Mathematics Scheme of Work: Autumn Year 6

National Curriculum Objectives:

Weeks 1-2: Number and place value:
Numbers to 10,000, 100, 000 and 1,000,000
Round numbers to 10, 100 and 1000.
Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit.
Round any whole number to a required degree of accuracy.
Use negative numbers in context, and calculate intervals across zero.
Solve number and practical problems that involve all of the above.

Weeks 3 – 6 The Four Rules
Add and subtract whole numbers with more than 4 digits.
Inverse operations of add and subtract
Multi step addition and subtraction problems
Multiply 4x1 digits, 3x1 digits, 2x2 digits 2x2 digits 3x2 digits
Divide with remainders and divide a 4 digit by a 1 digit number
Solve addition and subtraction multi step problems in contexts, deciding which operations and methods to use and why.
Multiply multi-digit number up to 4 digits by a 2-digit number using the formal written method of long multiplication.
Divide numbers up to 4 digits by a 2-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding as appropriate for the context.
Divide numbers up to 4 digits by a 2-digit number using the formal written method of short division, interpreting remainders according to the context.
Perform mental calculations, including with mixed operations and large numbers.
Identify common factors, common multiples and prime numbers.
Use their knowledge of the order of operations to carry out calculations involving the four operations.
Solve problems involving addition, subtraction, multiplication and division.
Use estimation to check answers to calculations and determine in the context of a problem, an appropriate degree of accuracy.

Weeks 7-11 : Fractions 1 and 2
To state equivalent fractions
To convert improper fractions and mixed numbers
To add and subtract mixed number fractions
Use common factors to simplify fractions; use common multiples to express fractions in the same denomination.
Compare and order fractions, including fractions > 1
Generate and describe linear number sequences (with fractions)
Add and subtract fractions with different denominations and mixed numbers, using the concept of equivalent fractions.
Multiply simple pairs of proper fractions, writing the answer in its simplest form [for example 1/ 4 x 1/ 2 = 1/8]
Divide proper fractions by whole numbers [for example 1/3 ÷ 2 = 1/6]
Associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example 3/8]
Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts.

National Curriculum Objectives continued:

Week 11-12 Converting units

Metric measures
Convert metric measures
Calculate with metric measures
Miles and Kilometres
Imperial measures

Some of the Vocabulary used:
Digits, multiply, divide, place value, decimal point, tens, hundreds, thousands tenths, hundredths, thousandths, , multiplication, product, Napier's bones, decimals, short, long, partition, product, tenths, hundredths, divisor, multiple, efficient, methods
RUCSAC, fraction, reduce to simplest form, cancel, factors, multiple, denominator Numerator, decimal, percentage, out of 100, %, length, breadth, area, surface, side, perimeter, total, calculate, formula, proportion, fraction, mean, mode, median, range, average, range, continuous, measure, metric, imperial, kilometre, metre, mile, yard, inches, centimetre, millimetre, calculate.

Examples of Tasks/activities informed by National Curriculum:

1. Practising reading large numbers and reading numbers in different forms.
2. Practising traditional short and long multiplication methods. Choosing the most efficient method to calculate by analysing the digits in a calculation.
3. Rapid recall of tables facts.
4. Using the RUCSAC method to solve word and real life problems.
5. Solving a variety of practical problem solving questions
6. Fraction calculation practise.
7. Mixed pairs activities.
8. Fraction games
9. Independent or supported work in books to practise new skills.

Examples of Selected Resources Used:
IR teaching tools, My Maths, Smart notebook
Knowledge box
White rose maths
Education city
Whiteboards and pens
Post it notes
Number place value flip books