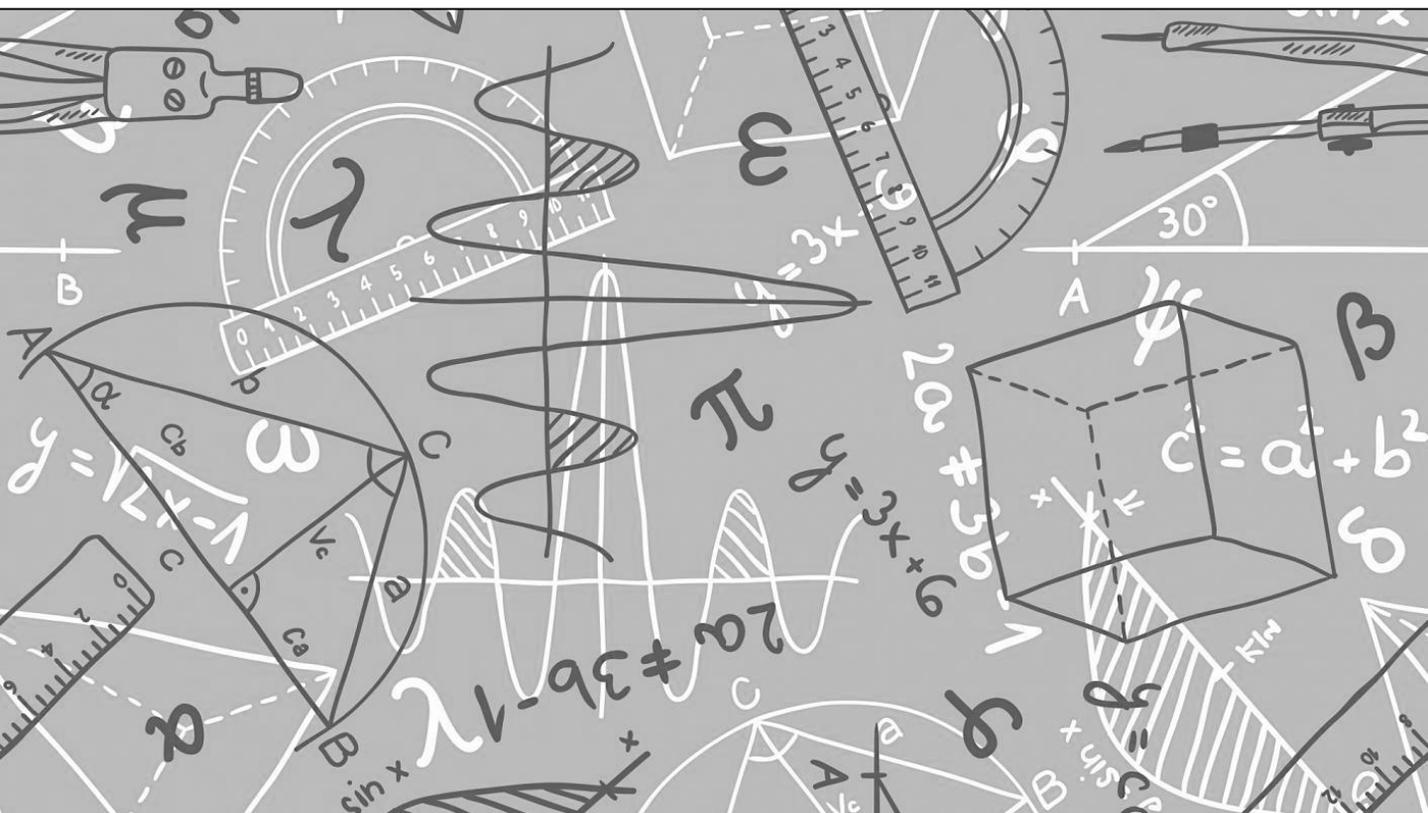




Maths

Redruth School



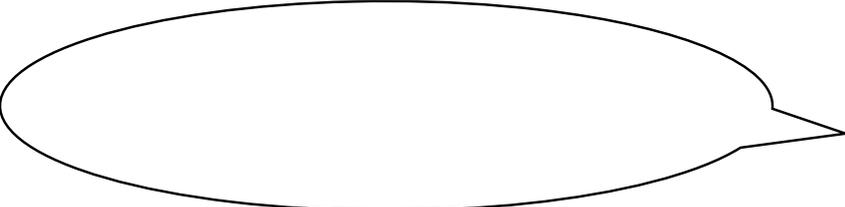
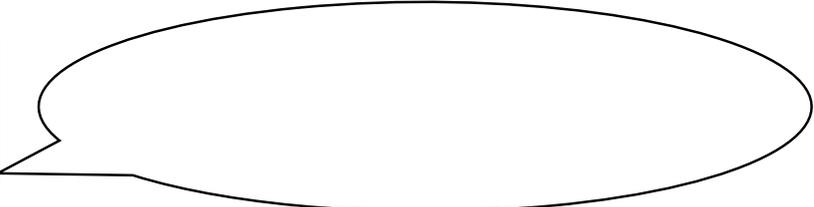
We can't wait to meet you ...

All the Maths teachers at Redruth School are very much looking forward to meeting you. Normally at this time of year you find out about us, we find out about you and together we do some maths. Unfortunately due to the usual transition activities being cancelled we won't meet in person, however hopefully by completing this booklet you will be able to find out