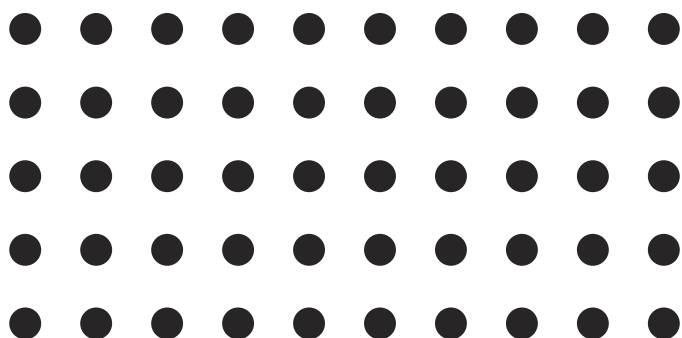
$$10 \times 5 = ?$$

- If you can count in 5s or 10s, you can count on to find the answer.

$$5, 10, 15, 20, 25, 30, 35, 40, 45, ?$$

$$10, 20, 30, 40, ?$$

- You could make an array, with 5 rows of 10 dots.



- You could even draw 5 trays with 10 dots on each, to represent the cakes – but be careful as this is a lot of dots to count! It is much better to learn your tables and how to count in 5s and 10s.

Now, try some multiplication word problems on the next page.

Use whichever method you prefer to solve these problems.

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

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

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

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

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

## Division Problems

Daniel bakes 25 cakes. He puts the cakes into boxes. Each box holds 5 cakes. How many boxes does he need?

**The first thing we need to do is read the problem carefully and then underline the important information. Underline the important information in this word problem.**

Daniel bakes 25 cakes. He puts the cakes into boxes. Each box holds 5 cakes. How many boxes does he need?

The important information tells us first what numbers we are using and what we need to do with them. If we read the problem carefully, we can see that the cakes are being shared into groups. This is a big clue that this is a division problem. There are 25 cakes being put into groups of 5.

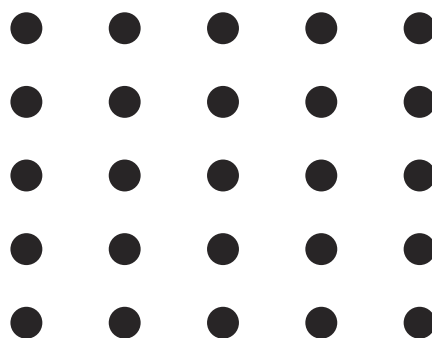
$$25 \div 5 = ?$$

Here are some ways that you could solve the problem now that you know the important information.

- Firstly, you could solve the problem in your head if you know your 5× table.
- If you can count in 5s, you can count on to find the answer. See how many counts of 5 it takes you to get to 25.

**5, 10, 15, 20, 25**

- You could group 25 dots into groups of 5 and see how many groups this makes.



Now, try some division word problems on the next page.

Use whichever method you prefer to solve these problems.

There are 50 toes in the room. How many people are there?

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

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

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

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



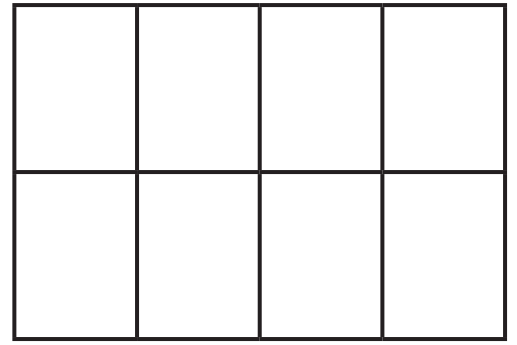
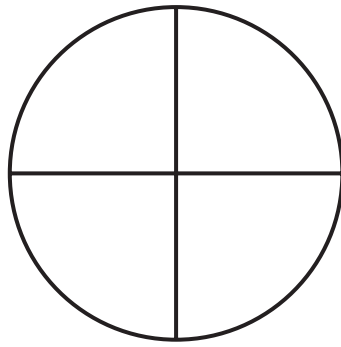
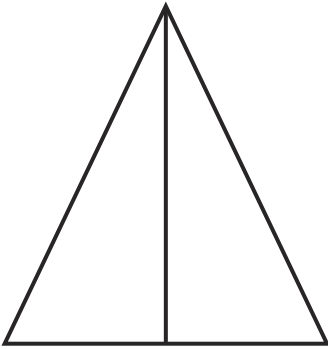
# Fractions

What you need to know: At the end of year 2, children are expected to understand the meaning of the fractions:  $\frac{1}{2}$ ,  $\frac{1}{4}$ ,  $\frac{1}{3}$  and  $\frac{3}{4}$ . They also need to understand that  $\frac{2}{4}$  is the same as  $\frac{1}{2}$ . Children should be able to find fractions of objects, shapes and quantities. Children start to learn about fractions by looking at fractions of shapes, and then move on to finding fractions of amounts, linking this to their understanding of division. Children are tested on finding fractions of quantities in the separate arithmetic test at the end of KS1. There are lots of fractions practice and revision opportunities in the Twinkl SATs Survival Year 2 Parents' Arithmetic Practice and Revision Activity Booklet - click [here](#) to access this booklet. In the reasoning paper, children will also be expected to use their understanding of fractions. They may be asked to shade in fractions of a shape or to identify a shape, with a particular fraction shaded. They may need to find fractions of quantities or solve word problems using fractions. A good understanding of the 2x and 3x tables is essential, as is a good knowledge of doubling and halving quantities. Children also need to be able to apply their understanding of fractions to other areas of maths, i.e. money and measure.

# Fractions of Shapes

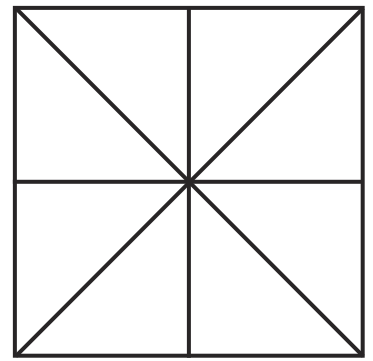
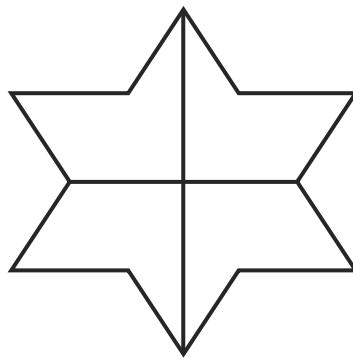
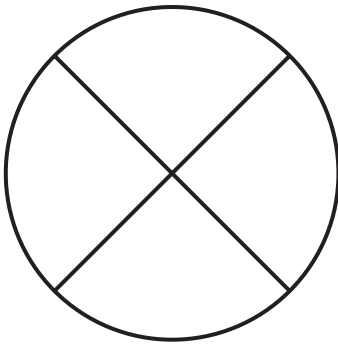
First, let's look at finding fractions of shapes.

Shade  $\frac{1}{2}$  of each of these shapes.



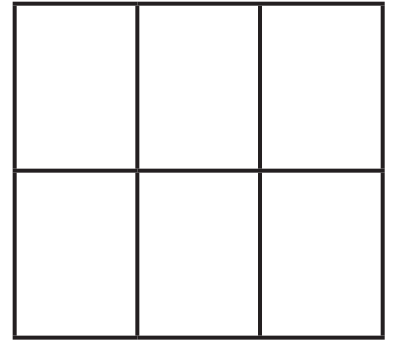
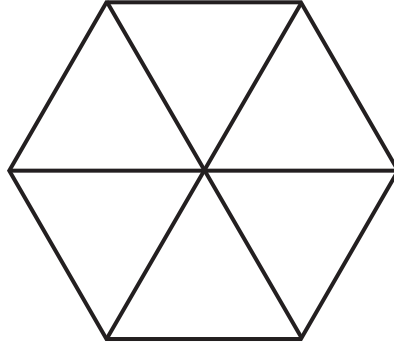
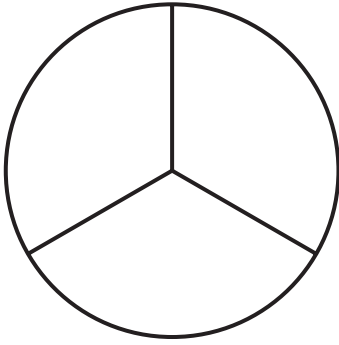
**Hint:** To find half of the shape, you should count the total number of sections each shape is split into and shade half of this number.

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



**Hint:** To find one quarter of the shape, you should count the total number of sections each shape is split into, then find half and then half it again.

