Weekly Maths Planning **Unit: Problem solving** **Butterflies Class** **w/b: 8.2.21**

	Learning objective	Main teaching	Activity	Resources	Vocabulary
Monday	LO to demonstrate my understanding of fractions, decimals and percentages	Scroll down and look at the Codebreaker which is saved for you at the bottom of this plan. If you solve the code, you'll find the answer to the joke. For some of you, this might take most of the lesson. Have a go and let me know how you get on!	Here is a workbook for you, covering all of the learning we have done since January. You do not need to print the workbook; you can write the answers in your maths book. Work for **NO MORE THAN 1 HOUR** https://files.schudio.com/roose/files/documents/Fractions,_Decimals_and_Percentages_Practice_Test.pdf The answers are at the bottom of the document. **Extra challenge**: If you finish with time to spare and you want to challenge yourself further, have a go at the 'Ultimate Fractions, Decimals and Percentages (FDP) challenge' which is saved on the website. You could time yourself and then try again another day to see if you can beat your time!	Codebreaker Worksheets Y6 link Paper Pencils Ultimate FDP challenge	Fraction Decimal Percentage Problem Demonstrate
Tuesday	LO to demonstrate my arithmetic skills	Scroll down and find the multiplication square for today. Be careful - there's some decimals on there too. A completed multiplication square has the numbers you are multiplying along the top and down the left hand side and the answers in the other boxes, like this: Yours isn't so simple though as the numbers aren't in order. 	×	1	2	3	4	5	6	7	8	9	10
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1	1	2	3	4	5	6	7	8	9	10
2	2	4	6	8	10	12	14	16	18	20
3	3	6	9	12	15	18	21	24	27	30
4	4	8	12	16	20	24	28	32	36	40
5	5	10	15	20	25	30	35	40	45	50
6	6	12	18	24	30	36	42	48	54	60
7	7	14	21	28	35	42	49	56	63	70
8	8	16	24	32	40	48	56	64	72	80
9	9	18	27	36	45	54	63	72	81	90
10	10	20	30	40	50	60	70	80	90	100		Find an arithmetic assessment in the middle of your 10 minute test book. (If you're on Zoom, I will tell you which one we'll be doing.) Complete the test, mark your answers and then correct any mistakes you made. **Extra challenge**: If you finish your work quickly or want an extra challenge, have a look at the 'Chessboard challenge'. Scroll down and you'll see it below this plan. Let me know how you get on!	Multiplication square Arithmetic assessment Pencil Ruler Maths book	Multiplication Division Addition Subtraction Calculate Place value

Wednesday	LO to solve problems involving fractions, decimals and percentages	1. Have a look at this game. https://nrich.maths.org/6945 While you might not be able to play the actual game (because you don't have 3 other people to play with), you could still try to build 4 doughnuts using the cards. Maybe you could time yourself? How could you make the game harder?	2. Download the 'FDP Tarsia' from the website. Have a go at matching up the cards to make a square shape. Choose your own level of challenge: Green - tricky Red - trickier Blue - trickiest 3. Can you help Andy with his marbles problem? https://nrich.maths.org/2421 **Extra challenge**: We haven't learnt about this yet but some children might love a really tricky challenge so here's one for you: https://nrich.maths.org/2739	Website links Scissors Paper Pencils	Fraction Decimal Percentage Equal Part Whole Equivalent Equal
Thursday	LO to use knowledge of place value and calculation to solve problems	Have a go at this function machine. You need to move the numbers so that the answers are correct. https://www.transum.org/Maths/Puzzles/Les_Page/Brainbox/ If you liked this game, you can scroll down the webpage and change the game to a different 'Level' and that will make it harder.	Last week, we learnt to multiply and divide with decimals. Have a go at the questions on this website: https://www.transum.org/Maths/Activity/Decimals/ When you have done the first page, click level 2, then 3 etc below. How far can you go? **Extra challenge**: Here's a tricky addition problem with some mind blowing results… Have a go at the Marvellous Matrix. Read the webpage carefully as there's further challenges for those who want them: https://nrich.maths.org/2064	Website links Paper Pencils	Function Multiplication Addition Subtraction Division Inverse

Friday	LO to show resilience in my problem solving	Can you solve the 'broken calculator game'? You have to make each total using only the buttons which are working. https://www.transum.org/Software/SW/Starter_of_the_day/Students/Broken_Calculator.asp If you enjoyed this game, scroll down the website further and you'll find you can change the game to make it harder.	Here is a maths challenge for you to solve: https://www.transum.org/Maths/Puzzles/Octagram/Star.asp Read the instructions carefully so you understand the game. When you have done the first page, click level 2, then 3 etc below. How far can you go? **Extra challenge**: Scroll down and find Einstein's Riddle. *Supposedly, only 2% of people are able to solve it.* Can you find the answer? Even if you can't get a solution, can you give it a go and show how you might go about solving it.	Website links Paper Pencils Ruler Einstein's riddle as extra challenge	Systematic Resilient Problem solving Challenge Order Plan

Calculations Code Breaker

Reveal a spring-themed joke by writing the percentage equivalent to the following fractions and decimal fractions. Use the grid to locate the letter that matches each answer. The joke will read across the tables.

