FOUR RULES OF NUMBER

Addition

Column Addition

19.01 + 3.65 + 0.7 =

	7	5	4	9				1	9	.	0	1
+	6	8	5	3					3	.	6	5
1	4	4	0	2			+		0	.	7	0
	1	1	1					2	3	.	3	6
								1	1			
	£	1	2	.	8	5						
+	£		8	.	7	6						
	£	2	1	.	6	1						
			1	1		1						

← Place holder 0

'Exchange'

Subtraction

Column subtraction

43762—9354 = 225.7— 82.34 =

	3 4	1 3	7	5 6	1 2			1 2	1 5	5	. 6 7	1 0
-		9	3	5	4		-		8	2	.	3	4
	3	4	4	0	8			1	7	3	.	3	6

Place holder 0

'Exchange'

Multiplication

Short Multiplication

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

Long Multiplication

		2	4	7		
		×	2	3		
		7	4	1		
		1	2			
+	4	9	4	0		
		1				
	5	6	8	1		
	1					

x10 then x 2 Place holder 0

'Lots of'

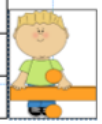
Division

Short division by 1 digit

1	4	4	5	÷	4	
	0	3	6	1	r	1
4	1	14	24	5		
or	3	6	1	.	2	5
or	3	6	1	1/4		

Short division by 2 digits

	4	5	5	0	÷	1	4
		0	3	2	5		
1	4	4	45	35	70		
Multiples of 14:							
1	4,	2	8,	4	2,	5	6,
7	0,	8	4				



'Groups of'

FRACTIONS FOUR RULES OF NUMBER

Addition – Common Denominators

$$\frac{1}{2} + \frac{3}{4} = \frac{2}{4} + \frac{3}{4} = \frac{5}{4} = 1\frac{1}{4}$$

(×2)

Mixed Numbers:

$$1\frac{1}{3} + 2\frac{3}{4} = 1\frac{4}{12} + 2\frac{9}{12} = 3\frac{13}{12} = 4\frac{1}{12}$$

(×3, ×4)

'What you do to the top, you do to the bottom'

Subtraction – Common Denominators

$$\frac{5}{8} - \frac{1}{2} = \frac{5}{8} - \frac{4}{8} = \frac{1}{8}$$

(×4)

Mixed Numbers: Change to improper fractions first

$$4\frac{2}{3} - 1\frac{1}{4} = \frac{14}{3} - \frac{5}{4} = \frac{56}{12} - \frac{15}{12} = \frac{41}{12} = 3\frac{5}{12}$$

(×3, ×4)

'What you do to the top, you do to the bottom'

Multiplication

Whole Number:

$$3 \times \frac{5}{8} = \frac{3}{1} \times \frac{5}{8} = \frac{15}{8} = 1\frac{7}{8}$$

Proper Fractions:

$$\frac{3}{4} \times \frac{4}{5} = \frac{12}{20} = \frac{3}{5}$$

Multiply the top and the bottom.

Mixed Numbers:

$$1\frac{2}{7} \times 1\frac{3}{8} = \frac{9}{7} \times \frac{11}{8} = \frac{99}{56}$$

'Just multiply'

Division – K.F.C.

Whole Number:

$$4 \div \frac{1}{3} = \frac{4}{1} \times \frac{3}{1} = \frac{12}{1} = 12$$

Proper Fractions:

$$\frac{2}{3} \div \frac{5}{6} = \frac{2}{3} \times \frac{6}{5} = \frac{12}{15} = \frac{4}{5}$$

Keep the first > Flip the second > Change the sign to ×

Cross-cancelling is taught in year 8