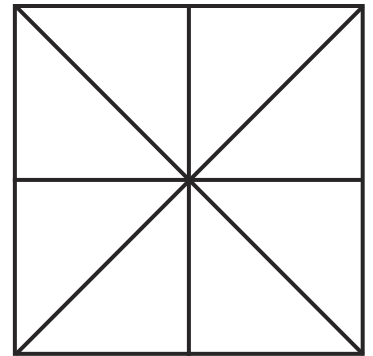
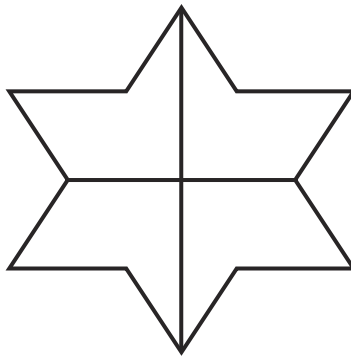
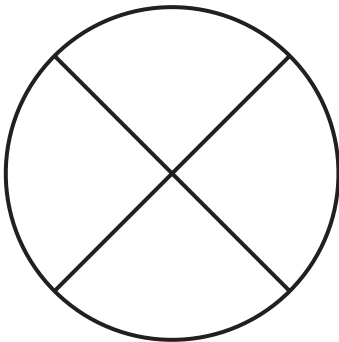
Shade  $\frac{1}{3}$  of these shapes.



Again, count the number of sections and divide by 3.

**Hint:** You'll need to know your 3x table for this!

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



Shading  $\frac{3}{4}$  is a little bit more complicated.

**Hint:** Find one quarter and then multiply this by 3.

# Fraction of Quantities

The same thing applies when we are finding fractions of quantities. You need to make sure you know your  $2\times$  and  $3\times$  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 $\frac{1}{2}$
2	1
4	
6	
8	
10	
12	
14	
16	
18	
20	

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

	Find $\frac{1}{2}$	Find $\frac{1}{4}$
4	2	1
8		
12		
16		
20		
24		
28		
32		
36		
40		

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

	Find $\frac{1}{2}$	Find $\frac{1}{4}$	Find $\frac{3}{4}$
4	2	1	3
8			
12			
16			
20			
24			
28			
32			
36			
40			

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

	Find $\frac{1}{3}$
3	
6	
9	
12	
15	
18	
21	
24	
27	
30	

# Fraction Word Problems

Now, let's have a look at some fraction word problems. Underline the important information in this word problem.

Jas has collected 20 football cards. He gives half of them to his friend Tom. How many cards does Jas have left?

**The important information tells us the numbers we are using and what we need to do with them.**

Jas has collected 20 football cards. He gives half of them to his friend Tom. How many cards does Jas have left?

For this problem, we need to find half of 20. Here are some ways that you can solve the problem now that you know the important information.

- Firstly, you could solve the problem in your head if you know your  $2\times$  tables or you are confident with halving.
- You could group 20 dots into two groups and see how many are in each group.
- You could find 20 objects like bricks or beads and divide them into two groups, then see how many are in each group.



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

Molly has some pens. She gives half of them to Chloe. Molly has 6 pens left.  
How many did she 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 left?

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

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

# Geometry

## Properties of 2D Shapes

What you need to know: 2D shapes are 'flat', meaning they have sides and corners but no faces. In year 2, children need to know the names of the common 2D shapes - circle, square, rectangle, triangle, pentagon, hexagon and octagon. They should also be able to talk about the properties of these shapes, e.g. how many sides and corners they have, and whether the sides are equal lengths. They should be able to recognise a vertical line of symmetry in a 2D shape, to recognise 2D shapes on the faces of 3D shapes and to sort shapes according to their properties.

## Properties of 3D Shapes

What you need to know: 3D shapes have depth as well as width and length. They have faces (surfaces), edges (where two faces meet) and vertices ('corners', where three faces meet). In year 2, children need to know the names of the common 3D shapes - sphere, cube, cuboid, cylinder, cone, triangular prism, square-based pyramid and triangular-based pyramid. They also need to be able to talk about the properties of these shapes, e.g. how many faces, edges and vertices they have, and what 2D shapes make up their faces. They need to be able to sort 3D shapes according to their properties.

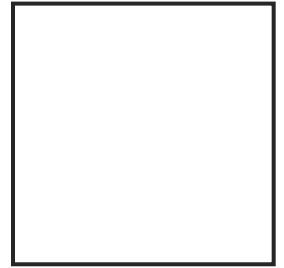
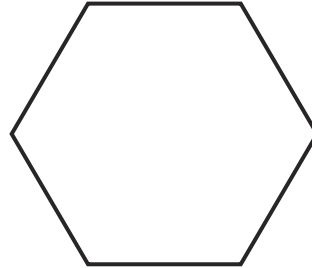
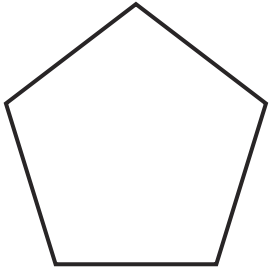
## Position and Direction

What you need to know: By the end of year 2, children need to be able to recognise repeating patterns and sequences, involving numbers and objects. They also need to be able to describe position, direction and movement of an object, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise).

# Properties of 2D Shapes

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

**circle square triangle rectangle pentagon hexagon octagon**



Name \_\_\_\_\_

Name \_\_\_\_\_

Name \_\_\_\_\_

Name \_\_\_\_\_

Sides \_\_\_\_\_

Sides \_\_\_\_\_

Sides \_\_\_\_\_

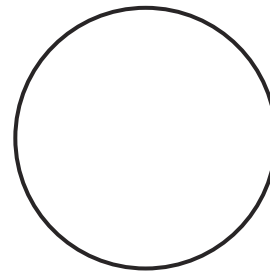
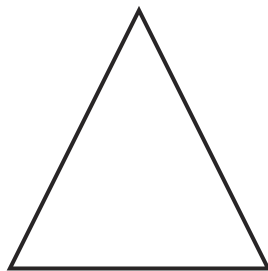
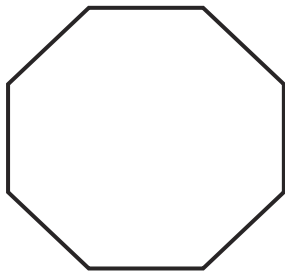
Sides \_\_\_\_\_

Corners \_\_\_\_\_

Corners \_\_\_\_\_

Corners \_\_\_\_\_

Corners \_\_\_\_\_



Name \_\_\_\_\_

Name \_\_\_\_\_

Name \_\_\_\_\_

Sides \_\_\_\_\_

Sides \_\_\_\_\_

Sides \_\_\_\_\_

Corners \_\_\_\_\_

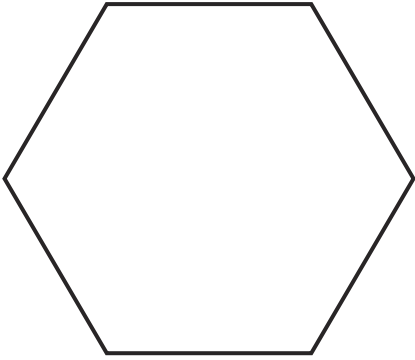
Corners \_\_\_\_\_

Corners \_\_\_\_\_

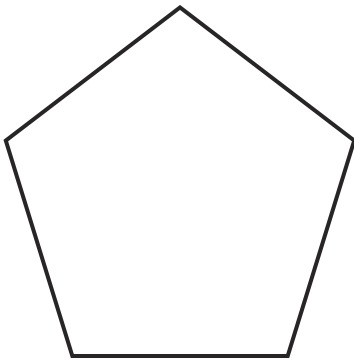
Now, write how many sides and how many corners each shape has.

Try some questions on the next page.

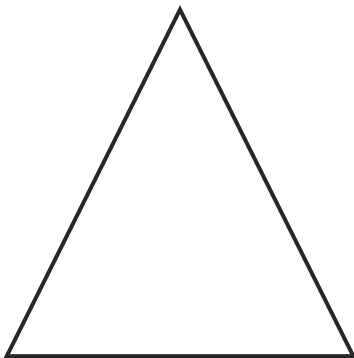
Draw lines to match these shapes to their names.



triangle



hexagon



octagon

pentagon

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

square

hexagon

rectangle

circle

4 Sides or Less	More Than 4 Sides

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.

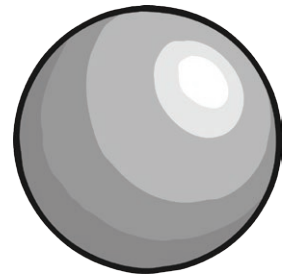
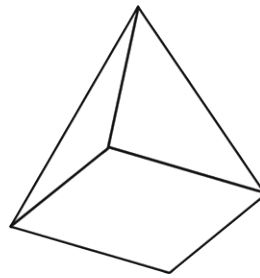
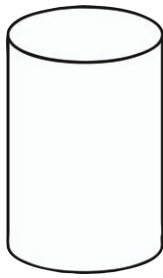
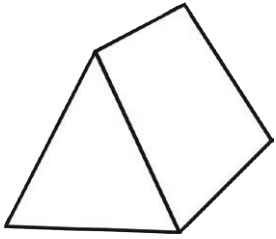
A square has one curved side.

