Hello Year 6!

It is amazing! We are now in the final week of term, which is incredible. We would like to thank you all for your hard work and resilience at this time. Things have not always been easy but you have impressed us with your determination to succeed and make the most of things. We wish you all the best of luck as you move to your various secondary schools. We hope you will all take part in the end of year assembly. Hopefully, we can meet up at the end of August or beginning of September for a celebration of some kind.

Maths

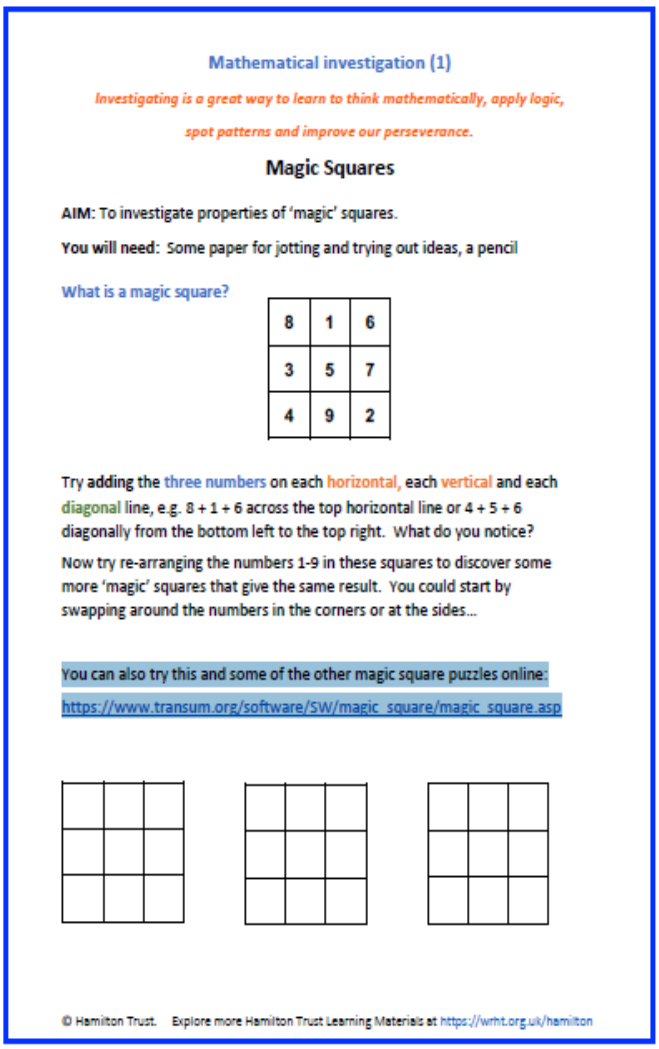
We would like the children to practise their tables to improve recall speed and accuracy of ALL tables. They can do this by visiting 'Times Tables Rockstars'.

For those taking part in the maths online sessions led by Mrs Webb, we will be introducing these activities and then your child will need to continue with the following after the session.

Monday 13th July – Magic Squares

You can also try this and some of the other magic square puzzles online:

https://www.transum.org/software/SW/magic_square/magic_square.asp



Mathematical investigation (1)

Investigating is a great way to learn to think mathematically, apply logic, spot patterns and improve our perseverance.

Magic Squares

AIM: To investigate properties of 'magic' squares.

