TERMLY PLAN FOR MATHEMATICS

in accordance with the requirements of the
Key Stage 2 Mathematics Programme of Study

(statutory from September 2015)

With Maths Makes Sense Links

July 2016

YEARS 5 and 6

IMPORTANT POINTS:

• **Mental and oral work** - 'Practice and development of oral and mental skills.' The requirements are based on the requirements of the relevant ages within the Revised Curriculum and there is further detail to ensure depth and continuity.

• **Develop Numerical Reasoning** - (See below) There are regular opportunities to develop the skills below throughout the scheme of work.

• In the column "Resources", **ITP**s are referred to. All of the interactive programs are on the County Mathematics CD (2012 / 2013)

Strand	Element	
Developing arithmetical reasoning	Recognising processes and connections ➚ Problem Solving	apply mathematical skills to various everyday situations and contexts
		identify approriate information and actions needed to complete task or reach solution
		select approriate technique and mathematics to use
		select and use suitable measuring tools and units
		select approriate mental or written strategy and know when use of calculator is appropriate
		estimate and visualise quantity in measuring and use correct units
	Representing and communicating ↑ Oral or written	clearly explain results and procedures using mathematical diction
		refine informal methods of recording written calculations, moving to formal calculation methods when sufficiently developed to do so
		use appropriate measuring units, symbols and notation
		select and draw appropriate charts, diagrams and graphs with suitable scales
	Revising and ↑ Verifying Reasoning	choose from an increasing range of verification strategies to determine whether answers are reasonable
		interpret answers in the context of the problem and consider whether answers are sensible, including calculator indicators, analogue and digital
		use data to draw conslusions, and recognise that some conclusions may be misleading or uncertain

KEY   ❖ - **bold** text, Area of Learning Skill

Normal text underlined – Numeracy Framework Skill

Possible resources:

- **ITP's,**   **Numicon Number Pattern and Calculating Activities,**   **Numicon Geometry Measurement and Statistics Activities,**

-     **Numerical Reasoning Activities,**   **Let's Think Activities**

Medium Term Plan : Spring Term (i)	Years 5 & 6

EVERY DAY: Practise and develop oral skills and mental arithmetic skills (e.g. counting, mental strategies, quick recall of +, -, x, ÷ facts)

Year 5:	**Year 6**:
Read and write whole numbers up to 100 000 at least	Read and write whole numbers
Count forwards/backwards in consistent-sized steps (e.g. 25, 100), going beyond zero	Put set of positive and negative numbers, fractions, mixed decimals in order
Round decimals to nearest whole number. Put fractions in order	Round off whole numbers to 10, 100, 1000:
Recall addition and subtraction facts for all numbers up to 20	Round off decimals to nearest whole number or nearest tenth
Add/subtract any pair of two-digit numbers, including crossing 100	Add/subtract and pair two-digit numbers including crossing 100:
Find pairs totalling 100, multiples of 50 totalling 1000, decimals totalling 1, 10	Derive sums and differences e.g. 760 + 380
Use mental strategies to recall multiplication tables for 2, 3, 4, 5, 6, 8, 10 and use to solve division problems	Find pairs of numbers totalling 100; multiples of 50 totalling 1000; decimals totalling 0.1, 1 or 10
Recall facts in x7 and x9 tables, and begin to derive division facts	Count forwards/backwards in steps of 25, 0.2, 0.25, 0.5….
Use doubling to multiply two-digit numbers by 4. Halve any two-digit number	Recall multiplication/division facts up to 10 x 10. Recall squares of numbers up to 12 x 12
Multiply or divide whole numbers up to 10 000 by 10 or 100	Give pairs of factors for whole numbers up to 100. Use divisibility tests.
	Find half decimals ending in even digits e.g. 3.8 ÷2, 0.76 ÷ 2
	Multiply or divide whole number by 10,000 or 1000
	Convert between km, m, cm, mm
	Mentally multiply any two-digit number up to 50 by a one-digit number
	Know some fractions as percentages/decimals. Obtain simple percentages.

Strand	Element	Subjects	Yr 5 Objectives: Children are taught to:	Resources	Yr 6 Objectives: Children are taught to:
Using number skills	Calculate using mental and written methods	Place value, putting in order, rounding off	**Order negative and positive numbers, including decimals to 1 decimal place.**❖ (up to 100,000)	**ITP Twenty Cards** **ITP Number Line**	**Add or subtract numbers across zero using number line, e.g. -3 + 5, 4 – 6** ❖
Using measuring skills	Temperateure		Measure and record temperatures involving positive and negative readings. Calculate temperature differences, including those involving temperature rises and falls across 0°C	**ITP Thermometer** **Kit 4 Number and number system activity 4** **Kit 5 Number and number system activity 5** **NR Year 6 The long and short of it activity 3**	Measure and record temperatures involving positive and negative readings Calculate temperature differences, including those involving temperature rises and falls scross 0°C

