Year 6 Maths- Medium Term Planning

Lesson 1 -	Lessons in black are key lessons that have to be taught
Lesson 2 -	Lessons in brown are lessons that can be combined into one or another key lesson
Lesson 4 -	Lessons in grey are lessons that can be taught if time allows to consolidate, these resources can be used to support the delivery of white days/journaling

Year 6 Lesson Breakdown

Number and Place Value: Numbers to 10 Million

Maths — No Problem! Book Reference	**Lesson Name**	**Lesson Objective**
Chapter 1 – Numbers to 10 Million	Lesson 1 – Reading and Writing Numbers to 10 Million	To construct and record numbers to 10 000 000; to recognise the value of digits to 10 000 000.
	Lesson 2 – Comparing Numbers to 10 Million	To compare numbers to 10 000 000 using place value.
	Lesson 3 – Comparing and Ordering Numbers to 10 Million	To compare and order numbers to 10 000 000; to create combinations of numbers using a fixed number of digits.
	Lesson 4 – Rounding Numbers	To round numbers to 10 000 000 to the nearest million, hundred thousand and ten thousand.
	Lesson 5 – Rounding Numbers	To round numbers to the nearest appropriate number up to and including millions; to determine when rounding is appropriate and to which value.

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Year 6 Lesson Breakdown

Calculations: Four Operations on Whole Numbers

Maths — No Problem! Book Reference	**Lesson Name**	**Lesson Objective**
Chapter 2 – Four Operations on Whole Numbers	Lesson 1 – Using Mixed Operations	To use multiple operations and create expressions from a picture; to use the order of operations to solve expressions.
	Lesson 2 – Order of Operations	To create and solve expressions using the four operations.
	Lesson 3 – Multiplying by Tens	To multiply numbers by multiples of 10; to use number bonds as a key strategy in multiplication.
	Lesson 4 – Multiplying a 3-Digit Number by a 3-Digit Number	To multiply 3- and 4-digit numbers by 2-digit numbers without regrouping or renaming; to use both number bonds and the column method as key strategies.
	Lesson 5 – Multiplying by a 2-Digit Number	To multiply 3- and 4-digit numbers by 2-digit numbers without regrouping or renaming; to use both number bonds and the column method as key strategies.
	Lesson 6 – Multiplying a 3-Digit Number by a 2-Digit Number	To multiply 3- and 4-digit numbers by 2-digit numbers with regrouping and renaming; to use number bonds and pattern recognition as key strategies for multiplication.
	Lesson 7 – Multiplying a 4-Digit Number by a 2-Digit Number	To multiply 3- and 4-digit numbers by 2-digit numbers with regrouping and renaming; to use number bonds and the column method as key strategies.
	Lesson 8 – Multiplying by a 2-Digit Number	To estimate products of multiplying 3- and 4-digit numbers by a 2-digit numbers; to use knowledge of multiplication to create specific products.
	Lesson 9 – Dividing by a 2-Digit Number	To divide 3-digit numbers by 2-digit numbers using a variety of strategies; to use number bonds, long division and bar models to facilitate division by 2-digit numbers.
	Lesson 10 – Dividing by a 2-Digit Number	To divide 4-digit numbers by 2-digit numbers; to use number bonds and long division as the key strategies.
	Lesson 11 – Dividing by a 2-Digit Number	To divide 4-digit numbers by 2-digit numbers using a variety of methods; to use number bonds, long and short division as key methods.
	Lesson 12 – Dividing by a 2-Digit Number with Remainder	To divide 3-digit numbers by 2-digit numbers giving rise to remainders; to use number bonds and long and short division as key strategies to solve division problems.

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Year 6 Lesson Breakdown

Calculations: Four Operations on Whole Numbers – Continued

Maths — No Problem! Book Reference	**Lesson Name**	**Lesson Objective**
Chapter 2 – Four Operations on Whole Numbers	Lesson 13 - Dividing by a 2-Digit Number with Remainder	To divide 4-digit numbers by 2-digit numbers giving rise to a remainder; to represent the remainder as part of a whole amount of money or decimal.
	Lesson 14 - Solving Word Problems Using Bar Models	To use the bar model heuristic to solve word problems involving multiplication and division.
	Lesson 15 - Solving Word Problems Using Patterns	To solve word problems using division as the main strategy; to use pictorial representations to support word problems.
	Lesson 16 - Solving Word Problems Using Multiple Methods	To solve word problems involving multiple operations, including multiplication and division.
	Lesson 17 - Finding Common Multiples	To find common multiples in real-life situations; to use common multiples in tandem with knowledge of time.
	Lesson 18 - Finding Common Multiples	To use common multiples to solve problems; to organise mathematical thinking into tables and lists.
	Lesson 19 - Finding Common Factors	To find the largest common factor of 3-digit numbers; to use multiplication and division to find largest common factors.
	Lesson 20 - Finding Common Factors	To find common factors using concrete materials.
	Lesson 21 - Finding Prime Numbers	To use prime numbers to create other numbers; to explore prime numbers above 100.
	Lesson 22 - Finding Prime Numbers	To explore prime numbers using concrete materials; to identify prime numbers using multiplication or division.

