

The Sultan's School Mathematics Year 5 Medium-Term Plans

Unit 9		
<i>Number -</i>		<i>Geometry-</i>
Number & place value	Addition & subtraction	Properties of shapes

Unit 10		
<i>Number</i>		<i>Measurement (volume & capacity)</i>
Multiplication & division including <i>Measurement (money)</i>	Fractions	

Unit 11		
<i>Number-</i>		<i>Geometry-</i>
Addition & subtraction including <i>Measurement (money)</i>	Percentages (including fractions and decimals)	Position & direction

Unit 12		
<i>Number -</i>		<i>Statistics</i>
Multiplication & division including <i>Measurement (money)</i>	Multiplication & division including <i>Measurement (money)</i>	

The Sultan's School Mathematics Year 5 Medium-Term Plans

Unit 1		
<i>Number -</i>		<i>Geometry -</i>
Number & place value	Addition & subtraction	Properties of shapes

Unit 5		
<i>Number -</i>		<i>Geometry -</i>
Number & place value	Addition & subtraction	Properties of shapes

Unit 2		
<i>Number -</i>		<i>Geometry -</i>
Multiplication & division	Fractions	Position & direction

Unit 6		
<i>Number -</i>		<i>Measurement (length)</i>
Multiplication & division	Fractions	

Unit 3		
<i>Number-</i>		<i>Measurement (mass)</i>
Addition & subtraction	Decimals	

Unit 7		
<i>Number-</i>		<i>Statistics</i>
Decimals	Addition & subtraction	

Unit 4		
<i>Number -</i>		<i>Measurement (time)</i>
Multiplication & division	Multiplication & division	

Unit 8		
<i>Number -</i>		<i>Measurement (perimeter & area)</i>
Multiplication & division	Percentages (including fractions and decimals)	

The Sultan’s School Mathematics Year 5 Medium-Term Plans

Unit 1 Number – Number and place value Number – Addition and subtraction Geometry – Properties of shapes		
National Curriculum attainment targets Pupils should be taught to:	Lesson objectives Pupils will be taught to:	Lesson
Number – Number and place value	Week 1	
<ul style="list-style-type: none"> • read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit • count forwards or backwards in steps of powers of 10 for any given number up to 100 000 • round any number up to 100 000 to the nearest 10, 100 and 1000 	• Read and write numbers to 100 000 and determine the value of each digit	1
	• Order and compare numbers to 100 000 and determine the value of each digit	2
	• Count forwards and backwards in steps 10 and 100	3
	• Round numbers up to 100 000 to the nearest 10, 100 and 1000	4
Number – Addition and subtraction	Week 2	
<ul style="list-style-type: none"> • add and subtract numbers mentally with increasingly large numbers • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why 	• Add numbers mentally	1
	• Subtract numbers mentally	2
	• Subtract numbers mentally	3
	• Solve addition and subtraction multi-step problems, deciding which operations and methods to use and why	4
Geometry – Properties of shapes	Week 3	
<ul style="list-style-type: none"> • identify 3-D shapes, including cubes and other cuboids, from 2-D representations 	• Identify 3-D shapes with parallel or perpendicular faces or edges	1
	• Use properties to identify 3-D shapes from 2-D representations	2
	• Visualise from the front, side and top 2-D representations of 3-D shapes made with interlocking cubes	3
	• Investigate and identify 3-D shapes which can be made using interlocking cubes	4

