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Introduction

Much positive work has been achieved over the last twenty years by 'The Summer Reading Challenge', whereby children, with the help of their parents, are encouraged to read 6 books over the school summer holidays. The Summer Maths Activities Challenge is the Maths equivalent and engages learners and their families in games, puzzles and open ended problems. It encourages the whole family to take up new fun activities that will promote learning during the school holidays. The Summer Maths Activities Challenge is cross curricular and your child will be immersed in art, DT, science, history and geography activities as well as maths. Research on the internet is also encouraged.

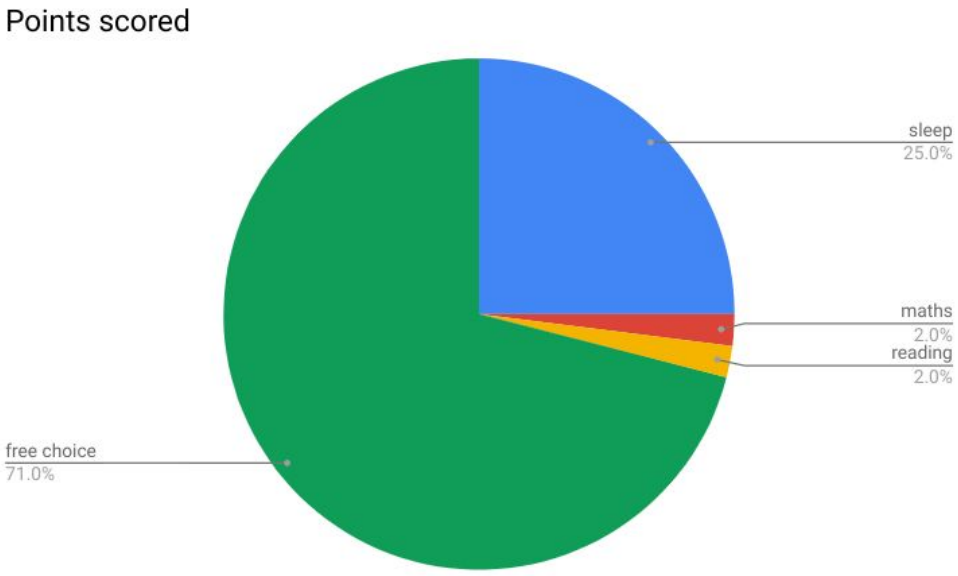
The Summer Maths Activities Challenge invites and supports the parent to fill the role of teacher during the summer holidays. Indeed ongoing parental input is vital to ensure that the process of learning is an enjoyable experience for the learner. This may seem like a scary prospect for some, however all that is needed is a positive, helpful and caring environment. These books provide parents with pointers to enable them to easily facilitate their child's learning.

I have recently read, 'Good Ideas: How to be your child's (and your own) Best Teacher', by Michael Rosen, who advocates the power of 'I don't know'. He tells the story of a young David Attenborough, who had a keen interest in 'old bones'. When the young Attenborough stumbled across 'old bones' while out on his explorations he would take them home for his father, a GP, to examine. Attenborough Senior could quite easily have named the various bones that his inquisitive son brought home, instead, however, he would say, ''I don't know maybe we could work it out together''. 'Working it out together' is the very essence of this book.

The Summer Maths Activities Challenge encourages families to negotiate treat days once the book has been completed. This proves a

greater incentive for the learner than merely giving out shiny stickers and glossy certificates. Treat days are fun for all the family too!!

The pie chart below illustrates the amount of school work your child should be completing during the summer holidays. This equates to 20 minutes per day or 2 hours per week. It is important that the time spent on The Summer Maths Activities Challenge during the school holidays is balanced and spread across the whole summer holidays, not just 6 hours in the first week followed by 6 hours in the last week.
The Pie Chart should be an important reminder that this is your summer holiday and that maths and reading are just a very small part of enjoying yourselves in the coming weeks.



<u>How you can help your child with Maths this summer</u>

1. Be encouraging! Encourage an inquisitive mind by asking your child questions about how they solved a problem or how puzzles could perhaps be solved in a different way (which they always can).

2. Making a mistake is great! Research has recently shown that the brain actually grows when a mistake is made. Accept mistakes can be made and don't focus on getting the answer correct all the time.

3. It's okay not to know the answer. A critical learning opportunity for children is to see that even adults do not have all the answers. Children should realise that learning never stops. It is what you do next that is really important - do you walk away because you don't know the answer or do you try to problem solve and figure it out together?

4. Do not share your own mathematical failures with your child or they will start to believe that it is their failure too and this may become a self-fulfilling prophecy. Encourage your child to develop a 'Growth Mindset' about Maths, that is, a positive 'can do' attitude. Your child then believes it is possible to succeed in Maths.

5. Do not emphasise speed. Some of the greatest mathematicians in the world are great because they think about Maths carefully and deeply. Completing activities with a time pressure can cause anxiety and create a negative impression of what it is to succeed in Maths.

6. Play with your child! Board games are a great way to spend time with children and choosing the right board game can provide hours of fun, challenge and learning.

7. Speak 'Maths'. Using the correct mathematical vocabulary with your child will expose them to language they are expected to know. If a 4/5 year old child can learn the names of all the dinosaurs and say them correctly then no mathematical word is too 'long' or 'complicated'.

8. Find Maths in the world around you. Children very often leave school with the impression that Maths only happens during Maths lessons and with a Maths book. Maths is so much more than that. Make your child aware that Maths takes place around us on a daily basis.

RUCSAC

Whenever you are faced with any written mathematical problem always use RUCSAC

R = Read, read through the problem 3 times

U = Underline, underline the key numbers and words

C = Calculation, choose the correct operation, either a mental or written method to calculate

S = Solve

A = Answer, check that you have answered the question. What did you need to find out in the first place ?

C = Check, check your answer. Use another method to check your answer

Sea Fishing

Art, Beatrice, Chloe, David and David's dad go sea fishing.
The cost to hire a fishing boat for a day is £20 per adult. Children get a 25% discount.