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Year 6 Lesson Breakdown

Fractions, Decimals and Percentages: Fractions

Maths — No Problem! Book Reference	**Lesson Name**	**Lesson Objective**
Chapter 3 – Fractions	Lesson 1 - Simplifying Fractions Using Common Factors	To use concrete materials to simplify fractions; to recognise equivalence in fractions to 1/4.
	Lesson 2 - Simplifying Fractions Using Common Factors	To simplify fractions using division and common factors; to represent fractions using concrete materials and pictorial representations.
	Lesson 3 - Comparing and Ordering Proper Fractions	To compare fractions and place them in order from smallest to largest.
	Lesson 4 - Comparing and Ordering Improper Fractions	To compare and order fractions by finding common denominators.
	Lesson 5 - Comparing and Ordering Fractions and Mixed Numbers	To compare and order fractions using common factors.
	Lesson 6 - Adding and Subtracting Unlike Fractions	Adding and subtracting fractions with different denominators; using pictorial representations to compare fractions and add/subtract.
	Lesson 7 - Adding and Subtracting Unlike Fractions	To add and subtract fractions with different denominators.
	Lesson 8 - Adding and Subtracting Mixed Numbers	To add and subtract mixed numbers, including fractions with different denominators; to subtract from the whole and add the remainder back on.
	Lesson 9 - Adding and Subtracting Mixed Numbers	To add and subtract fractions with different denominators; to add and subtract mixed numbers.
	Lesson 10 - Multiplying Pairs of Proper Fractions	To multiply fractions using pictorial representations and abstract methods.

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Year 6 Lesson Breakdown

Fractions, Decimals and Percentages: Fractions – Continued

Maths — No Problem! Book Reference	**Lesson Name**	**Lesson Objective**
Chapter 3 – Fractions	Lesson 11 - Multiplying Pairs of Proper Fractions	To determine if the commutative law applies to fractions; to multiply fractions using concrete materials and pictorial representations.
	Lesson 12 - Multiplying Pairs of Proper Fractions	To use concrete materials to understand and solve the multiplication of fractions; to simplify equations using pattern blocks.
	Lesson 13 - Dividing a Fraction by a Whole Number	To divide a fraction by a whole number; to use pictorial representation to divide whole numbers into fractions.
	Lesson 14 - Dividing a Fraction by a Whole Number	To divide fractions by whole numbers using concrete materials and pictorial representations; to divide fractions when the numerator and divisor are not easily divisible.
	Lesson 15 - Dividing a Fraction by a Whole Number	To divide fractions by a whole number; to use pictorial representations to support division.

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Year 6 Lesson Breakdown

Fractions, Decimals and Percentages: Decimals

Maths — No Problem! Book Reference	**Lesson Name**	**Lesson Objective**
Chapter 4 – Decimals	Lesson 1 - Reading and Writing Decimals	To read and write decimals to thousandths; to use concrete materials to represent decimals.
	Lesson 2 - Dividing Whole Numbers by Multiples of 10	To divide whole numbers by larger whole numbers; to use Base 10 materials to represent tenths, hundredths and thousandths.
	Lesson 3 - Dividing Whole Numbers	To divide whole numbers that give rise to decimals; to calculate decimal fraction equivalents using long division.
	Lesson 4 - Writing Fractions as Decimals	To convert fractions into decimals using bar models and long division.
	Lesson 5 - Writing Fractions as Decimals	To write fractions as decimals; to use long division as the key strategy for turning fractions into decimals.
	Lesson 6 - Multiplying Decimals without Renaming	To multiply decimals by whole numbers using partitioning or the worded method to help find the solution.
	Lesson 7 - Multiplying Decimals with Renaming	To multiply whole numbers that include a decimal by other whole numbers; to use partitioning and the worded method as key strategies.
	Lesson 8 - Multiplying Decimals with Regrouping	To multiply decimals by whole numbers, including regrouping and renaming.
	Lesson 9 - Multiplying Decimals with Renaming	To multiply decimals by whole numbers using a variety of methods; to use the heuristic 'making a list' to help solve a problem.
	Lesson 10 - Dividing Decimals without Renaming	To divide decimals using number bonds and number discs as the key strategies.