You will need: Some paper for jotting and trying out ideas, a pencil

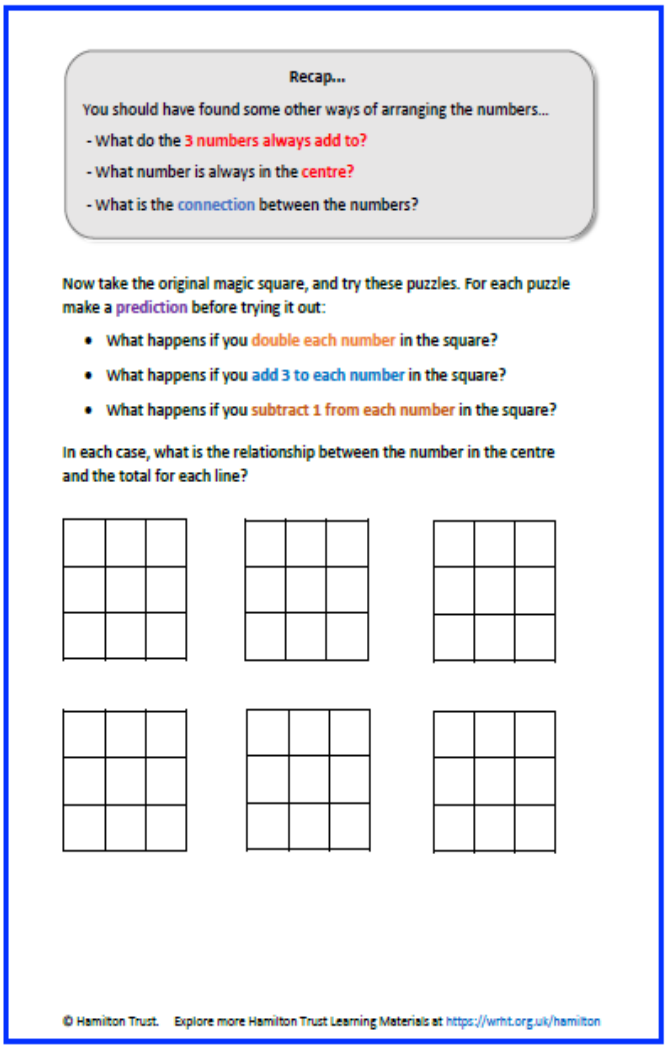
What is a magic square?

8	1	6
3	5	7
4	9	2

Try adding the three numbers on each horizontal, each vertical and each diagonal line, e.g. 8 + 1 + 6 across the top horizontal line or 4 + 5 + 6 diagonally from the bottom left to the top right. What do you notice?

Now try re-arranging the numbers 1-9 in these squares to discover some more 'magic' squares that give the same result. You could start by swapping around the numbers in the corners or at the sides...

You can also try this and some of the other magic square puzzles online:
https://www.transum.org/software/SW/magic_square/magic_square.asp



Recap...

You should have found some other ways of arranging the numbers...
- What do the 3 numbers always add to?
- What number is always in the centre?
- What is the connection between the numbers?

Now take the original magic square, and try these puzzles. For each puzzle make a prediction before trying it out:

- What happens if you double each number in the square?
- What happens if you add 3 to each number in the square?
- What happens if you subtract 1 from each number in the square?

In each case, what is the relationship between the number in the centre and the total for each line?

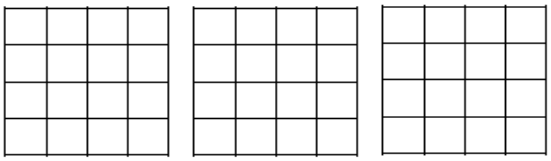
AND BIGGER MAGIC SQUARES

4 by 4 magic square

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

- Try adding each horizonal, vertical and diagonal line.
- What do you find? But there's more!
- Try adding the 2 by 2 squares inside the square, e.g. 1, 15, 12 and 6.
- Now try the 4 squares in the centre.
- Now the 4 corners... can you predict the answer?!
- Now the central numbers on the top and bottom rows (15, 14, 2, 2)...
- Now the central numbers at the sides...

Kaya's older brother says that if you add 16 to each of the numbers in the 4 by 4 magic square, the magic number will be 50.
Use these blank squares to check this... Was he right?
What numbers could you use to make a 4 by 4 magic square that *does* have the magic number 50?



Tuesday 14th July – Lines on a chessboard

Puzzle

Lines on a chessboard

Puzzles are great for developing mathematical logic skills, as well as training us to be resilient if a solution proves tricky to find...!

