Year 5 Autumn maths

Prior Learning

Learning in year 4
Place value - represent and partition numbers to 10,000
Addition & Subtraction – add and subtract up to 2 four digit numbers with more than one exchange.
Multiplication & Division -multiply and divide tables facts to x12. Multiply 3 digits by a single digit.
Fractions-partition, compare and order Mixed numbers . Understand improper fractions, convert improper fractions to Mixed numbers.

Key vocabulary for this unit

Place Value	**Addition & Subtraction**	**Multiplication and Division**	**Fractions**
Millions	Add	Multiply	Numerator
Thousands	Total	Groups of	Denominator
Hundreds	Make	Lots of	Unit fraction
Tens	Plus	Times	Non-unit fraction
Ones	Sum	Divide	Equivalent
Zero	More	Share	Whole
Place value	Altogether	Remainder	Mixed number
Greater than	Difference	Factor	Improper fraction
Less than	Subtract	Multiple	Simplest form
Order	Less	product	Multiple
Round	Minus		Common denominator
Rounded	Take away		Common numerator
Negative number	Column addition		
Partition	Column subtraction		
Interval	Estimate		
Sequence	Inverse operation		

Linear sequence	Number facts Place value Complex		

Learning Sequence	
Place Value	• read, write, order and compare numbers up to 100,000 and determine the value of each digit • read, write, partition and make numbers to 1,000,000- order and compare numbers up to 1,000,000 • Count forwards or backwards in steps of powers of 10 for any given number up to 1 000 000. • Round any number up to 1 000 000 to the nearest 10, 100, 1000, 10 000 and 100 000. • Read Roman numerals to 1000 (M) and recognise years written in Roman numerals.
Addition & Subtraction	• Add and subtract whole numbers with more than 4 digits, including using formal written methods. • Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy. • Use the inverse operations to check answers to calculations. • Add and subtract numbers mentally with increasingly large numbers.
Multiplication and Division	• Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers. • Establish whether a number up to 100 is prime and recall prime numbers up to 19. • Know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers. • Recognise and use square numbers and cube numbers, and the notation for squared and cubed. • Multiply and divide whole numbers and those involving decimals by 10, 100 and 1000.

Fractions	• Identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths. • Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements > 1 as a mixed number. • 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.

Assessment milestones

Mathematical skills:

Place value

- read, write, order and compare numbers up to 1,000,000 and determine the value of each digit
- round numbers up to 1 000 000 to the nearest 10, 100, 1000, 10 000 or 100 000 using a number line.
- compare and order negative numbers.
- read Roman numerals up to 1000 (M).

Addition and subtraction

- add and subtract numbers with at least 5 digits using mental and written methods.
- use inverse operations to check answers to addition and subtraction calculations.

Multiplication and Division

- find factor pairs and identify the common factors of two or more numbers;
- multiply numbers up to four digits by one or two-digit numbers using short and long multiplication;

Mathematical knowledge:

Place value

- apply knowledge and understanding to solve reasoning problems.
- solve age-appropriate problems involving negative numbers

Addition and subtraction

- choose a sensible way of calculating when solving a problem.
- solve one-step and two-step word problems;
- independently choose appropriate methods for mental calculation.

Multiplication and Division

- recall the prime numbers up to 20 and find prime numbers up to and beyond 100 using their multiplication tables knowledge;

• use the formal method of short division to divide numbers up to four digits by a one-digit number. • multiply and divide whole numbers and those involving decimals by 10, 100 and 1000; **Fractions** • compare and order fractions using multiplication and division to find equivalent fractions. • convert between improper fractions and mixed numbers; • add and subtract fractions with the same and also different denominators;	• interpret remainders as whole numbers, decimals and simple fractions and begin to choose the best way to express remainders, depending on the context of the problem; **Fractions** • answer reasoning and problem solving questions to demonstrate understanding • solve a range of multiplication and division problems, applying their mental and written methods