1. How much will it cost the group to hire the boat?
2. The boat leaves the harbour at 9.15 am and their trip lasts 5 ½ hours. What time will they arrive back?
3. The boat travels at 3 mph. They travel for 30 minutes. How far from the harbour are they?
4. At the end of the trip they have caught the following fish:
   Art: 10 mackerel weighing 2kg 800g in total
   Bea: 4 mackerel weighing 1kg 100g in total and 2 cod weighing 600g each
   Chloe: 6 mackerel each weighing 220g and a haddock weighing 1kg 750g
   David: 3 mackerel each weighing 270g and a skate weighing 1 kg 850g
   Dad: 5 cod. Of these 2 were 200g and the other 3 fish were 3 times that size.
   Who caught the most weight of fish?
5. How much did each mackerel weigh that Art caught?

Lighthouse Problem

On the way back they see 2 lighthouses near to the cliffs. At Lighthouse A the light flashes every 5 minutes and at Lighthouse B the light flashes every 9 minutes. They both flash together at 3.00pm. What is the next time both lights will flash together?

Dripping Tap

A dripping tap wastes 25 ml of water each minute. How much water would be wasted if a tap was left dripping for:

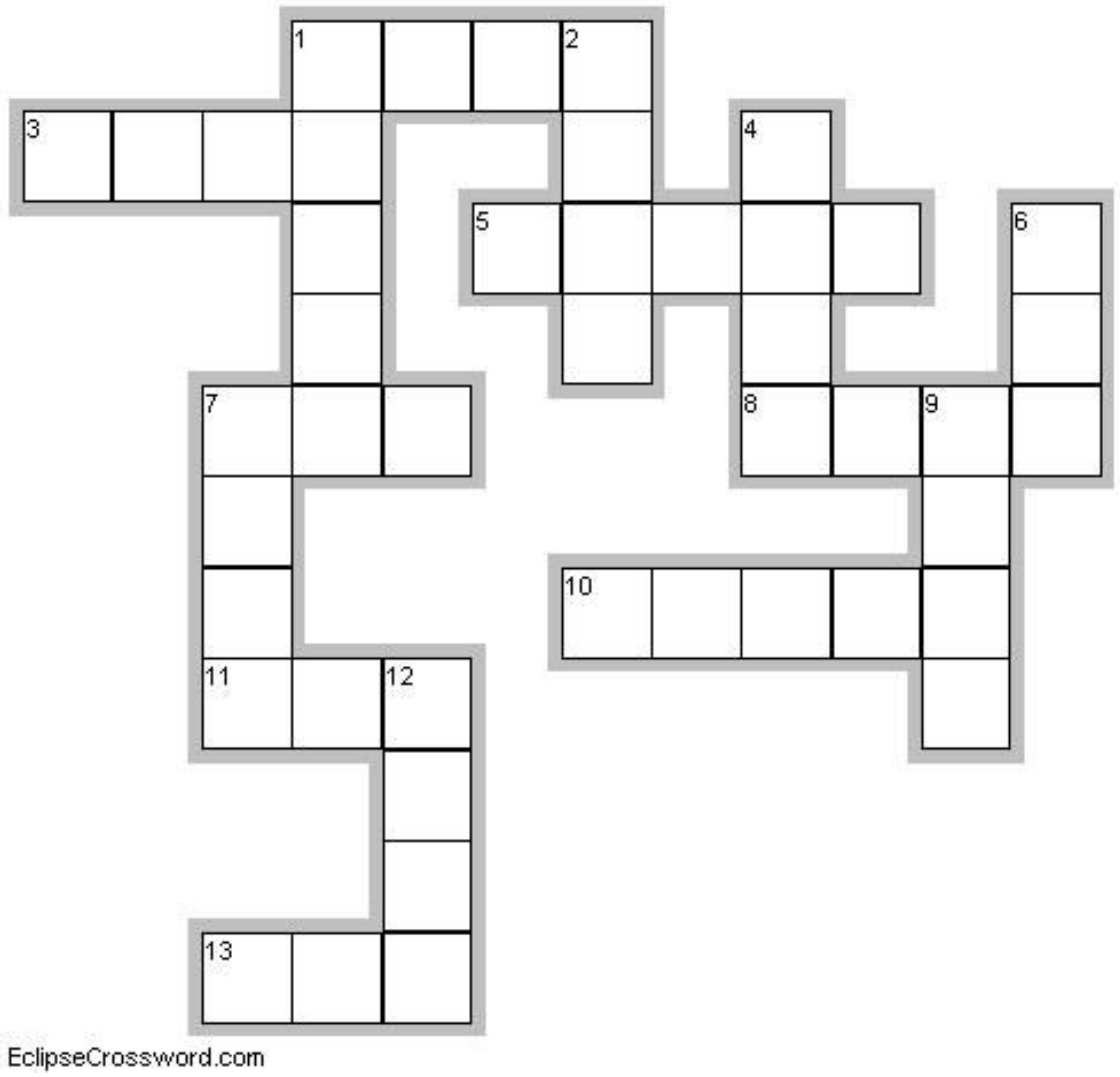
1. An hour
2. A day
3. A week
4. The summer holidays!!!

Numbers 1-100

Can you add all the numbers from 1 to 100?

Stop and have a think, is there is a quick way of doing it!!!!!

Crossword



Across	Down
1. 3765 + 2543	1. 300 x 200
3. ½ of 2220	2. 1111 x 8
5. 8743 x 9	4. 906 x 2
7. 50 x 6	6. 612 ÷ 4
8. 53 x 51	7. 6454 -3283
10. 87431 - 42716	9. 50 x 3
11. 512 ÷ 4	12. 40 x 20
13. 90 x 4	

Mark Beaumont Cycling around the World

Using the internet can you research Mark Beaumont's cycling adventure around the world.

What was the challenge he set himself?
Why did he set himself this challenge?
What route did he take?
How long did his journey take?
Write 5 interesting statistics about Mark's adventure.

Use the link below to help you with your research.
https://markbeaumontonline.com/

Consecutive Numbers

Consecutive numbers are numbers that follow each other in order.

Look at this sequence. There is a way of finding the total without adding.

1 + 2 + 3 + 4 + 5 = 15 (5 x 3)
2 + 3 + 4 + 5 + 6 = 20 (5 x 4)
3 + 4 + 5 + 6 + 7 = 25 (5 x 5)

Can you find an answer without adding for these sequences?

