

Workshops: The heart of the MagiKats Programme

Every student is assigned to a Stage, based on their academic year and assessed study level.

Stage Foundation and 1 students range from 5 to 7 years old.

The sheets in this pack are a small sample of what is available! These are only samples of the student's worksheets - our teaching methods include discussion and hands-on activities.

Core skills sheets are also provided for independent completion by each student (usually at home).

Topics offered at this level include: building concepts of addition, subtraction, multiplication and division; developing number awareness; odd and even numbers; rounding and estimating; halves and quarters; working with money; length, mass and capacity; reading a clock; following directions using right angles and turns; lists, pictograms and graphs; problem solving.

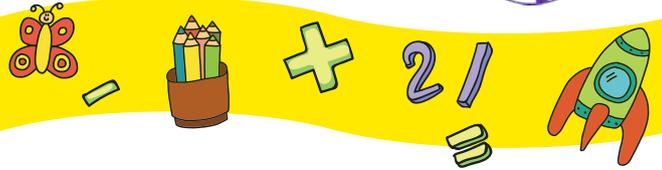


MagiKats
TUITION CENTRES

MATHS STAGE F/1



Number Bonds to 10



What are number bonds? They are the pairs of numbers that add up to a round number. The most helpful ones to learn are the bonds to 10, 20 and 100. We will concentrate on number bonds to 10 first.

Pick 2 colours.



Shade 1 caterpillar circle in your first colour.

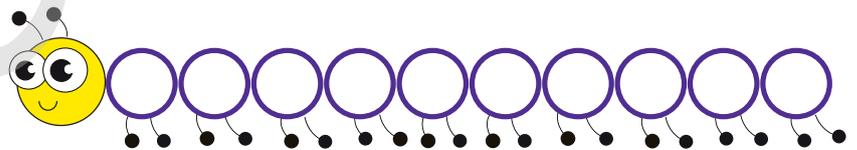
How many circles do you need to shade in your second colour to make sure all 10 circles are shaded?

We can show this with the sum $1 + \underline{\quad} = 10$

This is your first number bond!

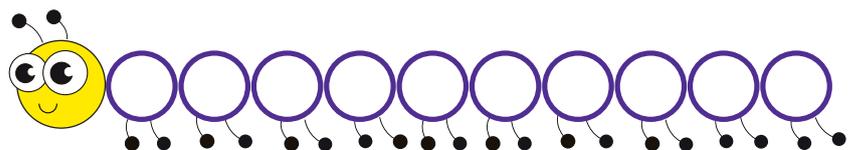


Now, do the same with these caterpillar circles below, to show different ways you can make 10. Make sure you do different combinations for each caterpillar!



Start with 2 circles in your first colour. Now shade the rest with your second colour.

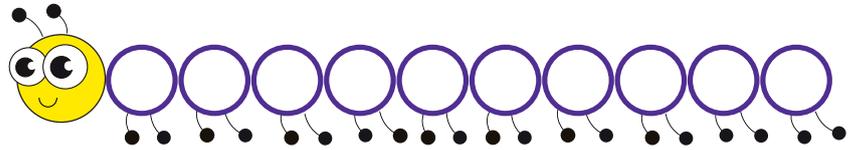
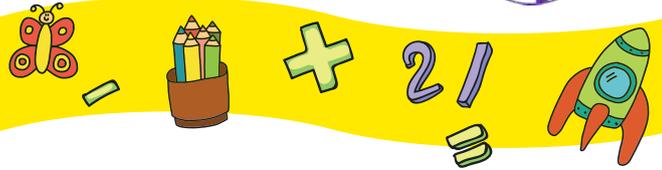
Sum: $2 + \underline{\quad} = 10$



How many circles in first colour? $\underline{\quad}$ How many circles in second colour? $\underline{\quad}$



Sum: $\underline{\quad} + \underline{\quad} =$



Now, use your coloured caterpillar circles to help you fill in the gaps in these sums!

