Year 6 Maths Programme
of Study – 2014-2015

Each block is covered three times during the year, ensuring that each objective is delivered.	
Block A	Counting, partitioning and calculating
Block B	Securing number facts, understanding shape
Block C	Handling data and measures
Block D	Calculating, measuring and understanding shape
Block E	Securing number facts, relationships and calculating

Block A Objectives

- Explain reasoning and conclusions, using words, symbols or diagrams as appropriate
- Solve multi-step problems, and problems involving fractions, decimals and percentages; choose and use appropriate calculation strategies at each stage, including calculator use.
- Find the difference between a positive and a negative integer, or two negative integers, in context
- Use decimal notation for tenths, hundredths and thousandths; partition, round and order decimals with up to three places, and position them on the number line
- Use knowledge of place value and multiplication facts to 10 × 10 to derive related multiplication and division facts involving decimals (e.g. 0.8 × 7, 4.8 ÷ 6)
- Calculate mentally with integers and decimals: U.t ± U.t, TU × U, TU ÷ U, U.t × U, U.t ÷ U
- Use efficient written methods to add and subtract integers and decimals, to multiply and divide integers and decimals by a one-digit integer, and to multiply two-digit and three-digit integers by a two-digit integer
- Use a calculator to solve problems involving multi-step calculations
- Use approximations, inverse operations and tests of divisibility to estimate and check results

Block B Objectives

- Tabulate systematically the information in a problem or puzzle; identify and record the steps or calculations needed to solve it, using symbols where appropriate; interpret solutions in the original context and check their accuracy
- Represent and interpret sequences, patterns and relationships involving numbers and shapes; suggest and test hypotheses; construct and use simple expressions and formulae in words then symbols (e.g. the cost of *c* pens at 15 pence each is 15*c* pence)
- Use knowledge of multiplication facts to derive quickly squares of numbers to 12 × 12 and the corresponding squares of multiples of 10
- Use knowledge of place value and multiplication facts to 10 × 10 to derive related multiplication and division facts involving decimals (e.g. 0.8 × 7, 4.8 ÷ 6)
- Recognise that prime numbers have only two factors and identify prime numbers less than 100; find the prime factors of two-digit numbers
- Use approximations, inverse operations and tests of divisibility to estimate and check results
- Use a calculator to solve problems involving multi-step calculations
- Describe, identify and visualise parallel and perpendicular edges or faces; use these properties to classify 2-D shapes and 3-D solids
- Make and draw shapes with increasing accuracy and apply knowledge of their properties

Block C Objectives

- Suggest, plan and develop lines of enquiry; collect, organise and represent information, interpret results and review methods; identify and answer related questions
- Solve problems by collecting, selecting, processing, presenting and interpreting data, using ICT where appropriate; draw conclusions and identify further questions to ask (**end of year objective**)
- Construct and interpret frequency tables, bar charts with grouped discrete data, and line graphs; interpret pie charts
- Describe and interpret results and solutions to problems using the mode, range, median and mean

Block C Objectives
• Describe and predict outcomes from data using the language of chance or likelihood
• Select and use standard metric units of measure and convert between units using decimals to two places (e.g. change 2.75 litres to 2750 ml, or vice versa) (**end of year objective**)
• Read and interpret scales on a range of measuring instruments, recognising that the measurement made is approximate and recording results to a required degree of accuracy; compare readings on different scales, for example when using different instruments
• Use a calculator to solve problems involving multi-step calculations

Block D Objectives
• Solve multi-step problems, and problems involving fractions, decimals and percentages; choose and use appropriate calculation strategies at each stage, including calculator use
• Calculate mentally with integers and decimals: U.t ± U.t, TU × U, TU ÷ U, U.t × U, U.t ÷ U
• Use efficient written methods to add and subtract integers and decimals, to multiply and divide integers and decimals by a one-digit integer, and to multiply two-digit and three-digit integers by a two-digit integer (**end of year objective**)
• Use a calculator to solve problems involving multi-step calculations
• Use approximations, inverse operations and tests of divisibility to estimate and check results
• Select and use standard metric units of measure and convert between units using decimals to two places (e.g. change 2.75 litres to 2750 ml, or vice versa) (**end of year objective**)
• Solve problems by measuring, estimating and calculating; measure and calculate using imperial units still in everyday use; know their approximate metric values
• Read and interpret scales on a range of measuring instruments, recognising that the measurement made is approximate and recording results to a required degree of accuracy; compare readings on different scales, for example when using different instruments
• Calculate the perimeter and area of rectilinear shapes; estimate the area of an irregular shape by counting squares
• Estimate angles, and use a protractor to measure and draw them, on their own and in shapes; calculate angles in a triangle or around a point
• Use coordinates in the first quadrant to draw, locate and complete shapes that meet given properties
• Visualise and draw on grids of different types where a shape will be after reflection, after translations, or after rotation through 90° or 180° about its centre or one of its vertices (end of year objective)

Block E Objectives
• Tabulate systematically the information in a problem or puzzle; identify and record the steps or calculations needed to solve it, using symbols where appropriate; interpret solutions in the original context and check their accuracy
• Explain reasoning and conclusions, using words, symbols or diagrams as appropriate
• Solve multi-step problems, and problems involving fractions, decimals and percentages; choose and use appropriate calculation strategies at each stage, including calculator use
• Use knowledge of place value and multiplication facts to 10 × 10 to derive related multiplication and division facts involving decimals (e.g. 0.8×7, $4.8 \div 6$)
• Use efficient written methods to add and subtract integers and decimals, to multiply and divide integers and decimals by a one-digit integer, and to multiply two-digit and three-digit integers by a two-digit integer
• Use a calculator to solve problems involving multi-step calculations
• Express a larger whole number as a fraction of a smaller one (e.g. recognise that 8 slices of a 5-slice pizza represents $^8/_5$ or $1\,^3/_5$ pizzas); simplify fractions by cancelling common factors; order a set of fractions by converting them to fractions with a common denominator
• Express one quantity as a percentage of another (e.g. express £400 as a percentage of £1000); find equivalent percentages, decimals and fractions
• Relate fractions to multiplication and division (e.g. $6 \div 2 = \frac{1}{2}$ of $6 = 6 \times \frac{1}{2}$; express a quotient as a fraction or decimal (e.g. $67 \div 5 = 13.4$ or $13\,^2/_5$; find fractions and percentages of whole-number quantities (e.g. $^5/_8$ of 96, 65% of £260)
• Solve simple problems involving direct proportion by scaling quantities up or down