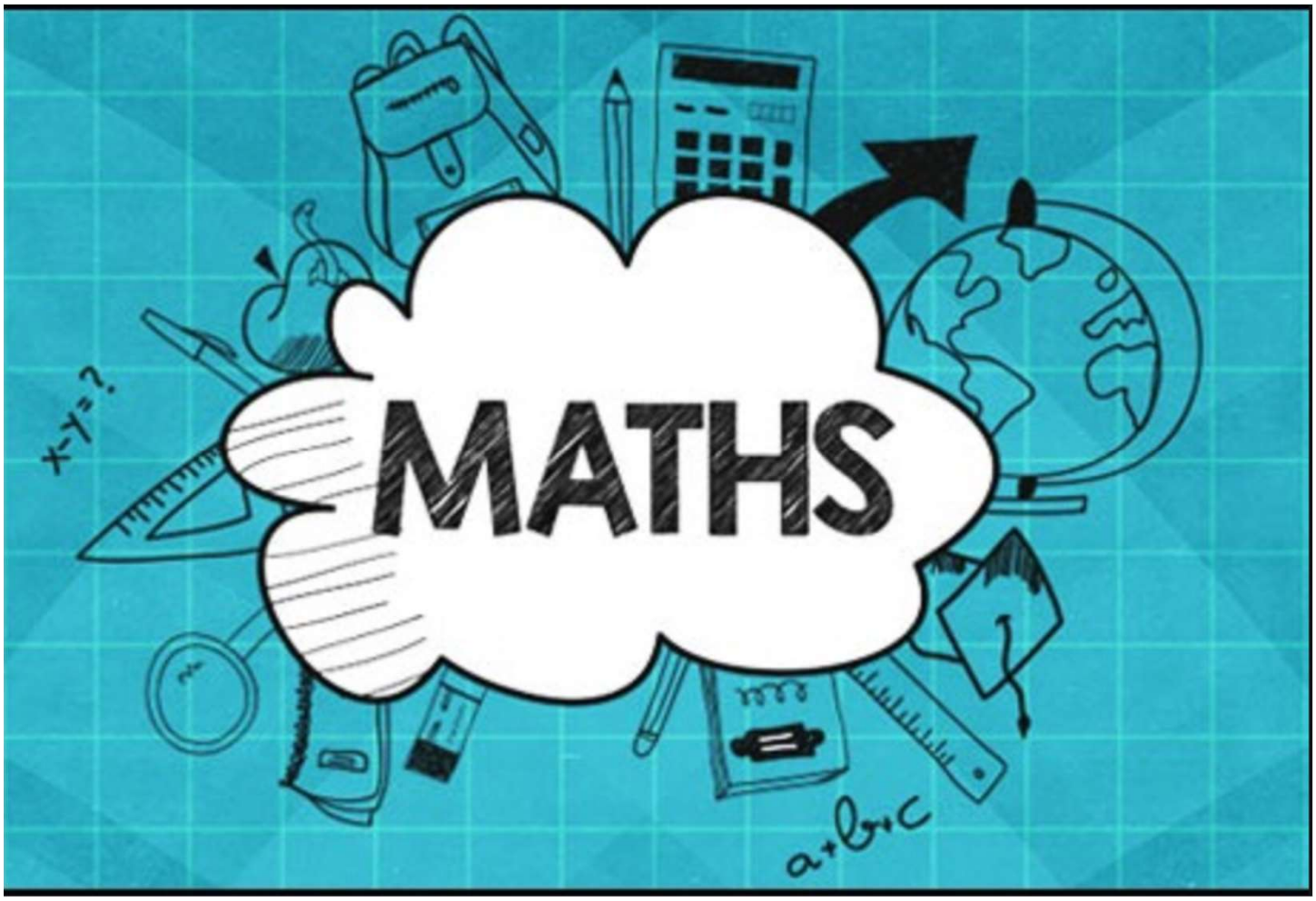
HAWKLEY HALL HIGH SCHOOL



We cannot wait to meet you…

All the Maths teachers at Hawkley Hall High School are very much looking forward to meeting you, normally during transition weeks you would be able to visit us and you would find out about us, we find out about you and together we would be able to do some Maths. Unfortunately due to transition being cancelled we won't be able to meet in person, however hopefully by completing this booklet you will be able to find out some facts about the Maths teachers at Hawkley, do some research into some of our favourite mathematicians and do some maths either on your own or with your family/carers.

What does Hawkley Hall maths department have to offer?

Hawkley Hall has a modern purpose built, mathematics block. It hosts 10 classrooms, the mathematics faculty staffroom and a meeting room.

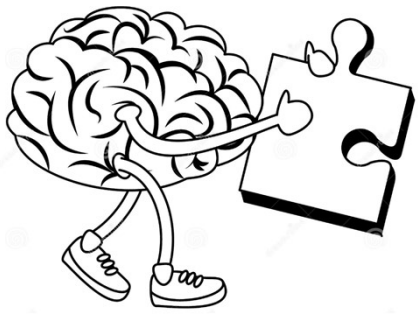
Throughout the year the Mathematics Faculty run a study support day once a week (currently Tuesday) before school 8:00am – 8:30am, at lunch time and after school 3:00pm – 4:00pm. Pupils are encouraged to come along for additional support with any areas of concern they have from the work they have been completing in lessons. Anybody is welcome, it does not matter which class you are in.

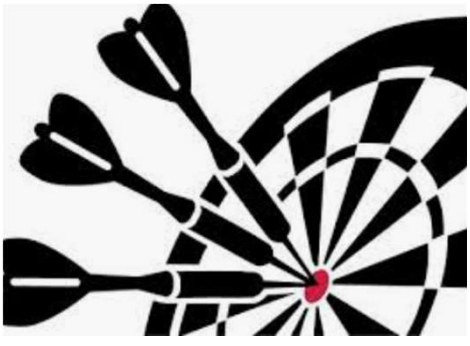
Our mathematics department really want you to love your time at Hawkley and it is important to us that you enjoy maths. To help with this we also hold some extra-curricular activities weekly.

One lunch a week Mrs Waites runs a puzzles and games club in D9. Pupils can bring their lunch with them and get to pick from a variety of games and puzzles. Top favourites are Connect 4, Mastermind and battleships but there are plenty more.....everybody is welcome to puzzles and games club and we actively encourage you to come along and try out some of the games and puzzles on offer.

You may also notice when you start Hawkley that in D10 there are two darts boards fixed to the wall. This is because Mr Roberts runs a weekly darts club. Darts club is open to anyone in KS3. Don't worry if you've never played before it is all about having fun and trying something new! We play different games, practicing and playing against different boys and girls each week to improve our arrow throwing skills.