$1 + \square = 10$

$6 + \square = 10$

$2 + \square = 10$

$7 + \square = 10$

$3 + \square = 10$

$8 + \square = 10$

$4 + \square = 10$

$9 + \square = 10$

$5 + \square = 10$

$10 + \square = 10$

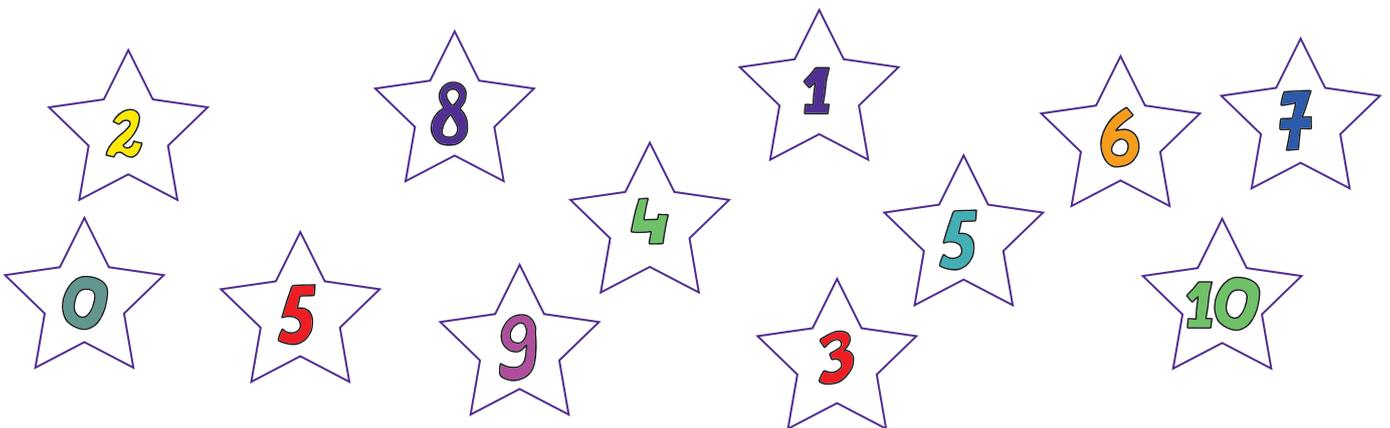
How about this one?

$0 + \square = 10$

How many different ways can we make up 10? _____



Pick 6 different colours. Find a pair of numbers below that add up to 10, and shade them the same colour. Now, change colours and find another pair. Carry on until all the numbers have been used.





Draw a line to join the pairs of numbers that add to make 10.

0 10

1 3 5 6 7 8 9 4

Join sets of three numbers to make a total of 10.

1 2 3

4 5 6

6 1 2

2 4 1

3 8 1

5 6 0



Try matching up at least one set of Number Bond to 10 cards.
You can keep these out if you want.

Now, using the cards or your memory, fill in the gaps on this sheet.

$1 + \square = 10$

$9 + \square = 10$

$2 + \square = 10$

$8 + \square = 10$

$3 + \square = 10$

$7 + \square = 10$

$4 + \square = 10$

$6 + \square = 10$

$5 + \square = 10$

$0 + \square = 10$

$6 + \square = 10$

$4 + \square = 10$

$7 + \square = 10$

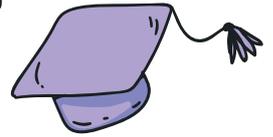
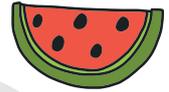
$3 + \square = 10$

$8 + \square = 10$

$2 + \square = 10$

$9 + \square = 10$

$1 + \square = 10$





Doubles and Halves



Do you remember what number goes with 5 to make 10?

$$\begin{array}{c} \star \\ 5 \end{array} + \begin{array}{c} \star \\ \end{array} = \begin{array}{c} \star \\ 10 \end{array}$$

This is like two lots of five.

$$\begin{array}{l} \text{5 candies} \\ 5 \\ + \\ \text{5 candies} \\ 5 \end{array} = 10 \text{ or } \text{double } 5$$

$$\begin{array}{l} \text{5 candies} \\ 5 \\ + \\ \text{5 candies} \\ 5 \end{array} = 10$$

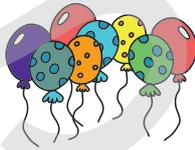
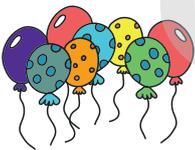
What do these doubles make?



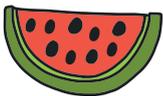
$6 + 6 = \square$



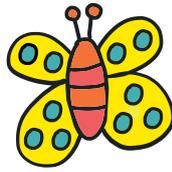
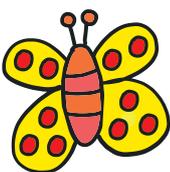
$7 + 7 = \square$



$8 + 8 = \square$



$9 + 9 = \square$



$10 + 10 = \square$



Join each number to its **double**.

10

2

6

4

8

4

8

8

20

16

12

1

9

7

3

5

18

14

10

2

6

Match each number to its **double** by colouring their star in the same colour.

Why do you need two number tens?

Make some doubling chains!