# Properties of 3D Shapes

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

**sphere**    **cube**    **cuboid**    **cylinder**    **cone**    **triangular prism**

**square-based pyramid**    **triangular-based pyramid**



Name \_\_\_\_\_

Name \_\_\_\_\_

Name \_\_\_\_\_

Name \_\_\_\_\_

Faces \_\_\_\_\_

Faces \_\_\_\_\_

Faces \_\_\_\_\_

Faces \_\_\_\_\_

Edges \_\_\_\_\_

Edges \_\_\_\_\_

Edges \_\_\_\_\_

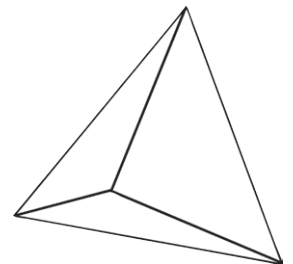
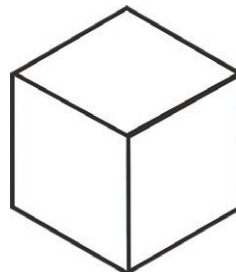
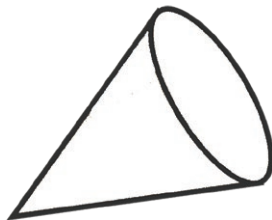
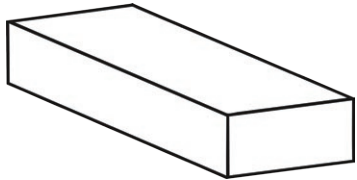
Edges \_\_\_\_\_

Vertices \_\_\_\_\_

Vertices \_\_\_\_\_

Vertices \_\_\_\_\_

Vertices \_\_\_\_\_



Name \_\_\_\_\_

Name \_\_\_\_\_

Name \_\_\_\_\_

Name \_\_\_\_\_

Faces \_\_\_\_\_

Faces \_\_\_\_\_

Faces \_\_\_\_\_

Faces \_\_\_\_\_

Edges \_\_\_\_\_

Edges \_\_\_\_\_

Edges \_\_\_\_\_

Edges \_\_\_\_\_

Vertices \_\_\_\_\_

Vertices \_\_\_\_\_

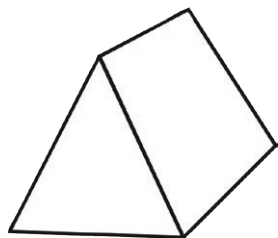
Vertices \_\_\_\_\_

Vertices \_\_\_\_\_

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?

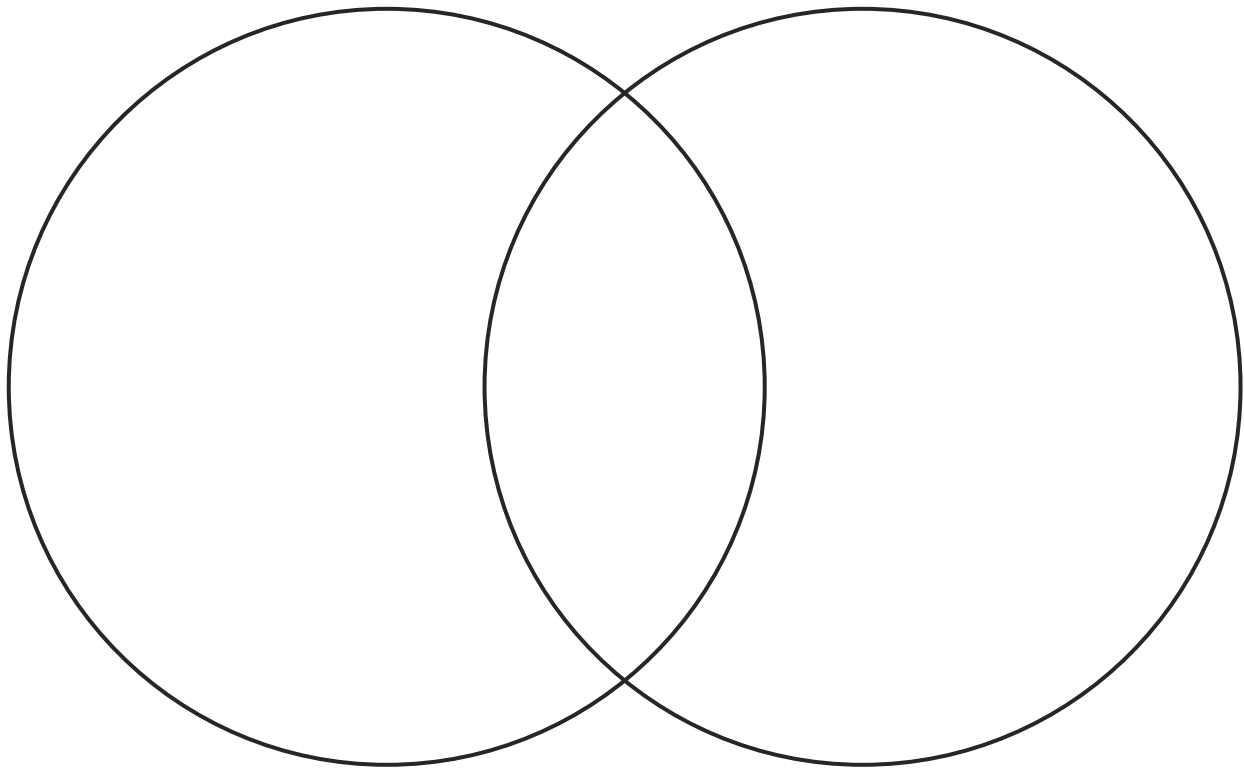


Mo says, 'A cone has no vertices.' Is he correct? Explain your answer.

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?

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

**sphere   cube   cone   cylinder   pyramid**



**All Curved Faces**

**All Flat Faces**

Which statements are correct? Tick **two**.

A square has four sides.

A square is symmetrical.

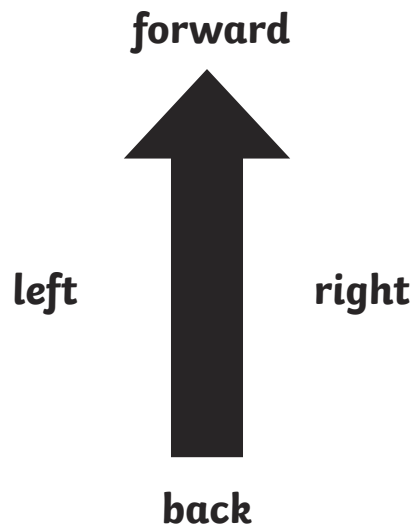
The sides of a square are not the same length.

A square has one curved side.



# Position and Direction

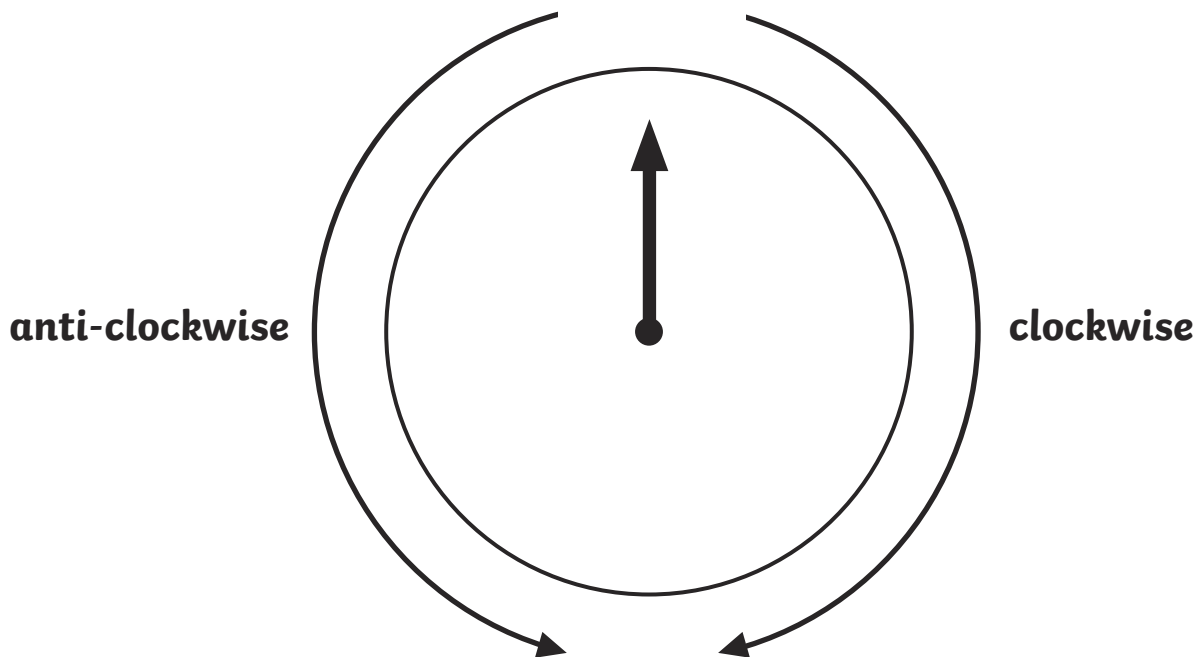
First, let's look at movement and turning. Look at this arrow:



