Mathematics

Mathematics teaching in Key Stage 2 should be taught in 3 sessions.

- Reasoning- this is a 40-60 minute lesson delivered every day. The lesson follows a 4 part lesson plan
  - Review and Do – learning from previous lesson is consolidated before progressing
  - Let's learn – direct teaching session focussed on developing reasoning skills
  - Practice – pupils consolidate understanding of new content and answer different questions
  - Challenge – reasoning questions should be intertwined throughout the lesson

- Arithmetic – this is 20-25 minutes session delivered 4 times a week which focusses on arithmetic and consolidates previous year knowledge and new content learnt in the current year recorded in the arithmetic books

- Fluency – 10 minute session and weekly fact learning task in home learning following the weekly number facts. Activities can be verbal or recorded in independent maths books

Arithmetic Long Term Plan (Year 6)

	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15
A	Multiplication and division facts up to 12 x 12	Multiplication and division facts using known time table facts	Addition (including decimals)	Subtraction (including decimals)	Multiplication (multiplying 3 numbers)	Division (short division and bus stop method)	Order of Operations	Long multiplication	Long Division	Adding fractions (including mixed numbers)	Subtracting fractions (including mixed numbers)	Multiplying fractions	Assessment week	Dividing fractions	
Sp	Adding and subtracting fractions	Multiplying and dividing fractions	Percentages	Multiplying and dividing by 10,100 and 1000	Multiplying and dividing by 10,100 and 1000	Order of operations and balancing equations	Addition (including decimals)	Subtraction (including decimals)	Multiplication (multiplying 3 numbers)	Division (short division and bus stop method)	Assessment week	Long division	Long multiplication		
Su	Addition (including decimals)	Subtraction (including decimals)	Multiplication (multiplying 3 numbers and long division)	Division (short division and bus stop method and long division)		Multiplying decimals	Topic based Maths	Topic based Maths	Assessment week	Topic based Maths	Topic based Maths	Topic based Maths			

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Reasoning Long Term Plan (Year 6)

	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14	W15
A	**Place value** Roman numerals Partitioning Ordering Rounding		**4 Operations** Addition Subtraction Division Mutliplication						**Fractions A** Equivalent fractions Compare and order fraction Add and subtract fractions		**Fractions B** Multiplying and dividing fractions Finding fractions of numbers		Assessment week	**Shape** Angles in 2D shapes Circles 3D shapes	
Sp	**Ratio** Roman numerals Partitioning Ordering Rounding		**Algebra** Function machines Formulas Finding values		**Decimals** Rounding Add, subtract, multiply and divide decimals		**Fractions/ decimals and percentages**		**Area/Perimeter and Volume** Perimeter Area of triangles/parallelogram Volume of cuboids and cubes		Assessment week	**Statistics** Line graphs Double bar charts Pie charts Finding the mean			
Su	SATs Preparation			Assessment week	Themed projects, consolidation and problem solving tasks (enterprise projects)										

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Fluency Facts (Year 5/6)

Autumn 1 Week 1	Autumn 1 Week 2	Autumn 1 Week 3	Autumn 1 Week 4	Autumn 1 Week 5	Autumn 1 Week 6
0 x 3 = 0 1 x 3 = 3 2 x 3 = 6 3 x 3 = 9 4 x 3 = 12 5 x 3 = 15 6 x 3 = 18 7 x 3 = 21 8 x 3 = 24 9 x 3 = 27 10 x 3 = 30 11 x 3 = 33 12 x 3 = 36	0 x 4 = 0 1 x 4 = 4 2 x 4 = 8 3 x 4 = 12 4 x 4 = 16 5 x 4 = 20 6 x 4 = 24 7 x 4 = 28 8 x 4 = 32 9 x 4 = 36 10 x 4 = 40 11 x 4 = 44 12 x 4 = 48	0 x 6 = 0 1 x 6 = 6 2 x 6 = 12 3 x 6 = 18 4 x 6 = 24 5 x 6 = 30 6 x 6 = 36 7 x 6 = 42 8 x 6 = 48 9 x 6 = 54 10 x 6 = 60 11 x 6 = 66 12 x 6 = 72	0 x 7 = 0 1 x 7 = 7 2 x 7 = 14 3 x 7 = 21 4 x 7 = 28 5 x 7 = 35 6 x 7 = 42 7 x 7 = 49 8 x 7 = 56 9 x 7 = 63 10 x 7 = 70 11 x 7 = 77 12 x 7 = 84	0 x 8 = 0 1 x 8 = 8 2 x 8 = 16 3 x 8 = 24 4 x 8 = 32 5 x 8 = 40 6 x 8 = 48 7 x 8 = 56 8 x 8 = 64 9 x 8 = 72 10 x 8 = 80 11 x 8 = 88 12 x 8 = 96	0 x 9 = 0 1 x 9 = 9 2 x 9 = 18 3 x 9 = 27 4 x 9 = 36 5 x 9 = 45 6 x 9 = 54 7 x 9 = 63 8 x 9 = 72 9 x 9 = 81 10 x 9 = 90 11 x 9 = 99 12 x 9 = 108
Autumn 2 Week 1	**Autumn 2 Week 2**	**Autumn 2 Week 6**	**Autumn 2 Week 6**	**Autumn 2 Week 5**	**Autumn 2 Week 6**
0 x 11 = 0 1 x 11 = 11 2 x 11 = 22 3 x 11 = 33 4 x 11 = 44 5 x 11 = 55 6 x 11 = 66 7 x 11 = 77 8 x 11 = 88 9 x 11 = 99 10 x 11 = 110 11 x 11 = 121 12 x 11 =132	0 x 12 = 0 1 x 12 = 12 2 x 12 = 24 3 x 12 = 36 4 x 12 = 48 5 x 12 = 60 6 x 12 = 72 7 x 12 = 84 8 x 12 = 96 9 x 12 = 108 10 x 12 = 120 11 x 12 = 132 12 x 12 =144	**6 and 7 times table** 6 x 6 = 36 7 x 6 = 42 8 x 6 = 48 9 x 6 = 54 11 x 6 = 66 12 x 6 = 72 6 x 7 = 42 7 x 7 = 49 8 x 7 = 56 9 x 7 = 63 11 x 7 = 77 12 x 7 = 84	**Prime numbers** 2, 3, 5, 7, 11, 13, 17, 19 and 23	**Squared Numbers** 1 x 1 = 1 2 x 2 = 4 3 x 3 = 9 4 x 4 = 16 5 x 5 = 25 6 x 6 = 36 7 x 7 = 49 8 x 8 = 64 9 x 9 = 81 10 x 10 = 100 11 x 11 = 121 12 x 12 = 144	**Cubed Numbers** 1 x 1 x 1 = 1 2 x 2 x 2 = 8 3 x 3 x 3 = 27 4 x 4 x 4 =64 5 x 5 x 5 = 125 6 x 6 x 6 = 216 7 x 7 x 7 = 343