Double 1 = double double double

Double 3 = double

Double 5 = double



Which number do you have to double?

$$\square + \square = 14$$

$$\square + \square = 20$$

$$\square + \square = 4$$

$$\square + \square = 16$$

$$\square + \square = 12$$

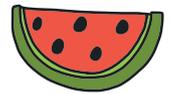
$$\square + \square = 10$$

$$\square + \square = 18$$

$$\square + \square = 8$$

$$\square + \square = 6$$

$$\square + \square = 2$$



In a game of Scrabble, some letters score double points on special places on the board. Here are some double point tiles.



Which tile would you put down:

To score 14 put down

To score 18 put down

To score 10 put down

To score 16 put down

To score 20 put down

To score 12 put down





Time: Analogue Clocks



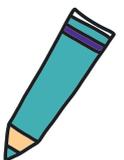
Write each of the numbers from 1-12 on the insides of the clock face, starting from number 1. 12 has been written in to help.

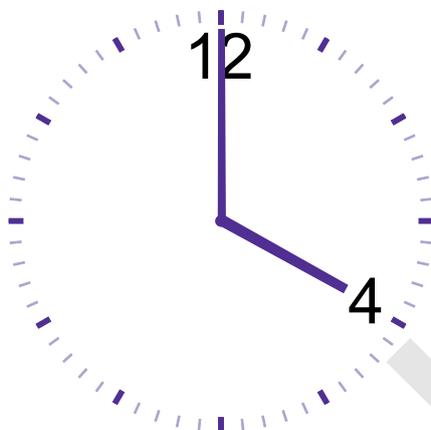
These are the **hours** of the day.
Remember - the little hand points to the o'clock.



Use a red pencil and a ruler to draw in the hour hand if it is 4 o'clock.

Then use a blue pencil and a ruler to draw the hour hand if it is 10 o'clock.



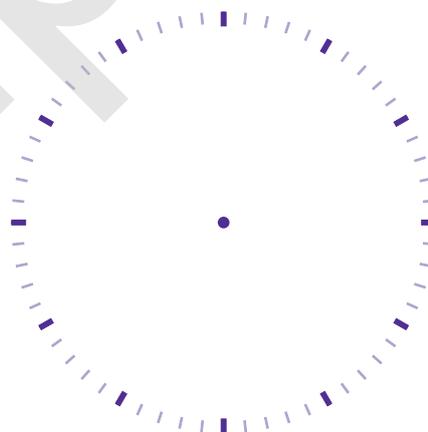
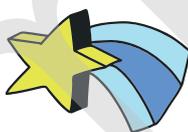


This clock says four o'clock.

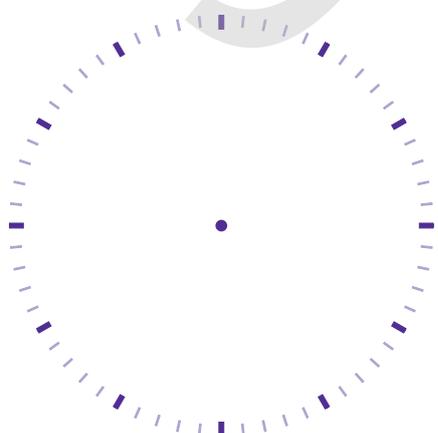
Draw in the hands to make the other clocks say the right time.



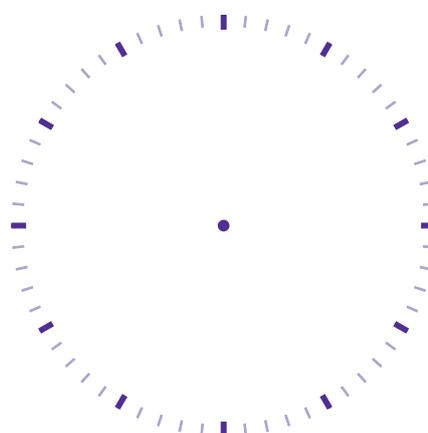
three o'clock



seven o'clock



nine o'clock



two o'clock



This clock says half past nine.

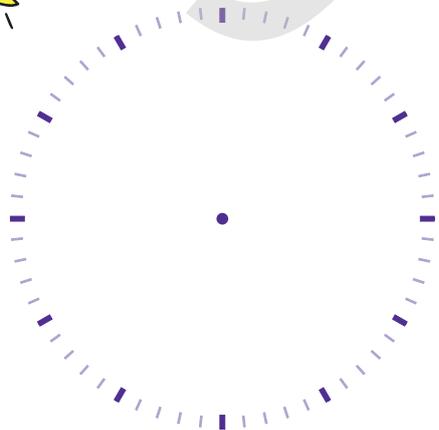
Draw in the hands to make the other clocks say the right time.