Unit 2 Number – Multiplication and division Number – Fractions Geometry – Position and direction		
National Curriculum attainment targets Pupils should be taught to:	Lesson objectives Pupils will be taught to:	Lesson
Number – Multiplication and division	Week 1	
<ul style="list-style-type: none"> • multiply and divide numbers mentally drawing upon known facts • multiply and divide whole numbers by 10, 100 and 1000 	• Multiply numbers mentally drawing upon known facts	1
	• Multiply whole numbers by 10, 100 and 1000	2
	• Multiply numbers mentally drawing upon known facts	3
	• Multiply and divide numbers mentally drawing upon known facts • Multiply whole numbers by 10 and 100	4
Number – Fractions	Week 2	
<ul style="list-style-type: none"> • compare and order fractions whose denominators are all multiples of the same number • identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths • develop their understanding of fractions as numbers, measures and operators by finding fractions of numbers and quantities * • practise counting forwards and backwards in simple fractions * • recognise and describe linear number sequences, including those involving fractions and find the term-to-term rule * [Domain: Number – Number and place value] 	• Find fractions of numbers and quantities using fractions as operators	1
	• Practise counting forwards and backwards in simple fractions • Recognise fraction sequences and find the term to term rule	2
	• Identify, name and write equivalent fractions of a given fraction, represented visually	3
	• Compare and order fractions whose denominators are all multiples of the same number	4
Geometry – Position and direction	Week 3	
<ul style="list-style-type: none"> • identify, describe and represent the position of a shape following a translation, using the appropriate language, and know that the shape has not changed 	• Recognise where a shape will be after a translation on a 2-D grid and know that the shape has not changed	1
	• Translate two or more shapes to make a tiling pattern on a 2-D grid	2
	• Create 2-D shapes which following translations to the left/right and up/down form a tiling pattern	3
	• Identify, describe and represent the position of a shape following a translation in the first quadrant of a coordinate grid and know that the shape has not changed	4

* Notes and guidance (non-statutory)

The Sultan's School Mathematics Year 5 Medium-Term Plans

Unit 3 Number – Addition and subtraction Number – Decimals Measurement (mass)		
National Curriculum attainment targets Pupils should be taught to:	Lesson objectives Pupils will be taught to:	Lesson
Number – Addition and subtraction	Week 1	
<ul style="list-style-type: none"> add whole numbers with more than 4 digits, including using formal written methods (columnar addition) add numbers mentally with increasingly large numbers use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy 	<ul style="list-style-type: none"> Add numbers mentally 	1
	<ul style="list-style-type: none"> Add whole numbers with five digits using the formal written method Estimate and check the answer to a calculation 	2
	<ul style="list-style-type: none"> Add whole numbers with five digits using the formal written method Estimate and check the answer to a calculation 	3
	<ul style="list-style-type: none"> Add whole numbers with five digits using the formal written method Use rounding to check answers to calculations 	4
Number – Decimals	Week 2	
<ul style="list-style-type: none"> read and write decimal numbers as fractions [for example, $0.71 = \frac{71}{100}$] round decimals with two decimal places to the nearest whole number and to one decimal place practise adding decimals, including complements of 1 (for example, $0.83 + 0.17 = 1$) * recognise and describe linear number sequences involving decimals, and find the term-to-term rule* [Domain: Number – Number and place value] 	<ul style="list-style-type: none"> Read and write decimal numbers as fractions 	1
	<ul style="list-style-type: none"> Round decimals with two decimal places to the nearest whole number Add complements of 1 	2
	<ul style="list-style-type: none"> Round decimals with two decimal places to one decimal place 	3
	<ul style="list-style-type: none"> Recognise and describe linear number sequences involving decimals, and find the rule 	4
Measurement (mass)	Week 3	
<ul style="list-style-type: none"> convert between different units of metric measure (for example, gram and kilogram) understand and use approximate equivalences between metric units and common imperial units such as pounds use all four operations to solve problems involving measure [for example, mass] using decimal notation, including scaling 	<ul style="list-style-type: none"> Use knowledge of place value, multiplication and division to convert between units of mass (gram and kilogram) 	1
	<ul style="list-style-type: none"> Know and use approximate equivalences between metric units of mass (kilograms and grams) and common imperial units (pounds) 	2
	<ul style="list-style-type: none"> Use all four operations to solve problems involving mass using decimal notation 	3
	<ul style="list-style-type: none"> Use all four operations to solve problems involving mass using decimal notation, including scaling 	4