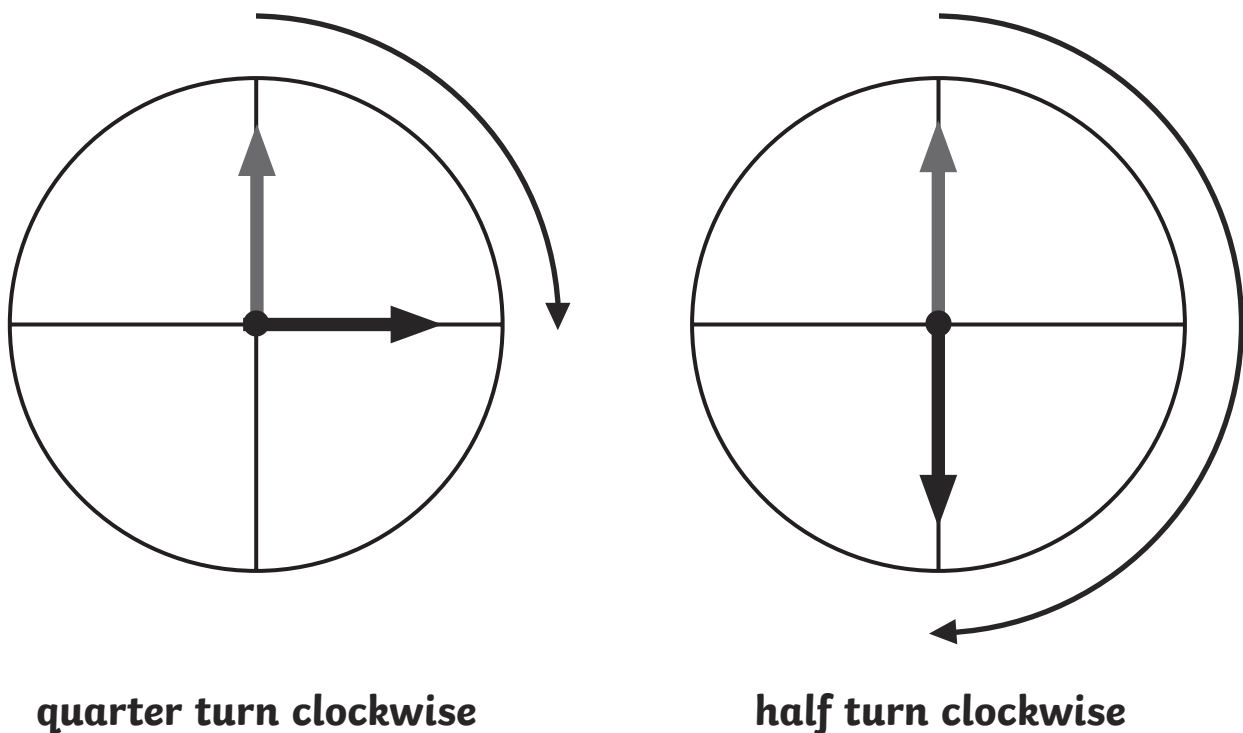
Draw what the arrow would look like if it turned to the left.

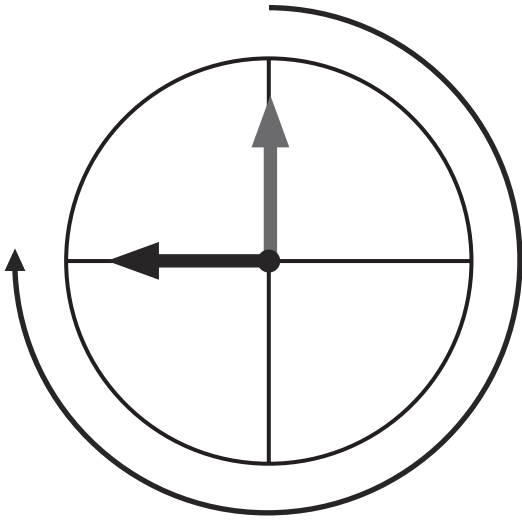
Now, draw what it would look like if it turned to the right.

Another way to look at movement and direction is to imagine the hands of a clock. Turning to the right is called 'clockwise' because this is the direction that a clock's hands move. Turning to the left is called 'anti-clockwise' because this is opposite direction to the way a clock's hands move.

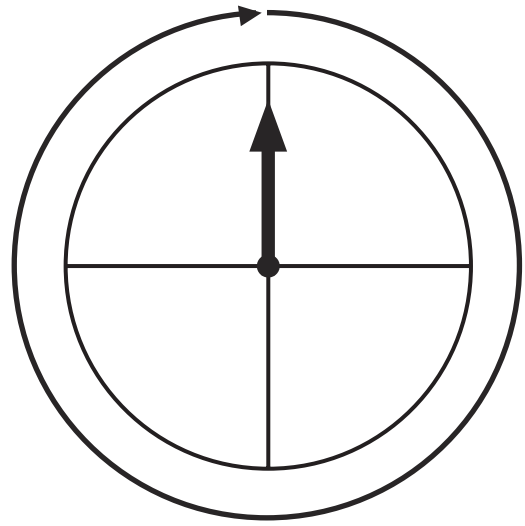


When imagining the hands of a clock, we also talk about quarter, half, three-quarter and full turns. Imagine the clock divided into four quarters.

