Christ Church & St Peter's CE Primary School
'Aiming High & Caring for Everyone'

Y5 Maths Long Term Plan

Autumn term

Year 5	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	Place Value			**Addition and subtraction**		**Multiplication and division A 1 week teaching times tables**			**Fractions A**				**Assesment week**	**Multiplication and division**		
Learning objectives	1. To understand Roman Numerals to 1000 2. To consolidate numbers to 10 000 3. To understand numbers to 100 000 4. To represent numbers to 1 000 000 5. To read and write numbers to 1 000 000 6. To understand and calculate powers of 10 7. To calculate 1 10 , 100 1000 , 10,000 more and less within 1000000 8. To partition numbers to 1 000 000 9. Using number lines to 1 000 000 10. To compare and order numbers to 100 000 11. To compare and order numbers to 1 000 000 12. To round numbers within 10000 to the nearest 10 100 1000 13. To round numbers within 100000 to the nearest 10 100 1000 14. To round numbers within 1000000 to the nearest 10 100 1000 10000			1. To use mental strategies to calculate. 2. To add two numbers with more than 4 digits 3. To subtract two numbers with more than 4 digits (with one exchange) 4. To subtract two numbers with more than 4 digits (with multiple exchange) 5. To rounding to the nearest 10 and 100 for 3-digit numbers, 6. To round to the nearest 1,000 for 4-digit numbers 7. To use inverse operations to check the accuracy of their Calculations (with more than 4 digits) 8. To solve addition and subtraction problems with more than one step 9. To compare calculations by exploring their structure 10. To use the inverse to calculate missing numbers			1. To understand multiples (*5 lessons on different times tables*) 2. To find common multiples of any pair of numbers. 3. To understand factors and find factors of numbers 4. To find common factors 5. To know and calculate prime numbers 6. To recognise and calculate square numbers up to 12x 12 7. To recognise and calculate cube numbers 8. To multiply whole numbers by 10 100 and 1000 9. To divide whole numbers by 10 100 and 1000 10. To multiply and divide by multiples of 10 100			1. To find fractions equivalent to a unit fraction 2. To find fractions equivalent to a non-unit fraction 3. To use multiplication and division facts to find equivalent fractions 4. To convert mixed to improper fractions 5. To convert improper to mixed fractions 6. To compare fractions less than 1 with different denominators 7. To order fractions less than 1 – with different denominators 8. To compare and order fractions greater than one with different denominators 9. To add and subtract same denominator 10. To add fractions within 1 with different denominators 11. To add fractions with a total greater than 1 with different denominators 12. To add to a mixed number 13. To add to mixed numbers (different denominators) 14. To add two mixed numbers (different denominators) 15. To subtract fractions with different denominators same families 16. To subtract from a mixed number – breaking the whole 17. To subtract from a mixed number different denominators same families 18. To subtract two mixed numbers different denominators		1. To understand multiples *(5 lessons on different times tables*) 2. To find common multiples of any pair of numbers. 3. To understand factors and find factors of numbers 4. To find common factors 5. To know and calculate prime numbers 6. To recognise and calculate square numbers up to 12x 12 7. To recognise and calculate cube numbers 8. To multiply whole numbers by 10 100 and 1000 9. To divide whole numbers by 10 100 and 1000 10. To multiply and divide by multiples of 10 100 1000		

Mental maths and Fluency

Counting

Count forwards and backwards in steps of powers of 10 for any given number (1 million)
Count forwards and backwards with positive and negative whole numbers, including through zero.

Number facts

Round any number to the nearest 10, 100 & 1000 (year 4)
Round decimals with one decimal place to the nearest whole (year 4)
Compliments to 100
Round any number up to 1,000,000 to the nearest 10, 100, 1000,
Double and half odd numbers to 100
Establish whether a number up to 100 is prime and recall prime numbers up to 19
12 x 12 and division facts use them to calculate known facts e.g. 20 x 50

Multiplication and division

Calculate 2- and 3-digit numbers multiplied by a one -digit number using mental methods and jottings. E.g 206 x 4 (year 4)
All times tables 12 x 12 (year 4)

Addition and subtraction

- Addition and subtraction of multiples of 10 and 100 e.g. 50 + 60 = 110, 300 + 400 (year 4)
- Adding and subtracting a 2 – digit, 3- digit and 4- digit number to a 4 digit number not crossing boundary 2035 + 303 4587 – 52 (year 4)
- Adding and subtracting a or 3 digit number to a 4 digit number where bridging is required 3210 – 12 3524 + 58 (year 4)
- Add and subtract decimals up to 2 DP no exchange 5.87 – 3.14 (year 4)
- Adding and subtracting four-digit numbers close in value e.g **3500 + 3510**
- Adding and subtracting a 2, 3- and 4-digit numbers to a 4-digit number or 5-digit number not crossing boundary 2467 – 1200 5864 - 32
- Adding and subtracting a 1-digit number to a 4- and 5-digit number bridging across the boundary e.g 6003 – 8 25486+7 (counting on and back)
- Adding and subtracting a 2-digit number from a 4- and 5-digit number bridging across one boundary e.g.5862 – 81 62588 + 25
- Adding and subtracting a three-digit number from and 4- and 5-digit number bridging across one boundary 58455 -307
- Adding and subtracting a four-digit number from and 4- and 5-digit number bridging across one boundary 86525 + 1634
- Consolidate adding and subtracting decimals up to 1DP that are close in Value 1.5 + 1.6 (near doubles)