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Year 6 Lesson Breakdown

Fractions, Decimals and Percentages: Decimals – Continued

Maths — No Problem! Book Reference	**Lesson Name**	**Lesson Objective**
	Lesson 11 – Dividing Decimals with Renaming	To divide decimals using bar models, number bonds and long division as key strategies, including regrouping and renaming.
	Lesson 12 – Multiplying a Decimal by a 2-Digit Whole Number	To multiply decimals by a 2-digit whole number using number discs and the column method.
	Lesson 13 – Dividing a Decimal by a 2-Digit Whole Number	To divide decimals by 2-digit numbers using number bonds and the worded method.
	Lesson 14 – Dividing a Decimal by a 2-Digit Whole Number	To divide decimals by 2-digit whole numbers using number bonds and the worded method.

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Year 6 Lesson Breakdown

Measurement: Measurements

Maths — No Problem! Book Reference	**Lesson Name**	**Lesson Objective**
Chapter 5 – Measurements	Lesson 1 - Converting Units of Length : Millimetres and Centimetres	To convert common measurements into centimetres and millimetres.
	Lesson 2 - Converting Units of Length : Metres and Centimetres	To convert units of measure into different units; to use knowledge of decimals and fractions to help convert units.
	Lesson 3 - Converting Units of Length : Kilometres and Metres	To convert metres into kilometres as units of measure.
	Lesson 4 - Converting Units of Length: Miles and Kilometres.	To convert distances between miles and kilometres.
	Lesson 5 - Converting Units of Mass	To convert units of mass from grams to kilograms using decimals and fractions.
	Lesson 6 - Converting Units of Volume	To convert units of volume from millilitres to litres.
	Lesson 7 - Converting Units of Time	To convert units of time from minutes to hours; to represent time using 24-hour notation.

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Year 6 Lesson Breakdown

Word Problems

Maths — No Problem! Book Reference	**Lesson Name**	**Lesson Objective**
Chapter 6 – Word Problems	Lesson 1 - Solving Word Problems	To use bar models to solve word problems involving the four operations.
	Lesson 2 - Solving Word Problems	To use the bar model heuristic to solve word problems involving money.
	Lesson 3 - Solving Word Problems	To use the bar model heuristic to solve complex word problems involving ratio.
	Lesson 4 - Solving Word Problems	To use the bar model heuristic to solve complex word problems involving time.
	Lesson 5 - Solving Word Problems	To solve word problems that apply the bar model heuristic and involve fractions.
	Lesson 6 - Solving Word Problems	To create and solve complex word problems using the four operations.

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Year 6 Lesson Breakdown

Fractions, Decimals and Percentages: Percentage

Maths — No Problem! Book Reference	**Lesson Name**	**Lesson Objective**
Chapter 7 – Percentage	Lesson 1 – Finding the Percentage of a Number	To find the percentage of a whole number using division and multiplication; to use bar modelling as a pictorial approach to calculating percentage.
	Lesson 2 – Finding the Percentage of a Quantity	To find the percentage of a quantity; to use bar model diagrams to support the division and multiplication of numbers towards the percentage.
	Lesson 3 – Finding Percentage Change	To find the percentage change in an amount over time; to calculate the percentage change where the number gives rise to a decimal.
	Lesson 4 – Using Percentage to Compare	To use percentage, bar models and fractions to compare amounts.

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Year 6 Lesson Breakdown

Ratio and Proportion: Ratio

Maths — No Problem! Book Reference	**Lesson Name**	**Lesson Objective**
Chapter 8 – Ratio	Lesson 1 - Comparing Quantities	To use ratios and fractions to compare objects; to find the relationship between ratios, percentages and fractions.
	Lesson 2 - Comparing Quantities	To determine the ratio of a quantity using concrete materials; to simplify ratios using concrete materials in addition to division.
	Lesson 3 - Comparing Several Quantities	To compare more than two quantities using the term 'ratio'; to use bar models to express ratios where there is more than one quantity.
	Lesson 4 - Finding Quantities from Ratios	To use ratio to count quantities.
	Lesson 5 - Ratios with Measurements	To use ratio to measure quantities.
	Lesson 6 - Finding Ratios	To compare quantities by writing a ratio.
	Lesson 7 - Comparing Ratios to Find a Quantity	To apply knowledge of ratios to word problems.
	Lesson 8 - Word Problems Involving Ratio	To solve word problems involving ratio.
	Lesson 9 - Word Problems Involving Ratio	To apply the advanced bar model heuristic to ratio word problems.
	Lesson 10 - Word Problems Involving Ratio	To apply the advanced bar model heuristic to ratio word problems.