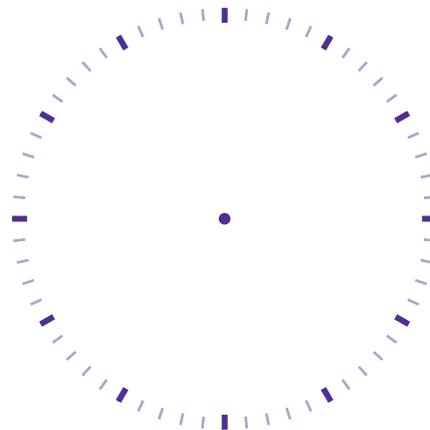
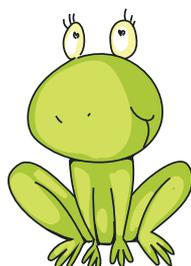
half past three



half past five



half past ten



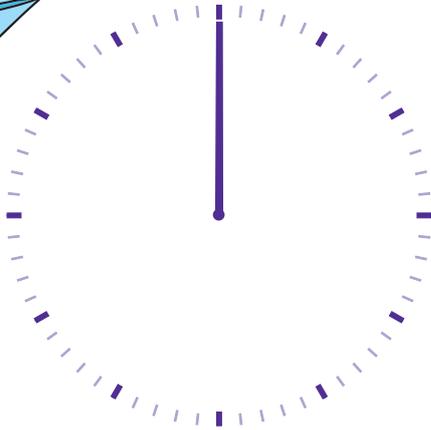
half past twelve



Halves and Quarters



You must learn these 4 special positions for the big hand:



...o'clock



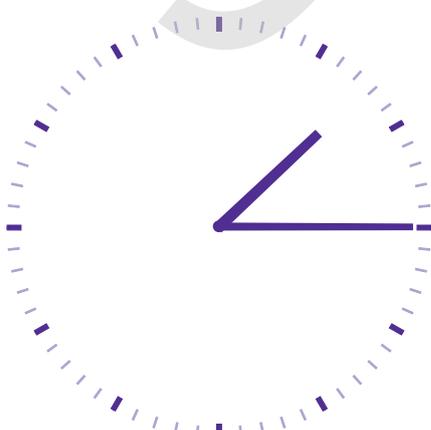
quarter past...



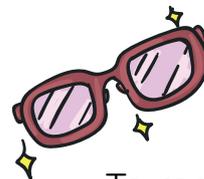
half past...



quarter to...



Here: "quarter past one" is the same as "15 minutes past one".



Say What You See

To read a digital clock, just say one number after the other.

For Example:

02:30

Just say "two thirty"
- that's "half past two".



Drawing the Time



Draw the minutes hand in the right place for the time shown underneath.



half past one



quarter to four



seven o'clock



half past six



quarter past nine



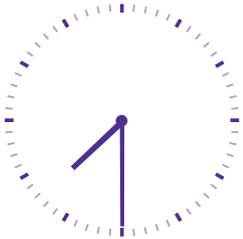
quarter to three



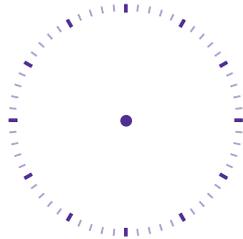
Time Questions



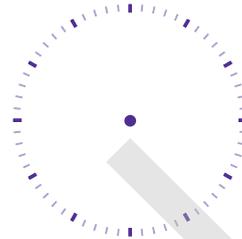
1) Draw hands on these clock faces to match the time written below each one (the first one is done for you).



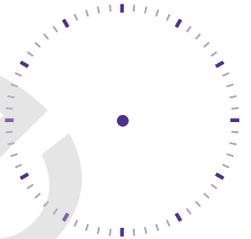
half past seven



three o'clock



quarter to one



quarter past nine

2) Kate went to a disco on Friday night.
This clock shows what time the disco started.



a) What time is it on the clock?

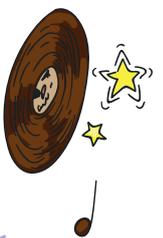


This clock shows what time the disco finished



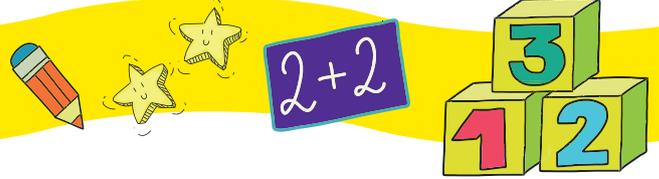
b) What time is it on the clock now?

c) How long did the disco last?