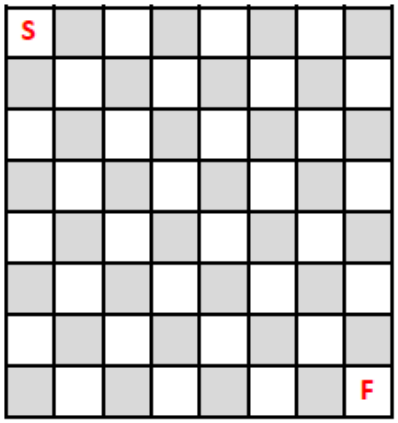
AIMS: Use logical reasoning to solve a spatial puzzle

> *"Begin at the beginning," the King said gravely, "and go on until you come to the end; then stop."*
>
> Lewis Carroll, *Alice's Adventures in Wonderland.*

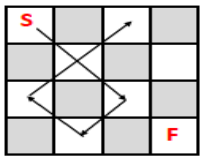
You will need: a pencil, paper, grids (*see resources*)

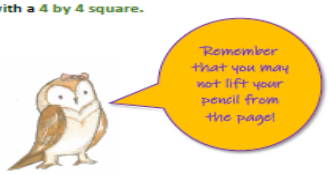
In this puzzle, we investigate how to use straight lines to go from start 'S' to finish 'F', passing through every white square on a grid of grey and white squares – like a chessboard. Just like a bishop in chess, we will use diagonal lines to avoid crossing any grey squares.

YOU MAY NOT LIFT YOUR PENCIL FROM THE PAPER!



A helpful problem-solving strategy is to try a **simpler problem first**, so learn how to start the problem with a **4 by 4 square**.





We could start by drawing a line directly from S to F, but we would then have to go back before we could travel to the other white squares. We definitely want to avoid this! So, instead follow these moves:

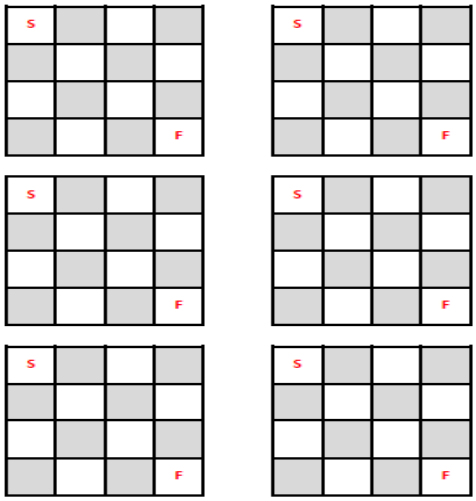
Move 1: Start by going down and right 2 squares.
Move 2: Turn and go down and left by 1 square.
Move 3: Turn and go up and left by 1 square.
Move 4: Turn and go up and right by 2 squares.

How many more moves to get to the **finish**? How many was that **in total**?
Do you think that you can beat that? Use the grids on the resource page to try out your ideas.

- Now try on the **5 by 5 grids**. What happens with these? UGH! You have to backtrack! There is no way to avoid this problem! Can you see why not?
- Now try on the **6 by 6 grids**.
- Now you are ready for the chessboard challenge!
  Look at your solutions for 4 by 4 and 6 by 6... Maybe you can use some of the patterns from those solutions to help?!
- If you get stuck, have a look at the solutions page and try and reproduce the examples before trying again.