Fractions

Recognise and write decimal equivalents to 1/4, 1/2 and 3/4

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Spring Term

Year 5	1	2	3	4	5	6	7	8	9	10	11
	Fractions B		**Decimals & percentages**			**Perimeter & Area**		**Statistics**		**Assessment week**	**Negative Numbers**

Learning objectives

Begin with retrieving objectives that is not fully secure from previous fraction A unit

1. To multiply a unit fraction by an integer
2. To multiply a non-unit fraction by an Integer
3. Multiply a mixed number by an integer
4. To revise calculating a unit fraction of a quantity
5. To calculate a non-unit fraction of a quantity
6. To Calculate a non-unit fraction of an amount
7. To find the whole (using non unit fractions)
8. To use fractions as operators e.g. 1/6 of 24 = 1/6 x 24

1. To represent decimals up to 2 decimal places
2. To calculate equivalent fractions and decimals when working with tenths.
3. To calculate equivalent fractions and decimals when looking at hundredths.
4. To know equivalent fractions and decimals, (*specifically focusing on halves, quarters, fifths and tenths)*
5. To understand thousandths as fractions and represent numbers in different ways
6. To understand thousandths as decimals and represent numbers in different ways
7. To represent numbers with up to 3 decimal places on a place value chart.
8. To order and compare decimals with the same decimal places
9. To order and compare any decimals up to 3 decimal places
10. To round decimals to the nearest whole number
11. To round decimals 1 decimal place
12. To understand what is a percentage
13. To understand percentages by comparing them to fractions.
14. To find decimal equivalents to percentages.
15. To find equivalent fractions, decimals and percentages

1. To calculate the perimeter of rectangles by using a ruler accurately to measure and also using given lengths
2. To consolidate learning in calculating the perimeter of rectilinear shapes
3. To find the perimeters of polygons and to solve word problems
4. To consolidate calculating the Area of rectangles by counting squares and using know lengths
5. To calculate the Area of compound shapes (The focus is on rectilinear shapes)
6. To estimate area

1. To interpret scales – calculating jumps and what would be half way
2. To draw line graphs
3. To read conversion graphs
4. To read and interpret line graphs
5. Read and interpret tables – including retrieval and comparison questions
6. To explore two-way tables and complete missing values
7. To read timetables
8. To interpret timetables

1. To understand negative numbers
2. To count forwards and backwards through zero in 1s
3. To count forwards and backwards through zero in multiples
4. Compare and order negative numbers
5. To find the difference between positive and negative numbers

Number facts

Compliments to 90 and 180
Establish whether a number up to 100 is prime and recall prime numbers up to 19
Count forwards and backwards in decimals tenths and hundredths

Addition and Subtraction

Consolidate adding and subtracting decimals up to 2DP that are close in Value (near doubles) 0.25 + 0.26 7.83 – 0.02
Adding and subtracting Decimals up to 2 DP that cross a boundary 1.5 + 0.6 3.08 + 0.04 4.93 – 0.07 9.3 – 0.7
Add and subtract a near rounded number by adjusting or compensating e.g. 736 + 199 1999 + 836 2998 + 28 1999 – 836 2998 - 28
Adding and subtracting a two digit or three digit and four digit number to a 4 digit boundary 2467 – 1200 25864 – 32number or five digit number not crossing
Adding and subtracting a four digit number from and 4 and 5 digit number bridging across one boundary 86525 + 1634

Multiplication and Division

Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.
identify multiples and common multiples of pairs of numbers
Identify factors, including finding all factor pairs of a number, and common factors of two numbers
Multiply numbers with up to 4 digits by a one -digit number e.g. 1354 x 4 3256 x2

All times tables 12x 12

Fractions & Decimals

Recognise mixed numbers and improper fractions and convert from one form to the other.
Read, write, order and compare numbers with up to two decimal places
Compare and order fractions whose denominators are multiples of the same number
Add and subtract fractions with the same denominator and denominators that are multiples of the same number
Identify, name and write equivalent fractions of a given fraction, including tenths and hundredths.
Multiply proper fractions and mixed numbers by whole numbers.