some facts about the maths teachers at Redruth, do some research into some of our favourite mathematicians, and do some maths either on your own or with your family.

Meet the Department...

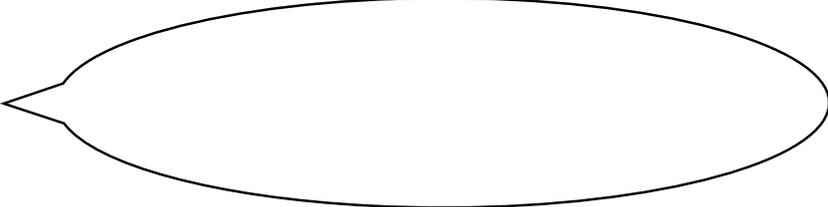
Throughout this booklet you will find out about some of our favourite maths related things. Come back to this page to fill in the facts for each teacher in their speech bubble when you spot them. Can you find them all?

Mrs Haslam

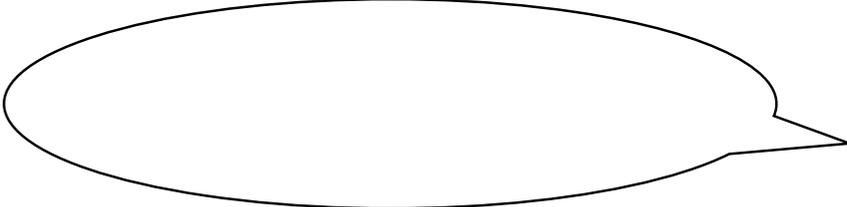
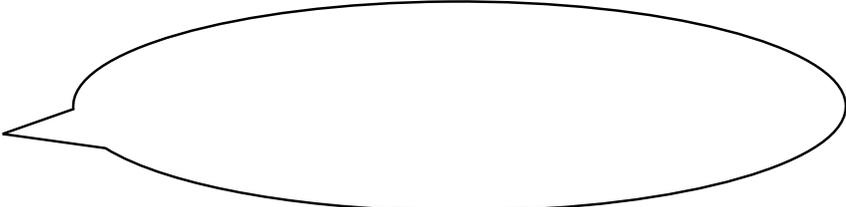