Using number skills	Calculate using mental and written methods	Understand x and ÷ Mental arithmetic strategies (x ÷) Pen and paper methods (x ÷)	Use facts which are closely related (derive x19 from x 20, x12 from x10 adding x2) Partition e.g. 47 x6 <u>Multiply and divide 3-digit numbers by a single digit numbers</u>	**Kit 5 Pattern and algebra activity 3** **Kit 5 Calculating activity 8** **ITP Division Grid** **ITP Remainders after Division**	Begin to use brackets Use facts which are closely related. Partition, e.g. 87 x 6, 3.4 x 3. <u>Multiply 2- and 3-digit numbers by a 2-digit number</u> <u>Divide 3-digit numbers by a 2-digit number</u>
	Money management	*Problems relating to money and 'real life'*	<u>Order and compare the costs of items up to £1000</u> <u>Add and subtract totals less than £100 using correct notation e.g. £28.18 + £33.45</u>	**Kit 4 Calculating activity 12 and 13** **NR Year 6 Buying Cakes activity 2** **NR Year 6 Medals activity 1** **NR Year 6 Childminding activity 1 and 3** **NR Year 5 Dinosaur footprints activity 1 and 2** **NR – Y5 Zigs, Pobs and Wums – activity 1** **NR Year 6 The long and short of it activity 1**	<u>Make comparisions between prices and understand which is best value for money</u> <u>Use the terms profit and loss in buying and selling activities and make calculations for this</u>
		Making decisions, verifying results, including use of calculator	Choose and use appropriate calculation operation and method. Explain how problem was solved. Make decisions, verify results, including use of calculator <u>Check answers using inverse operations.</u> <u>Estimate by rounding to the nearest 10, 100 or 1000.</u>		Choose and use appropriate calculation method and operation. Explain how problem was solved. Make decisions, verify results, including use of calculator <u>Check answers using inverse operations</u> <u>Estimate by rounding to the nearest 10, 100, 1000 or whole number</u>

Medium Term Plan : Spring Term (ii)				Years 5 & 6	

EVERY DAY: Practise and develop oral skills and mental arithmetic skills (e.g. counting, mental strategies, quick recall of +, -, x, ÷ facts)

Year 5:	Year 6:
Read and write whole numbers up to 100 000 at least	Read and write whole numbers
Count forwards/backwards in consistent-sized steps (e.g. 25, 100), going beyond zero	Put set of positive and negative numbers, fractions, mixed decimals in order
Round decimals to nearest whole number. Put fractions in order	Round whole numbers to 10, 100, 1000:
Recall addition and subtraction facts for each number up to 20	Round decimals to nearest whole number or nearest tenth
Add/subtract any pair of two-digit numbers, including crossing 100	Add/subtract and pair two-digit numbers including crossing 100:
Find pairs totalling 100, multiples of 50 totalling 1000, decimals totalling 1, 10	Derive sums and differences e.g. 760 + 380
Use mental strategies to recall multiplication tables for 2, 3, 4, 5, 6, 8, 10 and use to solve division problems	Find pairs of numbers totalling 100; multiples of 50 totalling 1000; decimals totalling 0.1, 1 or 10
Begin to recall facts in 7x and 9x tables and begin to derive ÷ facts	Count forwards/backwards in steps of 25, 0.2, 0.25, 0.5….
Use doubling to multiply two-digit numbers by 4. Halve any two-digit number	Recall multiplication/division facts up to 10 x 10. Recall squares of numbers up to 12 x 12
Multiply or divide whole numbers up to 10 000 by 10 or 100	Give pairs of factors for whole numbers up to 100. Use divisibility tests
	Find half decimals ending in even digits e.g. 3.8 ÷2, 0.76 ÷ 2
	Multiply or divide a whole number by 10,000 or 1000
	Convert between km, m, cm, mm
	Mentally multiply any two-digit number up to 50 by a one-digit number
	Know some fractions as percentages/decimals. Obtain simple percentages.

Strand	Element	Subjects	Yr 5 Objectives: Children are taught to:	Resources	Yr 6 Objectives: Children are taught to:
Using number skills	Fractions, decimals, percentages and ratio	Fractions, decimals and percentages	<u>Recognise connections between fractions e.g. one-tenth is half of one-fifth</u> ❖ Put set of fractions in order and locate them on a number line. Relate fractions to division <u>Calculate fractional quantities, e.g. $\frac{1}{8}$ of 24 = 3, so $\frac{5}{8}$ of 24 = 15</u> <u>Order negative and positive numbers, including decimals to 1 decimal place.</u>❖ (up to 100,000)	ITP Fractions ITP Moving Digits ITP Decimal Number Line Kit 5 Calculating activity 14 Kit 5 Number and the Number system activity 6 Kit 4 Number and the number system activity 7	<u>Simplify fractions</u> ❖ <u>Find equivalent fractions and use these to add and subtract fractions</u> ❖ Put fractions in order by converting to a common denominator, and locate them on a number line <u>Use understanding of simple fractions, decimals and percentages equivalences, e.g. find 25% of 60cm and know that this is equivalent to $\frac{1}{4}$ of 60cm</u> Put in order a mixed set of numbers or measurements with up to two decimal places
		Use of calculator	Effective use of calculator e.g. to convert fractions to decimals and obtain number fractions		Effective use of calculator e.g. to convert fractions to decimals and obtain number fractions
Using geometry	Shape	Shape and space		ITP Polygon	<u>Recognise tetrahedra and square-based pyramids</u>❖ <u>Identify a net of a cube</u>❖

| skills | Structure | | **Draw squares, rectangles and right angle triangles accurately** ❖