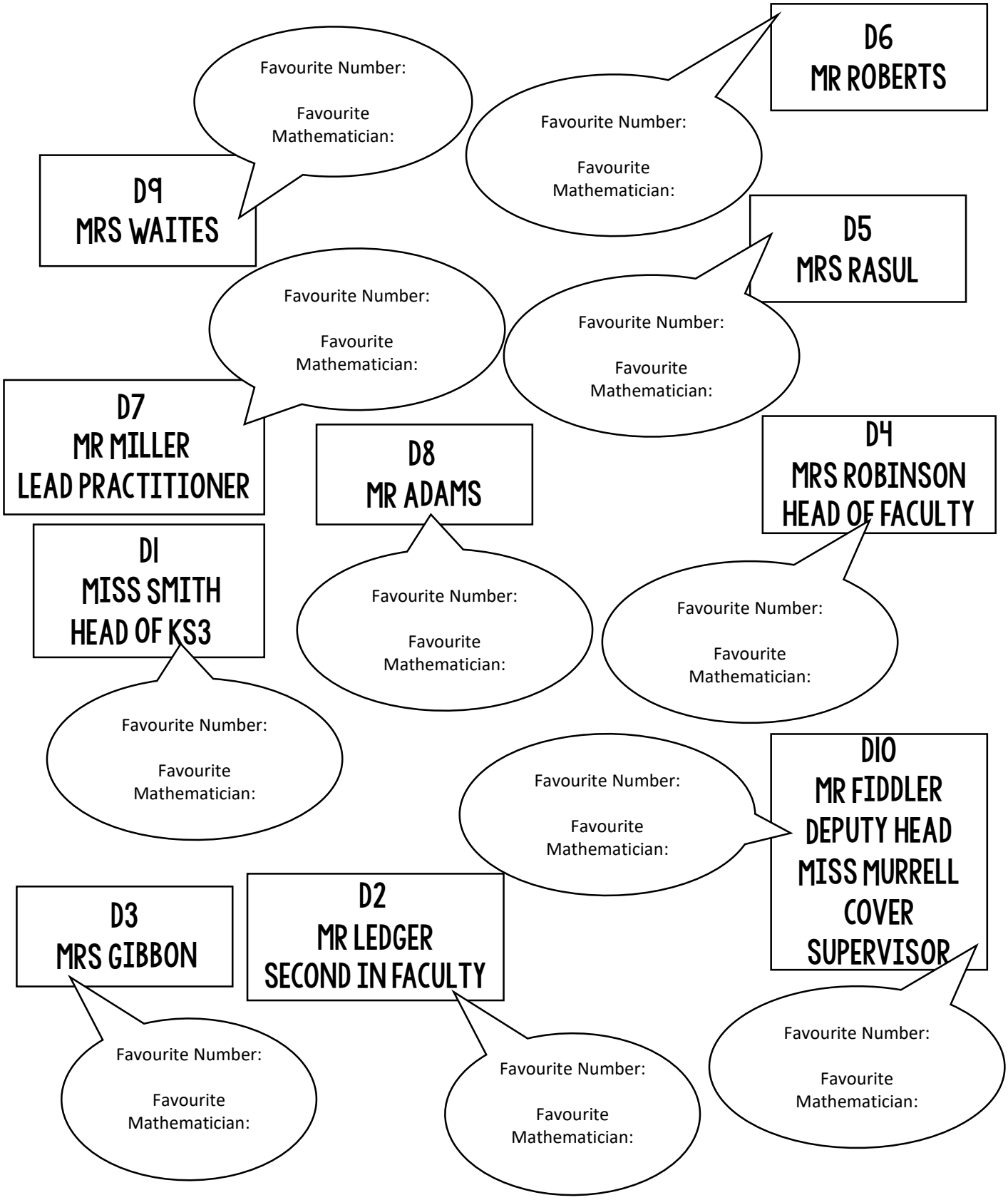
Our clubs are there for you to have fun and enjoy, they are also a great way for you to meet and make new friends whilst you settle into your Hawkley High school education.





Meet the department…

In the Maths department we have 10 Maths Teachers and a cover supervisor, our maths building looks like this. Throughout this booklet you will find out about some of our favourite Maths related things. Come back to this page to fill those in, can you find them all?



Welcome messages.....

Welcome to all our future Hawkley Hall High School pupils. We want all our pupils to be proud of our school and to take pride in their work. The maths department love to teach maths and we hope you all really enjoy maths as much as we do.

"Welcome to the Hawkley Hall Maths family. I am looking forward to getting to know you all and working with you throughout your time at Hawkley Hall. Maths is exciting, scary and rewarding all at the same time and in the maths department we all believe in embracing our strengths and working together as a team to overcome our weaknesses. Come with a positive mind set and a 'can do' attitude and I will help you with the rest." **Mrs Robinson (D4)**

"I know how it feels for many of you, as I was a Year 6 pupil once years ago and know what it is like to start high school! If I have one piece of advice it is to always learn from your mistakes and smile." **Mrs Waites (D9)**

"Enjoy making new friends and meeting your teachers. Don't be afraid to ask for help as there will always be someone there to answer any questions you have." **Mrs Gibbon (D3)**

"It was not too long ago i was in year 6 and ready for my first day at Hawkley, i was a little worried about making new friends. My advice would be to try as many new things as you can, that way you'll find something you enjoy and it might be something you've never done before." **Mr Roberts (D6)**

"You are not alone on your journey, you'll have lots of opportunities to talk to others and meet new friends. Enjoy each moment - be bold, aim high and be positive in all that you do" **Mrs Rasul (D5)**

"Hi, my name is Mr Adams and I am really looking forward to welcoming you to our brilliant maths department where you will have exciting lessons to improve your maths ability. Remember never to be afraid of asking questions because after all, if you dont ask.....you wont know. See you all soon" **Mr Adams (D8)**

“It wasn’t that long ago I decided to work in a secondary school. I felt how I imagine you’re all feeling right now. A little nervous to say the least. My advice would be to get involved in as many things as possible, embrace the exciting changes, never be afraid to ask questions and ALWAYS believe in yourself. You can do this”. **Miss Murrell (D10)**

"Year 6, I hope that you are all well. I am looking forward to being able to welcome you and getting to know you all at Hawkley Hall. Please don't feel anxious about coming as you will settle in quickly. You will see me around everyday and I'll make sure that I come into your maths lessons regularly to help you all out." **Mr Fiddler (D10)**

"High school is nothing to be afraid of. Always give 100% in everything you do and you will learn and make friends to take with you for the rest of your life." **Mr Miller (D7)**

"I am new to school like you are this year and I imagine I am just as nervous as you are, so I know exactly how it feels. I think the best advice I can give you is the same as I am going to keep telling myself.....new experiences are good and although they can be scary at first they often aren't and they help us to become the best we can be." **Mr Ledger (D2)**

"Hello year 6, I am also new to Hawkley High school this year, so like you I am probably going to not know my way around very well. Hopefully this means we can help each other help to settle in as we will all be feeling the same way, a little bit nervous, maybe scared but also very excited. I am really looking forward to meeting you." **Miss Smith (D1)**

The 24 game…

Try this with your family – who is the quickest?