Mrs Richards

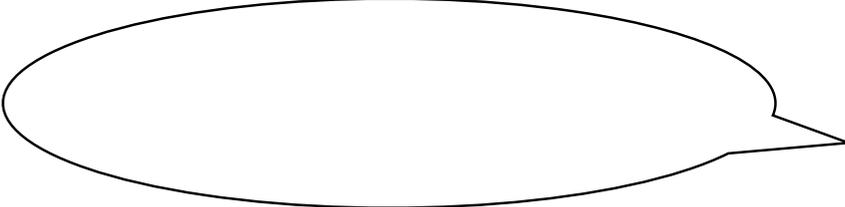
Mr Robson



Mrs Wade



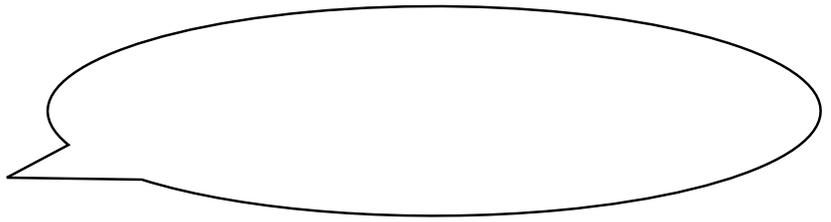
Mr Watson



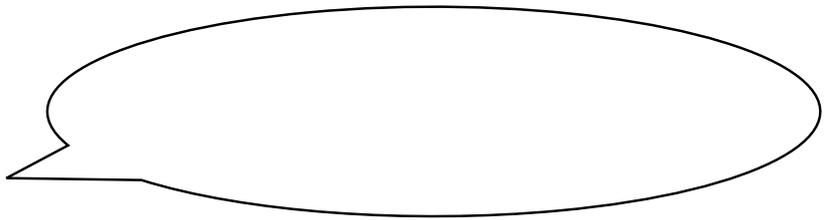
Mr Flint

Meet the Department...