Number Bonds to 20



Complete a set of Number Bond to 20 cards, then fill in the gaps on this sheet.

$1 + \square = 20$

$11 + \square = 20$

$2 + \square = 20$

$12 + \square = 20$

$3 + \square = 20$

$13 + \square = 20$

$4 + \square = 20$

$14 + \square = 20$

$5 + \square = 20$

$15 + \square = 20$

$6 + \square = 20$

$16 + \square = 20$

$7 + \square = 20$

$17 + \square = 20$

$8 + \square = 20$

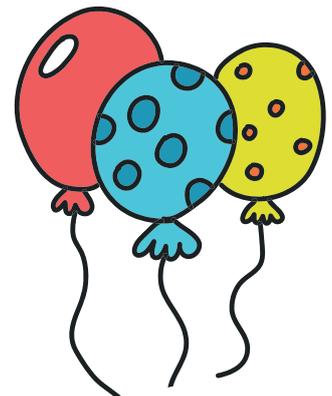
$18 + \square = 20$

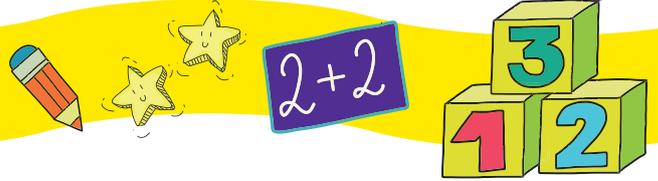
$9 + \square = 20$

$19 + \square = 20$

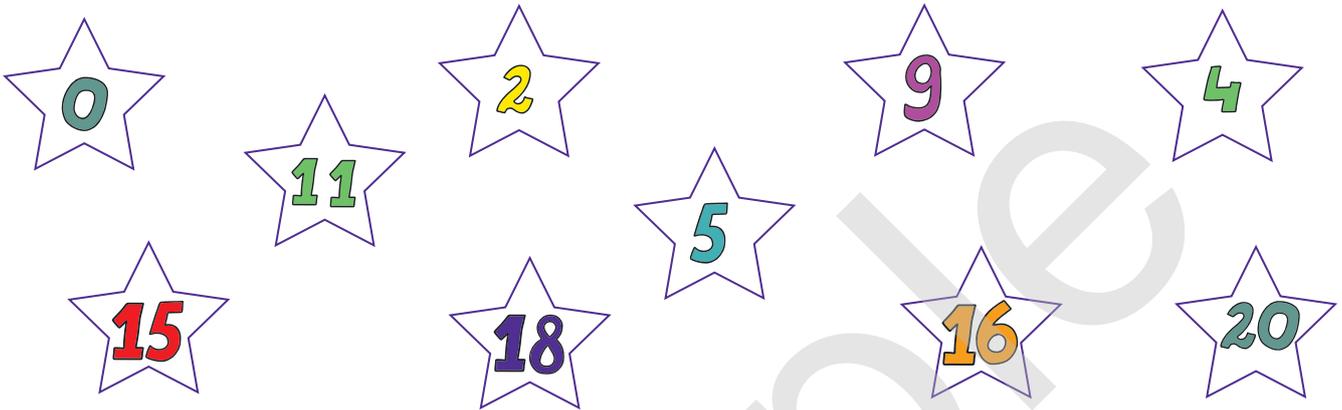
$10 + \square = 20$

$20 + \square = 20$

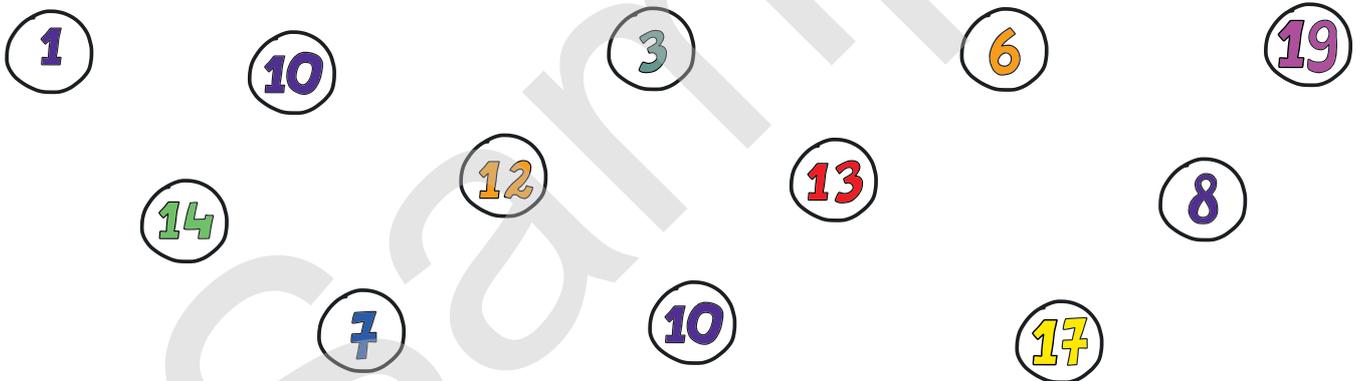




Pick five different colours. Find a pair of numbers below that add up to 20, and shade them the same colour. Now, change colours and find another pair. Carry on until all the numbers have been used.



Now use the same 5 colours to find more pairs of numbers that add up to 20 from the circles below. There are 6 pairs, so you will need to leave one pair white.



Have you spotted a pattern? The number bonds to 20 are quite like number bonds to 10.

Fill in these gaps, and see if you can spot the pattern.

$$6 + \square = 10$$

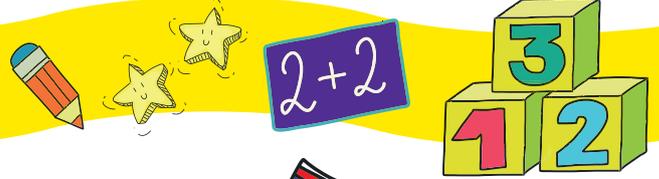
$$6 + \square = 20$$

$$4 + \square = 10$$

$$4 + \square = 20$$

$$14 + \square = 20$$

$$16 + \square = 20$$



Join together pairs of numbers that make 10 with RED.