1. 7 + 8 + 9 + 10 + 11 =
2. 20 + 21 + 22 + 23 + 24 =
3. 122 + 123 + 124 + 125 + 126 =

Check your answers by adding

4. Find 3 consecutive numbers that add up to 45
5. Find 3 consecutive numbers that add up to 99

Find a pair of consecutive numbers with:

6. A sum of 11 and a product 30
7. A sum of 15 and a product of 56
8. A sum of 29 and a product of 210

Remember product means to multiply and sum means to add.

Initials

Each number has some initials after it. Can you work out what the initials stand for?
For Example
3 S in a T = 3 sides in a triangle

7 D in a W
1000 G in a KG
365 D in a Y
12 M in a Y
52 P C in a P
1066 B of H
64 S on a C B
28 D in F
14 D in a F
6 N on a D
13 in a B D
8 S of an O
93 M M to the S
10 mm in a cm
3 F in a Y
26 L in the A
60 S in a M

See how many you can answer. Ask your parents for help when you get stuck.

Write 5 examples of your own for someone else to solve.

Mixed Bag

1. A book costs £12. What is the new price if it is reduced by 20% in a sale?
2. Ivo has saved 486 5p pieces. How much money has he saved in total?
3. 12 cricket bats cost £1080. How much would 1 cricket bat cost?
4. What is the nearest number to 200 which is exactly divisible by 16?
5. 4.8 x 2.7 =
6. A field is 97m by 66m. How far would Hannah walk if she walked around it 4 times?
7. What is ½ of 0.75?
8. A flat costs £82,000. What will the asking price be if the flat is reduced by 5%?
9. What number is halfway between -2 and 44?
10. Circle the numbers below which are divisible by 3:
    540 771 895 996
11. Jessica got 18 questions right out 20 in a Maths test. What percentage of questions did she get correct?
12. What is 2/7 as a decimal?
13. A football team wins ⅖ of their matches and draws ⅓. What fraction of matches did they lose? If there are 30 matches in a season how many matches did they win, draw and lose?
14. The average temperature for 4 days is 7 degrees. The temperatures on 3 of the days are 8, 9 and 6 degrees celcius. What was the temperature on the other day?
15. Draw 6 quadrilaterals with different properties and name them.
16. Kieran shares half his birthday cake between nine friends, What fraction of the whole cake do they each receive?

Number Patterns

1. Copy and complete the following pattern
3 x 37 =
6 x 37 =
9 x 37 =
12 x 37 =
Write out the next three lines.

Missing Signs

Fill in the correct sign to make the sum equal

★ can stand for + - X or ÷

For example:
8 ★ 2 = 3 ★ 2 = 8 - 2 = 3 x 2

Have a go at the sums below:

10 ★ 6 = 8 ★ 8
9 ★ 5 = 4 ★ 0
14 ★ 7 = 7 ★ 1
26 ★ 14 = 4 ★ 3
100 ★ 10 = 5 ★ 2
50 ★ 25 = 3 ★ 25

Make up 3 questions of your own.

Garden Design

Francesca, Elizabeth, Pip and Megan have moved into a new house.
They are helping to plan and design the back garden.
They have a budget of £1,800.
Draw the outline of the garden on square paper. Make the scale so that 1 square is equal to 1 m^2.
The garden is 15 m by 15 m
The table on the next page gives the cost of various items the children could pick to use in the garden.

Choose carefully what you think they should purchase, possibly work in rough first. Show your budget in the table once you have made your final decision.

Draw your design to scale and show as a plan.

Item	Cost	Size	Running cost
Grass	£1.80 m2	Max 100m2	
Patio slabs	£3.00	1m2 each	
Vegetable border	Compost £1 m2 Seeds 70p m2		
Fruit trees	Small £45 Large £70	5m2 10m2	
Flowers	Bulbs £11= 35	70 bulbs= 5m2	
Decking	£21 m2		
Table/Chairs	£190 4 chairs £290 6 chairs	8m2 12m2	
Shed	£240	8m2	
Spa	£1200 6 person £900 4 person	8m2	
Slide Swing Football Net	£275 £210 £95	5m2 5m2 5m2	
Fencing	£3 per metre	Must enclose the whole garden	

Skateboarding

Freddie, Ollie, Oser and Harry enjoy skateboarding and visit their local skateboard park.

1. They meet at the park, Freddie travels 3.6 km to get to the park, Ollie 2.43 km, Oser 1.68 km and Harry 11.6 km. How far as a group did they travel?
2. Ollie bought a new skateboard for £64.99, a helmet for £17.49 and knee pads for £23.50. How much money did he spend and did he get any change from £100?
3. They have a competition to see who could jump the highest. Freddie jumped 32.6 cm, Ollie jumped 0.37 m, Oser jumped 315 mm and Harry jumped 12 inches. Put the jumps in order with the highest jump first.
4. The skateboard park cost £99,000 to build. The Council paid a third of the cost. The Lottery paid £48,000. The local community had to fundraise to pay the rest. How much money did the community need to raise?
5. Oser decided to skateboard home. If he skates 10 metres in 6 seconds. How long will it take?
6. The perimeter of the skateboard park is 65 m. How many times would Harry have to go around the park to skate 1 km
7. The ratio of children to adults at the park was 9 children to every 1 adult. There were 144 children in the park. How many adults were skating?

Puzzle Time

Milo is a few years younger than Noah. Both their ages are prime numbers. When added together their ages give the only number less than 25 which has 8 factors.
How old are they?
Milo is
Noah is

Find out what each symbol is worth

$\odot + \triangle = 14$ $\odot =$
$\odot \times \triangle = 48$ $\triangle =$
$\infty \div \star = 2$ $\infty =$
$\star \times \top = 21$ $\star =$
$\top + \infty = 13$ $\top =$

How many rectangles

Count the number of rectangles in this diagram.
There are probably more than you think, maybe more than 20.

Car Game

Play this game against other members of your family next time you go on a car journey.
Each person will need a piece of paper.