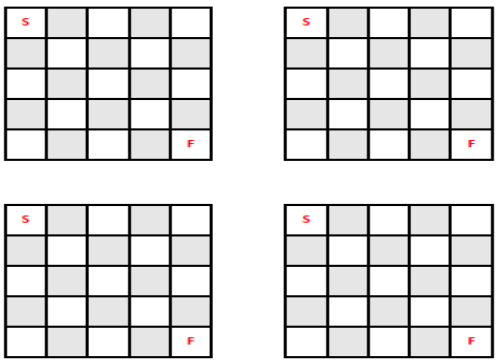
Resource

4 by 4 grids



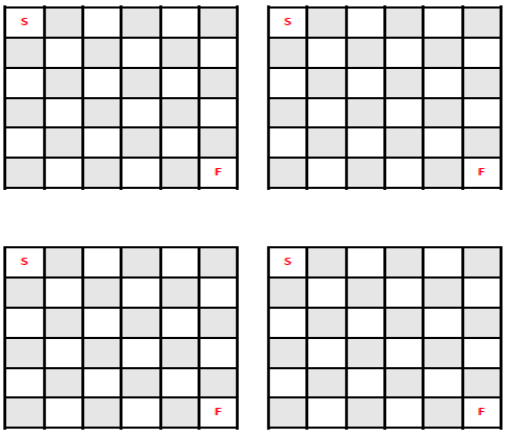
Resource

5 by 5 grids



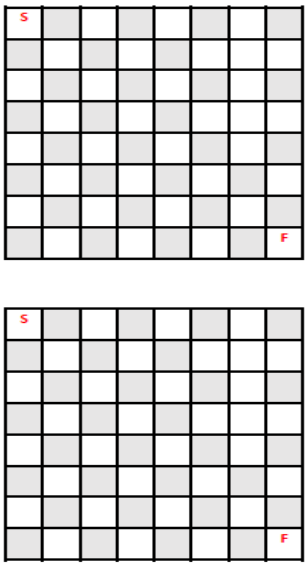
Resource

6 by 6 grids



Resource

8 by 8 grids



Wednesday 15th July - Sudoku

Puzzle: Sudoku

Puzzles like this are great for developing mathematical logic skills, as well as training us to be resilient if a solution proves tricky to find...!

In the first of these 4 by 4 grids, the numbers 1, 2, 3 and 4 appear just once in each row, each column and each 2 by 2 block (bold outline).

Have a go at completing the missing numbers in the other two grids:

2	1	4	3
3	4	1	2
1	2	3	4
4	3	2	1

1	3	2	
2			3
4		3	1
3	1	4	

4			
2	1		
3			2
	2		

What are the missing shapes in these grids: (one each of ♦, ♥, ● and ⬟)

	♦		♥
			●
	♥		♦
♦	●	♥	⬟

♥			
⬟	♦		♥
		♥	
			♦

♦	♥	●	⬟
●	⬟		
	●		♦
♥			

Same rules, but find the missing Roman numerals:

	II		IV
		I	II
II			
	III		

I	III	II	
		III	
		I	
II			III

IV			
III	II		
			III

In each row, column, and 2 by 2 block, the decimals add to 1:

		0.3	0.4
		0.2	
			0.3
0.1		0.4	0.2

0.1		2	
0.3	0.2		
0.2			0.4
	0.1	0.3	0.2

	0.2	0.1	
0.1	0.3		
	0.1	0.2	
			0.1

Finally, similar puzzles can be completed for a 9 by 9 grid!

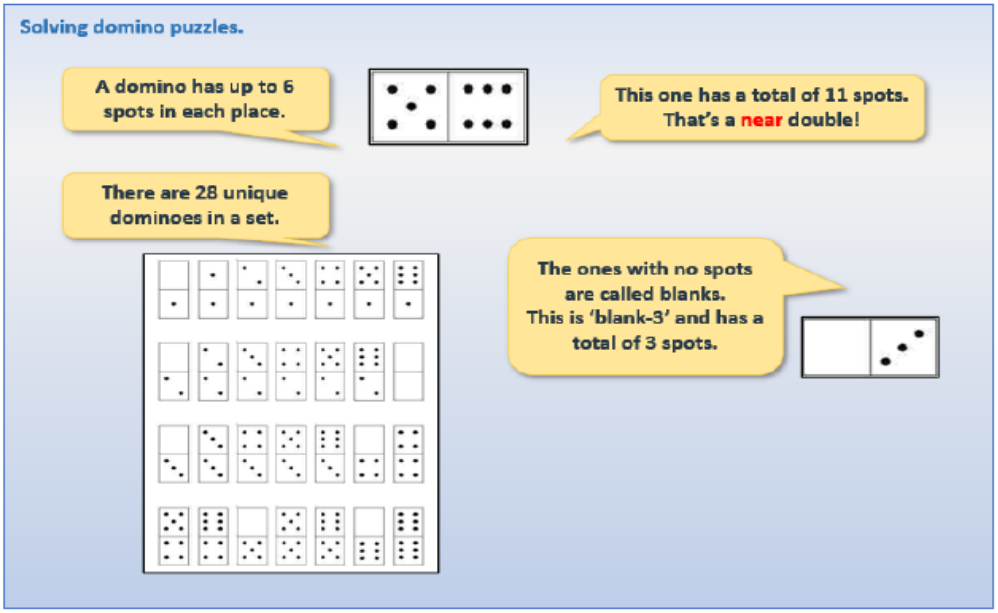
Have a go at completing these...