One of our favourite things to do on transition is to play the 24 game. The aim of the game is to be the first person to make the number 24.

For each game you have 4 numbers, you have to use **ALL** four numbers, you can add, subtract, multiply or divide these to make 24.

Example:

ONE DOT - EASIEST

2 2 6 8

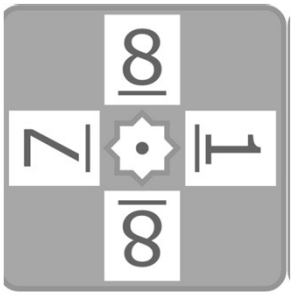
To make 24, I can do (8 - 2) x (6 – 2)

8 -2 = 6

6 -2 = 4

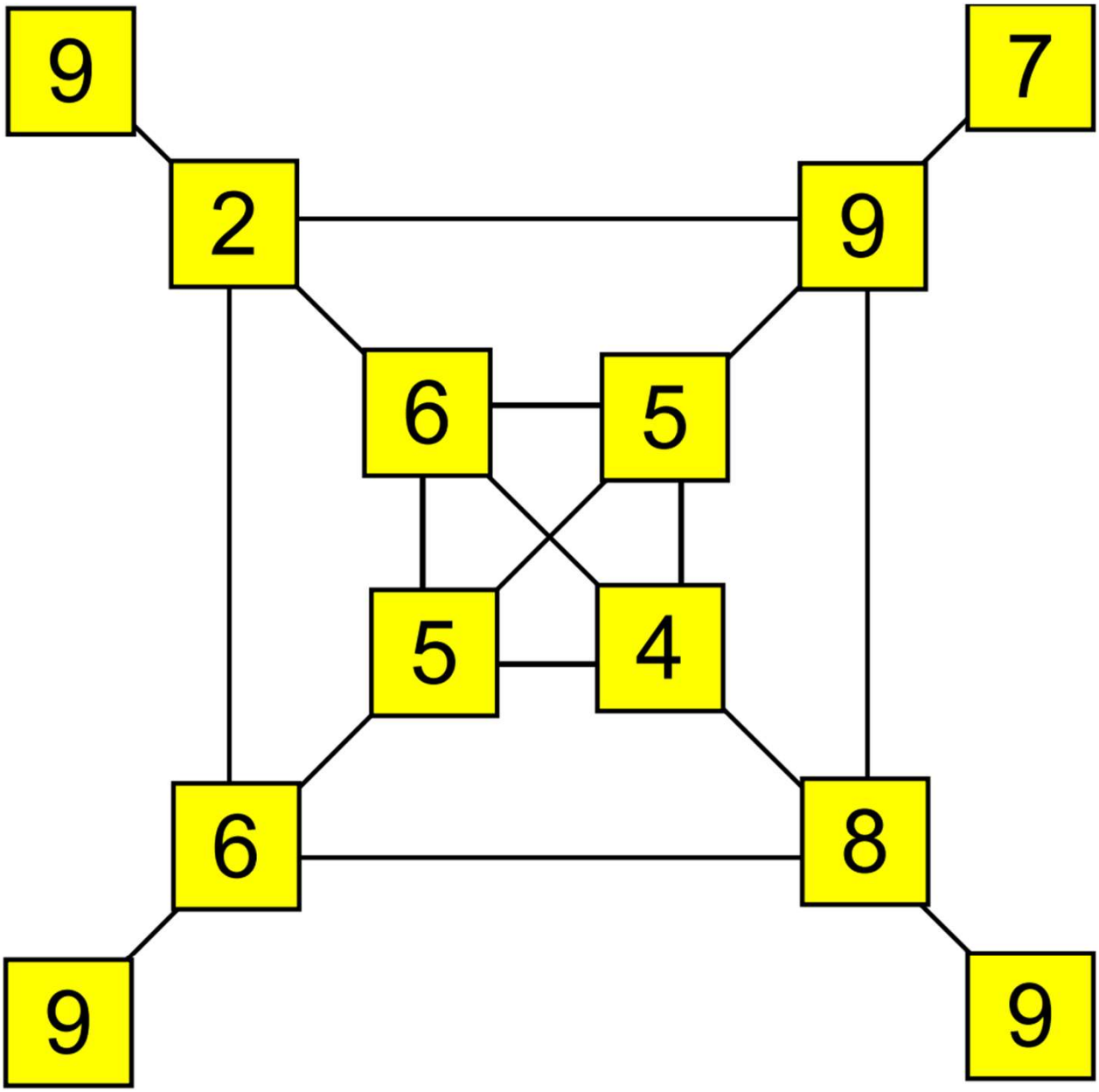
6 x 4 = 24

Now it's your turn, the 24 cards are below they get harder as you go through.



Mrs Gibbon's favourite number is the sum of 4 + 7

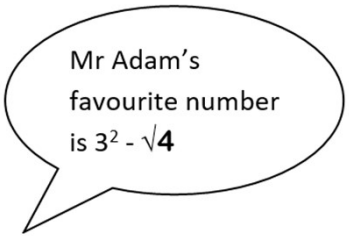
The Highest Total



Start anywhere and collect five numbers by following the paths - no jumping or going back over a path twice!

What is the highest total you can make?

Miss Rasul's favourite number is 70 divided by 5



Key Skills…

When you get to a page like this, spend 10 minutes completing the skills check questions based on topics from Y6.

Question 1 Write in figures : thirteen thousand, five hundred and two units	**Question 2** Write in figures : seventy seven thousand, eight tens and three units	**Question 3** List the factors of 51	**Question 4** List the factors of 36
Question 5 Work out 7 × 10 =	**Question 6** Work out 10 × 10 =	**Question 7** Simplify $\frac{8}{16}$	**Question 8** Simplify $\frac{12}{42}$
Question 9 Find 50% of £180	**Question 10** Find 25% of £120	**Question 11** Round 2084 to the nearest 100	**Question 12** Round 3372 to the nearest 10
Question 13 Work out 86 × 8 =	**Question 14** Work out 630 × 9 =	**Question 15** Simplify 5c + 5c + 6c	**Question 16** Simplify 10a + 2b + 8a + 7b
Question 17 Work out 39253 + 15736 =	**Question 18** Work out 30730 + 18364 =	**Question 19** Work out 8 × 2 - 5	**Question 20** Work out 6 + 11 × 3

SKILLS CHECK

Score

Mr Robert's favourite Mathematician is Fibonacci who was an Italian man who studied math and theories back in the 11th century. He discovered a pattern called the Fibonacci sequence. It's a series of numbers that starts with 0 and 1, and each number after is found by adding the two previous numbers (0, 1, 1, 2, 3, 5…)The sequence just keeps going on and on.