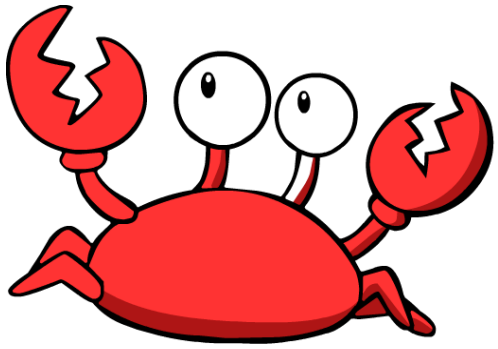
Give each letter of the alphabet a value:

A = 1 B = 2 C = 3 D = 4 etc

Find a village, town or city on your route worth the most points.
Liverpool = 12+9+22+5+18+16+15+15+12 = 124 pts. You do not have to visit the town, but you must see it on a sign for it to count.

The World Crabbing Pier Championships

The World Crabbing Pier Championship will be held in Cromer, Norfolk on August 26th. Work out the total cost for you and your family to attend this event.
You need to find the cost of transport, accommodation, food and refreshments and equipment for you and your family.



Palindromes

A palindrome is a word that reads the same way forwards and backwards, for example, ‘MUM’, ‘PIP’, ‘DID’. ‘NEVER ODD OR EVEN’ is a longer example.
Numbers can also be Palindromes eg. 141.

Write the 2 digit number 14, reverse it 41 and add the 2 numbers 14 + 41 = 55. This is a 1 step palindrome.

If you use 67 you would get 67 + 76 = 143. Continue a second time 143 + 341 = 484. This is a 2 step palindrome.

Try 10 different 2 digit numbers. Which number would need the most steps to reach a palindromic number?

Try with some 3 digit numbers. Do you tend to need more steps with 3 digit numbers?

If you would really like a challenge try 196. The number 196 needs the most steps to reach a palindromic number. A computer has tried this number and did not reach a palindrome, even after millions of steps!!!! So relax and go and enjoy your holiday instead.

Biathlon

Reuben, Darcy, Herbie, Elizabeth, Archie, and Henrietta have entered the Regional Biathlon Competition. They have to swim 50 metres and then run 800m.
The tables below show how to work out each athlete's score:

Points for Swimming: Boys and Girls

	50m Swim	1,000 pts	+/- 0.2 sec
U10		45 sec	6
U11		42 sec	6

Points for Running: Boys

	800 m	1,000 pts	+/- 0.2 sec
U10		3mins 10sec	3
U11		3 mins	3

Points for running: Girls

	800m	1,000 pts	+/- 0.2 sec
U10		3min 15 sec	3
U11		3min 15 sec	3

Name	Age	M/F	Run	Swim	Pts
Reuben	U10	M	3.04	29.2	2,564
Herbie	U11	M	2.56	43.2	
Archie	U11	M	3.05	42.2	
Darcy	U10	F	3.07	32.8	
Elizabeth	U10	F	2.59	47.4	
Henrietta	U11	F	3.16	42.6	

How to work out each athletes points for:

Running
Reuben's running time was 3.04 mins. The standard time for all runners was 3.10mins
Reuben is 6 sec faster than the standard time. He gets 3 additional points for every 0.2 sec he is faster than the standard time.
6 sec $\div$ 0.2 = 30
30 x 3 = 90 extra points for running.
So Reuben's score for running is 1090 pts

Swimming:
Reuben swimming time is 29.2 secs. The standard time for all swimmers is 45 secs
45 - 29.2 = 15.8 secs faster. He gets 6 pts for every 0.2 secs
15.8 $\div$ 0.2 = 79
79 X 6 = 474 extra pts.
So Reuben's score for swimming is 1474 pts
Add run and swim points: 1090 + 1474 = 2564 pts

Work out all of the other athletes' points.
How many points would the boys' team score in their team event? (add the 3 boys' scores together).

How many points would the girls' team score?

Family Birthdays

Fifi was born on her granny's 48th birthday. This year Fifi noticed that her age, her mother's age and her granny's age are all even square numbers. How old is Fifi', her mum and gran?

Lucky dip

1. A pizza costs £4.99. How much would 100 pizzas cost?

2. Henry needs to take 7.5 ml of medicine 4 times a day. How long will a 300 mls bottle of medicine last?

3. Put the following in order from smallest to largest: 33%, 0.343, 3/10

4. Round 34,675 to the nearest 100

5. Joshua, Thomas, David, Basti and Elodie need to split a bill in a restaurant. The bill comes to £39.75, how much does each person pay?

6. 300,000 - 249 =

7. A film lasts 1h 45 mins. What time will it finish if it starts at 7.17 pm?

8. 10 chocolate bars cost £5.70. How much will 3 bars cost?

9. Circle the fractions that are equivalent to 2/3
   11/3, 16/24, 8000/12000, 21/30

10. In a Maths competition, there are 15 problems. For every correct answer you score 3 marks. If an answer is incorrect 1 mark is deducted from the score. Matthew attempts all 15 questions and