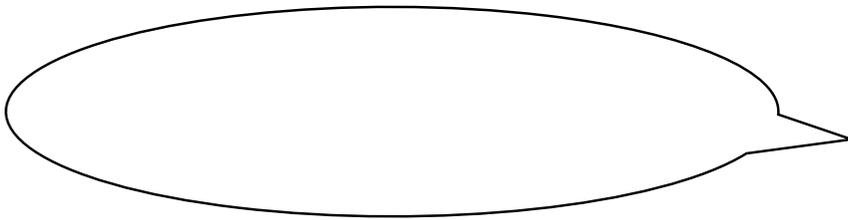
Mrs Sawalha



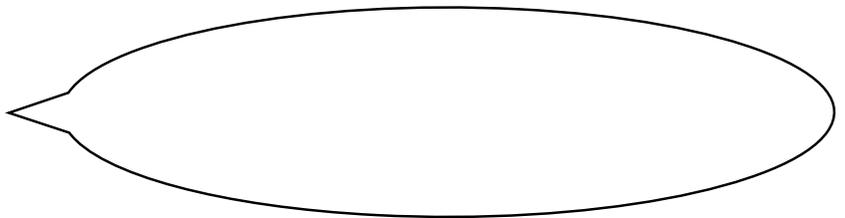
Mr Telling



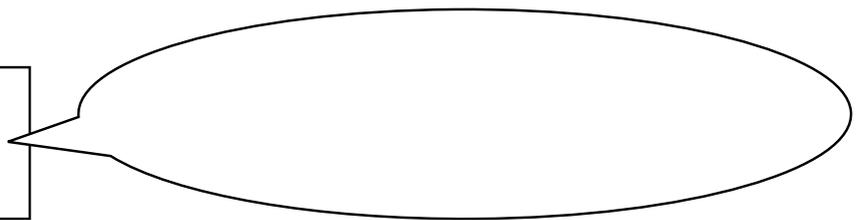
Mr Thompson



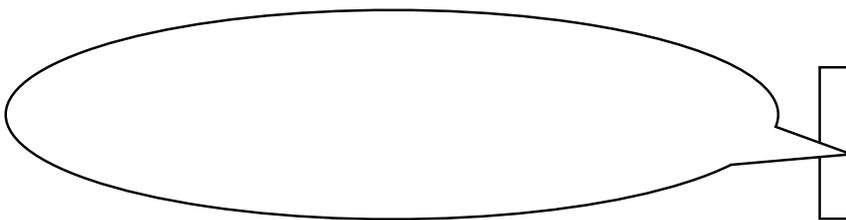
Mr Downie



Mr Taylor



Mr Leah

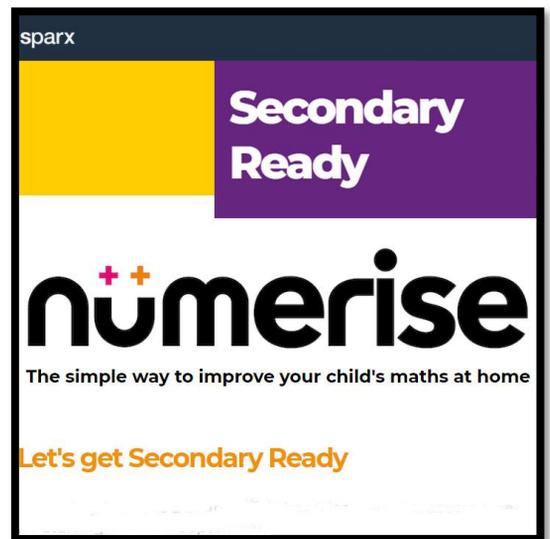


Mrs Richards favourite number is φ , the golden ratio. This is a very special irrational number. Make sure you ask her about it when you meet her in September.

Mrs Wades favourite number is the smallest perfect number. Can you find out what a perfect number is?

Secondary Ready Course

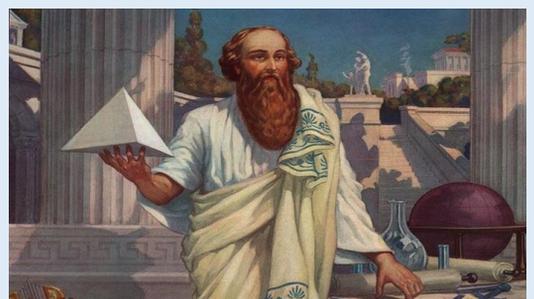
At Redruth School all of our students use the excellent online learning tool **Hegarty Maths**. When you join us in September, we will set up your Hegarty Maths account and teach you how to use it.



We are delighted that the team behind Hegarty Maths have recently launched a free online programme called 'Secondary Ready' that you can access at home this summer.

Simply register at numerise.com/secondary-ready and complete the course. It's only twelve lessons and if you complete them all, you will be super ready for your Year 7 maths lessons. Let us know if you finish it – we can't wait to hear how you get on.

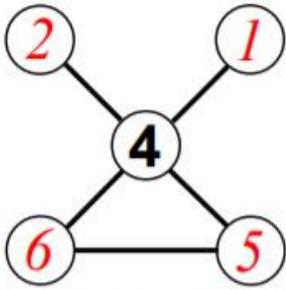
Mr Leah's favourite mathematician is Pythagoras of Samos. You'll learn all about his famous theorem in Year 8. Pythagoras was a controversial character in Ancient Greece. He believed that everything in the world could be explained by numbers.



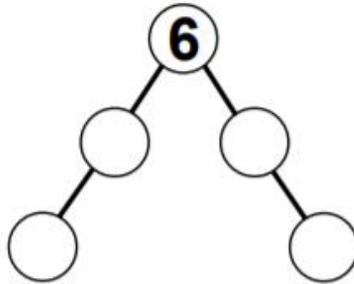
Totalines

Mr Taylor's favourite number is the square root of nine

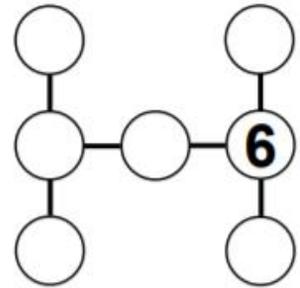
Numbers have to be placed in the empty circles. The numbers to be used are listed under each diagram and no given number may be used twice. The object is to place the numbers so that all those which lie along a straight line, as shown by the lines drawn, add up to the total which is also given under the diagram. The first one has been done for you.