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SummerTerm

Year 5	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
	Shape			**Position & direction**		**Decimals**			**volume**	**Assessment week**	**Converting units inc time**	
Learning objectives	1. To understand and use degrees as a measurement of turn 2. To identify and classify angles (as acute, obtuse or reflex by comparing them to right angles and straight lines.) 3. To estimate the size of angles 4. To measure angles up to 90° 5. To measure angles up to 180° 6. To draw lines and angles accurately 7. To calculate angles up to 90° 8. To calculate angles on a straight line 9. To calculate angles around a point 10. To explore different strategies for calculating missing lengths and angles in shapes. 11. To name regular and irregular polygons 12. To solve problems regarding the perimeter of polygons 13. To name 3-D shapes and identify their properties			1. To read and plot coordinates in the first quadrant 2. To problem-solve with coordinates in the first quadrant 3. To read and plot coordinates in the two quadrants 4. To read and plot coordinates in four quadrants 5. To Translate shapes (both a squared grid and a coordinate grid). 6. To translate shapes using coordinates 7. To identify lines of symmetry in shapes 8. To identify lines of symmetry in shapes on coordinate grid 9. To reflect shapes in horizontal mirror lines 10. To reflect shapes in vertical mirror lines		1. To make a whole from tenths 2. To make 1 whole from hundredths. 3. To partition decimals using place value parts. 4. To flexibly partition decimals up to 2 decimal places 5. To compare decimal numbers up to 2 decimal places 6. To order decimal numbers up to 2 decimal places 7. To round decimals with 1 decimal place to the nearest whole number 8. To apply knowledge of decimal equivalents of hundredths and tenths to recognise and write 1/4, 1/2 and 3/4 as decimal			1. To measure volume using cubes - Cubic centimetres 2. To compare the volume of different shapes. 3. To estimate the volume of different objects, by using cubes 4. To estimate the capacity of unknown containers		1. To understand and convert KG and KM 2. To understand and convert MM and Ml 3. To convert units of length 4. To convert between metric and imperial units 5. To consolidate telling the time on analogue time up to 1 minute 6. To consolidate telling the time on digital clocks including 24 hours 7. To solve problems regarding time *(single step and multi-step*) 8. To solve problems regarding converting between units of time To solve problems using timetables	
ental maths and fluency	**Counting** Count forwards and backwards in steps of powers of 10 for any given number up to 1,000,000. Count forwards and backwards with positive and negative whole numbers, including through zero. Count forwards and backwards in decimals tenths and hundredths Number sequences **Number facts** Establish whether a number up to 100 is prime and recall prime numbers up to 19 Recognise and use square numbers and cube numbers, and the notation for squared (2) (up to 10) and cubed (3)- (up to 5) 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 Compliments to 90 180 and 360 **Addition and subtraction** Add and subtract small decimals up to 2 DP 7.82 + 0.03 – Add and subtract a 4-digit number from and 4- and 5-digit number bridging across one boundary 86525 + 1634 Adding and subtracting decimals up to 2DP using partitioning 5.6 + 1.27 7.21 + 2.1 5.6 - 1.2 Add and subtract multiples of 10 100 1000 from any number e.g 20,000 – 3,000 500000-60000 Adding and subtracting small decimals up to 3 DP 0.004 + 2.984 2.986 - 0.005 **Multiplication and division** All times tables 12 x 12 Identify multiples and common multiples of pairs of numbers Use Place value knowledge to multiply a decimal with a whole number 0.4 x 5 **Fractions, decimals and percentages** knowing percentage and decimal equivalents of 1/2, 1/4, 1/5, 2/5, 4/5, and fractions with a denominator of a multiple of 10 or 25 Know key facts for ½ ¼ ¾ relate to length, time, mass and capacity - known as decimals fractions Recognise mixed numbers and improper fractions and convert from one form to the other. Add and subtract fractions with the same denominator and denominators that are multiples of the same number Multiply proper fractions and mixed numbers by whole numbers.								**Measures** Convert between different units of metric measure			

Key Criteria children must master to be ready for Year 6

- Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1.
- Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01.
- Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01.
- Recognise the place value of each digit in numbers with up to 2 decimal places, and compose and decompose numbers with up to
- 2 decimal places using standard and non-standard partitioning.
- Reason about the location of any number with up to 2 decimals places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each
- Divide 1 into 2, 4, 5 and 10 equal parts, and read scales/number lines marked in units of 1 with 2, 4, 5 and 10 equal parts.
- Convert between units of measure, including using common decimals and fractions
- Secure fluency in multiplication table facts, and corresponding division facts, through continued practice.
- Apply place-value knowledge to known additive and multiplicative number facts (scaling facts by 1 tenth or 1 hundredth), for example:

  8 + 6 = 14 3 x 4 = 12

  0.8 + 0.6 = 1.4 0.3 x 4 = 1.2

  0.08 + 0.06 = 0.14 0.03 x 4 = 0.12

- Multiply and divide numbers by 10 and 100; understand this as equivalent to making a number 10 or 100 times the size, or 1 tenth or 1 hundredth times the size
- Find factors and multiples of positive whole numbers, including common factors and common multiples, and express a given number as a product of 2 or 3 factors
- Multiply any whole number with up to 4 digits by any one-digit number using a formal written method
- Divide a number with up to 4 digits by a one-digit number using a formal written method, and interpret remainders appropriately for the context.
- Find non-unit fractions of quantities
- Find equivalent fractions and understand that they have the same value and the same position in the linear number system
- Recall decimal fraction equivalents for 1/2 , 1/4 ,1/5 and1/10 , and for multiples of these proper fractions.
- Compare angles, estimate and measure angles in degrees (°) and draw angles of a given size.
- Compare areas and calculate the area of rectangles (including squares) using standard units.