Can you find the first 10 numbers in the sequence?

Maths Keywords...

During Maths lessons you may be asked to write the maths keywords down in the margins in your book. Can you find all the keywords you will need for your first half term at Hawkley Hall?

Y R Y A P F F T Z P M M D Q U M Z L N U
F I J X F U D M E E B U D O N D I M X E
B D P J B K C D B R U F I H I B Y V W J
C K H U T U G Z I I Z M D L T V F S F S
Y P I Z P L N M G M I Q A W S Y V D R Q
H X A T M Y K O P E L S Q W R E P E W K
C O D K Q I A Q D T C T E E S M H R U T
P L A C E V A L U E G Q B T D Z D D M J
J V B S H U K I N R S M D D A T M N K N
Z T R K F S L D L P U C M M N M O U G M
W O O Z D A I P C N R Q E X Z P I H J M
E M N T M N V Y E C C C Q N A R J T Q N
U K E I G T V R C F R N B H D Q H Z S X
P N C X A U A L G N S L B W V I D I D E
S E T F O U K L W Q C T I R Q N N P N E
D Z J D Q P T C A R T B U S O R K G B F
F V N S N I T G B P K G L R W U D J R V
O F V S G P O L Y G O N Q I X R N R O L
O U J V F K T B N Q V Z U D U V A D K O
E L E F T K D W E F Y A C L J T J N R L

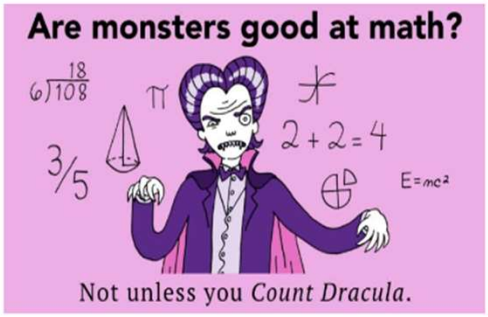
Mr Robert's favourite number is 5 squared

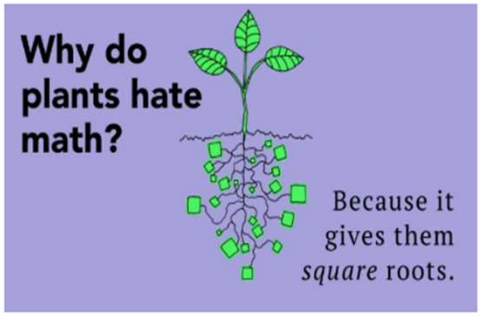
ADD
ASCENDING
DECIMAL
DESCENDING
ESTIMATE
HUNDREDS
PERIMETER
PLACEVALUE
POLYGON
ROUND
SQUARENUMBER
SUBTRACT
TENS
UNITS

Mr Miller's favourite mathematician Leonhard **Euler** (pronounced Oiler) (April 15, 1707 – September 7, 1783) was a Swiss mathematician and physicist. He spent most of his life in Russia and Germany. **Euler** made important discoveries in fields like calculus and topology. He also made many of the words used in math today.

Funny maths !!

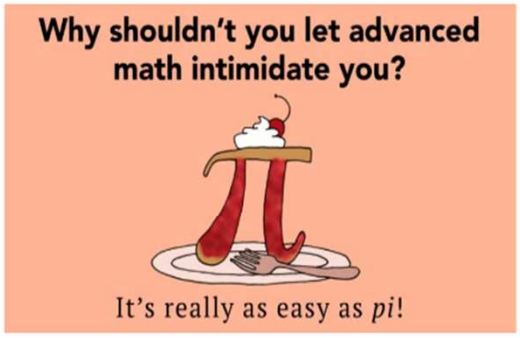
At Hawkley we all believe that learning is key. However, we also like to have a laugh in the process. How many of the maths jokes do you understand? If you don't 'get it', why not ask a friend

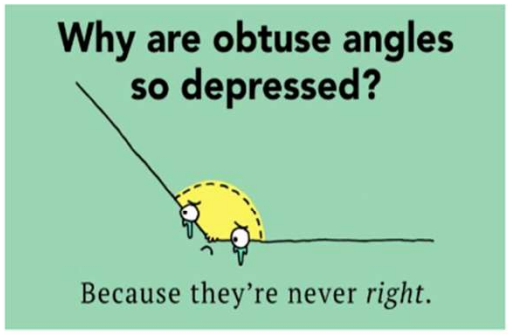




What do you call a number that can't keep still?

A romin' numeral



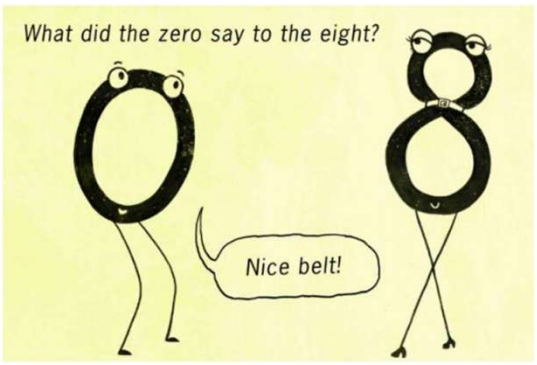


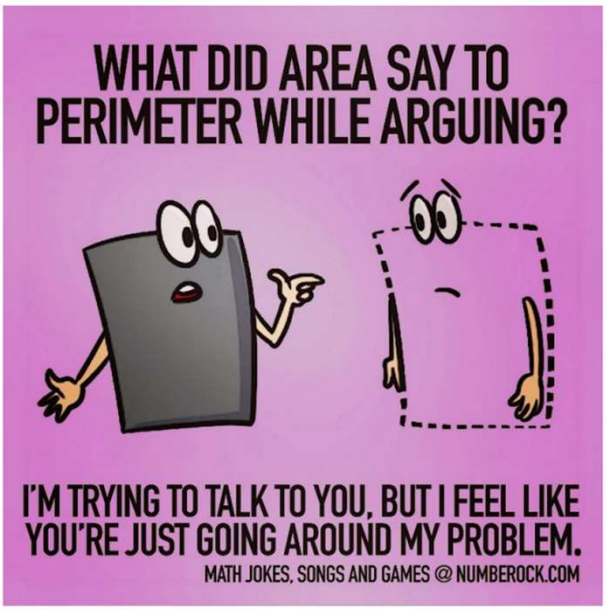
Why should you worry about the math teacher holding graph paper?