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The Sultan’s School Mathematics Year 5 Medium-Term Plans

Unit 4 Number – Multiplication and division Number – Multiplication and division Measurement (time)		
National Curriculum attainment targets Pupils should be taught to:	Lesson objectives Pupils will be taught to:	Lesson
Number – Multiplication and division	Week 1	
<ul style="list-style-type: none"> • identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • multiply numbers up to 4 digits by a one-digit number using a formal written method • multiply and divide numbers mentally drawing upon known facts • multiply whole numbers by 10, 100 and 1000 • recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) • solve problems involving multiplication and division including using their knowledge of squares and cubes • solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign 	<ul style="list-style-type: none"> • Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) 	1
	<ul style="list-style-type: none"> • Use the formal written method of short multiplication to calculate ThHTO x O • Estimate and check the answer to a calculation 	2
	<ul style="list-style-type: none"> • Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers 	3
	<ul style="list-style-type: none"> • Solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign 	4
Number – Multiplication and division	Week 2	
<ul style="list-style-type: none"> • identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers • establish whether a number up to 100 is prime and recall prime numbers up to 19 • divide numbers mentally drawing upon known facts • divide whole numbers by 10, 100 and 1000 • solve problems involving multiplication and division including using their knowledge of factors and multiples 	<ul style="list-style-type: none"> • Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers • Establish whether a number up to 100 is prime and recall prime numbers up to 19 	1
	<ul style="list-style-type: none"> • Divide whole numbers by 10, 100 and 1000 	2
	<ul style="list-style-type: none"> • Divide numbers mentally drawing upon known facts 	3
	<ul style="list-style-type: none"> • Solve problems involving multiplication and division including using their knowledge of factors and multiples 	4
Measurement (time)	Week 3	
<ul style="list-style-type: none"> • solve problems involving converting between units of time • use all four operations to solve problems involving measure, including scaling 	<ul style="list-style-type: none"> • Solve problems involving converting between units of time 	1
	<ul style="list-style-type: none"> • Solve problems involving converting between units of time to calculate durations of time 	2
	<ul style="list-style-type: none"> • Use all four operations in problems involving time, including conversions (for example, days to weeks, expressing the answer as weeks and days) 	3
	<ul style="list-style-type: none"> • Use all four operations to solve problems involving time, including scaling 	4

The Sultan's School Mathematics Year 5 Medium-Term Plans

Unit 5 Number – Number and place value Number – Addition and subtraction Geometry – Properties of shapes		
National Curriculum attainment targets Pupils should be taught to:	Lesson objectives Pupils will be taught to:	Lesson
Number – Number and place value		
<ul style="list-style-type: none"> • read, write, order and compare numbers to at least 1000000 and determine the value of each digit • count forwards or backwards in steps of powers of 10 for any given number up to 1000000 • interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through zero • round any number up to 1000000 to the nearest 10, 100, 1000, 10000 and 100000 • solve number problems and practical problems that involve all of the above 	Week 1	
	<ul style="list-style-type: none"> • Read, write, order and compare numbers up to 1 000 000 and determine the value of each digit 	1
	<ul style="list-style-type: none"> • Count forwards and backwards in steps of 10, 100 and 1000 • Round any number up to 1 000 000 to the nearest 10, 100 and 1000 	2
	<ul style="list-style-type: none"> • Count backwards through zero with negative numbers • Interpret negative numbers in context 	3
	<ul style="list-style-type: none"> • Solve negative number problems 	4
Number – Addition and subtraction		
<ul style="list-style-type: none"> • subtract whole numbers with more than 4 digits, including using formal written methods (columnar subtraction) • subtract numbers mentally with increasingly large numbers • use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy • practise adding and subtracting decimals, including a mix of whole numbers and decimals * [Domain: Number – Fractions (including decimals and percentages)] 	Week 2	
	<ul style="list-style-type: none"> • Subtract numbers mentally 	1
	<ul style="list-style-type: none"> • Subtract whole numbers with five digits using the formal written method (decomposition) • Estimate and check the answer to a calculation 	2
	<ul style="list-style-type: none"> • Subtract whole numbers with five and six digits using the formal written method (decomposition) • Use rounding to check answers 	3
	<ul style="list-style-type: none"> • Add and subtract decimals to two decimal places using the formal written method 	4
Geometry – Properties of shapes		
<ul style="list-style-type: none"> • know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles • draw given angles, and measure them in degrees (°) • identify: <ul style="list-style-type: none"> - angles at a point and one whole turn (total 360°) - angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°) - other multiples of 90° 	Week 3	
	<ul style="list-style-type: none"> • Know angles are measured in degrees: estimate, compare and measure with a protractor acute, obtuse and reflex angles 	1
	<ul style="list-style-type: none"> • Use a protractor to measure and draw angles to the nearest 5° 	2
	<ul style="list-style-type: none"> • Make accurate drawings of given angles, drawing lines with a ruler to the nearest millimetre and measuring angles to the nearest degree 	3
	<ul style="list-style-type: none"> • Identify angles at a point and one whole turn (total 360°), angles at a point on a straight line and $\frac{1}{2}$ a turn (total 180°), other multiples of 90° 	4