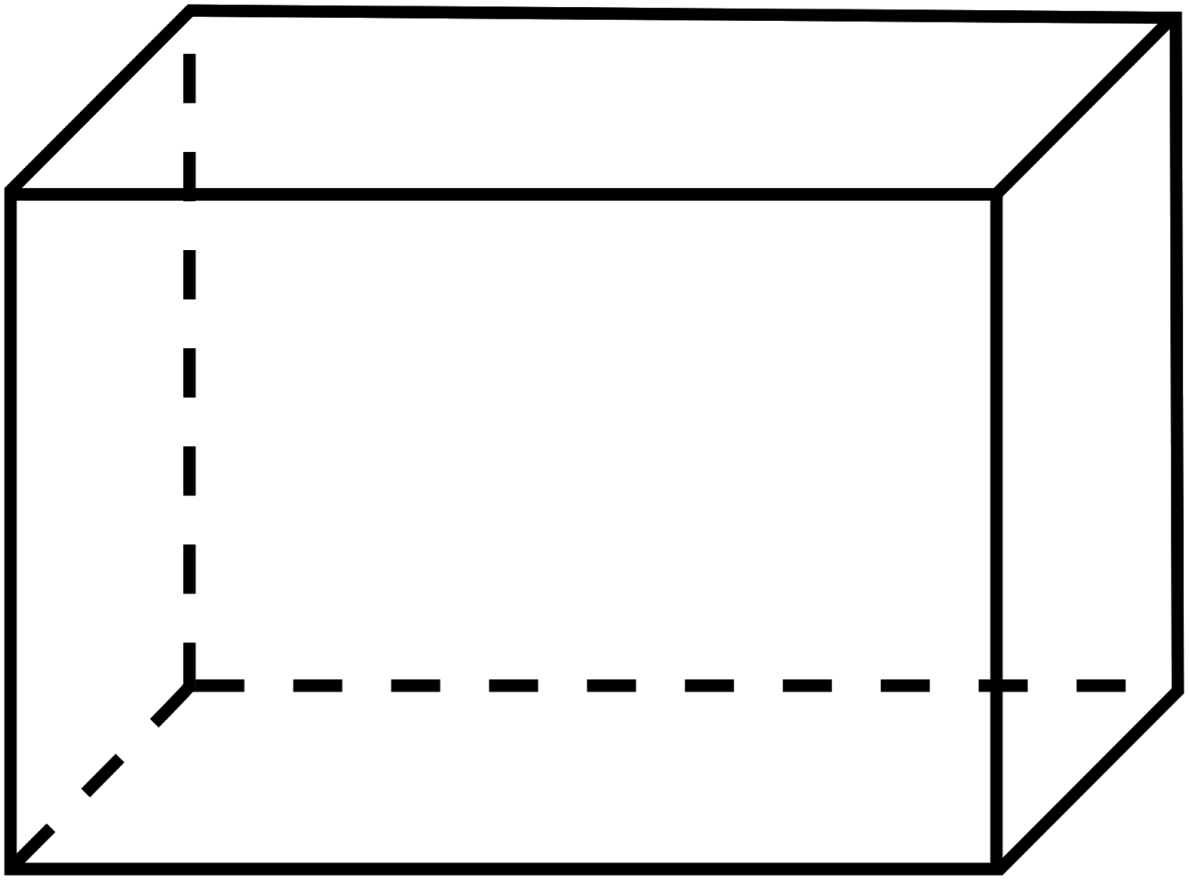
scores 29 marks. How many questions did he answer correctly.

Volume problem

A cuboid has a volume of 180 cm3. What are the dimensions?

e.g 10 cm x 9 cm x 2 cm

There are several possible answers.



Magic Maths

Impress your family and friends with these two Maths tricks.

1. Get them to write down any 3 digit number, for example, 423.
2. Write the number backwards (324)
3. Take the smaller number away from the larger
   (423 -324 = 99)
   All this is done without looking at the number
4. Ask what the first digit of the answer is. In this example, the first digit is 9.
5. You can say the other digit is a 9.

The answer will always be one of these numbers:

99, 198, 297, 396, 495, 594, 693, 792 and 891.

The middle digit is always 9 and the other two digits add up to 9 - so if you add a number to the digit they have given you to make 9 you will have the last number.
So all you need is the first number and you can tell them the other digits.

Check it out!!!!!!!! Practice!!!!! It's impressive!!!!!

Trick 2

The Prediction

To do this trick you need to practice getting an 'anti-nine' number. It is not as hard as it sounds.

Write down any large number with 6 digits
e.g : 695,385

To get the anti nine number just write a number to make 999,999
695,385 521,784
304,614 478,215
Try this a few times and then you will be ready to try the trick.
Get one of your parents to write any 6 digit number
For example 359,467
At this point, you will write your prediction, add a 2 to the front of the number and subtract 2 from the units digit

2359465

Next, ask your parent to write any 2 six digit numbers above their first number

For example:

376129
536412
359467

You then write down the 2 anti nine numbers they have just written

376129
536412
359467
623870 Anti 9 number for 376129
463587 Anti 9 number for 536412

Get your parent to add the 5 numbers up.
It should add up to the prediction you have put in their pocket 2359465.

Practice a few times before doing it on anyone else!!!!!
They will think you are a Maths genius.

<u>Bidmas</u>

Use all 4 operations and brackets to make an equation equal to:

1. 100
2. 1,000
3. 10,000

For example 100
(20 x 4) + (100 ÷ 4) − 5

Written Problems

Use written methods you know for adding, subtracting, multiplication and division in the following questions:

1. A ball of string is 3.5 m long. How much string is left if 1.34 m is used?
2. A leaking pipe loses 3.8 litres in 30 mins. How much water is lost in 24 hours?
3. A CD costs £8.50. How much would two CD's cost if you buy one and get a second one half-price.
4. A book has 180 pages. Florence reads ⅝ of the book. How many more pages must Florence read until she gets half-way through the book?
5. There are 31 pupils in a class. They share 682 marbles for an experiment. How many marbles does each pupil receive?
6. A car is worth £4,200. After an accident its value is reduced by 20%. What is the value of the car now?
7. On average a school needs 58 new books per week. How many new books are needed per school year, which lasts 38 weeks?
8. In the run-up to Christmas a shop took £156,876 on day 1, £121,599 on day 2 and £202,758 on day 3. How much money did the shop take in total over the 3 days?
9. How much more money would the shop need to take in sales to make a total of £1,000,000 for the week?
10. A theatre has 1995 seats. There are 15 seats in each row. How many rows are there in the theatre?

Problem Page

1. A shopkeeper buys a packet of crisps for 22p and sells them for 55p. How much money would she make on a box that holds 40 packets of crisps?
2. Three chocolate bars cost £2.55. How much would seven bars cost?
3. Mabel has 64 coins. Half her coins are 20p coins and half are 5p coins. How much money does Mabel have in total?
4. Emily orders a paper that costs £1.30 a day. How much will she spend on papers in December?
5. Arthur can run 45 metres in 10 seconds. How far will he run in 3 minutes?
6. Imogen spends 60p on sweets. She spends 5 times this amount on pencils and ⅕ of this amount on a rubber. How much did she spend altogether?
7. The perimeter of a regular octagon is 29.6 m. What is the length of one side?
8. A plane takes off at 09.45 am and arrives at 13.31 pm. How long was the journey?
9. A painting has a length of 13 cm and a perimeter of 50 cm. What is the area of the painting?
10. In a general election, Bolurin beat his opponent by 1%. If Bolurin polled 36,100 votes. How many votes did his opponent poll?