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Year 6 Lesson Breakdown

Algebra: Algebra

Maths — No Problem! Book Reference	**Lesson Name**	**Lesson Objective**
Chapter 9 – Algebra	Lesson 1 – Describing a Pattern	To determine a pattern using concrete materials and pictorial representation; to use a table to identify a repeating pattern; to express a rule using a letter or symbol.
	Lesson 2 – Describing a Pattern	To determine a pattern using concrete materials and pictorial representation; to use a table to identify a repeating pattern; to express the relationship between consecutive numbers in terms of a symbol or letter.
	Lesson 3 – Describing a Pattern	To determine a pattern using concrete materials and pictorial representation; to use a table to identify a pattern; to express the relationship between consecutive numbers in terms of a symbol or letter.
	Lesson 4 – Describing a Pattern	To determine a pattern using concrete materials and pictorial representation; to use a table to identify a pattern; to express unknown numbers in terms of a letter or symbol, including using a number before a letter for multiplication.
	Lesson 5 – Writing Algebraic Expressions	To use a table to identify a pattern; to write algebraic expressions.
	Lesson 6 – Writing Algebraic Expressions	To be able to express a missing number algebraically.
	Lesson 7 – Writing and Evaluating Algebraic Expressions	To be able to express missing number problems algebraically.
	Lesson 8 – Writing Formulae	To recognise patterns; to write and evaluate algebraic expressions with two steps; to write and use formulae.
	Lesson 9 – Using Formulae	To use formulae to solve problems; to replace a letter/variable with a number then solve the equation; to use inverse operations to solve equations.
	Lesson 10 – Solving Equations	To solve equations; to use equations to find unknown values.

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Year 6 Lesson Breakdown

Measurement: Area and Perimeter

Maths — No Problem! Book Reference	**Lesson Name**	**Lesson Objective**
Chapter 10 – Area and Perimeter Lessons 1-6	Lesson 1 - Finding the Perimeter and the Area of Rectangles	To find the area and perimeter of rectangles; to calculate perimeter using the known area and vice versa.
	Lesson 2 - Finding the Base and Height of Triangles	To identify the base and height of a triangle.
	Lesson 3 - Finding the Area of Triangles	To use prior knowledge of area to determine and solve the area of a triangle; to use and apply the formula for the area of a rectangle to solve problems involving triangles.
	Lesson 4 - Finding the Area of Parallelograms	To find the area of a parallelogram using an understanding of triangles; to use concrete materials to find the area of a parallelogram.

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Year 6 Lesson Breakdown

Geometry – Properties of Shapes: Geometry

Maths — No Problem! Book Reference	**Lesson Name**	**Lesson Objective**
Chapter 12 – Geometry Lessons 1–5	Lesson 1 – Investigating Vertically Opposite Angles	To investigate opposite angles; to use prior knowledge of angles to solve problems involving angles.
	Lesson 2 – Solving Problems Involving Angles	To solve problems involving angles using the bar model heuristic; to solve problems involving angles without protractors.
	Lesson 3 – Investigating Angles in Triangles	To determine and show the sum of the angles inside a triangle.
	Lesson 4 – Investigating Angles in Quadrilaterals	To investigate and determine angles in quadrilaterals.
	Lesson 5 – Finding Angles in Polygons	To use the knowledge of angles inside a triangle and a quadrilateral to solve problems involving angles in other shapes.

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Year 6 Lesson Breakdown

Geometry – Position and Direction: Position and Movement

Maths — No Problem! Book Reference	**Lesson Name**	**Lesson Objective**
Chapter 13 – Position and Movement Lessons 1–5	Lesson 1 – Showing Negative Numbers	To represent negative numbers on both vertical and horizontal number lines.
	Lesson 2 – Describing Position	To describe the positions of objects on a coordinate grid; to use x and y axes to determine the position of objects on a grid.
	Lesson 3 – Describing Position	To describe the position of points using coordinates on a grid.
	Lesson 4 – Drawing Polygons on a Coordinate Grid	To draw polygons on a coordinate grid; to recognise polygons on a coordinate grid.
	Lesson 5 – Describing Translations	To describe the translation of shapes on a coordinate grid.