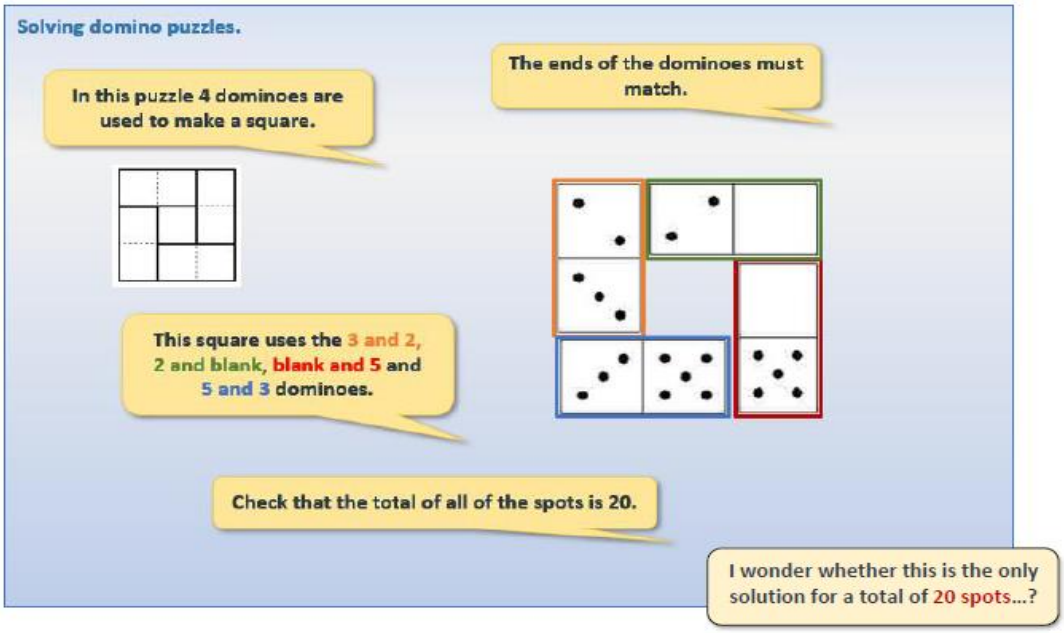
6	4		9	5				
2	3	8						5
			3					
		2					8	9
			5	3		6	2	
	6	4	8			7	5	
4	2	6	7		5		9	
1	7		2	9	4	5	6	8
	9		6			4	7	

Roman numerals...

VIII		VII	III	II	V		IV	IX
	III	I			VIII			
		V		IV				
I		IV		VIII	VII	IX	VI	
						IV	VII	
	II	III	IV		VI			
				VI	IX		VIII	IV
		IX		V	IV		II	VII
VI	IV	VIII		III	II		IX	I

Thursday 16th July – Domino Puzzle



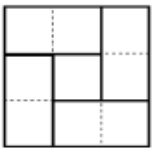


Investigative Practical Activity

Domino squares

Things you will need:
a set of 0-0 to 6-6 dominoes (check that you have all 28), or cut out the set we provide

- Four dominoes are arranged in a square so that ends match, and the total of all the spots is 20. Find at least 4 different solutions.
- Use the page of blank square grids to record your solutions.