11 Nets of a Cube

Can you find all 11 nets of a cube? Be careful you don't repeat by spinning it around or reversing them.

Weighing Problem

You can weigh any amount using just:
1g, 3g, 9g, 27g and 81g and a set of pan scales
Look at the difference between the pans in the table below.

	Pan A	Pan B
1	1	
2	3	1
3	3	
4	3, 1	
5	9	3, 1
6	9	3
7	9, 1	3
8	9	1
9	9	

Can you continue this up to 100?

The Unluckiest Day?

As he was leaving his house one morning Mr Goldsmith checked his postbox to see if he had any letters.
The first letter he pulled out was a tax bill for £112.75. The second letter was a garage bill for £68.70.
After school, Mr Goldsmith went to the library and when he got there he found that he had 6 books, which were all overdue by 6 days each. He was fined 10p per book per day.
He then went into a cafe and bought a cup of coffee. The coffee cost £2.20. Mr Goldsmith gave the cashier a £10 note, but he only received change for a £5 note.
He left the coffee shop and went back to his car to find a parking ticket on the windscreen. The fine was £60.
When Mr Goldsmith returned home he pulled his front door keys out of his pocket. Unfortunately, he also pulled out a £20 note a £10 note and a £5 note, which all blew away with the wind.
That evening the toaster blew up and it cost him £39 to replace it.
At 9 pm he watched the National Lottery and he got 3 numbers and won £300. Did Mr Goldsmith cover all of his loses over the day or not?
How much did he lose or gain on the day?

Write a similar money story entitled ‘The Luckiest Day’.

Revision Time

1. £5 - 66p =
2. £2.52 ÷ 6 =
3. 54 x 20 =
4. 89p x 5 =
5. 13 weeks = days
6. Write 3 multiples of 8 between 90 and 120
7. Find 1% of £1 =
8. 10 peaches cost £2.10. How much would 3 peaches cost?
9. 6.875 - 3.555 =
10. 8000 - 2004 =
11. Increase £3.80 by 10% =
12. 0.6 ÷ 100 =
13. How many degrees does Maddi turn from SE to face W?
14. Draw 6 different quadrilaterals and name them
15. Write 1.3 million in figures
16. What number is halfway between 1.72 and 1.73?
17. ⅓ + ½ =
18. Find a pair of square numbers with a sum of 221
19. How many mm are there in 1 km?
20. 0.9 x 8 =
21. 800 x 8 =
22. Write 1 ¾ million in numbers.
23. 1 kg - 0.001 kg =
24. Plane tickets to Venice cost £85 return. How much would it cost a family of four?
25. Y - 16 = 32 What does Y equal?
26. ¼ x ⅖ =

Charity Cricket Tournament

Ellie, Jake, Poppy, Joe, Ethan and Henry enter a team into a charity 6-a-side cricket tournament.
They call their team 'The Court Jesters'.
Three other teams also enter into the tournament, The Six Club, Milton Youth Club and Easton Cricket Club.
Each team must play each other. Each match lasts for 45 minutes. There is only one pitch.
Draw up a timetable for the tournament starting at 10.00am. Include a 30-minute lunch break.

1. Each player pays £4 to enter the tournament. How much money would the charity raise from all 4 teams' entrance fees?
2. At lunchtime hot dogs, burgers and drinks are on sale. The charity sells 14 hot dogs at £2.50, 15 burgers at £3.50 and 20 drinks at £1.20. How much money does the charity raise at lunchtime?
3. During their 3 matches, The Court Jesters team score the following runs when batting

Ellie	6, 13, 4
Jake	9, 4, 0
Poppy	2, 14,1
Joe	12, 4, 3
Ethan	5, 7, 2

Henry 11, 4, 0
Total each players' runs and find their batting average by dividing each total by 3 (the number of times they bat).
4. At the end of the tournament, the charity sells raffle tickets at 25p each. If 71 tickets are sold how much did the raffle raise?
5. How much will the charity raise from entry fees, food and the raffle?
If you were responsible for organising a cricket tournament which charity would you choose and why?

'Owzat' Cricket Dice Game
Play against other members of your family or friends.
You need 2 dice. The first dice is the batting dice and the second dice is the umpire dice.
When using the batting dice the batsman scores the number of runs thrown on the dice, however, if a 5 is thrown it is 'Owzat' and the umpire's dice is thrown.
On the umpire dice
1 is Bowled
2 is Not out
3 is Caught
4 is Not out
5 is LBW
6 is Not out

If an even number is thrown the batsman continues with the innings until another 5 is thrown.

If an odd number is thrown the batsman is out and the next batsman takes a turn. When all 11 batsmen have batted total the team score and the other team then bat.

The team with the most runs is the winner.
Use the scorecard to keep a record of the game.

Batsman	Runs Scored	Total

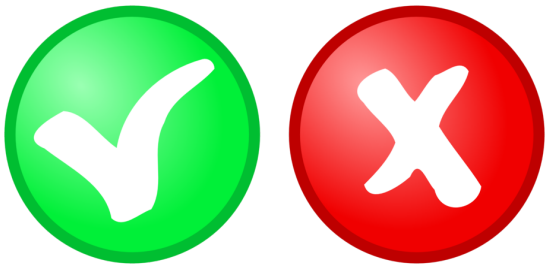
Problems

1. A shopkeeper buys tea at £5.40 per kg and sells it for 85p per 100g. How much profit does the shopkeeper make?
2. Three-tenths of the children in a cinema are boys. If there are 147 girls how many boys are there?
3. The tenth number in the sequence 1, 4, 16, 64….is 262,144. What are the ninth and eleventh numbers?
4. Which is larger ⅔ of 66 or 25% of 164?

5. The price of a new car is £4,600, it is reduced by 5% what is the new cost?
6. One pen costs 35p. How many pens can Henry buy with £6.30?
7. There are 276 children at a school. How many 50 seater coaches will be needed to go on a whole school trip?
8. William's walking stride is 80cm. How far will he walk if he takes 10,000 steps? What is your answer in km's?
9. Harry leaves Hull at 1.40 pm and arrives in London at 6.25 pm. How long did his journey take?
10. Lily runs around a 40 m square field 8 times. How far did she run?
11. Nicholas buys 5 Mars bars for £3.55. How much would 3 Mars bars cost?
12. A pizza weighs 0.62 kg. It is cut into 4 equal slices. What is the weight of 1 slice in grams?