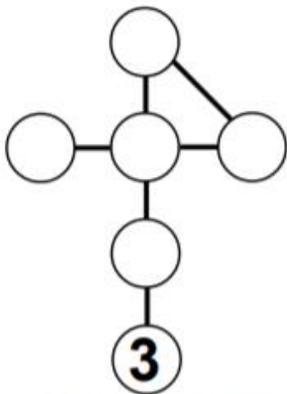
Use 1, 2, 5, 6
Total 11



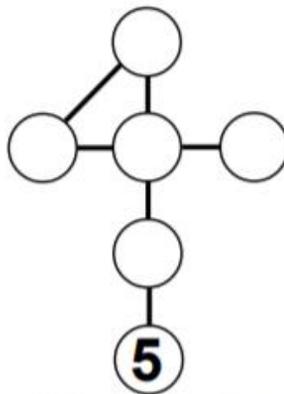
Use 2, 3, 4, 5
Total 13



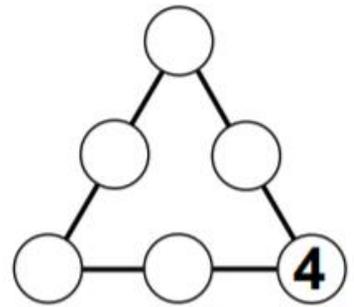
Use 0, 1, 2, 3, 4, 5
Total 10



Use 1, 2, 4, 5, 6
Total 11

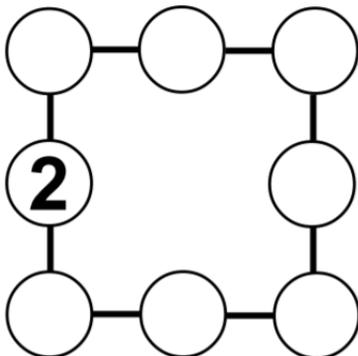


Use 0, 1, 3, 4, 6
Total 10

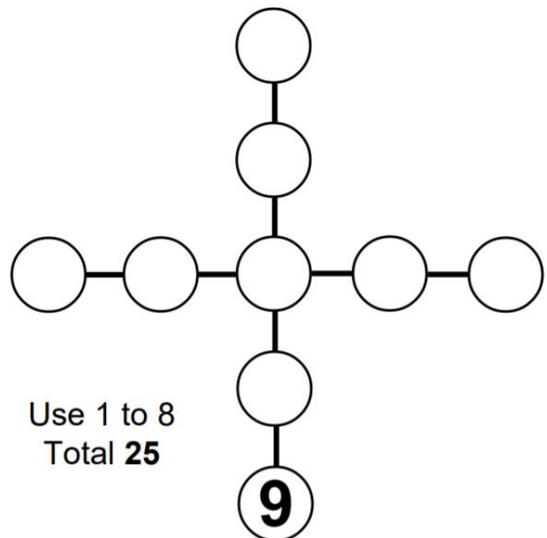


Use 0, 1, 2, 3, 5
Total 9

Challenge!



Use 3, 4, 5, 6, 7, 8, 9
Total 18



Use 1 to 8
Total 25

Mr Robson's favourite number is e . This irrational number has eminent importance in mathematics. It is close to 2.72.

Mrs Sawalha's favourite number is the only even prime number.

Maths Equipment

Secondary school mathematics is so exciting!

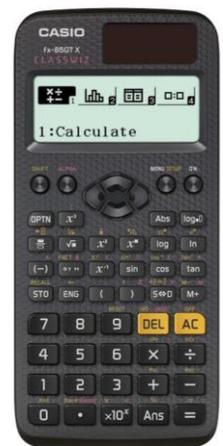
You will need for September

A black pen, a green pen, a blue pen, pencil, ruler, compass, protractor, highlighter and a rubber.



We'll start using a calculator in lessons

We'll all use the Casio FX83-GTX or similar



Mrs Haslam is a big fan of Ada Lovelace. This English mathematician, the daughter of poet Lord Byron, has been called "the first computer programmer" for writing an algorithm for a computing machine in the mid-1800s.