There are 5 pairs to find.

Join together pairs of numbers that make 20 with BLUE.
There are 7 pairs to find.

(You can do the number bond cards to 20 first, and keep them out to help, if you want)

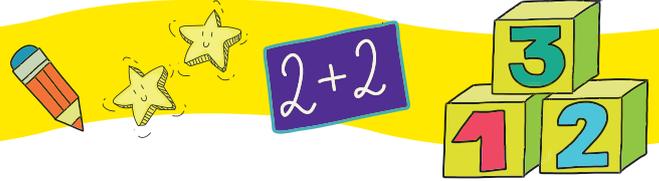
0 10 15 6 11 4
7 5 9 1
16 10
8 2 7 8 14
4 9 5
12 5
13 3



Excellent work!
Make sure you have your answers checked before moving on.

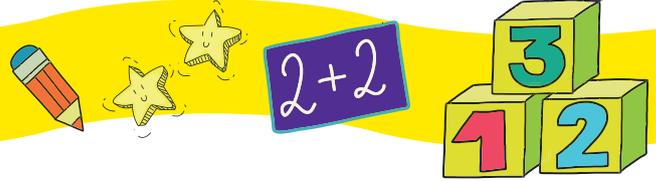


Number Bonds to 100



Can you fill in the gaps in this grid?

1			4						10
11					16				
	22		24						
		33						39	
41							48		
						57			60
		63		65					
	72				76				
						87			90
	92		94						



Fill in the missing gaps in these lines, counting in 10s to 100.
You can use the 100 grid on Sheet 5 to help, if you want.

10	20	30		50	60		80	90	100
----	----	----	--	----	----	--	----	----	-----

10		30			60	70		90	100
----	--	----	--	--	----	----	--	----	-----

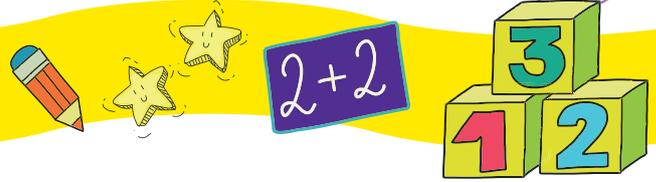
10			40	50			80	90	100
----	--	--	----	----	--	--	----	----	-----

10		30			60		80		100
----	--	----	--	--	----	--	----	--	-----

10	20					70			100
----	----	--	--	--	--	----	--	--	-----

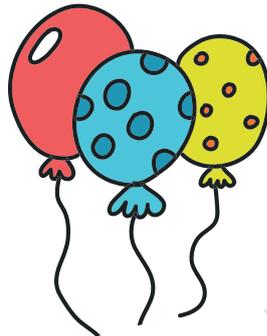
10				50					100
----	--	--	--	----	--	--	--	--	-----

10									100
----	--	--	--	--	--	--	--	--	-----

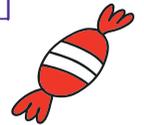


Fill in the gaps in this grid to show the different pairs that make 100.