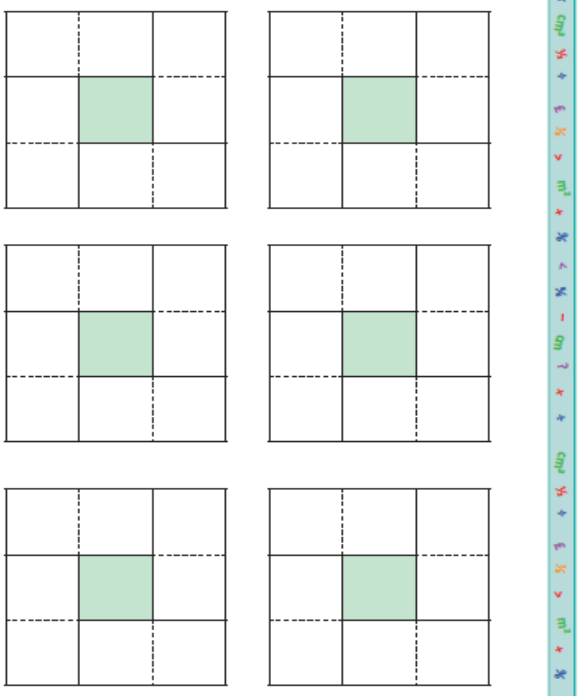


- Repeat, this time finding domino squares with a total of 30.
- What strategies did you apply from last time?
- What did you change?
- What was the same?
- Can a square of dominoes be made with an odd total?
- How can you explain this?
- What is the smallest total you can make? And the largest?

Challenge

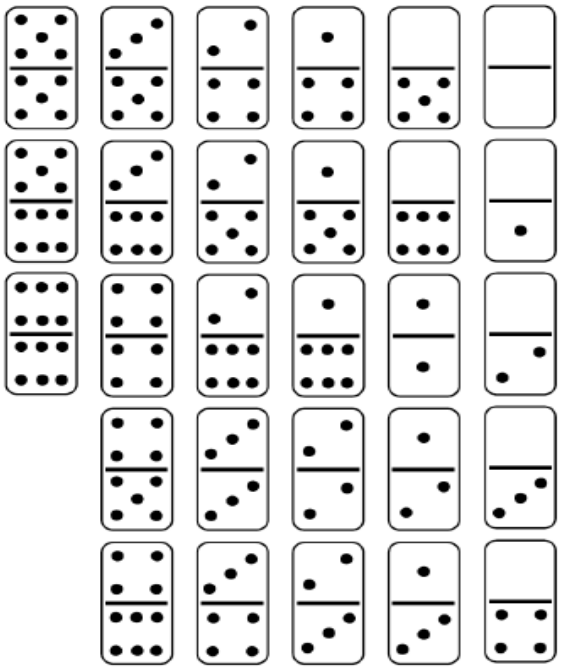
Use eight dominoes to make a square (2 on each side).
Again, the ends of each domino should match.
Make at least one square so that the total of all of the spots is 50.

Investigative Practical Activity
Domino squares



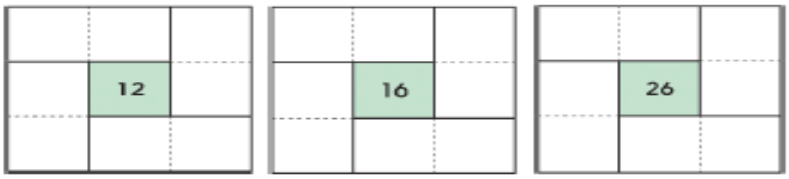
Investigative Practical Activity
Domino squares

Carefully cut out this set of dominoes to use if you do not have any at home.



Check your understanding
Questions

Make squares of four dominoes with the following totals.
Don't forget that the ends must match!



English - Reading and Writing

Please ensure that your child is reading 30 minutes a day and that you are reading with your child often and they are recording it in their 'Home School Diary'. They need to be taking tests in Accelerated Reader as often as possible.

Children also now have access to myON at www.myon.co.uk. To access their myON account children can use their Accelerated Reader username and the password 'DEAN'.

The following link provides daily tasks for writing and grammar with images for inspiration:
https://www.pobble365.com

On SPaG.Com we have set some SPaG activities for your child.

For spellings we'd like children to practise the Year 5/6 and Year 3/4 Spelling List. Also look at this link https://spellingframe.co.uk/guest/word-list

For help with handwriting, log on to https://www.letterjoin.co.uk.