Mr Thompson's favourite mathematician is Euclid, the Greek mathematician who lived in Alexandria in Egypt around 300 BCE. Euclid is often referred to as the "Father of Geometry", and he wrote perhaps the most important and successful mathematical textbook of all time, the Elements.



Word Searches

Each of the blocks of letters below represents a maze. A way has to be found through the maze moving (up and down or across but **not** diagonally) from letter to letter. No letter may be used twice. In some cases arrows show where the maze is to be entered and left. The letters visited must spell words as you go, and these words can be written on the dashed lines to the right of each maze. The number of dashes show how many letters are in each word. The first one has been started.

↓	↑	
M E R E E R U		<i>M E T R E</i>
R T G E E A S		<i>D E G R E E</i>
E D E D M M U		<i>D E C I</i> - - -
M I C E R E S		- - - - -
A L N V A U Q		- - - - - - -
E H O E I C S		- - - - -
X A G R T A L		- - -
		- - - - - - -

Mr Flint enjoys discovering large prime numbers. What is the largest you can find?

↓	↑	
C E R T I L		- - - - -
I R O R L E		- - - -
L C T C I N		- - -
E O D A F T		- - - - - - -
A A D B T C		- - - - -
R E S U R A		- - - -
		- - - - -

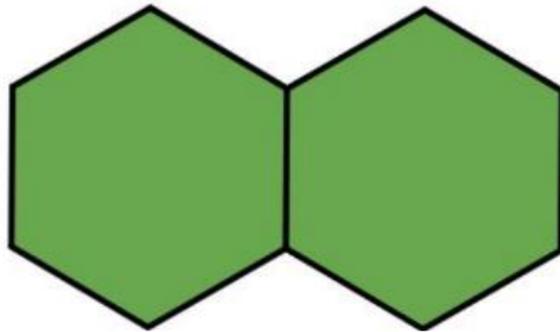
↓	
G M E L E P	- - - - - - -
E O T G N O	- - - - -
N Y R R A L	- - - - -
U M B E G Y	- - - - - - -
O S U N O D	→ - - - -
B L L P M I	- - - - -
N O I M A R	- - - - -
G P R E P Y	- - - - - - -

O I T D I O	- - - - -
R R A O U B	- - -
E D T C C N	- - - - -
I N A G T O	- - - - - - -
L Y C O E S	← - - - - -
B U S N R Q	- - - - - - -
M O H R A U	- - - - -

Mr Watson's favourite mathematician is Caleb M Gattegno, an influential twentieth century maths educator. He is well known for his innovative approaches to teaching and learning mathematics and for inventing pedagogical materials for these approaches.



A Hexagon Problem



Heather can make two connected hexagons by drawing 11 lines.

What is the minimum number of lines Heather needs to draw 12 hexagons?

Extension What numbers of hexagons are the most efficient to draw and why?