0	+	
10	+	
20	+	
30	+	
40	+	
50	+	



60	+	
70	+	
80	+	
90	+	
100	+	



Now you've been over your number bonds to 10, 20 and 100, can you think of any ways you can use these to help you in everyday life?

A lot of packets have 10 items in them, e.g. packs of sweets, greetings cards, lollies, balloons. Can you think of any others? Number bonds to 10 can be very useful when splitting the contents of such packets.

Can you use your number bonds to 10 to answer these questions?

- 1) I have 10 lollies and give 5 to my sister. How many do I have left?
- 2) A packet has 10 balloons in it. Sarah blows up 2, how many are left to blow up?
- 3) Out of a pack of 10 cards, Joe gives 6 to his family. How many does he have left to give out to his friends?
- 4) There are 10 pink and blue iced cakes in a tin. 8 have pink icing, how many have blue?
- 5) Hannah has a pack of 10 mini chocolate bars. She wants to give 7 to friends, and have 3 left for herself. Can she do this?
- 6) Keith has a bag of 10 batteries. He needs 4 for the radio, and 8 for the stereo. Does he have enough batteries?
- 7) Mags has a box with 10 rubbers in it. She takes 3 to school. How many does she have left to keep at home?

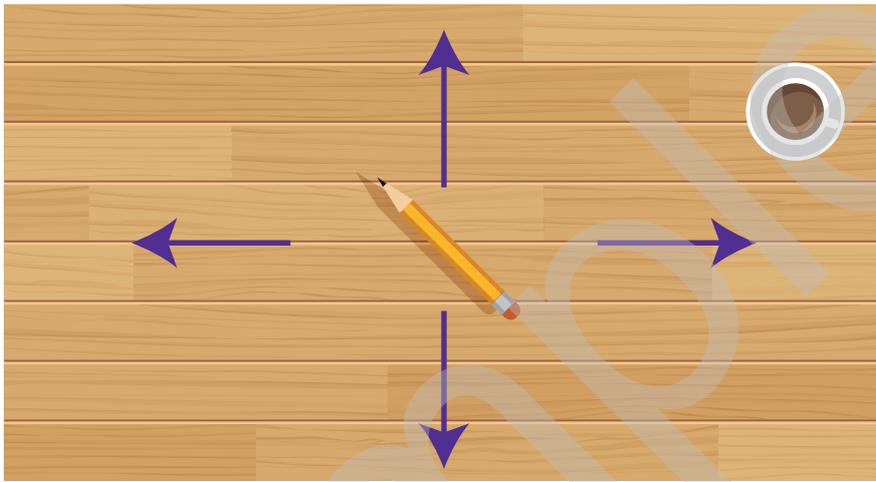




Moving and turning



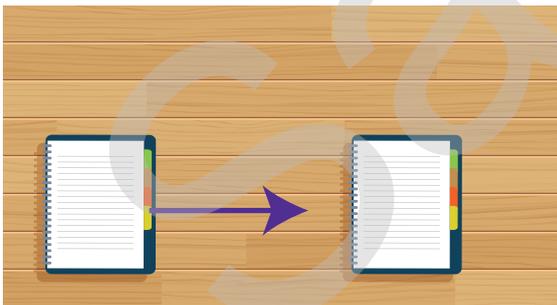
There are lots of ways of moving things. Look at your pencil on the table. When we move it from one place to another, it does not change its shape, just its position. On the table, how many different ways can we move it? We can move it away from us (up), we can bring it nearer to us (down) and we can move it from side to side (left or right).



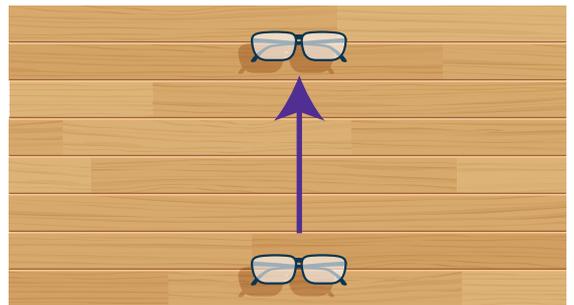
If we try to move it away **and** to one side, what happens?

Describe how these objects have been moved on each of these table tops.