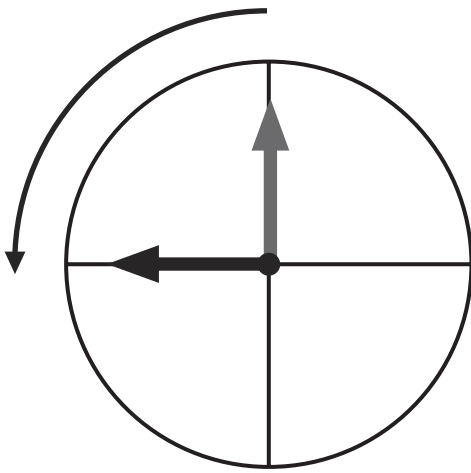




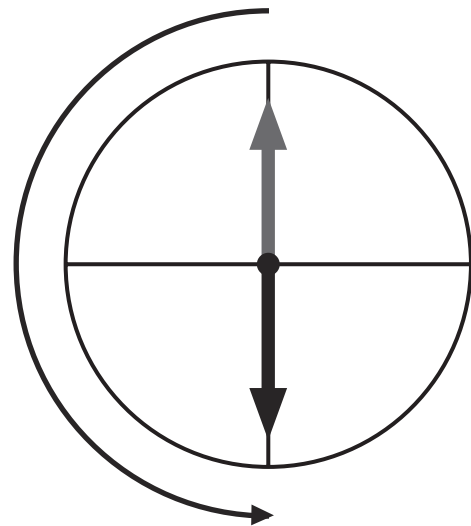
**three-quarter turn clockwise**



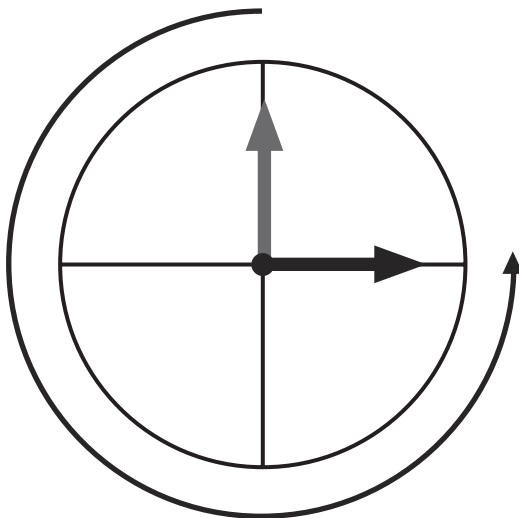
**full turn clockwise**



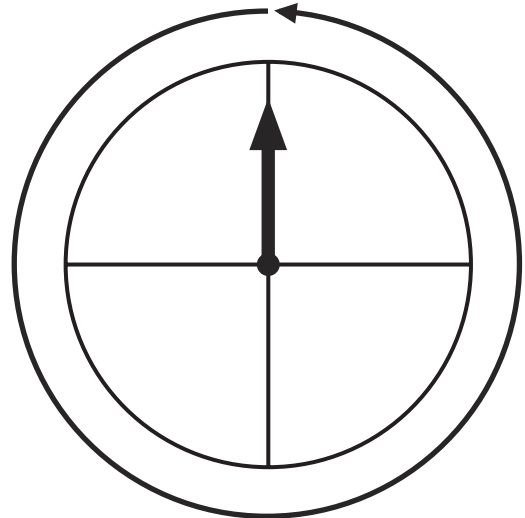
**quarter turn anti-clockwise**



**half turn anti-clockwise**

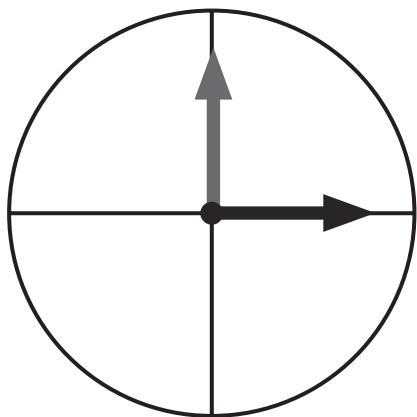


**three-quarter turn anti-clockwise**

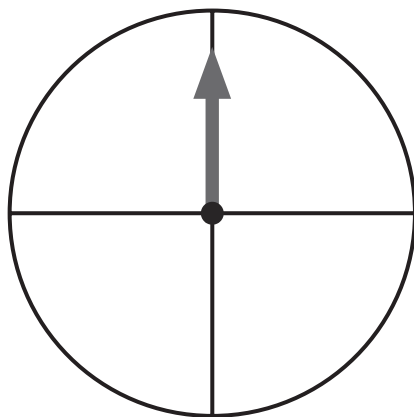


**full turn anti-clockwise**

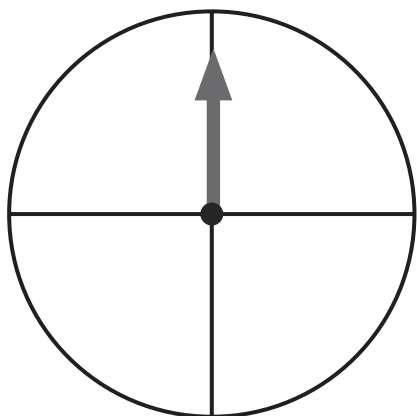
Draw arrows to show these movements. The grey arrow shows where to start.  
The first one has been done for you.



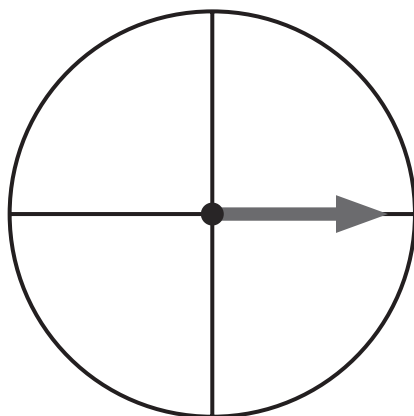
**quarter turn clockwise**



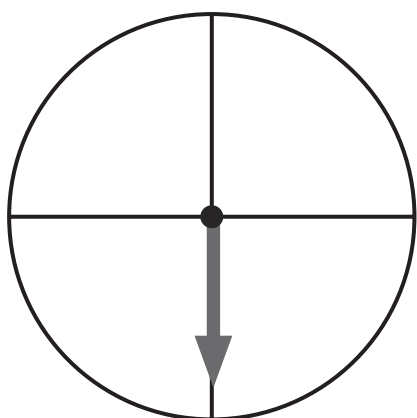
**three-quarter turn clockwise**



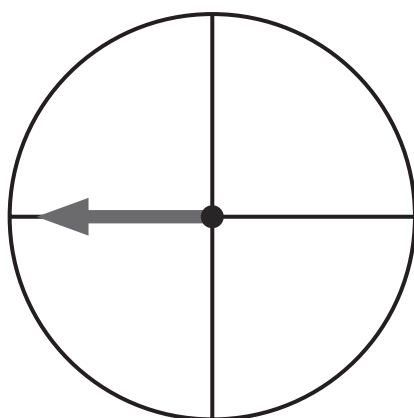
**half turn anti-clockwise**



**quarter turn clockwise**



**three-quarter turn anti-clockwise**



**quarter turn clockwise**

# Patterns and Sequences

When you are asked to complete a pattern, you need to look at what you already know first. Can you fill in the missing numbers in this sequence?

3, 6, 9, \_\_, \_\_, \_\_, \_\_, 24

We can see straight away that the sequence goes up in 3s, so we just need to keep counting on in this way. The final number helps us to check if we've got it right.

3, 6, 9, 12, 15, 18, 21, 24

Sometimes, the sequence goes backwards.

\_\_, \_\_, \_\_, 60, 50, 40, \_\_, \_\_

We can see that the sequence counts back in 10s.

90, 80, 70, 60, 50, 40, 30, 20

And when we look at patterns that use shapes, we have to look again at what we already know.



Although the pattern here doesn't completely repeat, we know enough to be able to carry it on.



Sometimes, a question might ask you to find a 'term' in a sequence. This just means one of the parts of the sequence. So for the sequence above, the 1st term is a triangle, the 6th term is a circle and so on.

Complete these sequences.

\_\_\_, \_\_\_, 25, 30, 35, \_\_\_, \_\_\_, \_\_\_

1, 3, 5, \_\_\_, \_\_\_, \_\_\_, \_\_\_, 15



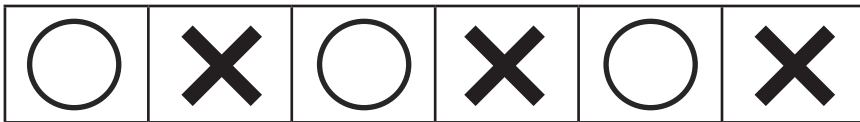
Look at this sequence. What would the 10th term be?

**2, 4, 6, 8, 10, 12**

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

**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.

	2					
	4					
			12	15	18	
	10					
	12					
	14					
	16					

Fill in the missing sections in these sequences.

			X					
			O					
!	X	@			X	@	X	
			O					

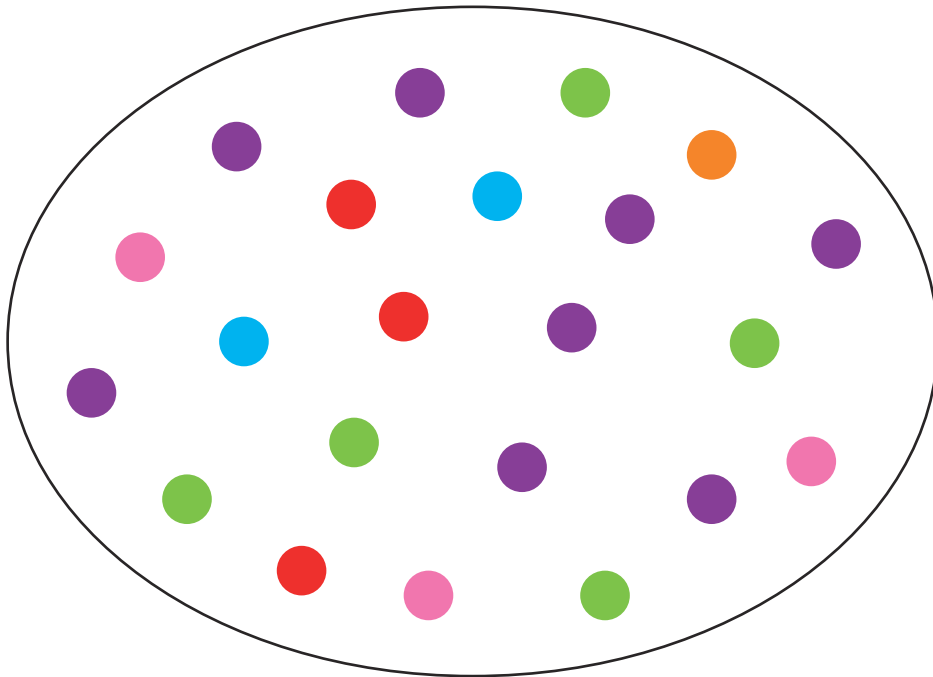
# Statistics

What you need to know: By the end of year 2, children need to be able to construct simple pictograms, tally charts, block diagrams and tables and interpret the data they contain. They also need to be able to ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity. For example, they may be asked which category has the highest number or to say which group of objects represents those shown in a tally chart. Finally, they need to be able to ask and answer questions about totalling and comparing categorical data so they may be asked how many more are in one category than another, or to say how many objects are shown in total. Accurate reading of questions, charts and tables is important, as are good calculation skills.