Desktop Login: Username – ak0599 Password – home Tablet Login: Username – ak0599 Swipe code – L

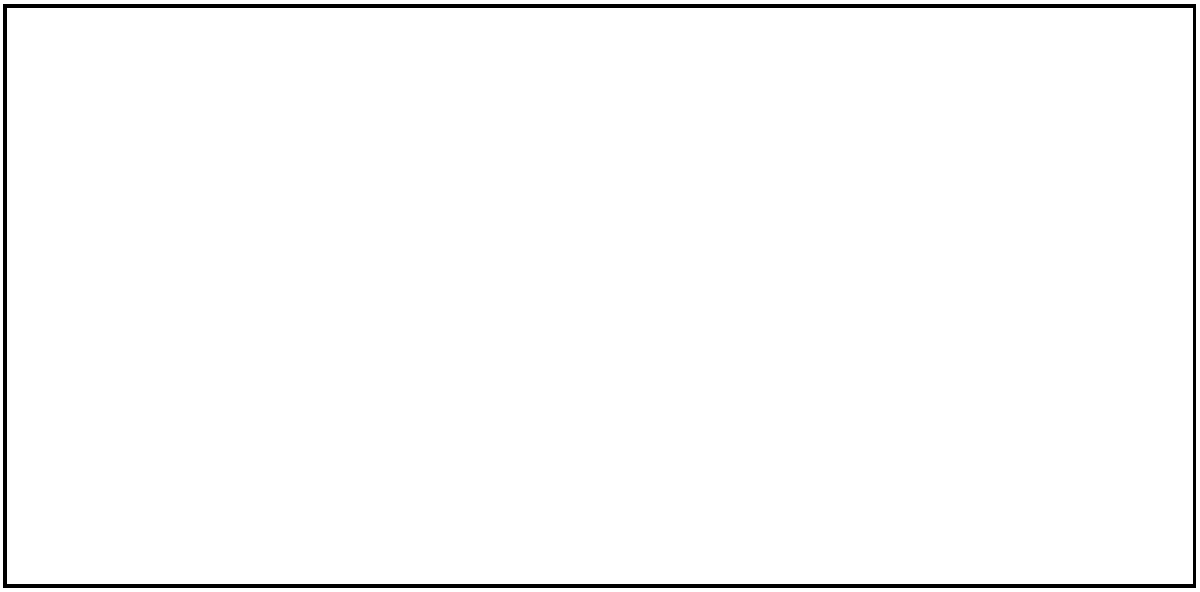
This week we would like you to produce your own yearbook. This is something we would traditionally do at the time of year. We would like you to write about the following:

- My Favourite Trip – Monday 13th July
- My Time at DPS –Tuesday 14th July
- My Ambitions – Wednesday 15th July
- My Achievements – Thursday 16th July

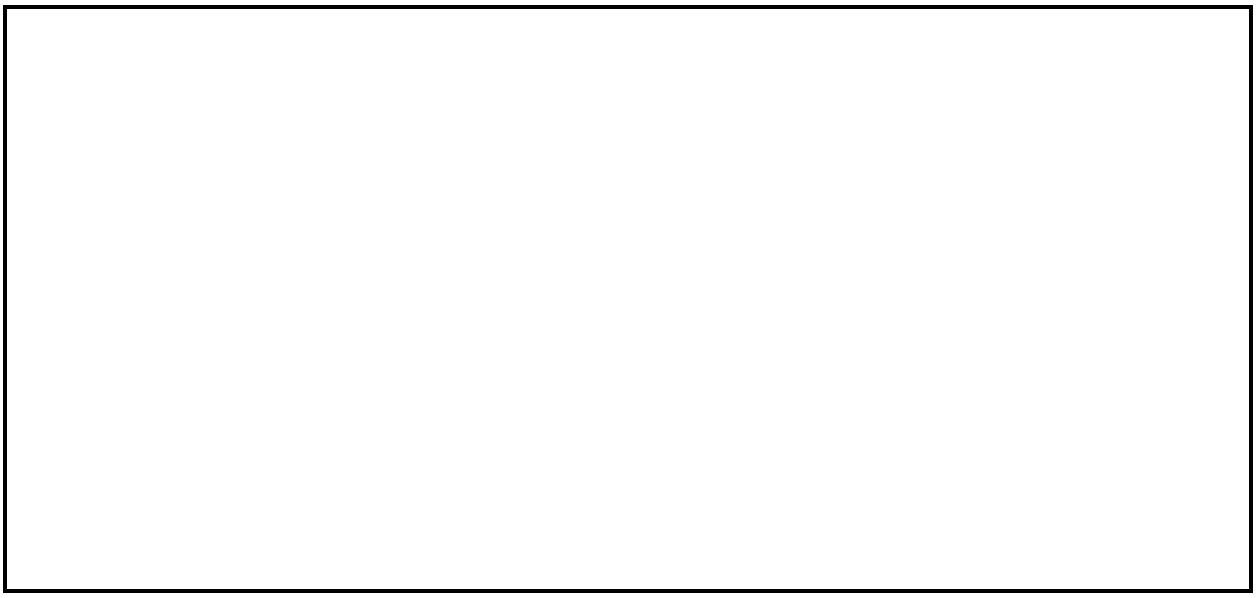
Attached are the pages for your yearbook. It is important that you share positive experiences. We will be thinking about ideas for these pieces when we take part in the online lessons.