Construct solid from given nets ❖ | CAME 10 - Tessellating triangles | **Draw nets of cubes on squared paper**❖
Draw cubes and cuboids on isometric paper❖ |
| Using measuring skills | Area and volume, angle and position | Shape reasoning | Understand and use degrees
Recognise acute and obtuse angles ❖
Draw and measure acute angles in multiples of 10 degrees ❖

Identify and explain patterns and relationships, generalise and make predictions | *What's My Angle?*
ITP Calculating Angles
ITP Fixing Points
Kit 4 Geometry activity 3
Kit 5 Geometry activity 1 and 3 | **Recognise reflex angles** ❖
Draw accurately and measure acute and obtuse angles in multiples of 5 degrees❖
Calculate a missing angle within a right angle, on a straight line or around a point❖

Identify and explain patterns and relationships, generalise and make predictions |

Medium Term Plan : Spring Term (iii)	Years 5 & 6

EVERY DAY: Practise and develop oral skills and mental arithmetic skills (e.g. counting, mental strategies, quick recall of +, -, x, ÷ facts)

Year 5 :	Year 6 :
Read and write whole numbers up to 100 000 at least	Read and write whole numbers in figures and words.
Put set of positive and negative whole numbers in order	Put positive and negative numbers in order; put fractions, mixed decimals in order
Round off decimals to nearest whole number.	Round off to nearest 10, 100 or 1000.
Put fractions in order	Round off decimals to nearest whole number or nearest tenth
Recall addition and subtraction facts for each number up to 20	Add/subtract any pair of two-digit numbers, including crossing 100;
Add/subtract any pair of two-digit numbers, including crossing the 100 boundary	derive sums and differences such as 760 + 380, 7.6 + 3.8
Use doubling to multiply two-digit numbers by 4. Halve any two-digit number	Find pairs of numbers totalling 100, multiples of 50 totalling 1000; decimals totalling 0.1 or 10
Use mental strategies to recall multiplication tables for 2, 3, 4, 5, 6, 8, 10 and use to	Count forwards/backwards in steps of 25, 0.2, 0.25, 0.5…
solve division problems	Recall multiplication and division facts up to 10 x 10. Recall squares of numbers.
Recall facts in 7x and 9x tables, and begin to derive division facts	Give pairs of factors for whole numbers up to 100
Convert m to cm and £ to pence, and vice versa; convert kg to grams	Use divisibility tests
Multiply or divide whole numbers up to 10,000 by 10 or 100	Find decimal halves ending in even digits e.g. 3.8 + 2, 0.76 + 2.
	Multiply or divide whole numbers by 10, 100 or 1000
	Convert between km, m, cm, mm; kg and g; litres and millilitres; seconds and minutes
	Mentally multiply any two-digit number up to 50 by a one-digit number
	Know some fractions as percentages/decimals Obtain simple percentages

Strand	Element	Subjects	Yr 5 Objectives: Children are taught to:	Resources	Yr 6 Objectives: Children are taught to:
Using measuring skills	Area and volume Angle and position	Measurements including problems	Calculate, estimate and compare the area of squares and rectangles using standard units Find volumes by counting and other practical methods	**ITP Area** **CAME 3 - Largest rectangle** **Kit 4 measurment activity 6** **Kit 5 measurment activity 4 & 5**	Use formula to calculate area of squares and rectangles

Using data skills	Length, weight/mass, capacity		Use measuring instruments with 10 equal divisions between each major unit, and record using decimal notation, e.g. 1.3 kg **Make estimates of length, weight/mass and capacity based on knowledge of size of real life objects** ❖ **Recognise the appropriateness of units in different contexts**❖ Use, read and write standard metric units, abbreviations and relationships between them Make use of conversions, e.g. ¼ kg = 250 g Use the four operations to solve mass problems expressed in words. Choose appropriate calculation methods/operations. Explain how problem was solved	**NR Year 6 How do they know activity 1 and 2** **Kit 5 measurment activity 4** **Kit 4 measurment activity 4** **NR Year 5 Selling lemonade activity 3** **ITP Weighing Scales**	Begin to find volumes through calculation Read and interpret scales or divisions on variety of measuring instruments Record measurements in different ways, 1.3kg = 1kg 300g **Make estimates of length, weight/mass and capacity based on knowledge of the size of real life objects, recognising the appropriateness of units in different contexts**❖ Use, read and write standard metric units of mass, and their abbreviations. Know the relationship between them. Use the four operations to solve measurement problems expressed in words. Choose appropriate calculation methods/operations. Explain how problem was solved.
	Probability	Data handling	**Use the words 'certain' and 'impossible' to describe the likelihood of an event occuring** ❖ **Recognise that some events are impossible and some events are certain**❖ **Recognise that some events are more likely than others**❖ **Use the words 'likely', 'unlikely' and 'an even chance'** ❖	**Kit 4 Pattern and algebra activity 6** **CAME - Which way up?**	**Identify the outcomes of simple events, e.g. flipping a coin, rolling a dice**❖ **Recognise that some results are equaliy likely** ❖ **Use numbers to describe the likelihood of an event, e.g.a one in six chance**❖
	Collect and record data Present and analyse data Interpret results		Use mode to describe a data set	**ITP Line Graph**	**Use mean, median, mode and range to describea data set**