# 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:

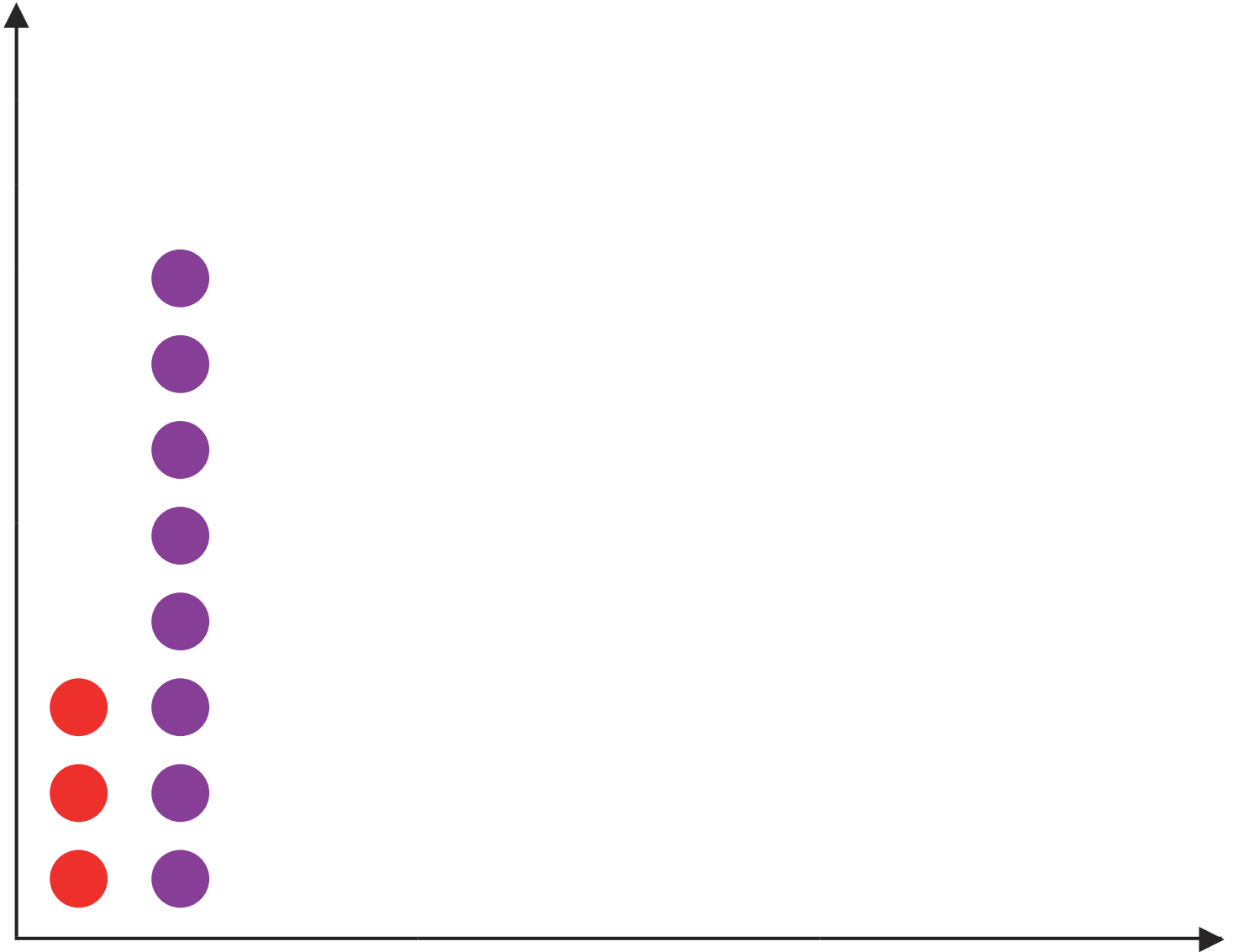


Lily decides to count the colours and record this information in a tally chart. Can you finish the tally chart for her?

Colour	Tally	Number
red	III	3
	IIII III	
pink		
orange	I	
green		5

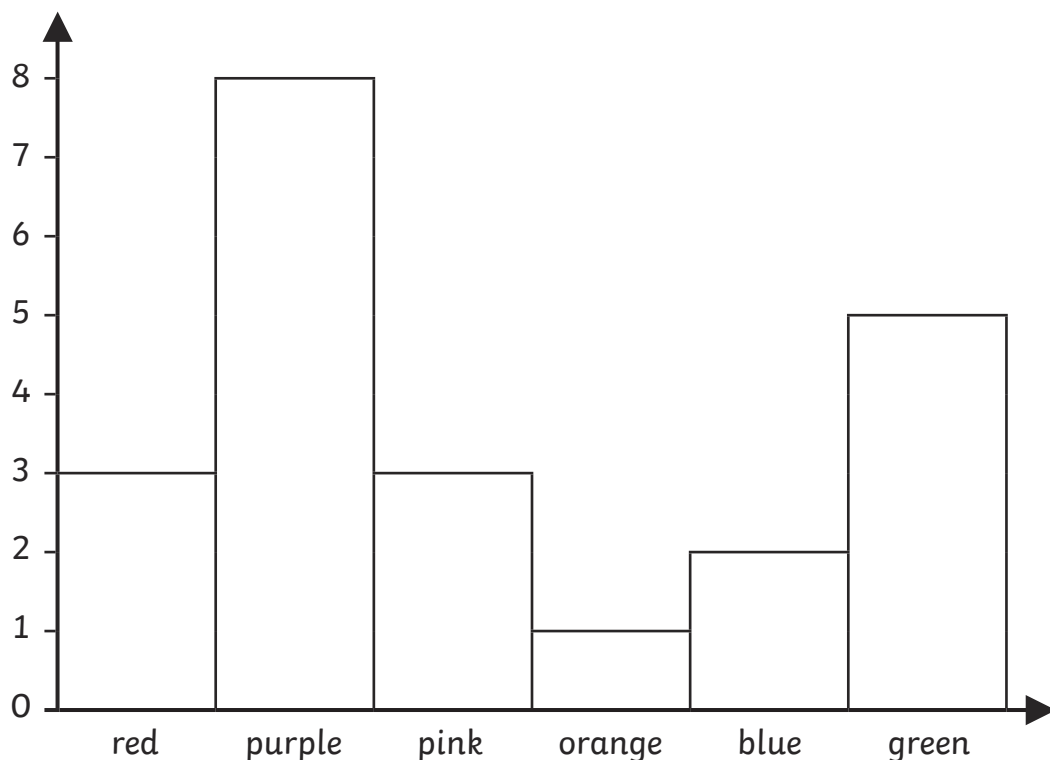
# Pictograms

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?

Which two colours have the same number of sweets?

How many sweets are there altogether?

How many more purple sweets are there than blue?

Lily eats 3 purple sweets, 2 green sweets and 2 red sweets.

What will the tally chart look like now?

Colour	Tally	Number

How many sweets are left?

# Measure

What you need to know: By the end of year 2, children will have learnt about the measurement of length, weight, capacity, time and temperature. They need to know the units of measurement used for each of these and how to read the scale on a ruler, measuring jug, weighing scale and so on. They also need to be able to compare different measures and to carry out simple calculations. In learning about time, children need to be able to tell the time to 5 minutes on an analogue clock and say how many seconds in a minute, minutes in an hour and hours in a day. Lots of practical work is carried out in schools as this is the best way to learn these skills. This can help at home too. To develop measuring skills, you could try practical activities at home such as making something out of bricks or paper, baking a cake or observing the temperature.

# 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.

millimetres, centimetres, metres

capacity

grams, kilograms

weight

seconds, minutes, hours

temperature

millilitres, litres

time

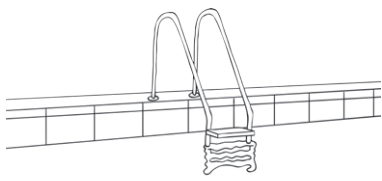




degrees centigrade

length

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

metres	
millilitres	
	cm
kilograms	
	°C
grams	
	mm
	l

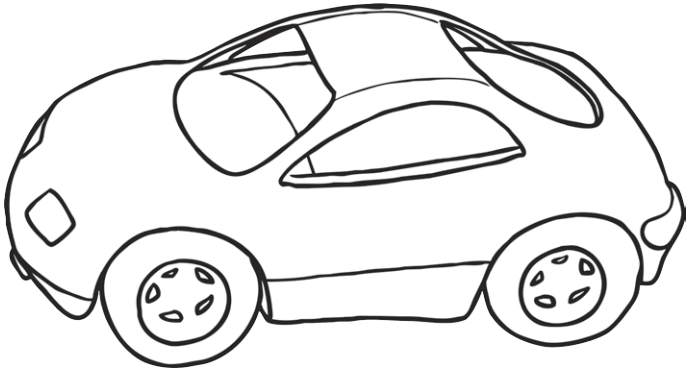
It is important to use the right unit when you are measuring. What unit would you use to measure these things?

the water in a swimming pool		
a pencil		
the temperature in your classroom		
the liquid in a cup of tea		
the distance from your home to Australia		