<u>Compare the volumes of any 3 cereal boxes of your choice</u>

Right or Wrong



You are the teacher. Mark the following work with a tick or cross

A = 3.97

B = 2.8

C = 0.75

D = 0.023

E = 5.61

1. A + B = 6.77
2. A + C + E = 10.33
3. B + D + E = 9.603
4. C + D + E = 6.383
5. E - A = 2.64
6. A + C - B = 1.92
7. What letters would you add to get closest to 5?
8. Could you get closer to 5 if you could add and subtract?

100 Challenge

0 1 2 3 4 5 6 7 8 9

Take any of the 4 digits above and set them out like this

3 4

2 1

Then add horizontally and vertically

34 + 21 + 32 + 41 = 128

Can you make 100 exactly?

There are 4 possible solutions. If you can’t make 100 exactly what is the closest you can get?

Roller Coasters

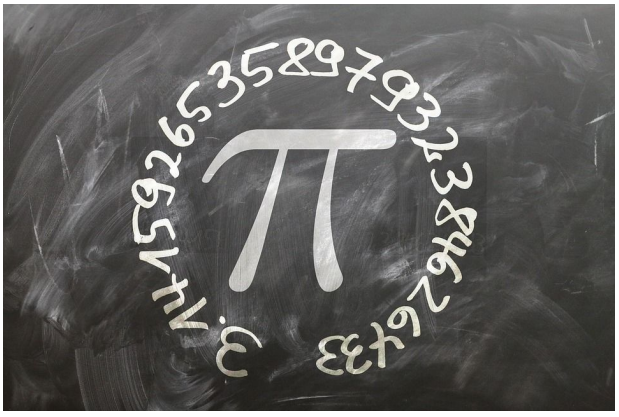
https://www.attractiontix.co.uk/blog/2018/05/11/8-rollercoasters-to-ride-this-summer/

The above website names some of the top roller coaster rides in Europe. Make a list of the best roller coaster rides you have tried. Look at the heights, distances and spins to work out what makes a good roller coaster ride.

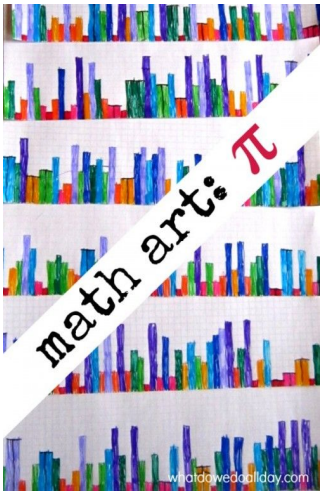
Design and describe your own roller coaster ride.

Where would it come in the top 10 attractions and which theme park would you put your roller coaster in?

Pi Skyline



What is the most interesting number? If you did a poll of mathematicians you would probably get one clear winner. It would be Pi or π. Pi is so interesting it even has a day named after it. March 14th is Pi day. So what is Pi? It is a mathematical constant equal to the ratio of a circle's circumference to the diameter c/d and it is approximately 3.14. The blackboard above shows Pi to 25 digits. However, mathematicians have been beaten by Pi as it is an infinite number, a supercomputer has worked out Pi to 22 trillion digits and it is still going on.
Can you make a Pi skyline by drawing a graph landscape and drawing in the digits of Pi similar to the picture below? Use a different colour for each number. If you are enjoying it find the first 100 digits of Pi.



Eggs In A Box

You have an empty egg box and need to put 1 egg inside. There will be 6 possible ways to place the egg.

O	

	O

O	

	O

O	

	O

Work out all the combinations if you were to put 2 eggs in each box.
Then combinations for 3, 4, 5 and 6 eggs.
Fill in the table below. When you find all combinations can you see a pattern in your answers?

eggs	0	1	2	3	4	5	6
combinations	1	6					

Make 15

A game for 2 players

The object of the game is to make any row, column or diagonal add up to 15.

Use numbers 1 to 9. Each number can only be used once.
Player A has cards 1, 3, 5, 7, 9
Player B has cards 2, 4, 6, 8

Player A goes first followed by Player B and then alternatively.

The winner is the player that makes 15 first.

Player A and player B swap number cards every 5 games.

Magic Squares

A magic square is a grid where all rows, columns and diagonals add up to the same amount.
Can you fill in these magic squares?

The magic number is 30

16		
		14
	18	4

The magic number is 34

13	8		
			14
	10	6	15
16			4

Magic Maths

A palindromic number is a number that reads the same forward or backwards.

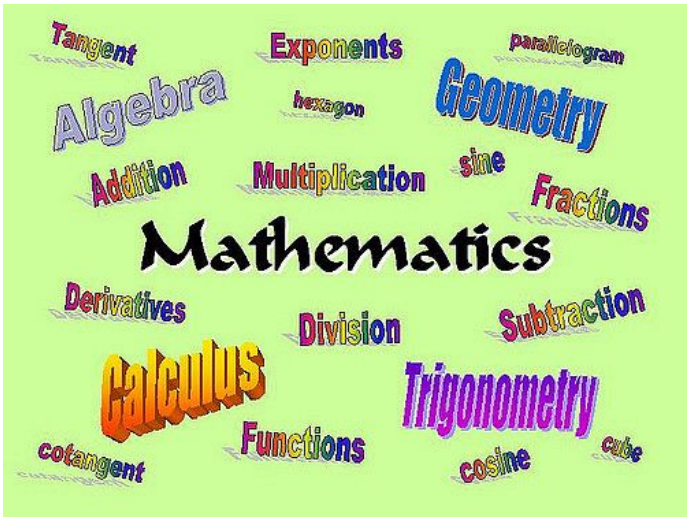
For example 6116

Divide this number by 11

$6116 \div 11 = 556$ Can you find any 4 digit palindromic number that will divide by 11 with a remainder?

Try this 10 times

100 Maths Vocabulary Challenge



You have been learning Maths for a long time. Write more than 100 mathematical words in the table below. Think about all the different topics you have covered.
I have given you 10 D maths words to get you started.
You can't just write numbers!!!!