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Year 6 Lesson Breakdown

Statistics: Graphs and Averages

Maths — No Problem! Book Reference	**Lesson Name**	**Lesson Objective**
Chapter 14 – Graphs and Averages	Lesson 1 – Understanding Averages	To calculate the average (mean) of sets of values.
	Lesson 2 – Calculating the Mean	To calculate the mean.
	Lesson 3 – Calculating the Mean	To calculate the mean.
	Lesson 4 – Solving Problems Involving the Mean	To solve problems involving the mean; to use the mean and the number of values to calculate the total; to use given information to find unknown values.
	Lesson 5 – Reading Pie Charts	To read and interpret pie charts.
	Lesson 6 – Reading Pie Charts	To read and interpret pie charts.
	Lesson 7 – Reading Pie Charts	To read and interpret pie charts; to use percentages in pie charts.
	Lesson 8 – Reading Pie Charts	To read and interpret pie charts; to use knowledge of angles to interpret pie charts.
	Lesson 9 – Reading Line Graphs	To read line graphs; to interpret the information in line graphs that show distance and time.
	Lesson 10 – Reading Line Graphs	To read and interpret line graphs; to answer questions about the information in line graphs.
	Lesson 11 – Converting Miles and Kilometres	To convert miles into kilometres and kilometres into miles.

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Year 6 Lesson Breakdown

Number and Place Value: Negative Numbers

Maths — No Problem! Book Reference	**Lesson Name**	**Lesson Objective**
Chapter 15 – Negative Numbers	Lesson 1 – Adding and Subtracting Negative Numbers	To add and subtract negative numbers using a number line.
	Lesson 2 – Using Negative Numbers	To create number stories using negative numbers.

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Year 6 Lesson Breakdown

Measurement: Volume

Maths — No Problem! Book Reference	**Lesson Name**	**Lesson Objective**
Chapter 11 – Volume	Lesson 1 - Finding the Volume of Cuboids	To find the volume of cubes and cuboids using concrete materials.
	Lesson 2 - Finding the Volume of Cuboids	To determine the formula for the volume of cubes and cuboids and apply it to calculate the volume of shapes.
	Lesson 3 - Finding the Volume of Cuboids	To estimate the volume of objects and spaces; to calculate the volume of boxes using the formula for volume of cubes and cuboids.
	Lesson 4 - Finding the Volume of Cuboids	To calculate, estimate and compare the volume of cubes and cuboids.
	Lesson 5 - Solving Problems Involving Volume	To solve word problems involving the volume of cubes and cuboids; to apply the formula for the volume of a cube or cuboid.

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Year 6 Lesson Breakdown

Geometry – Properties and Shapes: Geometry

Maths — No Problem! Book Reference	**Lesson Name**	**Lesson Objective**
Chapter 12 – Geometry Lessons 6–12	Lesson 6 – Naming Parts of a Circle	To name the parts of a circle; to calculate diameter and radius using parts of a circle.
	Lesson 7 – Solving Problems Involving Angles in a Circle	To solve problems involving angles in a circle.
	Lesson 8 – Drawing Quadrilaterals	To draw quadrilaterals with specific side lengths and parallel lines; to find the perimeter of shapes and name trapeziums and parallelograms.
	Lesson 9 – Drawing Triangles	To draw triangles using measurements and angles as the starting point; to use a protractor to draw triangles using angles.
	Lesson 10 – Drawing Triangles	To construct triangles using a protractor and ruler; to use ratio to determine the dimensions of a triangle.
	Lesson 11 – Drawing Nets of 3D Shapes	To construct the nets of 3D shapes by identifying the faces and the 2D shapes that construct them.
	Lesson 12 – Drawing Nets of 3D Shapes	To construct the nets of 3D shapes by identifying the faces and the 2D shapes that construct them.

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Year 6 Lesson Breakdown

Geometry – Position and Direction: Position and Movement

Maths — No Problem! Book Reference	**Lesson Name**	**Lesson Objective**
Chapter 13 – Position and Movement Lessons 6–10	Lesson 6 – Describing Reflections	To describe reflection using a mirror line and the terms ‘object’ and ‘image’.
	Lesson 7 – Describing Movements	To reposition objects so they can be reflected in the x and y axis as the mirror line.
	Lesson 8 – Describing Movements	To describe the movement of objects using the terms ‘translation’ and ‘reflection’.
	Lesson 9 – Using Algebra to Describe Position	To use algebra to describe the positions of coordinates in relationship to one another.
	Lesson 10 – Using Algebra to Describe Movements	To represent translation and reflection using algebraic notation.

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