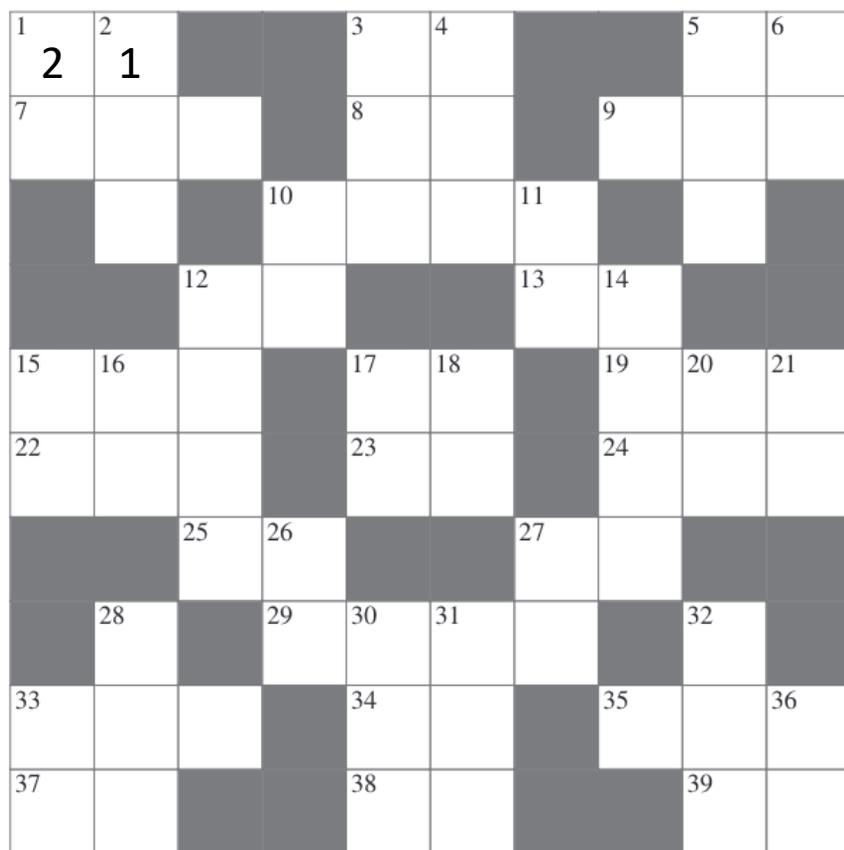
This problem is taken from puzzleoftheweek.com. If you enjoy doing puzzles then have a go at the weekly problems on this website.



Mr Downey's favourite mathematician is Grace Hopper, an American computer scientist and United States Navy rear admiral. She was one of the pioneers in the development of the electronic computer and is (probably) the only mathematician to have a warship named after her.

Cross Number

Use the questions below to complete the cross number.



Mr Telling's favourite number is 2 cubed, what is this number?

Can you calculate any other cube numbers?

Across

down

- | | |
|--|--|
| <ol style="list-style-type: none"> 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. $15 \text{ ACROSS} + 3 \text{ DOWN} + 6 \text{ DOWN} + 21 \text{ DOWN} + 36 \text{ DOWN}$ (4) 12. $39 \text{ ACROSS} - 33 \text{ DOWN}$ (2) 13. $2 \times (1 \text{ ACROSS} + 1 \text{ DOWN})$ (2) 15. $1 \text{ DOWN} \times 38 \text{ ACROSS}$ (3) 17. $36 \text{ DOWN} - 8 \text{ ACROSS}$ (2) 19. A square number (3) 22. The smallest three-digit square number with all its digits different (3) 23. $1 \text{ ACROSS} + 6 \text{ DOWN}$ (2) 24. A multiple of 4 DOWN (3) 25. $27 \text{ ACROSS} + 37 \text{ ACROSS}$ (2) 27. $39 \text{ ACROSS} + 1 \text{ DOWN}$ (2) 29. $200 \times 12 \text{ ACROSS} + 27 \text{ DOWN}$ (4) 33. 10 times 2 dozen (3) 34. A square of a square number (2) 35. $5 \times 1 \text{ ACROSS} +$ 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) | <ol style="list-style-type: none"> 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. $22 \text{ ACROSS} + 28 \text{ DOWN}$ (3) 6. The number of minutes in three-fifths of an hour (2) 10. A multiple of 7 (2) 11. $3 \times 37 \text{ ACROSS}$ (2) 12. $(22 \text{ ACROSS} - 6 \text{ DOWN}) \times 9$ (4) 14. A number all of whose digits are the same (4) 15. A prime number (2) 16. $27 \text{ ACROSS} - 8 \text{ ACROSS}$ (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. $3 \times 12 \text{ ACROSS}$ (2) 27. Two-thirds of 36 DOWN (2) 28. $22 \text{ ACROSS} - 1 \text{ DOWN}$ (3) 30. $1 \text{ ACROSS} \times 26 \text{ DOWN}$ (3) 31. $25 \text{ ACROSS} + 4 \text{ DOWN} + 5 \text{ DOWN}$ (3) 32. $17 \text{ DOWN} + 27 \text{ ACROSS}$ (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) |
|--|--|

Completed our booklet? That's incredible! Well done. Check out nrich.maths.org for more problems to get you thinking...