Medium Term Plan : Spring Term (iv)	Years 5 & 6

EVERY DAY: Practise and develop oral skills and mental arithmetic skills (e.g. counting, mental strategies, quick recall of +, -, x, ÷ facts)

Year 5 :

Read and write whole numbers up to 100 000 at least

Put set of positive and negative whole numbers in order

Round off decimals to nearest whole number. Put fractions in order

Recall addition and subtraction facts for each number up to 20

Add/subtract any pair of two-digit numbers, including crossing the 100 boundary

Use doubling to multiply two-digit numbers by 4.

Halve any two-digit numbers

Use mental strategies to recall multiplication tables for 2, 3, 4, 5, 6, 8, 10 and use to

solve division problems

Recall facts in x7 and x9 tables, and begin to derive division facts

Convert m to cm and £ to pence, and vice versa; convert kg to grams

Multiply or divide whole numbers up to 10,000 by 10 or 100

Year 6 :

Read and write whole numbers in figures and words.

Put positive and negative numbers in order; put fractions, mixed decimals in order

Round off to nearest 10, 100 or 1000.

Round off decimals to nearest whole number or nearest tenth

Add/subtract any pair of two-digit numbers, including crossing 100;

derive sums and differences such as 760 + 380, 7.6 + 3.8

Find pairs of numbers totalling 100, multiples of 50 totalling 1000; decimals totalling 0.1 or 10

Count forwards/backwards in steps of 25, 0.2, 0.25, 0.5…

Recall multiplication and division facts up to 10 x 10.

Recall squares of numbers. Give pairs of factors for whole numbers up to 100

Use divisibility tests

Find half decimals ending in even digits e.g. 3.8 + 2, 0.76 + 2.

Multiply or divide whole numbers by 10, 100 or 1000

Convert between km, m, cm, mm; kg and g; litres and millilitres; seconds and minutes

Mentally multiply any two-digit numbers up to 50 by a one-digit number

Know some fractions as percentages/decimals

Obtain simple percentages

Strand	Element	Subjects	Yr 5 Objectives: Children are taught to:	Resources	Yr 6 Objectives: Children are taught to:
Using number skills	Calculate using mental and written methods	Mental arithmetic strategies (+ −) Pen and paper methods (+ −)	Identify close doubles, e.g. 1.5 + 1.6 Add. subtract multiples of 10 or 100, and modify Use relationship between addition and subtraction Extend written methods to add more than 2 whole numbers less than 10000, and + and − pair of decimals with 1 or 2 decimal places each	**ITP Number Line** **Kit 4 Calculating 1** **Kit 5 Calculating activity 5**	Reinforce all previous work Extend written methods to + and − numbers including decimals in columns
	Money management	Problems relating to money and 'real life'	Use the four operations to solve 'real life' or money-related problems expressed in words Plan and track money and savings by keeping accurate records Realise that budgeting is important Choose and use an appropriate calculation method and operation. **Explain how problem was solved**		Use the four operations to solve 'real life' or money-related problems expressed in words Understand advantages and disadvantages of using bank accounts Choose an appropriate calculation method/operation. Explain how problem was solved

