Using The Mathematical CPD Library as Part of a Structured CPD Programme

Overview

This document outlines a practical, school-friendly approach to embedding The Mathematical CPD Library into a structured professional development programme. It supports personalised development while remaining manageable within existing CPD frameworks.

Suggested CPD Structure

We suggest staff are given a minimum of three dedicated CPD sessions for personalized development using our library. However, please bear in mind the library has enough content for you to include subject knowledge development as part of a three to five year strategic plan using this approach.

To begin you may wish staff to select the key areas in which they would like to develop. We include a printer friendly subject knowledge development document on page 8 to help you get started.

Subject Knowledge Areas and Tutorials

The tables below outline the tutorials available in each area of the curriculum.

Number

	Module Outline	Tutorial breakdown
N1	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication	N1 is covered through **one** tutorial.
N2	divide numbers up to 4 digits by a two-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	N2 is covered through **one** tutorial.

N3	divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context	N3 is covered through **one** tutorial.
N4	perform mental calculations, including with mixed operations and large numbers	N4 is covered through **one** tutorial.
N5	identify common factors, common multiples and prime numbers	N5 is covered through **one** tutorial.
N6	use their knowledge of the order of operations to carry out calculations involving the 4 operations	N6 is covered through **one** tutorial.
N7	solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	N7 is covered through **one** tutorial.
N8	solve problems involving addition, subtraction, multiplication and division	N8 is covered through **one** tutorial.
N9	use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy	N9 is covered through **one** tutorial.

Place Value

	Module Outline	Tutorial Breakdown
PV1	read, write, order and compare numbers up to 10,000,000 and determine the value of each digit	PV1 is covered through **one** tutorial.

PV2	round any whole number to a required degree of accuracy	PV2 is covered through **one** tutorial.
PV3	use negative numbers in context, and calculate intervals across 0	PV3 is covered through **one** tutorial.
PV4	solve number and practical problems that involve all of the above	PV4 is covered through **one** tutorial.

Fractions, Decimals & Percentages

	Module Outline	Tutorial Breakdown
F1	use common factors to simplify fractions; use common multiples to express fractions in the same denomination	F1 is covered through **one** tutorial.
F2	compare and order fractions, including fractions >1	F2 is covered through **one** tutorial.
F3	add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions	F3 is covered through **one** tutorial.
F4	multiply simple pairs of proper fractions, writing the answer in its simplest form [for example, × =]	F4 is covered through **one** tutorial.
F5	divide proper fractions by whole numbers [for example, ÷ 2 =]	F5 is covered through **one** tutorial.
F7	identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places	F7 is covered through **one** tutorial.

F8	multiply one-digit numbers with up to 2 decimal places by whole numbers	F8 is covered through **one** tutorial.
F9	use written division methods in cases where the answer has up to 2 decimal places	F9 is covered through **one** tutorial.
F6	associate a fraction with division and calculate decimal fraction equivalents [for example, 0.375] for a simple fraction [for example,]	F6 and F10 are covered by a single tutorial
F10	recall and use equivalences between simple fractions, decimals and percentages, including in different contexts	

Geometry

	Module Outline	Tutorial Breakdown
G1	describe positions on the full coordinate grid (all 4 quadrants)	G1 is covered through **one** tutorial.
G2	draw and translate simple shapes on the coordinate plane, and reflect them in the axes	G2 is covered through **one** tutorial.
G3	draw 2-D shapes using given dimensions and angles	G3 is covered through **one** tutorial.
G4	recognise, describe and build simple 3-D shapes, including making nets	G4 is covered through **one** tutorial.
G5	compare and classify geometric shapes based on their properties and sizes and	G5 is covered through **one** tutorial.

	find unknown angles in any triangles, quadrilaterals, and regular polygons	
G6	illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius	G6 is covered through **one** tutorial.
G7	recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles	G7 is covered through **one** tutorial.

Measurement

	Module Outline	Tutorial Breakdown
M1	solve problems involving the calculation and conversion of units of measure, using decimal notation up to 3 decimal places where appropriate	M1 and M2 are covered by a single tutorial
M2	use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 decimal places	
M3	convert between miles and kilometres	M3 is covered through **one** tutorial.
M4	recognise that shapes with the same areas can have different perimeters and vice versa	M4 is covered through **one** tutorial.

M5	recognise when it is possible to use formulae for area and volume of shapes	M5 is covered through **one** tutorial.
M6	calculate the area of parallelograms and triangles	M6 is covered through **one** tutorial.
M7	calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm^3) and cubic metres (m^3), and extending to other units [for example, mm^3 and km^3]	M7 is covered through **one** tutorial.

Algebra

	Module Outline	Tutorial Breakdown
	An introduction to algebra tutorial is available	
A1	use simple formulae	A1 is covered by **three** tutorials.
A2	generate and describe linear number sequences	A2 is covered by **two** tutorials.
A3	express missing number problems algebraically	A3 is covered through **one** tutorial.
A4	find pairs of numbers that satisfy an equation with 2 unknowns	A4 is covered by **two** tutorials.
A5	renumerate possibilities of combinations of 2 variables	A5 is covered through **one** tutorial.

Statistics

	Module Outline	Tutorial Breakdown
S1	interpret and construct pie charts and line graphs and use these to solve problems	S1 is covered through **two** tutorials.
S2	calculate and interpret the mean as an average	S1 is covered through **one** tutorial.

Ratio & Proportion

	Module Outline	Tutorial Breakdown
	An introduction to ratio tutorial is available	
R1	solve problems involving the relative sizes of 2 quantities where missing values can be found by using integer multiplication and division facts	R1 is covered through **two** tutorials.
R2	solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison	R2 is covered through **two** tutorials.
R3	solve problems involving similar shapes where the scale factor is known or can be found	R3 is covered through **two** tutorials.
R4	solve problems involving unequal sharing and grouping using knowledge of fractions and multiples	R4 is covered through **one** tutorial.

Subject Knowledge Development Document

Name:
Role / Year Group:
Date:

Select three focus areas:

[ ] Number
[ ] Place Value
[ ] Fractions, Decimals & Percentages
[ ] Geometry
[ ] Measurement
[ ] Algebra
[ ] Statistics
[ ] Supporting materials such as Bar Modelling
[ ] Year 5 Content

Now narrow these down into three particular units you plan to focus on in year 1 of your subject knowledge development. For example, you might have selected algebra above but wish to focus particularly on A1, A3 and A5. We'd recommend selecting units that cover no more than three tutorials per hour of CPD time.

The tutorials I'll start with are:

1.

2.

3.

Notes / Reflections:

Review Date:

Support

For support, contact info@themathematicalcpdlibrary.com or reach out via social media.