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The Sultan’s School Mathematics Year 5 Medium-Term Plans

Unit 6 Number – Multiplication and division Number – Fractions Measurement (length)		
National Curriculum attainment targets Pupils should be taught to:	Lesson objectives Pupils will be taught to:	Lesson
Number – Multiplication and division	Week 1	
<ul style="list-style-type: none"> divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign 	<ul style="list-style-type: none"> Use the formal written method of short division to calculate $HTO \div O$ Estimate and check the answer to a calculation 	1
	<ul style="list-style-type: none"> Use the formal written method of short division to calculate $HTO \div O$ with a fraction remainder Estimate and check the answer to a calculation 	2
	<ul style="list-style-type: none"> Use the formal written method of short division to calculate $HTO \div O$ with a decimal remainder Estimate and check the answer to a calculation 	3
	<ul style="list-style-type: none"> Solve division problems including answers that involve rounding remainders up or down 	4
Number – Fractions	Week 2	
<ul style="list-style-type: none"> compare and order fractions whose denominators are all multiples of the same number add and subtract fractions with the same denominator and denominators that are multiples of the same number recognise and use thousandths and relate them to tenths and hundredths 	<ul style="list-style-type: none"> Recognise and use thousandths and relate them to tenths and hundredths 	1
	<ul style="list-style-type: none"> Compare and order fractions whose denominators are all multiples of the same number 	2
	<ul style="list-style-type: none"> Add fractions with the same denominator and denominators that are multiples of the same number 	3
	<ul style="list-style-type: none"> Subtract fractions with the same denominator and denominators that are multiples of the same number 	4
Measurement (length)	Week 3	
<ul style="list-style-type: none"> convert between different units of metric measure (for example, kilometre and metre; centimetre and metre; centimetre and millimetre) understand and use approximate equivalences between metric units and common imperial units such as inches use all four operations to solve problems involving measure [for example, length] using decimal notation, including scaling 	<ul style="list-style-type: none"> Use knowledge of place value, multiplication and division to convert between units of length (kilometre and metre; centimetre and metre; centimetre and millimetre) 	1
	<ul style="list-style-type: none"> Know and use approximate equivalences between metric units of length (centimetres) and common imperial units (inches) 	2
	<ul style="list-style-type: none"> Use all four operations to solve problems involving length using decimal notation 	3
	<ul style="list-style-type: none"> Use all four operations to solve problems involving length using decimal notation, including scaling 	4