She's definitely plotting something.

Why is it sad that parallel lines have so much in common?

Because they'll never meet





Did you hear about the mathematician whose afraid of negative numbers?

He'll stop at nothing to avoid them.

A farmer counted 297 cows in the field.

But when he rounded them up, he had 300.

How do you make seven an even number?

Just remove the "s."

Why is the number six so scared?
Because seven eight nine!

Mr. Ledger's Favourite Number

Mr. Ledger and Miss Smith are new like you in September. Mr Ledger's he has hasn't been into Hawkley yet in order to share his favourite number. Instead he has sent me some clues. Can you work out Mr. Ledger's favourite number?

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

Guess my number 1

The number is a multiple of 3

AIM

Guess my number 1

The digital sum is 6

AIM

Guess my number 1

Find the number between 1 and 99

AIM

Guess my number 1

It is more than 5 squared

AIM

Guess my number 1

One of the digits is a 2

AIM

Guess my number 1

It is less than 55

AIM

Guess my number 1

It is not a square number

AIM

Key Skills...

Mr Miller's favourite number is the product of 3 x 3 x 3

When you get to a page like this, spend 10 minutes completing the skills check questions based on topics from Y6.

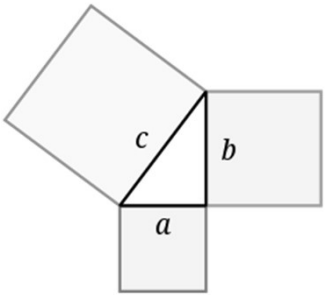
Name :

61.2

Question 1 Write in figures : six thousand, four tens and six units	**Question 2** Write in figures : One hundred and twenty six thousand, nine tens and three units	**Question 3** List the factors of 30	**Question 4** List the factors of 20
Question 5 Work out 306 × 1000 =	**Question 6** Work out 34 × 1000 =	**Question 7** Simplify $\frac{20}{70}$	**Question 8** Simplify $\frac{18}{63}$
Question 9 Find 75% of £720	**Question 10** Find 75% of £500	**Question 11** Round 6199 to the nearest 100	**Question 12** Round 2096 to the nearest 1000
Question 13 Work out 77 × 9 =	**Question 14** Work out 397 × 6 =	**Question 15** Simplify 9x + 4x - 3x	**Question 16** Simplify 10a + 3b + 7a + 6b
Question 17 Work out 37959 + 32050 =	**Question 18** Work out 24509 + 19451 =	**Question 19** Work out 5 × 2 + 2	**Question 20** Work out 5 × 4 + 3

SKILLS CHECK

Score



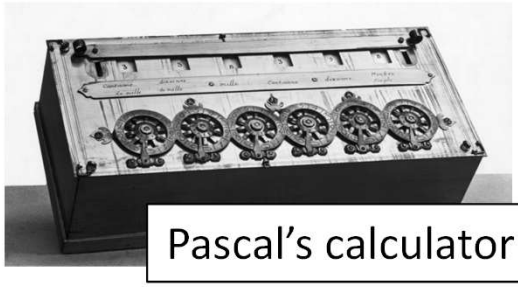
Miss Smith's and Mrs Gibbon's favourite mathematician

Pythagoras of Samos was a famous Greek mathematician and philosopher (c. 570 – c. 495 BC). He is known best for the proof of the important Pythagorean theorem, which is about right angled triangles. He started a group of mathematicians, called the Pythagoreans, who worshiped numbers and lived like monks.

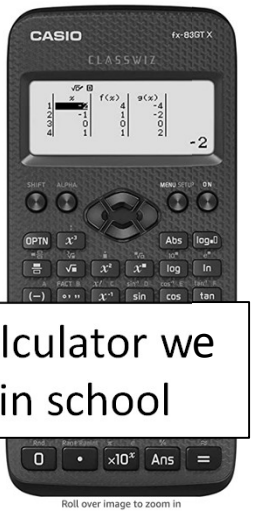
Can you find out what the Pythagorean theorem is? You will use it in Year 9.

The calculator transformation..

Blaise Pascal, in his short 39 years of life, made many contributions and inventions in several fields. He is well known in both the mathematics and physics fields. In mathematics, he is known for contributing Pascal's triangle and probability theory. He also invented an early digital calculator and a roulette machine.



Pascal's calculator



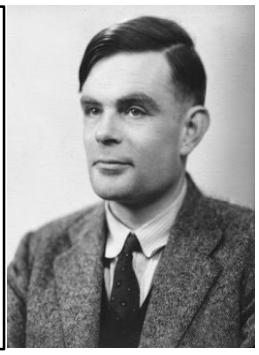
The calculator we use in school

The modern calculator can now be found everywhere, both mini and large versions and is embedded into devices such as laptops and mobile phones. How many devices that have calculators can you find in your house?

Mr. Ledger's favourite mathematician

Code Breaking…

Alan Turing
Alan Turing was a British mathematician. He made major contributions to the fields of mathematics, computer science, and artificial intelligence. He worked for the British government during World War II, when he succeeded in breaking the secret code Germany used to communicate.



In September 1939 Great Britain went to war against Germany. During the war, Turing worked at the Government Code and Cypher School at Bletchley Park. Turing and others designed a code-breaking machine known as the Bombe. They used the Bombe to learn German military secrets. By early 1942 the code breakers at Bletchley Park were decoding about 39,000 messages a month. At the end of the war, Turing was made an Officer of the Most Excellent Order of the British Empire.

Can you crack the code to reveal the 3 Maths teachers who's favourite mathematician is Turing?

A	B	C	D	E	F	G	H	I	J	K	L	M
55	47	84	10	9	75	59	64	32	15	23	50	26
N	O	P	Q	R	S	T	U	V	W	X	Y	Z
80	63	19	3	27	30	21	92	18	35	99	69	199

81 ÷ 3 =	
43 + 12 =	
46 – 19 =	
46 x 2 =	
250 ÷ 5÷ =	

3 x 9 =	
9 x 7 =	
188 ÷ ÷ 4 =	
18 + 14 =	
10 x 8 =	
57 – 27 =	
126 ÷ 2 =	
5^2 – 65 =	

7x 5 =	
39 + 16 =	
64 ÷ 2 =	
19 + 2 =	
81+ 9 =	
13 + 14 =	

Can you make up some calculations to spell out your name using the same code breaker grid?