	Estimate and check	Making decisions, verifying results, including use of calculator	Make decisions, verify results, including use of calculator <u>Check answers using inverse operations</u> <u>Estimate by rounding off to the nearest 10, 100 or 1000.</u>		Make decisions, verify results, including use of a calculator <u>Check answers using inverse operations</u> <u>Estimate by rounding off to the nearest 10, 100, 1000 or whole number</u>
Using number skills	Use number facts and relationships	Number properties and number sequences	**<u>Identify multiples of 2, 3, 4, 5, 6, 8, and 10; use the terms multiple and factor</u> ❖** Know and apply tests to see whether numbers can be divided by 2, 3, 4, 5, 6, 8, and 10; **<u>Identify prime number as having only two factors; recognise that 1 is not a prime number</u> ❖** **<u>Identify prime numbers lower than 10</u> ❖**	**ITP Number Grid** **ITP Number Dials** **ITP Moving Digits** **Kit 4 Pattern and algebra activity 4** **CAME 14 Good enough to eat** **Kit 5 Pattern and algebra activity 3**	**<u>Identify multiples of numbers up to 10; use the terms multiple and factor</u> ❖** **<u>Identify common multiples of two numbers</u>❖** **<u>Identify common factors of two number</u> ❖** **<u>Identify prime numbers</u>❖** **<u>Know prime numbers below 20</u>❖**
Using algebra skills	Number sequences	Number reasoning	**<u>Show that a number is in the sequence and/or find the position number by continuing the sequence</u> ❖**	**CAME 17 -Gardens** **Kit 5 Pattern and algebra activity 4** **Kit 4 Calculating activity 5 and 6**	
	Expression and formulae				**<u>Explore general statements through practical activities, e.g. that a + a + a = 3a, 3 x a = 3a and that a + a + a + b + b = 3a + 2b</u>❖** **<u>Simplify expressions involving the addition of one variable, e.g. 5t + 3t = 8t</u>❖**
	Functions and graphs		Solve mathematical puzzles or problems. Recognise patterns, generalise. **<u>Use multistep function machines to generate input and output using all four operations; express, in words, the operations of function machines</u>❖**	*Function Machine*	Solve mathematical problems or puzzles. Recognise patterns, generalise. **<u>Express output generated from one step function machines using algebra</u>❖**
	Equations and inequalities		**<u>Solve one step equations, using letters to present 'unknowns', with integer solutions, e.g. 6 + a = 10 a b + b = 8</u> ❖** Make a simple statement about numbers and investigate, by finding examples to satisfy. Suggest extensions	**NR Year 6 Aeroplanes activity 1** **NR Year 6 Pens activity 1 and 2** **Kit 4 Pattern and algebra activity 7** **NR Year 6 How do they know activity 3**	**<u>Construct and solve one step equations with whole number solutions</u>❖** Make a simple statement about numbers and investigate, through finding examples to satisfy. Suggest extensions.

	Medium Term Plan : Summer Term (i)	Years 5 & 6

EVERY DAY: Practise and develop oral skills and mental arithmetic skills (e.g. counting, mental strategies, quick recall of +, -, x, ÷ facts)

Year 5 :	**Year 6** :
Read and write any whole number ; round off to nearest 10, 100 or 1000	Read and write whole numbers in figures and words
Put positive and negative whole numbers in order; put fractions in order	Put positive and negative numbers in order; put fractions, mixed decimals in order
Round off decimals to nearest whole number	Round off whole numbers to nearest 10, 100 or 1000
Recall addition and subtraction facts for every number up to 20;	Round off decimals to nearest whole number or nearest tenth
Add/subtract any pair of two-digit numbers, including crossing 100	Add/subtract any pair of 2-digit numbers, including crossing 100 boundary;
Find pairs totalling 100, multiples of 50 totalling 1000, decimals totalling 1, 10	derive sums and differences such as 7.6 ± 3.8, 760 ± 380
Use mental strategies to recall multiplication tables for 2, 3, 4, 5, 6, 8, 10 and use to	Find decimals totalling 0.1, 1 or 10
solve division problems	Add a number of one-digit numbers
Recall facts in x7 and x9 tables, and begin to derive division facts	Count forwards/backwards in steps of 25, 0.2, 0.25, 0.5…
Assort in order to multiply by 2, 5 or 10, and use divisibility tests	Recall multiplication and division facts up to 10 x 10.
Use doubling and halving to multiply or divide two-digit numbers by 4	Recall squares of numbers and prime numbers
Multiply or divide whole numbers up to 10000 by 10 or 100	Give pairs of factors for whole numbers up to 100. Use divisibility tests
Know simple fractions as percentages	Find doubles/halves of decimals, e.g. 7.9 x 2, 0.9 ÷ 2, 0.72 ÷ 2
	Multiply or divide whole numbers by 10, 100 or 1000
	Convert between km and mm; kg and g; litres and millilitres, hours, minutes, seconds
	Mentally multiply any two-digit number by a one-digit number, e.g. 3.6 x 4
	Know some fractions as percentages/decimals. Obtain simple percentages

Strand	Element	Subjects	Yr 5 Objectives: Children are taught to:	Resources	Yr 6 Objectives: Children are taught to:
Using number skills	Use number facts and relation-ships	Place value, putting in order, rounding off	Read and write whole numbers, up to 100,000 and 1 and 2 decimal place decimals, in figures and words, and know what each digit represents	**ITP Number Spinners**	Read and write numbers up to 1 million and numbers to 3 decimal places, in figures and words, and know what each digit represents.
Using measuring skills	Temperature		Measure and record temperatures involving positive and negative readings. Calculate temperature differences involving temperatures, including those involving temperature rises and falls across 0°C	**ITP Thermometer** **Kit 5 Number and the number system activity 5**	Measure and record temperatures involving positive and negative readings. Calculate temperature differences involving temperatures, including those involving temperature rises and falls across 0°C