The Sultan's School Mathematics Year 5 Medium-Term Plans

Unit 7 Number – Decimals Number – Addition and subtraction Statistics		
National Curriculum attainment targets Pupils should be taught to:	Lesson objectives Pupils will be taught to:	Lesson
Number – Percentages, decimals and fractions	Week 1	
<ul style="list-style-type: none"> read and write decimal numbers as fractions recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents round decimals with two decimal places to the nearest whole number and to one decimal place read, write, order and compare numbers with up to three decimal places solve problems involving number up to three decimal places 	<ul style="list-style-type: none"> Recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents 	1
	<ul style="list-style-type: none"> Read, write, order and compare numbers with up to three decimal places 	2
	<ul style="list-style-type: none"> Read, write, order and compare numbers with up to three decimal places Round decimals with two decimal places to the nearest whole number and to one decimal place 	3
	<ul style="list-style-type: none"> Solve problems involving number up to three decimal places 	4
Number – Addition and subtraction	Week 2	
<ul style="list-style-type: none"> mentally add and subtract tenths, and one-digit whole numbers and tenths * practise adding and subtracting decimals, including a mix of whole numbers and decimals, decimals with different numbers of decimal places, and complements of 1 [for example, $0.83 + 0.17 = 1$]* * [Domain: Number – Fractions (including decimals and percentages)]	<ul style="list-style-type: none"> Add decimals with one and two decimal places mentally 	1
	<ul style="list-style-type: none"> Subtract decimals with one and two decimal places mentally 	2
	<ul style="list-style-type: none"> Add and subtract a mix of whole numbers and decimals 	3
	<ul style="list-style-type: none"> Add and subtract decimals with different numbers of decimal places 	4
Statistics	Week 3	
<ul style="list-style-type: none"> solve comparison, sum and difference problems using information presented in a line graph complete, read and interpret information in tables, including timetables 	<ul style="list-style-type: none"> Solve comparison, sum and difference problems using information presented in a line graph 	1
	<ul style="list-style-type: none"> Solve comparison, sum and difference problems using information presented in a line graph 	2
	<ul style="list-style-type: none"> Complete, read and interpret information in tables, including timetables 	3
	<ul style="list-style-type: none"> Connect work on coordinates and scales to interpreting information in time graphs 	4

Unit 8 Number – Multiplication and division Number – Percentages (including fractions and decimals) Measurement (perimeter and area)		
National Curriculum attainment targets Pupils should be taught to:	Lesson objectives Pupils will be taught to:	Lesson
Number – Multiplication and division	Week 1	
<ul style="list-style-type: none"> multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign 	<ul style="list-style-type: none"> Use partitioning to calculate $TO \times TO$ Estimate and check the answer to a calculation 	1
	<ul style="list-style-type: none"> Use partitioning and the grid method to calculate $TO \times TO$ Estimate and check the answer to a calculation 	2
	<ul style="list-style-type: none"> Use the expanded written method of long multiplication to calculate $TO \times TO$ Estimate and check the answer to a calculation 	3
	<ul style="list-style-type: none"> Solve problems involving addition, subtraction, multiplication and division 	4
Number – Percentages (including fractions and decimals)	Week 2	
<ul style="list-style-type: none"> recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$ and those fractions with a denominator of a multiple of 10 and 25 make connections between percentages, fractions and decimals * 	<ul style="list-style-type: none"> Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred' Write percentages as a fraction with a denominator of 100 	1
	<ul style="list-style-type: none"> Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred' Write percentages as a decimal with two places 	2
	<ul style="list-style-type: none"> Know percentage equivalents of certain fractions 	3
	<ul style="list-style-type: none"> Solve problems involving percentages 	4
Measurement (perimeter and area)	Week 3	
<ul style="list-style-type: none"> measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres calculate and compare the area of rectangles (including squares), and including using standard units, square centimetres (cm^2) and square metres (m^2) and estimate the area of irregular shapes 	<ul style="list-style-type: none"> Measure and calculate the perimeter P of composite rectilinear shapes in centimetres and metres, including using the rule $P = 2(a + b)$ where a and b are the dimensions of the sides in the same unit 	1
	<ul style="list-style-type: none"> Calculate and compare the area A of rectangles (including squares), using standard units, square centimetres (cm^2) and square metres (m^2), and using the rule $A = a \times b$; and estimate the area of irregular shapes 	2
	<ul style="list-style-type: none"> Use the relations of perimeter or area to find unknown lengths 	3
	<ul style="list-style-type: none"> Calculate the area of irregular shapes formed from rectangles 	4