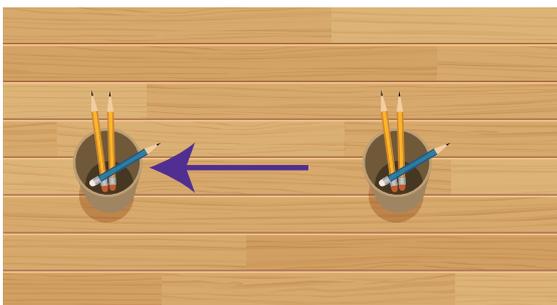
1)



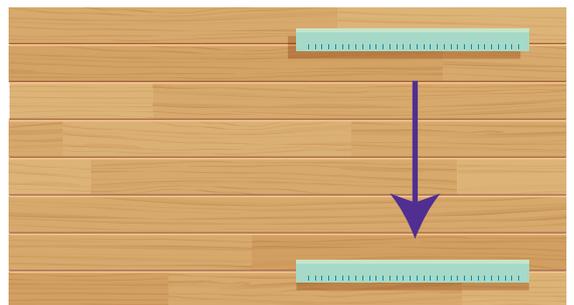
2)



3)



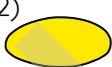
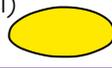
4)





If we want to explain how things have moved in a more accurate way, we can use a grid. Now we can count how many squares and the direction the shape has moved. On this grid, we can write down how the purple star has moved from position 1 to position 2 like this:

The star has moved five squares up.

						2) 	1) 		
1) 					2) 				
			1) 						
				2) 					
1) 	2) 					1) 		2) 	
			1) 						
	2) 				1) 		1) 		
			2) 						
							2) 		

Write down how these objects have moved from position 1 to position 2 on the grid.















Clockwise and anti-clockwise

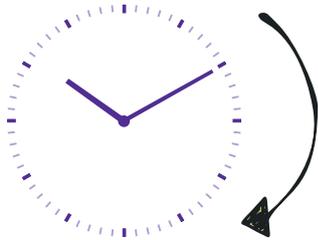


Things don't only move in the ways we have already learned. Things can also turn round. The shape of the pencil still does not change, but it is in a different position to how it started.

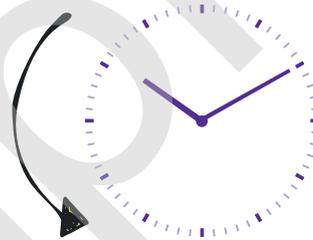


When something turns round it can do it two ways:

Clockwise



Anti-clockwise



Clockwise means it turns in the same direction as clock hands do, or to the right.

Anti-clockwise means it turns in the opposite direction to the clock hands, or to the left.

Has the pencil moved clockwise or anticlockwise in each of these pictures?

1)



2)



3)



4)



5)



6)



7)



8)



9)

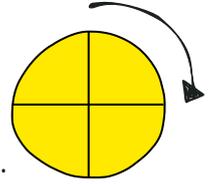




Quarter and Half Turns



When something turns, we might need to know how much to turn. We can measure this by half and quarter turns. Remember that things can turn both ways, so you must remember clockwise and anti-clockwise! Another way of saying a quarter turn is a right angle.



one quarter turn clockwise



Maria is sitting on the roundabout...

- 1) She is facing the swing. What will she be looking at when the roundabout has turned one quarter turn clockwise?

- 2) She is facing the seesaws. What will she be looking at when the roundabout has turned one quarter turn clockwise?

- 3) She is facing the climbing frame. What will she be looking at when the roundabout has turned one half turn anti-clockwise?

- 4) She is facing the slide. What will she be looking at when the roundabout has turned three right angles anti-clockwise?

- 5) She is facing the seesaws. What will she be looking at when the roundabout has turned three right angles clockwise?

- 6) She is facing the swing. What will she be looking at when the roundabout has turned two right angles clockwise?



Clockwise and anti-clockwise



When a boat is out at sea, it uses a compass. This keeps it heading in the right direction, telling it which way to turn and by how much to keep it on course.

The letters on the four main points of the compass stand for:

- N - north
- E - east
- S - south
- W - west



Here are two ways to help you remember the order they come **clockwise** around the circle:

Never Eat Sausages on Wednesday
Never Eat Shredded Wheat

Imagine you are standing in the middle of the compass and facing north. Which direction will you be if you turn:

- 1) Two right angles clockwise? _____
- 2) One quarter turn anti-clockwise? _____
- 3) Three right angles anti-clockwise? _____
- 4) One half turn clockwise? _____
- 5) One right angle clockwise? _____

What direction would you be facing if you were:

- 6) Facing south and turned three right angles clockwise? _____
- 7) Facing west and turned three quarter turns anti-clockwise? _____
- 8) Facing north and turned three right angles clockwise? _____
- 9) Facing east and turned one quarter turn anti-clockwise? _____
- 10) Facing west and turned two right angles clockwise? _____