Using number skills	Calculate using mental and written methods	Understand x and ÷ Mental arithmetic strategies (x ÷) Pen and paper methods (x ÷)	Use relationship between x and ÷ Recall multiplication facts and find division facts Use known facts and place value to mentally multiply and divide e.g. 23 x 15 = 345 therefore 23 x 30 = 690 Extend written methods to TU x TU	**ITP Remainders after Division** **Kit 5 Calculating activity 9, 12 and 13** **ITP Number Dials** **ITP Multiplication Grid** **ITP Division Grid**	Use relationship between x and ÷ Recall multiplication facts and find division facts Use known facts and place value to mentally multiply and divide e.g. if 345x27 = 9315 how could you quickly calculate 345x54? Multiply ThHTU by U Divide HTU by TU (long division, whole number solution)
	Money management	Problems relating to money and 'real life'	Use the four operations to solve 'real life' or money-related problems expressed in words Order and compare the cost of items up to £1000 Add and subtract totals less than £100 using correct notation e.g. £28.18 + £33.45 Select and use appropriate calculation method and operation Explain how problem was solved	**Kit 4 Calculating activity 14** **Kit 5 Calculating activity 16**	Use the four operations to solve 'real life' or money-related problems expressed in words, including obtaining percentages and VAT. Select and use an appropriate calculation method and operation Explain how problem was solved
	Estimating and verifying	Making decisions, verifying results, including use of calculator	Make decisions, verify results, including use of calculator Check answers using inverse operations Estimate by rounding off to the nearest 10, 100 or 1000		Make decisions, verify results, including use of calculator Check answers using inverse operations Estimate by rounding off to the nearest 10, 100, 1000 or whole number

Medium Term Plan : Summer Term (ii)	Years 5 & 6

EVERY DAY: Practise and develop oral skills and mental arithmetic skills (e.g. counting, mental strategies, quick recall of +, -, x, ÷ facts)

Year 5 :

Read and write any whole number; round off to nearest 10, 100 or 1000

Put positive and negative whole numbers in order; put fractions in order

Round off decimals to nearest whole number

Recall addition and subtraction facts for every number up to 20;

Add/subtract any pair of two-digit numbers, including crossing 100 boundary

Find pairs totalling 100, multiples of 50 totalling 1000, decimals totalling 1, 10

Use mental strategies to recall multiplication tables for 2, 3, 4, 5, 6, 8, 10 and use to solve division problems

Assort in order to multiply by 2, 5 or 10, and use divisibility tests

Use doubling and halving to multiply or divide two-digit numbers by 4

Multiply or divide whole numbers up to 10000 by 10 or 100

Know simple fractions as percentages

Year 6 :

Read and write whole numbers in figures and words

Put positive and negative numbers in order; put fractions, mixed decimals in order

Round off whole numbers to nearest 10, 100 or 1000

Round off decimals to nearest whole number or nearest tenth

Add/subtract any pair of 2-digit numbers, including crossing the 100 boundary;

derive sums and differences such as 7.6 ± 3.8, 760 ± 380

Find decimals totalling 0.1, 1 or 10

Add a number of one-digit numbers

Count forwards/backwards in steps of 25, 0.2, 0.25, 0.5…

Recall multiplication and division facts up to 10 x 10.

Recall squares of numbers and prime numbers

Give pairs of factors for whole numbers up to 100. Use divisibility tests

Find doubles/halves of decimals, e.g. 7.9 x 2, 0.9 ÷ 2, 0.72 ÷ 2

Multiply or divide whole numbers by 10, 100 or 1000

Convert between km and mm; kg and g; litres and millilitres, hours, minutes, seconds

Mentally multiply any two-digit number by a one-digit number, e.g. 3.6 x 4

Know some fractions as percentages/decimals. Obtain simple percentages

Strand	Element	Subjects	Yr 5 Objectives: Children are taught to:	Resources	Yr 6 Objectives: Children are taught to:
Using number skills	Fractions, decimals, percentages and ratio	Fractions, decimals and percentages	**Recognise connections between fractions e.g. one-tenth is half of one-fifth ❖** **Add and subtract fractions with the same denominator ❖** **Add fractions with same denominator to make a whole ❖**	**ITP Fractions** **Kit 5 Calculating activity 11** **Kit 5 Calculating activity 15** **Kit 5 Number and the number system activity 6 and 7** **NR Year 6 Fraction quilt activity 1 and 2**	Use understanding of simple fraction, decimal and percentage equivalences e.g. find 25% of 60cm and know that this is equivalent of ¼ of 60cm Calculate percentage quantities based on 10%, e.g. 20%, 5%, 15% **Simplify fractions❖** **Find equivalent fractions and use these to add and subtract fractions❖**
		Ratio and	Solve simple problems relating to ratio (1 for each)	**CAME 18 - Who dunnit** **CAME 5 - Scaffolding**	Solve problems relating to ratio **Use ratio to express two or more quantities in**