Introduction

The Sultan’s School Mathematics Year 5 Medium-Term Plans

* Notes and guidance (non-statutory)

Unit 9 Number – Number and place value Number – Addition and subtraction Geometry – Properties of shapes		
National Curriculum attainment targets Pupils should be taught to:	Lesson objectives Pupils will be taught to:	Lesson
Number – Number and place value	Week 1	
<ul style="list-style-type: none"> • read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit • count forwards or backwards in steps of powers of 10 for any given number up to 1000000 • round any number up to 1000000 to the nearest 10, 100, 1000, 10000 and 100000 • solve number problems and practical problems that involve all of the above • read Roman numerals to 1000 (M) and recognise years written in Roman numerals 	<ul style="list-style-type: none"> • Read, write, order and compare numbers to 1 000 000 and determine the value of each digit 	1
	<ul style="list-style-type: none"> • Count forwards and backwards in steps of 100, 1000, 10000 and 100 000 • Round any number up to 1 000 000 to the nearest 10 000 and 100 000 	2
	<ul style="list-style-type: none"> • Solve number problems 	3
	<ul style="list-style-type: none"> • Read Roman numerals to 1000 (M) • Recognise years written in Roman numerals 	4
Number – Addition and subtraction	Week 2	
<ul style="list-style-type: none"> • add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) • practise adding and subtracting decimals, including a mix of whole numbers and decimals * [Domain: Number – Fractions (including decimals and percentages)] • add and subtract numbers mentally with increasingly large numbers • use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy • solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why 	<ul style="list-style-type: none"> • Add and subtract mentally whole numbers and decimals 	1
	<ul style="list-style-type: none"> • Add whole numbers with five and six digits using the formal written method • Use rounding to check answers to calculations 	2
	<ul style="list-style-type: none"> • Subtract whole numbers with five and six digits using the formal written method (decomposition) • Use rounding to check answers to calculations 	3
	<ul style="list-style-type: none"> • Solve multi-step problems involving number and money, including some multiplication and division, deciding which operations to use and why 	4
Geometry – Properties of shapes	Week 3	
<ul style="list-style-type: none"> • use the properties of rectangles to deduce related facts and find missing lengths and angles • distinguish between regular and irregular polygons based on reasoning about equal sides and angles • use angle sum facts and other properties to make deductions about missing angles and relate these to missing number problems * • use the term diagonal and make conjectures about the angles formed between sides, and between diagonals and parallel sides, and other properties of quadrilaterals* • use conventional markings for parallel lines and right angles * 	<ul style="list-style-type: none"> • Use the properties of rectangles to deduce related facts and find missing lengths and angles 	1
	<ul style="list-style-type: none"> • Use the term diagonal and make conjectures about the angles formed between sides, and between diagonals and parallel sides, and other properties of quadrilaterals; use conventional markings for parallel lines and right angles 	2
	<ul style="list-style-type: none"> • Distinguish between regular and irregular polygons based on reasoning about equal sides and angles 	3
	<ul style="list-style-type: none"> • Use angle sum facts and other properties to make deductions about missing angles and relate these to missing number problems 	4

* Notes and guidance (non-statutory)