Can you make up your own message for a friend to decode?

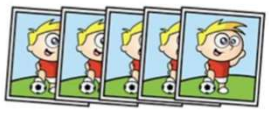
Maths Challenges

Miss Smith's favourite number is 110 divided by 10

Can you solve all the Maths challenges?
They get more difficult as you get them.....

Stickers come in packs of 5.

Max buys 12 packs.



He gave his three friends some stickers.

They each receive the same number.

He has 27 stickers left.

How many stickers did Max give each of his friends?

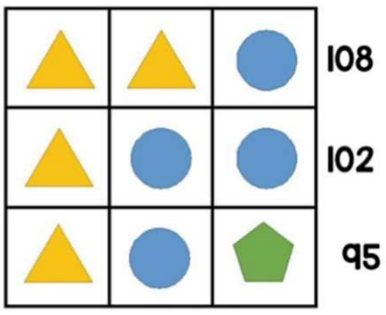
Here are 3 containers.

- The jug can hold **1500 ml**.
- The bucket can hold **2 litres**.
- The barrel can hold **15 litres**.

Anisa wants to fill the barrel with water.

Find 2 ways that Anisa can fill the barrel using the jug and bucket.

Here is a 3 x 3 grid with some shapes in.

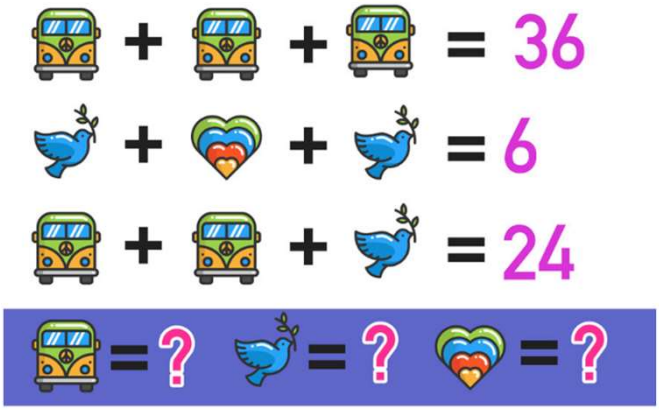


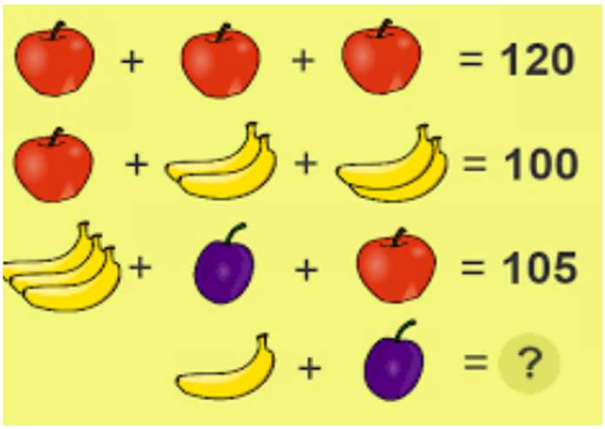
Each shape represents a number.

The sum of each row is shown at the right of the table.

Find the value of each of the shapes.

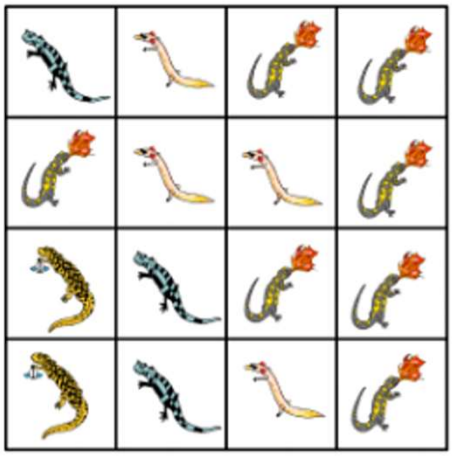
Puzzle time…





Each salamander is worth a different value between 1 and 10.

The total of each vertical line of salamanders is worked out for you.



How much is each salamander worth?