A	B	C	D	E	F	G	H	I	J	K	L	M
6%	15%	21%	5%	13%	24%	18%	7%	12%	1%	25%	19%	9%

N	O	P	Q	R	S	T	U	V	W	X	Y	Z
22%	16%	11%	26%	2%	17%	20%	3%	10%	8%	14%	23%	4%

	0.08	$\frac{7}{100}$	0.06	$\frac{1}{5}$
Answer				
Letter				

	$\frac{18}{100}$	0.16	$\frac{13}{100}$	0.17
Answer				
Letter				

	$\frac{3}{100}$	0.11
Answer		
Letter		

	$\frac{2}{25}$	0.07	$\frac{13}{100}$	0.22
Answer				
Letter				

	$\frac{2}{10}$	0.07	$\frac{13}{100}$
Answer			
Letter			

	0.02	$\frac{6}{100}$	0.12	$\frac{22}{100}$
Answer				
Letter				

	0.21	$\frac{4}{25}$	0.09	$\frac{13}{100}$	0.17
Answer					
Letter					

	$\frac{5}{100}$	0.16	$\frac{8}{100}$	0.22	
Answer					
Letter					?

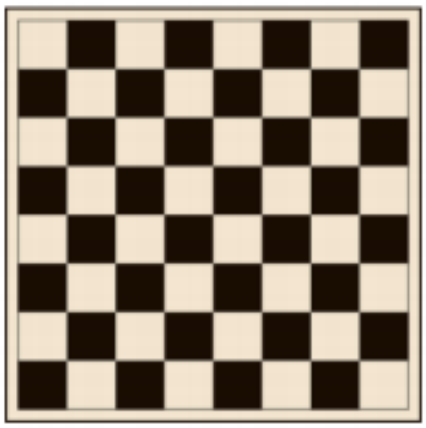
	0.06	$\frac{22}{100}$
Answer		
Letter		

	0.03	$\frac{9}{100}$	0.15	$\frac{2}{100}$	0.13	$\frac{19}{100}$	0.19	$\frac{6}{100}$	
Answer									
Letter									.

Monday Codebreaker

Tuesday Multiplication square

X					
	49	28	6.3		
	77				0.66
			0.54		
		60		7.5	
			72		



The ruler of India was so pleased with one of his palace wise men, who had invented the game of chess, that he offered this wise man a reward of his own choosing.

The wise man, who was also a wise mathematician, told his Master that he would like just one grain of rice on the first square of the chess board, double that number of grains of rice on the second square, and so on: double the number of grains of rice on each of the next 62 squares on the chess board.

This seemed to the ruler to be a small request, so he called for his servants to bring the rice. The servants began to place the rice on the chess board. 1 grain on the first square, 2 on the next, 4 on the next…and so on, doubling each time. The servants were very surprised by how much rice this started to add up to…

Your challenge: can you find out how many grains of rice were needed on the 12th square? And then can you find out how many were needed for the 64th square? And the total number?

Einstein's Riddle

The situation

- There are five houses in five different colours.
- In each house lives a person with a different nationality.
- These five owners drink a certain type of beverage, eat a certain food and keep a certain pet.
- No owners have the same pet, eat the same food or drink the same beverage.

The question is: Who owns the fish?

Hints

- The Brit lives in the red house
- The Swede keeps dogs as pets
- The Dane drinks tea
- The green house is on the left of the white house
- The green house's owner drinks coffee
- The person who eats cucumber rears birds
- The owner of the yellow house eats sausages
- The man living in the centre house drinks milk
- The Norwegian lives in the first house
- The man who eats pasta lives next to the one who keeps cats
- The man who keeps horses lives next to the man who eats sausages
- The owner who eats chips drinks beer
- The German eats sweets
- The Norwegian lives next to the blue house
- The man who eats pasta has a neighbour who drinks water

Rules

You **must** work as a team to find the answer. When you have the answer you will be expected to all explain to the class how you solved it and answer their questions about any mistakes you made along the way.

Remember that supposedly only 2% of people can ever solve this s**o we don't expect you all to get the answer** – but **we do expect you all to find a method** that would help you find the answer.

If your method is not working then **stop** and start again with a new method.

You can use any of the resources available to make it easier for you to think of a method.

Make sure **everyone** in your group has a chance to help out – you will be surprised at the amazing ideas from your team mates!