The Sultan's School Mathematics Year 5 Medium-Term Plans

Number – Multiplication and division, including Measurement (money) Unit 10 Number – Fractions Measurement (volume and capacity)		
National Curriculum attainment targets Pupils should be taught to:	Lesson objectives Pupils will be taught to:	Lesson
Number – Multiplication and division	Week 1	
<ul style="list-style-type: none"> multiply and divide numbers mentally drawing upon known facts multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates 	<ul style="list-style-type: none"> Use the most efficient method to calculate $ThHTO \times O$ and $ThHTO \div O$ Estimate and check the answer to a calculation 	1
	<ul style="list-style-type: none"> Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000 	2
	<ul style="list-style-type: none"> Multiply numbers mentally drawing upon known facts Multiply $TO \times TO$ using factors 	3
	<ul style="list-style-type: none"> Solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates Use all four operations to solve problems involving money using decimal notation, including scaling 	4
Measurement (money)		
<ul style="list-style-type: none"> use all four operations to solve problems involving measure [for example, money] using decimal notation, including scaling 		
Number – Fractions	Week 2	
<ul style="list-style-type: none"> recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number [for example, $\frac{2}{5} + \frac{4}{5} = \frac{6}{5} = 1\frac{1}{5}$] multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams connect equivalent fractions > 1 that simplify to integers with division and other fractions > 1 to division with remainders, using the number line and other models, and hence move from these to improper and mixed fractions * 	<ul style="list-style-type: none"> Recognise mixed numbers and improper fractions and convert from one form to the other Write mathematical statements > 1 as a mixed number 	1
	<ul style="list-style-type: none"> Recognise mixed numbers and improper fractions and convert from one form to the other Connect fractions > 1 that simplify to integers with division and other fractions > 1 to division with remainders 	2
	<ul style="list-style-type: none"> Multiply proper fractions by whole numbers 	3
	<ul style="list-style-type: none"> Multiply mixed numbers by whole numbers 	4
Measurement (volume and capacity)	Week 3	
<ul style="list-style-type: none"> convert between different units of metric measure (for example litre and millilitre) understand and use approximate equivalences between metric units and common imperial units such as pints estimate volume [for example, using 1 cm^3 blocks to build cuboids (including cubes)] and capacity [for example, using water] use all four operations to solve problems involving measure [for example volume] using decimal notation, including scaling 	<ul style="list-style-type: none"> Use knowledge of place value, multiplication and division to convert between units of capacity (litre and millilitre) 	1
	<ul style="list-style-type: none"> Know and use approximate equivalences between metric units of capacity (litres) and common imperial units (pints), and estimate capacity 	2
	<ul style="list-style-type: none"> Estimate volume using 1 cm^3 blocks to build cuboids (including cubes) 	3
	<ul style="list-style-type: none"> Use all four operations to solve problems involving volume and capacity using decimal notation, including scaling 	4

* Notes and guidance (non-statutory)

The Sultan's School Mathematics Year 5 Medium-Term Plans

Unit 11 Number – Addition and subtraction, including Measurement (money) Number – Percentages (including fractions and decimals) Geometry – Position and direction		
National Curriculum attainment targets Pupils should be taught to:	Lesson objectives Pupils will be taught to:	Lesson
Number – Addition and subtraction	Week 1	
<ul style="list-style-type: none"> add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) add and subtract numbers mentally with increasingly large numbers use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why 	<ul style="list-style-type: none"> Add and subtract mentally whole numbers and decimals 	1
	<ul style="list-style-type: none"> Add whole numbers with up to six digits using the formal written method Use rounding to check answers to calculations 	2
	<ul style="list-style-type: none"> Subtract whole numbers with up to six digits using the formal written method (decomposition) Use rounding to check answers to calculations 	3
Measurement (money)		
<ul style="list-style-type: none"> use all four operations to solve problems involving measure [for example, money] using decimal notation, including scaling 	<ul style="list-style-type: none"> Solve multi step problems involving number and money, including some multiplication and division, deciding which operations to use and why 	4
Number – Percentages (including fractions and decimals)	Week 2	
<ul style="list-style-type: none"> Recognise the per cent symbol (%) and understand that per cent relates to “number of parts per hundred”, and write percentages as a fraction with denominator 100, and as a decimal solve problems which require knowing percentage and decimal equivalents of $\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{5}$, $\frac{2}{5}$, $\frac{4}{5}$, and those fractions with a denominator of a multiple of 10 or 25 make connections between percentages, fractions and decimals * 	<ul style="list-style-type: none"> Know percentage and decimal equivalents of fractions 	1
	<ul style="list-style-type: none"> Find percentages of amounts Solve problems involving percentages 	2
	<ul style="list-style-type: none"> Solve percentage problems Solve problems involving percentages 	3
	<ul style="list-style-type: none"> Solve problems involving percentages 	4
Geometry – Position and direction	Week 3	
<ul style="list-style-type: none"> identify, describe and represent the position of a shape following a reflection, using the appropriate language, and know that the shape has not changed 	<ul style="list-style-type: none"> Recognise and use reflection in a variety of diagrams, including continuing to use a 2-D grid 	1
	<ul style="list-style-type: none"> Recognise where a shape will be after a reflection in given mirror lines and know that the shape has not changed 	2
	<ul style="list-style-type: none"> Reflect a 2-D shape using coordinates in the first quadrant and lines that are parallel to the axes 	3
	<ul style="list-style-type: none"> Identify, describe and represent the position of a shape following a reflection in two mirror lines at right angles and parallel to the axes in the first quadrant 	4