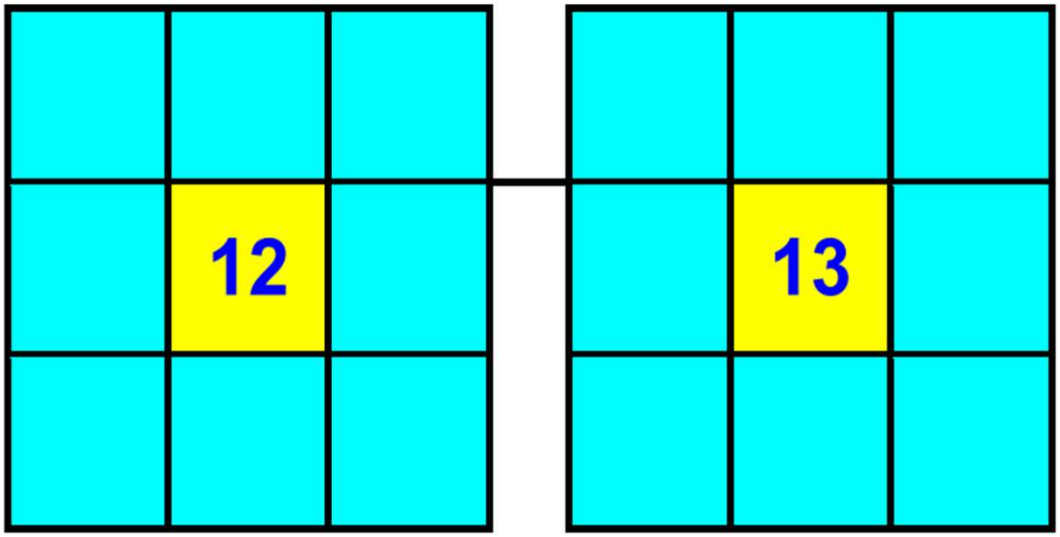
Mr. Adam's favourite mathematician

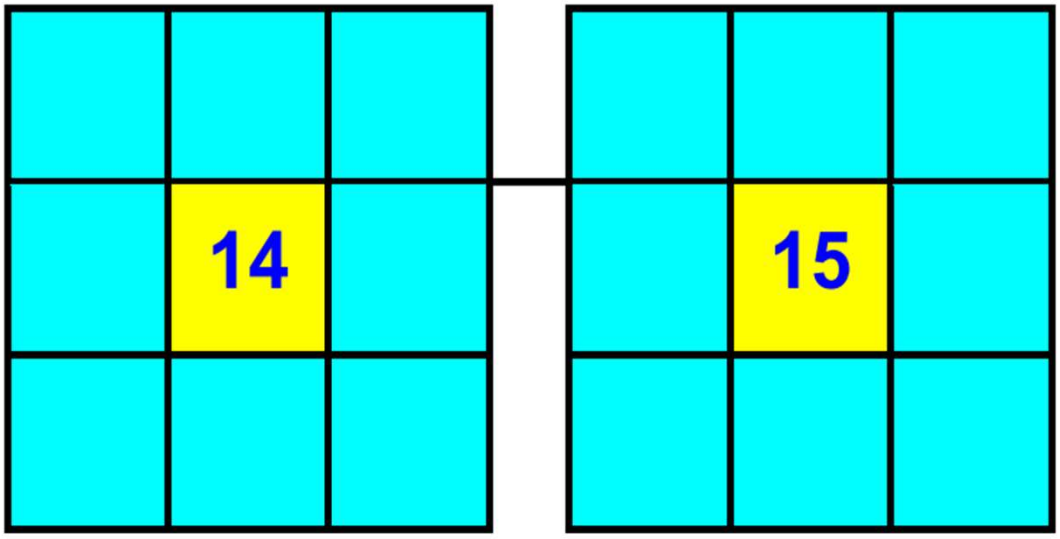
René Descartes

Descartes is considered the father of modern philosophy, a key figure in the scientific revolution of the 17th Century, and a pioneer of modern mathematics. Many people also call him the father of analytic geometry, which connects the fields of algebra and geometry.

Puzzle time

12 to 15



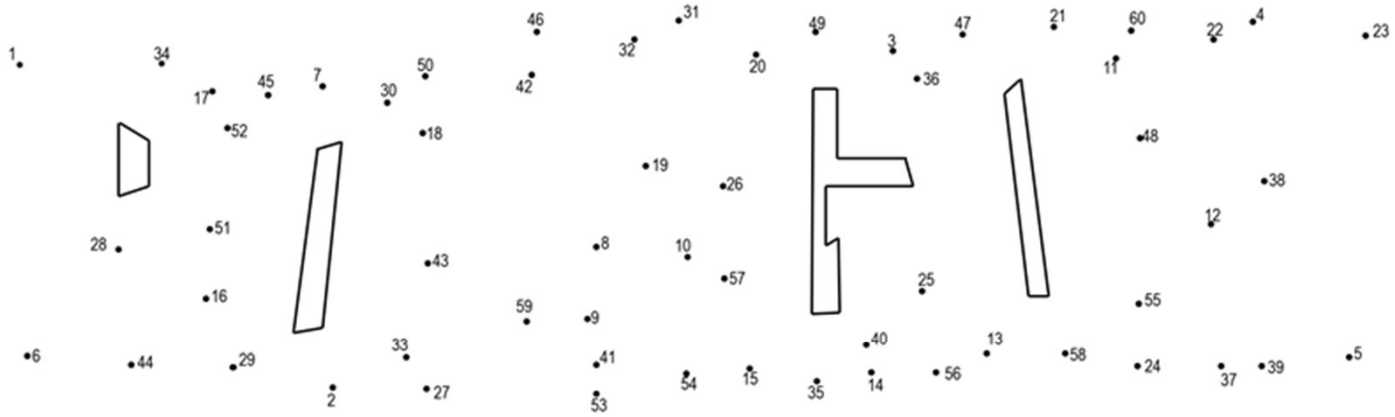


Can you put the numbers 1 to 8 in each of the squares so that each side adds up to the middle number?

Dot to Dot!

Mrs Waites' favourite number is 3^3

What do you call a dead parrot?



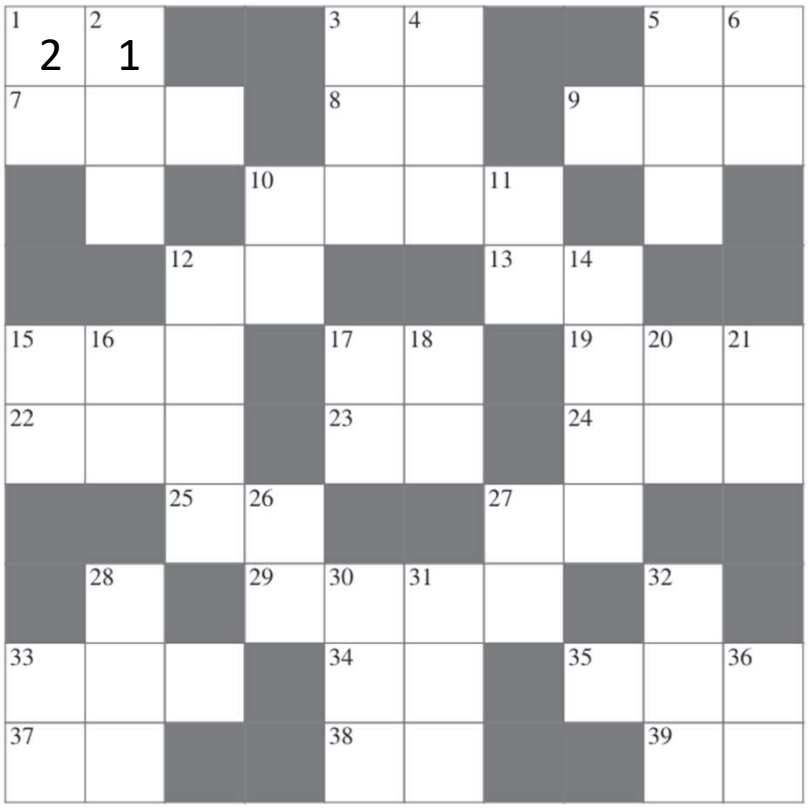
Join each question number to its answer. Use a ruler and pencil.

1	56-22	21	78-67	41	72-19
2	99-70	22	64-26	42	92-33
3	26+10	23	77-72	43	20+13
4	39-16	24	10+45	44	68-62
5	76-37	25	69-13	45	82-75
6	98-97	26	19-9	46	79-47
7	80-50	27	35+8	47	70-49
8	45+1	28	25+19	48	1+59
9	24-16	29	22-6	49	39-36
10	64-10	30	43-25	50	58-16
11	86-38	31	35-15	51	48-20
12	64-27	32	52-33	52	66-21
13	13+12	33	15-13	53	41-14
14	62-22	34	18-1	54	16+25
15	37+20	35	8+7	55	43+15
16	70-19	36	35+12	56	1+13
17	56-4	37	85-61	57	81-55
18	85-35	38	51-47	58	77-64
19	52-21	39	0+12	59	65-56
20	99-50	40	45-10	60	35-13

Cross Number...