A	
B	
C	
D	Decimal, decagon, difference, diamond, division, diagonal, diameter, digit, denominator, degree
E	
F	
G	
H	
I	
J	

K	
L	
M	
N	
O	
P	
Q	
R	
S	
T	

U	
V	
W	
X	
Y	
Z	

Go to www.summer-maths-activities-challenge.com record how many maths words you got and your details. A prize for the winner. Only primary Maths terms, don't copy from Wikipedia!!!

Mental Arithmetic Questions

1. 6.3 cm = mm
2. 2.45 km = m
3. 3760 mls = l
4. 8÷100 =
5. ⅘ of 55 =
6. 3.7 x 7 =
7. 67.4 + 4.97 =
8. £64 ÷ 5 =
9. 30% of 150 =
10. What are the Prime Numbers between 30-50?
11. ⅔ of 96 =
12. ⅕ + ⅓ =
13. 6 + 4 x 5 =
14. 35% of 60 =
15. What is the volume of a cuboid: L 9 cm W 5 cm H 10 cm
16. 3.17 litres = mls
17. 100, 81, 64, 49, ___ , ___
18. 1, 1, 2, 3, 5, 8, ___, ___
19. Write ¼ as a percentage and a decimal
20. Change 45/4 into a mixed number.
21. How many minutes are there in 3 ½ hours?
22. 0.7 x 1000 =
23. 50 x 70 =
24. ⅗ x ⅛ =
25. 1 plant costs £1.15. How much will 15 plants cost?
26. Oliver wants to cycle 854 km in 7 days. How far will he have to cycle each day?

Fraction Game

A game for 2 players

Take out all the picture cards from a pack of cards.

Deal out all the cards to 2 players face down.

Each player turns over their top 2 cards and puts the largest number card on the bottom and the smallest number on the top to make a fraction.

The player with the largest fraction wins all 4 cards.

If the largest fraction can't be decided or is in dispute use the following method to work out who has the largest fraction.

For example ⅜ or ⅖

Change each fraction to a decimal

$3 \div 8 = 0.37$

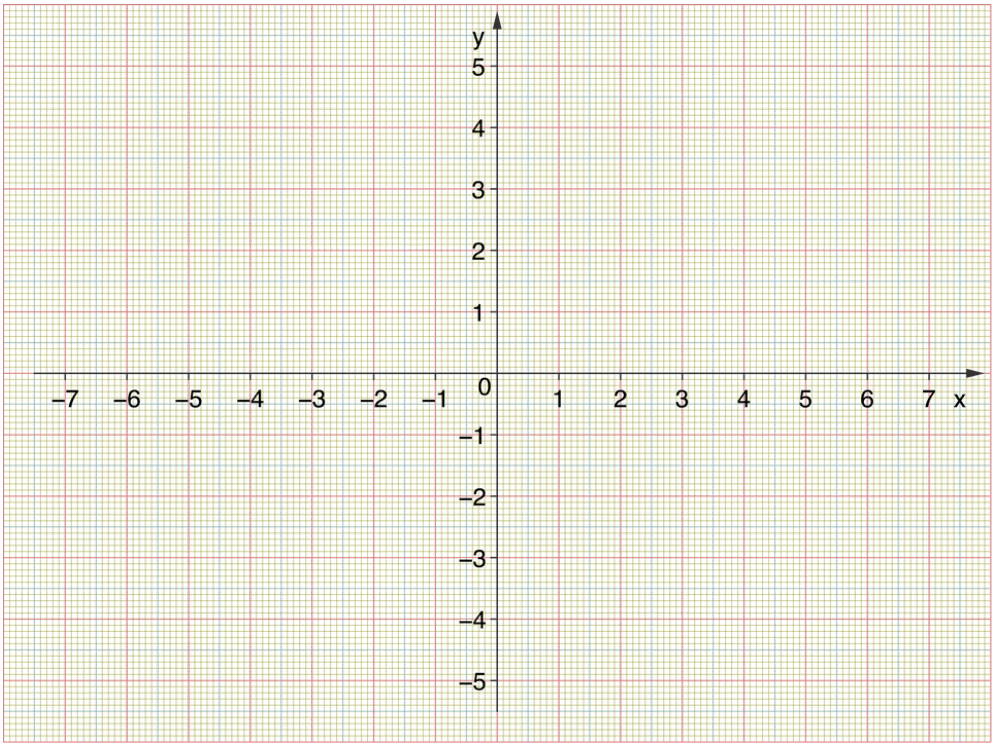
$2 \div 5 = 0.40$

⅖ is larger and wins all the cards

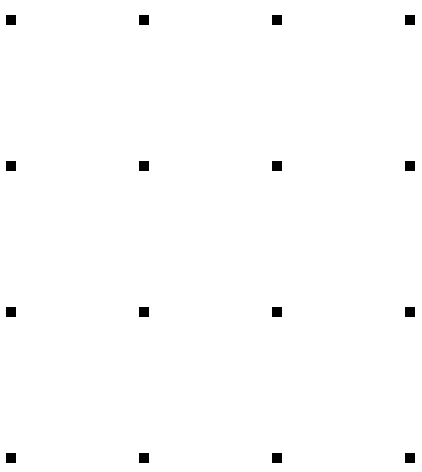
Play again, this time either number can be on top. Work out the largest improper fraction.

Battleships

Play the coordinate game Battleships with a friend or family member
https://**battleship**-game.org
Use the 4 quadrant grid below to make up your own game. It does not have to be battleships, think about when coordinates are used or negative numbers. Use your imagination



16 Sided Shape Challenge



Use squared paper to make a 4 x 4 grid using 16 dots as above.

Using a new grid each time draw shapes with 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, and 16 sides.

All shapes should be made with straight lines and only 2 lines should be coming out of any dot

Once you have completed this challenge could find shapes with up to 25 lines on a 5 x 5 dotted grid.

How many shapes would you be able to draw on a 6 x 6 grid?

Answers for all the problems and questions in the book can be accessed at www.summer-maths-activities-challenge.com
If you have enjoyed the Summer Maths Activities Challenge why not check out some of the following websites for some great maths ideas
https://mathsticks.com/my/

Useful Maths websites for Primary School

http://happysoft.org.uk/countdown/numgame.php