		proportion	**Share objects in a given ratio, e.g. red blocks and blue blocks in a ratio of 1:2 ❖**	**ITP Ratio and Proportion** **Kit 5 Calculating activity 10**	**words ❖** Use simple ratio and proportion **State the proportion of a whole that each share represents, e.g. recognise that in a 1:3 ratio, 1 part represents a quarter of total ❖**
Using data skills	Collecting and recording data Presenting and analysing data Interpreting results	Data handling	Represent data using: -lists, charts, tally, tables, diagrams and frequency tables -bar charts, grouped data charts, line graphs and conversion graphs Extract and interpret information from an increasing range of diagrams, timetables and graphs (including pie charts) Use mean, median, mode and range to describe a data set	**ITP Line Graph** **ITP Data Handling** **CAME 6 - Comparing texts** **Kit 5 Measurment activity 2** **ITP Number Spinners**	Represent data using: -lists, charts, tally, tables, diagrams and frequency tables -bar charts, grouped data charts, line graphs and conversion graphs Extract and interpret information from an increasing range of diagrams, timetables and graphs (including pie charts) Use mean, median, mode and range to describe a data set

	Medium Term Plan : Summer Term (iii)			Years 5 & 6	

EVERY DAY: Practise and develop oral skills and mental arithmetic skills (e.g. counting, mental strategies, quick recall of +, -, x, ÷ facts)

Year 5 :	Year 6 :
Read and write any whole number; round off to nearest 10 or 100	Read and write whole numbers in figures and words
Put positive and negative whole numbers in order; put fractions in order	Put positive and negative numbers in order ; put fractions, mixed decimals in order
Put decimals with same number of decimal places in order	Round off whole numbers to nearest whole number or nearest tenth
Add/subtract any pair of two-digit numbers, including crossing 100 boundary	Add/subtract any pair of 2-digit numbers, including crossing 100 boundary;
Find pairs totalling 100, multiples of 50 totalling 1000, decimals totalling 1, 10	derive sums and differences such as 7.6 ± 3.8, 760 ± 380
Recall multiplication facts up to 10x10 and derive all division facts	Find decimals totalling 0.1, 1 or 10
Identify pairs of factors of small two-digit numbers	Add several one-digit numbers
Use doubling and halving to multiply or divide two-digit numbers by 4	Recall multiplication and division facts up to 10 x 10.
Multiply or divide whole numbers up to 10000 by 10 or 100	Recall squares of numbers and prime numbers
Convert £ to pence, m to cm, Km to m, kg to g and litres to millilitres	Count forwards/backwards in steps of 25, 0.2, 0.25, 0.5…
Assort in order to multiply by 2, 5 or 10, and use divisibility tests	Give pairs of factors for whole numbers up to 100. Use divisbility tests
Know simple fractions as percentages/decimals	Find doubles/halves of decimals, e.g. 7.9 x 2, 0.9 ÷ 2, 0.72 ÷ 2
Obtain simple percentages	Multiply or divide whole numbers by 10, 100 or 1000
	Convert between km and mm; kg and g; litres and millilitres, hours, minutes, seconds
	Mentally multiply any two-digit number by a one-digit number, e.g. 3.6 x 4
	Know some fractions as percentages/decimals. Obtain simple percentages

Strand	Element	Subjects	Yr 5 Objectives: Children are taught to:	Resources	Yr 6 Objectives: Children are taught to:
Using geometry skills	Movement	Shape and space	Identify symmetry of reflection in regular polygons **Draw a reflection of shape in any line ❖** **Complete a partly drawn shape after rotation ❖** **Translate a shape on squared paper horizontally or vertically ❖**	**ITP Symmetry** **ITP Isometric Grid** **ITP Coordinates** **Kit 4 Geometry activity 2** **CAME 19 - symmetry Peg board** **Kit 5 Geometry activity 2**	**Find all the lines of symmetry for a given shape❖** **Identify rotational symmetry of shapes❖** **Identify symmetrical propreties of regular polygons❖**
Developing numerical reasoning	Represent and communicate	Shape reasoning	Make general statement about shapes and investigate **Recognise, and generalise in words, patterns that arise in numerical, spatial or practical❖** **Visualise describe shapes, movements and transformations ❖**	**NR Year 6 - Ambulance**	Make general statement about shapes and investigate **Recognise, and generalise in words, patterns that arise in numerical, spatial or practical❖** **Visualise and describe shapes, movements and transformations ❖**