Mr Fiddler's favourite number is 777 ÷ 111

Use the questions below to complete the cross number.



ACROSS

1. The number of spots on a standard dice (2)
3. The largest two-digit multiple of 13 (2)
5. One more than 8 Across (2)
7. One quarter of the square of 6 Down (3)
8. $2 \times 2 \times 2 \times 2 \times 2$ (2)
9. A cube number (3)
10. 15 Across + 3 Down + 6 Down + 21 Down + 36 Down (4)
12. 39 Across − 33 Down (2)
13. Twice (1 Across + 1 Down) (2)
15. 1 Down × 38 Across (3)
17. 36 Down − 8 Across (2)
19. A square number (3)
22. The smallest three-digit square number with all its digits different (3)
23. 1 Across + 6 Down (2)
24. A multiple of 4 Down (3)
25. 27 Across + 37 Across (2)
27. 39 Across + 1 Down (2)
29. 200 × 12 Across + 27 Down (4)
33. 10 times 2 dozen (3)
34. A square of a square number (2)
35. 5 × 1 Across + one-seventh of 12 Across (3)
37. A half of 8 Across (2)
38. A cube number (2)
39. One less than 6 Down (2)

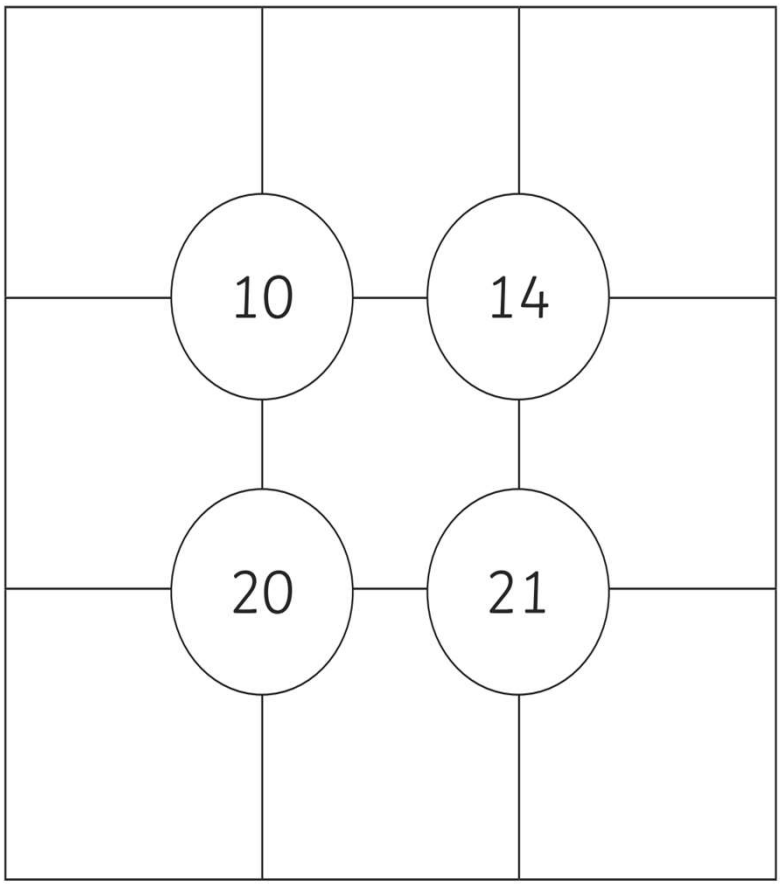
DOWN

1. A prime number (2)
2. The sum of the first ten prime numbers (3)
3. The number of hours in 39 days (3)
4. $2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2$ (3)
5. 22 Across + 28 Down (3)
6. The number of minutes in three-fifths of an hour (2)
10. A multiple of 7 (2)
11. 3 × 37 Across (2)
12. (22 Across − 6 Down) × 9 (4)
14. A number all of whose digits are the same (4)
15. A prime number (2)
16. 27 Across − 8 Across (2)
17. A multiple of 9 (2)
18. A prime number (2)
20. A square number (2)
21. The square of a square number (2)
26. 3 × 12 Across (2)
27. Two-thirds of 36 Down (2)
28. 22 Across − 1 Down (3)
30. 1 Across × 26 Down (3)
31. 25 Across + 4 Down + 5 Down (3)
32. 17 Down + 27 Across (3)
33. The sum of the digits of 1 Down, 17 Across and 17 Down (2)
36. One and a half times 27 Down (2)

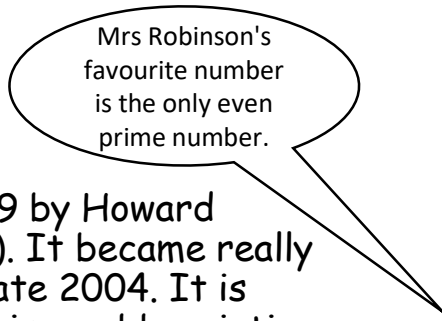
The 9 number grid…

Miss Murrell's and Mr Fiddler's favourite mathematician is Ada Lovelace. Ada was the daughter of famed poet Lord Byron. Her real name was Augusta **Ada** Byron. She showed her gift for mathematics at **an** early age. Ada is considered the first computer programmer, she wrote the world's first machine algorithm for an early **computing** machine. She died on November 27, 1852.

Fill in the grid with the numbers 1 through 9 so that the sum of the four numbers surrounding each circle add up to the number inside each circle.



Miss Murrell's favourite number is $\sqrt{25} \times 6$



Sudoku Puzzle…

The modern version of Sudoku was invented in 1979 by Howard Garns in USA (where it was called `Number Place'). It became really popular in Japan in the 1980s and in the UK since late 2004. It is now quickly spreading worldwide. The word Sudoku is an abbreviation of a phrase which means "the digits must occur only once". The aim of a Sudoku puzzle is to fill in the grid so that each row, each column and each box contains all the numbers from 1 to 9. Usually the grid is 9 by 9, using the numbers from 1 to 9, but the easier grids are smaller, using numbers from 1 to 4 or 1 to 6. Simple eh! Of course not! Sometimes it is easy but often it can be fiendishly difficult. But it's fun to learn strategies for yourself by just having a go!

- **Fill in the puzzle so that every row across, every column down and every 3 by 3 box contains the numbers 1 to 9.**

6	5	9		1		2	8	
1				5			3	
2			8				1	
			1	3	5		7	
8			9					2
		3		7	8	6	4	
3		2			9			4
					1	8		
		8	7	6				

Best Maths Movies