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Spring 1 Week 1	Spring 1 Week 2	Spring 1 Week 3	Spring 1 Week 4	Spring 1 Week 5	Spring 1 Week 6
8 and 9 times table 6 x 8 = 48 7 x 8 = 56 8 x 8 = 64 9 x 8 = 72 11 x 8 = 88 12 x 8 = 96 6 x 9 = 54 7 x 9 = 63 8 x 9 = 72 9 x 9 = 81 11 x 9 = 99 12 x 9 = 108	**11 and 12 times table** 10 x 11 = 110 11 x 11 = 121 12 x 11 =132 6 x 12 = 72 7 x 12 = 84 8 x 12 = 96 9 x 12 = 108 10 x 12 = 120 11 x 12 = 132 12 x 12 =144	**Compliments to 100** 11 + 89 = 100 21 + 79 = 100 31 + 69 = 100 41 + 59 = 100 16 + 84 = 100 26 + 74 = 100 36 + 64 = 100 46 + 54 =100 Pupils use facts to derive other pairs	**Compliments to 100** Pupils use their knowledge to find compliments to 100 45 + [ ] = 32 + [ ] = 65 + [ ] = 91 + [ ] =	**Division facts for 3 times table** 3 ÷ 3 = 1 6 ÷ 3 = 2 9 ÷ 3 = 3 12 ÷ 3 = 4 15 ÷ 3 = 5 18 ÷ 3 = 6 21 ÷ 3 = 7 24 ÷ 3 = 8 27 ÷ 3 = 9 30 ÷ 3 = 10 33 ÷ 3 = 11 36 ÷ 3 = 12	**Division facts for 4 times table** 4 ÷ 4 = 1 8 ÷ 4 = 2 12 ÷ 4 = 3 16 ÷ 4 = 4 20 ÷ 4 = 5 24 ÷ 4 = 6 28 ÷ 4 = 7 32 ÷ 4 = 8 36 ÷ 4 = 9 40 ÷ 4 = 10 44 ÷ 4 = 11 48 ÷ 4 = 12
Spring 2 Week 1	**Spring 2 Week 2**	**Spring 2 Week 4**	**Spring 2 Week 4**	**Spring 2 Week 5**	**Spring 2 Week 6**
Decimal compliments to 1 0.1 + 0.9 = 1 0.2 + 0.8 = 1 0.3 + 0.7 = 1 0.4 + 0.6 = 1 0.5 + 0.5 = 1	**Decimal compliments to 1** 0.11 + 0.89 = 1 0.21 + 0.79 = 1 0.41 + 0.69 = 1 0.41 + 0.59 = 1 0.14 + 0.87 = 1 0.24 + 0.77 = 1 0.44 + 0.67= 1 0.44 + 0.57 = 1	**Decimal compliments to 10** 1.1 + 8.9 = 10 2.1 + 7.9 = 10 4.1 + 6.9 = 10 4.1 + 5.9 = 10 0.4 + 9.6 =10 1.4 + 8.6 =10 2.4 + 7.6 =10 4.4 + 6.6 = 10 4.4 +5.6 = 10	**Decimals and Fractions** 1= 1 whole 0.5 = ½ 0.25 = ¼ 0.75 = ¾ 0.1 = 1/10 0.4 = 4/10 or 2/5 0.2 = 1/5 or 2/10 0.6 = 4/5 or 6/10	**Division facts for 6 times table** 6 ÷ 6 = 1 12 ÷ 6 = 2 18 ÷ 6 = 3 24 ÷ 6 = 4 30 ÷ 6 = 5 36 ÷ 6 = 6 42 ÷ 6 = 7 48 ÷ 6 = 8 54 ÷ 6 = 9 60 ÷ 6 = 10 66 ÷ 6 = 11 72 ÷ 6 = 12	**Division facts for 7 times table** 7 ÷ 7 = 1 14 ÷ 7 = 2 21 ÷ 7 = 3 28 ÷ 7 = 4 35 ÷ 7 = 5 42 ÷ 7 = 6 49 ÷ 7 = 7 56 ÷ 7 = 8 63 ÷ 7 = 9 70 ÷ 7 = 10 77 ÷ 7 = 11 84 ÷ 7 = 12
Summer 1	Summer 1	Summer 1	Summer 1	Summer 1	Summer 1

Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
Division facts for 8 times table 8 ÷ 8 = 1 16 ÷ 8 = 2 24 ÷ 8 = 3 32 ÷ 8 = 4 40 ÷ 8 = 5 48 ÷ 8 = 6 56 ÷ 8 = 7 64 ÷ 8 = 8 72 ÷ 8 = 9 80 ÷ 8 = 10 88 ÷ 8 = 11 96 ÷ 8 = 12	**Division facts for 9 times table** 9 ÷ 9 = 1 18 ÷ 9 = 2 27 ÷ 9 = 3 36 ÷ 9 = 4 45 ÷ 9 = 5 54 ÷ 9 = 6 63 ÷ 9 = 7 72 ÷ 9 = 8 81 ÷ 9 = 9 90 ÷ 9 = 10 99 ÷ 9 = 11 108 ÷ 9 = 1	**Division facts for 11 times table** 11 ÷ 11 = 1 22 ÷ 11 = 2 33 ÷ 11 = 3 44 ÷ 11 = 4 55 ÷ 11 = 5 66 ÷ 11 = 6 77 ÷ 11 = 7 88 ÷ 11 = 8 99 ÷ 11 = 9 110 ÷ 11 = 10 121 ÷ 11 = 11 132 ÷ 11 = 12	**Division facts for 12 times table** 12 ÷ 12 = 1 24 ÷ 12 = 2 36 ÷ 12 = 3 48 ÷ 12 = 4 60 ÷ 12 = 5 72 ÷ 12 = 6 84 ÷ 12 = 7 96 ÷ 12 = 8 108 ÷ 12 = 9 120 ÷ 12 = 10 132 ÷ 12 = 11 144 ÷ 12 = 12	**Number of sides of a 2D shapes** Quadrilateral 4 Pentagon 5 Hexagon 6 Heptagon 7 Octagon 8 Nonagon 9 Decagon 10	**Number of sides of a 3D shapes** Edges/vertices/faces Cuboid 12e/8v/6f Cube 12e/8v/6f Pyramid 6e/4v/4f Square based pyramid 8e/5v/5f Triangular prism 9e/6v/5f
Summer 2 Week 1	Summer 2 Week 2	Summer 2 Week 3	Summer 2 Week 4	Summer 2 Week 5	Summer 2 Week 6
Squared Numbers 1 x 1 = 1 2 x 2 = 4 3 x 3 = 9 4 x 4 = 16 5 x 5 = 25 6 x 6 = 36 7 x 7 = 49 8 x 8 = 64 9 x 9 = 81 10 x 10 = 100 11 x 11 = 121 12 x 12 = 144	**Cubed Numbers** 1 x 1 x 1 = 1 2 x 2 x 2 = 8 3 x 3 x 3 = 27 4 x 4 x 4 =64 5 x 5 x 5 = 125 6 x 6 x 6 = 216 7 x 7 x 7 = 343	**13 times table** 1 x 13 = 13 2 x 13 = 18 3 x 13 = 27 4 x 13 = 36 5 x 13 = 45 6 x 13 = 54 7 x 13 = 63 8 x 13 = 72 13 x 13 = 81 10 x 13 = 130 11 x 13 = 1313 12 x 13 = 108	**Double numbers (25 -50)** 26 – 52 28 – 56 32 – 64 34 – 68 36 – 72 38 – 76 42 – 84 44- 88 46 -96 48 -98	**Halve numbers (25 -100)** 26 – 13 28 – 14 32 – 16 34 – 17 36 – 18 38 – 19 42 – 21 44- 22 46 -23 48 -24	**Halve numbers (25-100)** 52 – 26 54 – 27 64 – 32 68 – 34 72 – 36 88 -44 92 – 46 96 -48 98 – 49

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