# 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'.



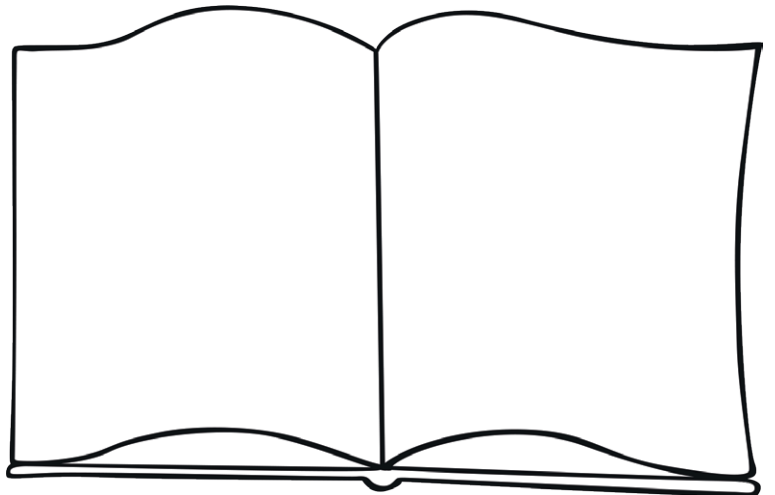
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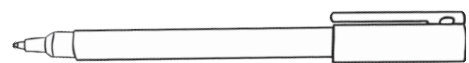
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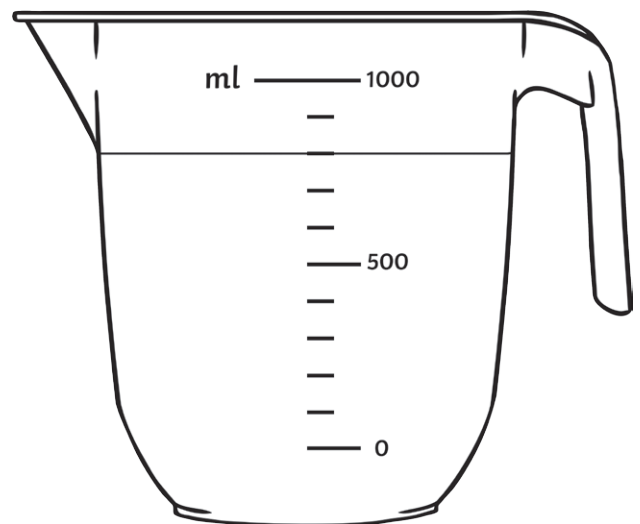
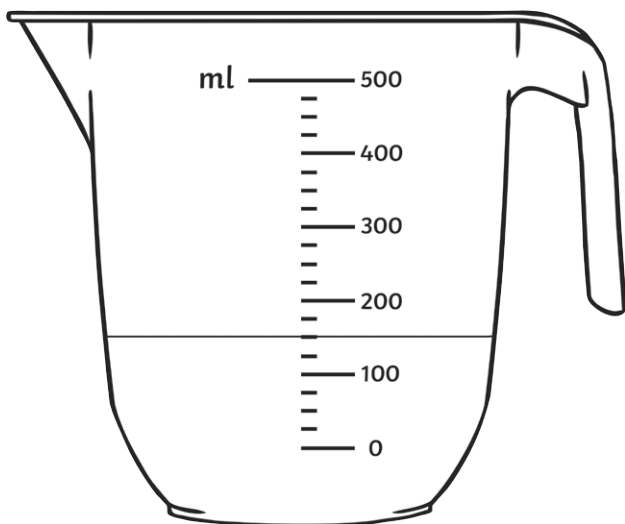
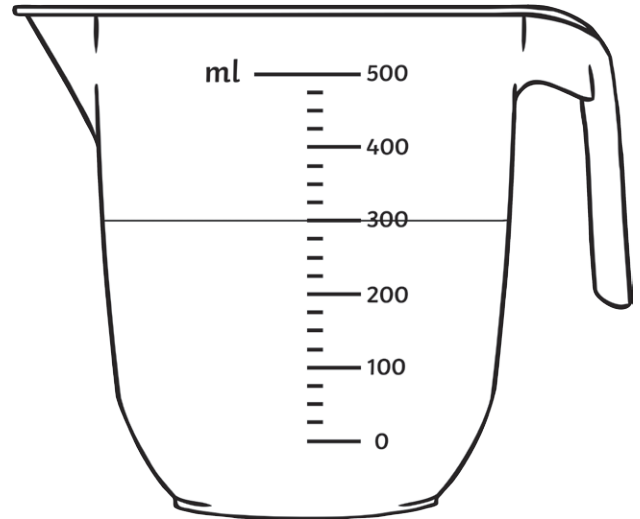
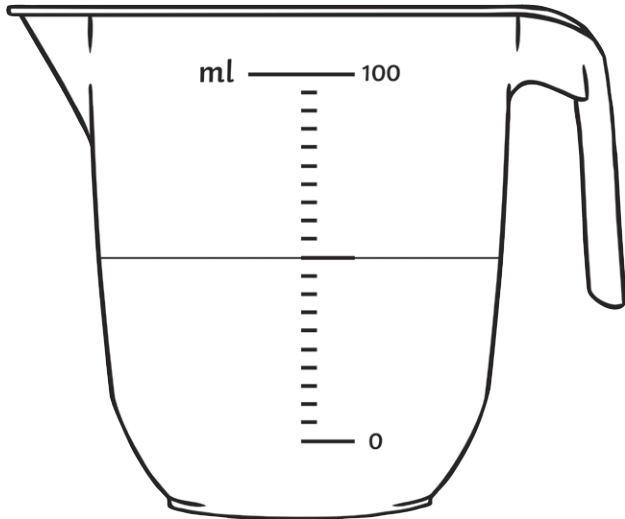


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# Measuring Capacity

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).



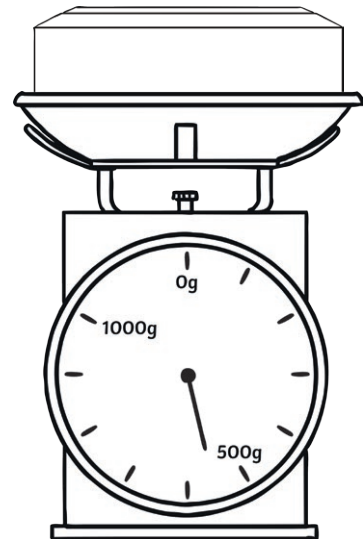
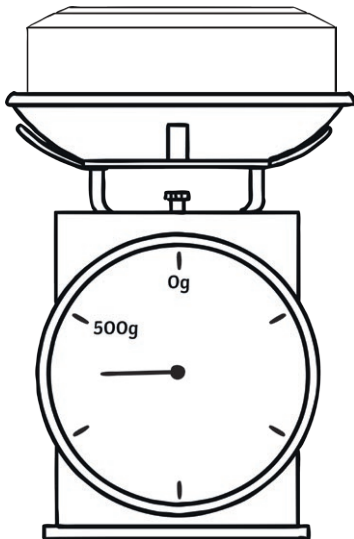
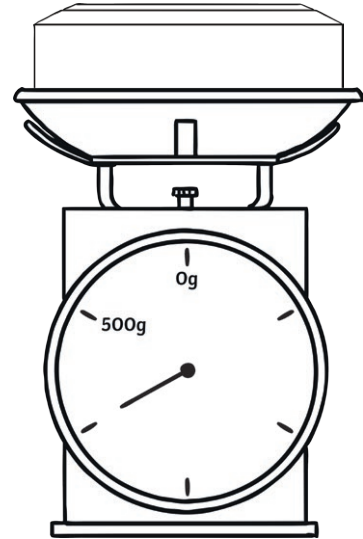
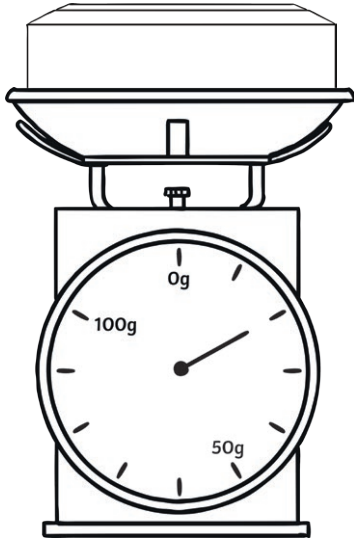
Draw a circle around the jug holding the most water.

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).

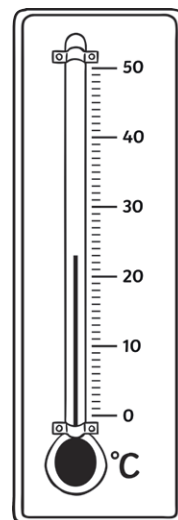
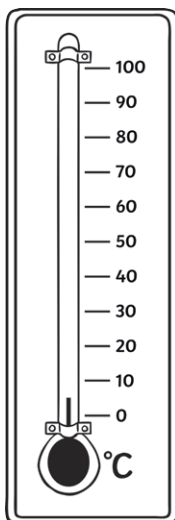
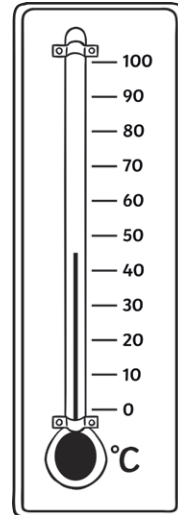
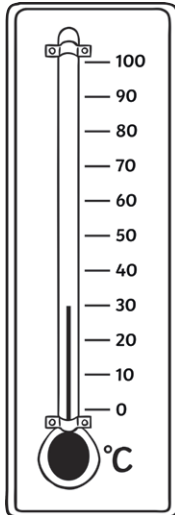


Draw a circle around the scale with the heaviest parcel.