* Notes and guidance (non-statutory)

The Sultan's School Mathematics Year 5 Medium-Term Plans

Unit 12 Number – Multiplication and division, including Measurement (money) Statistics		
National Curriculum attainment targets Pupils should be taught to:	Lesson objectives Pupils will be taught to:	Lesson
Number – Multiplication and division	Week 1	
<ul style="list-style-type: none"> multiply numbers up to 4 digits by a two-digit number using a formal written method, including long multiplication for two-digit numbers divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context solve problems involving addition, subtraction, multiplication and division and a combination of these, including understanding the meaning of the equals sign solve problems involving multiplication and division, including scaling by simple fractions and problems involving simple rates 	<ul style="list-style-type: none"> Use partitioning to calculate $HTO \times TO$ Estimate and check the answer to a calculation 	1
	<ul style="list-style-type: none"> Use partitioning and the grid method to calculate $HTO \times TO$ Estimate and check the answer to a calculation 	2
	<ul style="list-style-type: none"> Use the expanded written method of long multiplication to calculate $HTO \times TO$ Estimate and check the answer to a calculation 	3
	<ul style="list-style-type: none"> Solve problems involving addition, subtraction, multiplication and division 4 and a combination of these, including understanding the meaning of the equals sign Use all four operations to solve problems involving money using decimal notation, including scaling 	4
Measurement (money)	Week 2	
<ul style="list-style-type: none"> use all four operations to solve problems involving measure [for example money] using decimal notation, including scaling 	<ul style="list-style-type: none"> Use the formal written method of short division to calculate $ThHTO \div O$ (decimal remainder) Estimate and check the answer to a calculation 	1
	<ul style="list-style-type: none"> Use the formal written method of short division to calculate $ThHTO \div O$ (fraction remainder) Estimate and check the answer to a calculation 	2
	<ul style="list-style-type: none"> Use the formal written method of short division to calculate $ThHTO \div O$ (rounding remainders) Estimate and check the answer to a calculation 	3
	<ul style="list-style-type: none"> Use all four operations to solve problems involving money using decimal notation, including scaling 	4
Statistics	Week 3	
<ul style="list-style-type: none"> solve comparison, sum and difference problems using information presented in a line graph complete, read and interpret information in tables 	<ul style="list-style-type: none"> Solve comparison, sum and difference problems using information presented in a line graph 	1
	<ul style="list-style-type: none"> Complete, read and interpret information in tables 	2
	<ul style="list-style-type: none"> Connect work on coordinates and scales to interpreting information in time graphs 	3
	<ul style="list-style-type: none"> Complete, read and interpret information in tables and begin to decide which representations of data are most appropriate and why 	4