Using measuring skills	Time		Know relationship between units of time and use it **Calculate start times, finish times and durations using hours and minutes** ❖ Carry out practical activities including timed events and explain which unit of time is most appropriate **Estimate the length of time everyday activities take to compelte, to hours and quarter of hours** ❖	**Kit 4 Measurment activity 1**	**Convert between standard units of time**❖ Time events in minutes and seconds to the nearest tenth of a second **Estimate the length of time everyday activities take, to complete with increasing accuracy**❖
	Length, weight/mass, capacity	Measures, including problems	Use measuring instruments with 10 equal divisions between each major unit, and record using decimal notation, e.g. 1.3 litre **Make estimates of capacity based on knowledge of the size of real life objects** ❖ **Recognise the appropriateness of units in different contexts**❖ Use, read and write standard metric units, abbreviations and relationships between them Make use of conversions, e.g. ¼ l = 250 ml Use the four operations to solve capacity problems expressed in words Select appropriate calculation methods/operations. Explain how problem was solved	**ITP Measuring Cylinder** **ITP measuring scales** **ITP Thermometer** **NR Year 5 Packing bottles activity 1 & 2** **Kit 4 Measurment activity 5** **Kit 5 Measurment activity 4**	Read and interpret scales or divisions on a range of measuring instruments Record measurements in different ways, 1.3l = 1l 300ml **Make estimates of capacity based on knowledge of the size of real life objects, recognising the appropriateness of units in different contexts**❖ Use the language of imperial units in daily use e.g. miles, pints Use the four operations to solve capacity problems expressed in words Select appropriate calculation methods/operations. Explain how problem was solved.

Medium Term Plan : Summer Term (iv)			Years 5 & 6			

EVERY DAY: Practise and develop oral skills and mental arithmetic skills (e.g. counting, mental strategies, quick recall of +, -, x, ÷ facts)

Year 5:

Read and write any whole number; round off to nearest 10 or 100

Put positive and negative whole numbers in order; put fractions in order

Put decimals with same number of decimal places in order

Add/subtract any pair of two-digit numbers, including crossing 100 boundary

Find pairs totalling 100, multiples of 50 totalling 1000, decimals totalling 1,10

Recall multiplication facts up to 10 x 10 and derive all division facts

Identify pairs of factors of small two-digit numbers

Use doubling and halving to multiply or divide two-digit numbers by 4

Multiply or divide whole numbers up to 10000 by 10 or 100

Convert £ to pence, m to cm, Km to m, kg to g and litres to millilitres

Assort in order to multiply by 2, 5 or 10, and use divisibility tests

Know simple fractions as percentages/decimals

Obtain simple percentages

Year 6:

Read and write whole numbers in figures and words

Put positive and negative numbers in order; put fractions, mixed decimals in order

Round off whole numbers to nearest whole number or nearest tenth

Add/subtract any pair of 2-digit numbers, including crossing 100 boundary;

derive sums and differences such as 7.6 ± 3.8, 760 ± 380

Find decimals totalling 0.1, 1 or 10

Add several one-digit numbers

Recall multiplication and division facts up to 10 x 10.

Recall squares of numbers and prime numbers

Count forwards/backwards in steps of 25, 0.2, 0.25, 0.5…

Give pairs of factors for whole numbers up to 100. Use divisibility tests

Find doubles/halves of decimals, e.g. 7.9 x 2, 0.9 ÷ 2, 0.72 ÷ 2

Multiply or divide whole numbers by 10, 100 or 1000

Convert between km and mm; kg and g; litres and millilitres, hours, minutes, seconds

Mentally multiply any two-digit number by a one-digit number, e.g. 3.6 x 4

Know some fractions as percentages/decimals. Obtain simple percentages

Strand	Element	Subjects	Yr 5 Objectives: Children are taught to:	Resources	Yr 6 Objectives: Children are taught to:
Using number skills	Calculate using mental and written methods	Mental arithmetic strategies (+ −) Pen and paper methods (+ −)	Add and subtract 3-digit numbers using an appropriate mental or written method Use known facts and place value for mental addition and subtraction Extend written methods of adding and subtracting whole numbers less than 10 000, and decimals with up to one decimal place	**ITP Number Spinners**	Add and subtract numbers using whole numbers and decimals Use number facts and place value for mental addition and subtraction Extend written methods to add and subtract numbers including decimals in columns
		Problems relating to money and 'real life'	Using the four operations to solve 'real life' or money-related problems expressed in words Select and use an appropriate calculation method and operation		Use the four operations to solve 'real life' and money-related problems expressed in words, including percentages Select and use an appropriate calculation method and operation

	Estimating and verifying	Making decisions, verifying results, including use of calculator	Explain how problem was solved Make decisions, verify results, including use of calculator <u>Check answers using inverse operations</u> <u>Estimate by rounding off to the nearest 10, 100 or 1000.</u>		Explain how problem was solved Make decisions, verify results, including use of calculator <u>Check answers using inverse operations</u> <u>Estimate by rounding off to the nearest 10, 100, 1000 or whole number.</u>
Developing numerical reasoning	Represent and communicate	Number properties and number sequences	**<u>Recognise, and generalise in words, patterns that arise in numerical, spatial or practical</u>❖**		**<u>Recognise, and generalise in words, patterns that arise in numerical, spatial or practical</u>❖**
Using algebra skills	Expressionand formulae	Number reasoning		**ITP Number Grid** ***Function Machine***	**<u>Explore general statements through practical activities, e.g. that a + a + a = 3a, 3 x a = 3a and a + a + a + b + b = 3a + 2b</u>❖** **<u>Simplify expressions involving the addition of one variable, e.g. 5t + 3t = 8t</u>❖**