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 ( $^{\circ}\text{C}$ ).

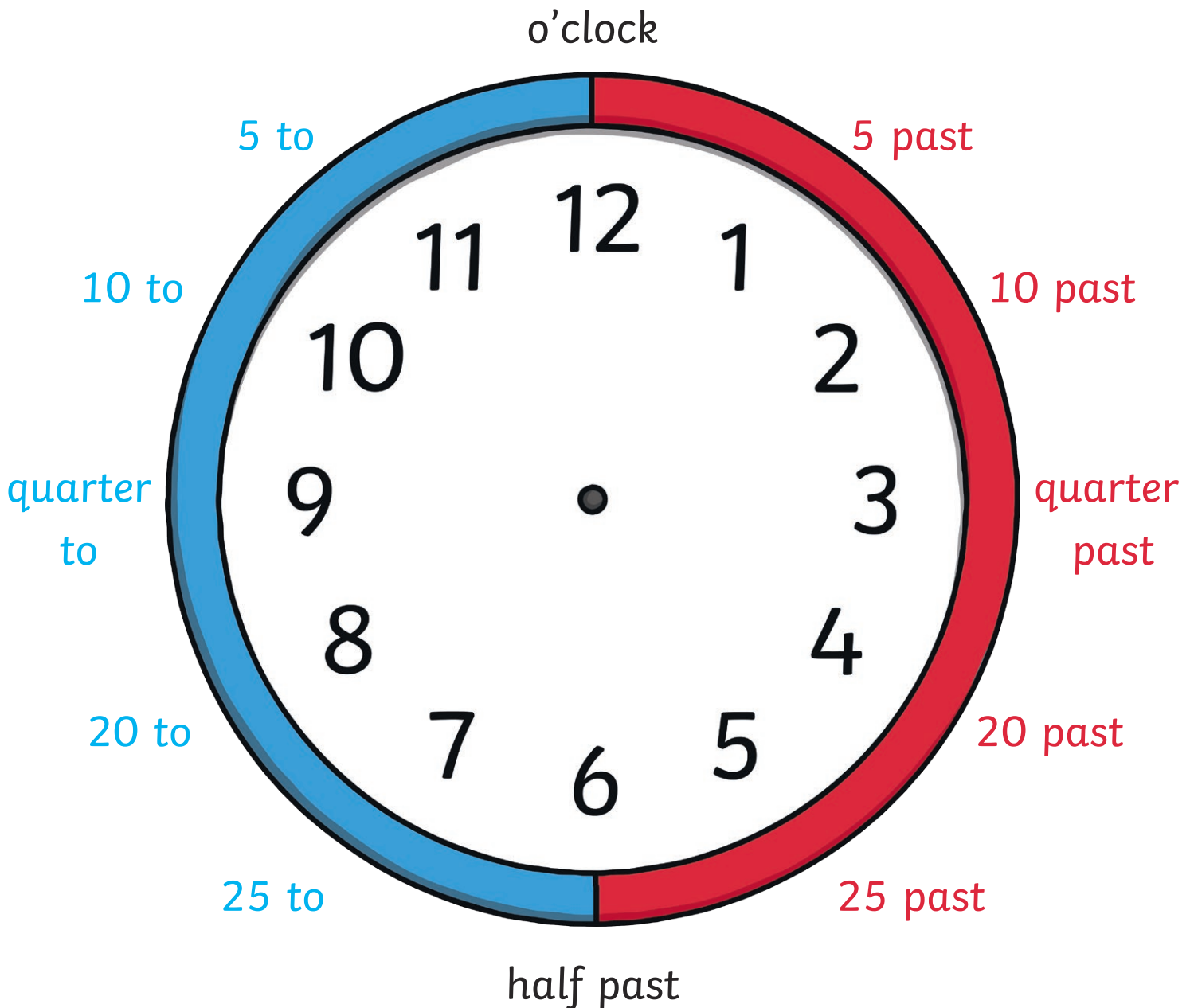


Draw a circle around the thermometer showing the coldest temperature.

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

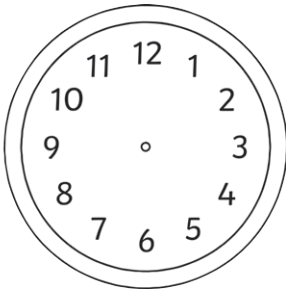
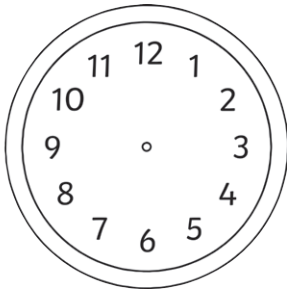
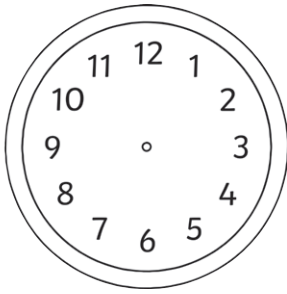
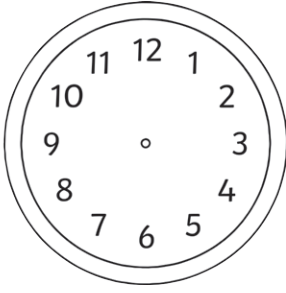
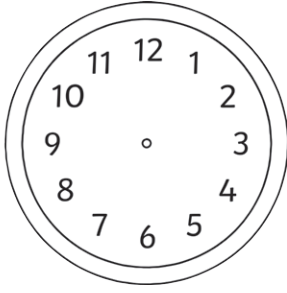
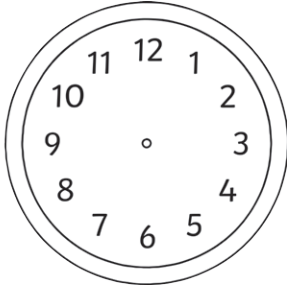
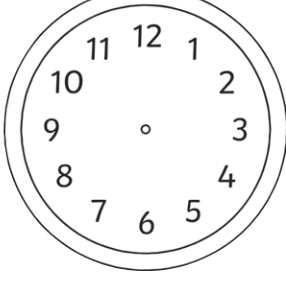
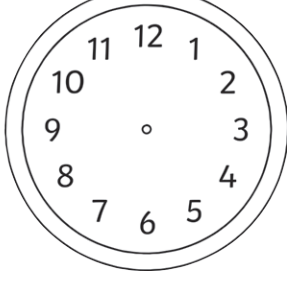
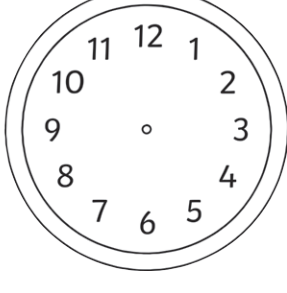
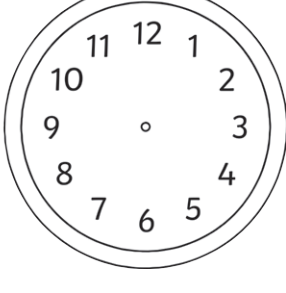
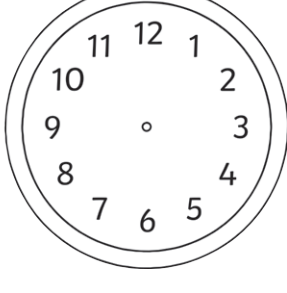
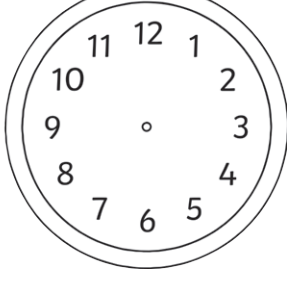
# Telling the Time

Look carefully at this clock. It should help you to remember how to use an analogue clock to tell the time.



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

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

		
<b>quarter past 9</b>	<b>10 past 10</b>	<b>25 to 8</b>
		
<b>20 to 1</b>	<b>25 to 7</b>	<b>5 past 2</b>
		
<b>25 past 3</b>	<b>10 to 12</b>	<b>quarter to 4</b>
		
<b>5 to 11</b>	<b>half past 5</b>	<b>20 past 6</b>

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

# Fill the Jar!

Choose a reward that you would like to have and write it on the label of the jar. You can colour in buttons every time you complete some great work, and when you've coloured in all the buttons you can have your reward. If you still have work to do, you can print off another chart and start again - perhaps with a new reward!

Completing a sheet - colour 1 button

Doing something else great (helper's choice) - colour 1 button