Below are the templates we will be using.

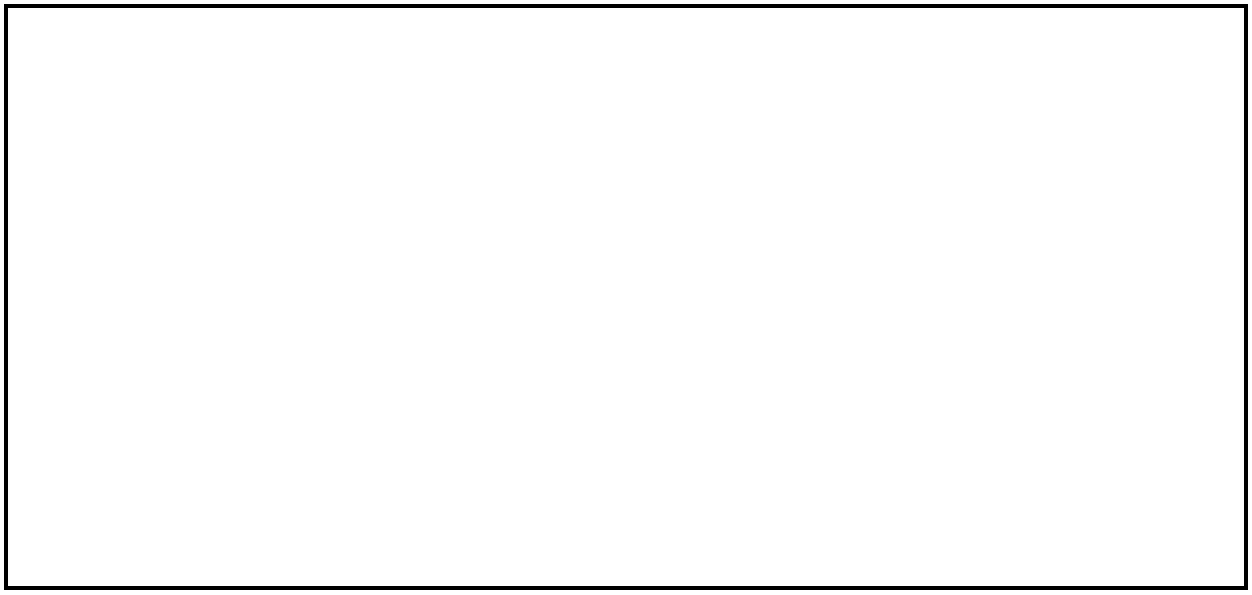
My Favourite Trip



My Time at DPS



My Ambitions



My Achievements

Art

We would like you to create a piece of art about your favourite memory at Deanshanger Primary School. This could be a drawing, painting, collage... It is up to you.

Design Technology

We would like you to design and if possible make an end of term celebration meal/ snack. This could involve the following:

- Researching and creating a menu for a celebratory meal/snack. This could include mocktails https://www.bbcgoodfood.com/recipes/collection/kids-mocktail-recipes. You could create a special celebratory cake....
- Making the meal/snack
- Researching and designing a possible outfit to wear to your celebration meal/snack
- Making and creating invitations to your celebration
- Creating a playlist of your favourite music for your celebration
- Creating and sharing a dance for your celebration
- Creating decorations and decorating your celebration venue
- Creating forms of entertainment for celebration – magic tricks, jokes etc

It would good if on Thursday or Friday afternoon you took a photo of your celebration and shared it with us...