Medium term Plans for Autumn Term Year 6 – Beecroft Primary School

Week	Main focus of teaching and activities each day	Starter	Outcomes and plenary for each day
1	**Mental skills for week:** Order 5-digit numbers Count in steps of 1 though multiples of 100, 1000, 10,000 and 100,000 Place value in 6-digit numbers Times tables and square numbers/ square roots.		
	Vocabulary for week: PLACE VALUE, ORDERING AND ROUNDING units, ones, tens, hundreds, thousands, ten thousand, hundred thousand, million, digit, one-, two-, three- or four-digit number, place, place value, stands for, represents, the same number as, as many as, equal to, >, greater than, more than, larger than, bigger than, <, less than, fewer than, smaller than, ≥, greater than or equal to, ≤, less than or equal to, greatest, most, largest, biggest, least, fewest, smallest one… ten… one hundred… one thousand more/less, compare, order, size, ascending/descending order PROPERTIES OF NUMBERS AND NUMBER SEQUENCES square number, one squared, two squared… , prime, prime factor		
	Place value/Addition **Day 1:** Place value in 6-digit numbers <u>Key questions</u> • Where do the commas go when you write one million in figures? • If 1,000,000 is the whole, what could the parts be? • How else can you partition the number? • What is the value of each digit in the number? • Which columns will change if you add/subtract 10, 100,	**Day 1:** Order 5-digit numbers Ask each child to write a number between 40,000 and 50,000 on their w/bs. Each group work together to put their w/bs in ascending order. Fastest group wins! Repeat with different ranges. **Day 2:** Count in steps of 1 though multiples of 100, 1000, 10,000 and 100,000 Write the following numbers on the board: 478,597, 367,497, 839,998, 299,995. Chn copy them and write the next 5 numbers after each. **Day 3:** Place value in 6-digit numbers	***Place value/Addition*** **Day 1:** Chn use the digits 2, 3, 4, 5, 6 and 7 to make four different 6-digit numbers and write them on their w/bs. *Ring a number where: 6 is worth 60,000 / 3 is worth 3000 / 4 is worth 400…* **Day 2:** Chn work in groups. Ask chn to write 245,865, then pass to the next child to add 10, writing the answer underneath. Keep going until past 245,900. Repeat but this time count in steps of 100 through 256,000.

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	1,000, … to/from the number? • When do you use placeholders in numbers? (PV additions/subtractions). CGP BK 6 pg. 2 and 6 Busy Ant 6A pg. 6-7 and 12-15 Target Bk. 6 pg 4-5 **Day 2:** Add and subtract 1s, 10s, 100s, 1000s, 10,000s and 100,000s. CGP Bk. 6 pg 13-14 Complete the number sentences such as: 604,821 = 600,000 + ? + ? + 20 + 1 ? = 300,000 + 4,000 + 700 + 4 2,000 + 8 + 60,000 + 500 + 700,000 = ? **Day 3:** Place 6-digit numbers on a line and compare pairs of numbers; use < and >. No. lines in Number Y6 lever arch folder WR Autumn compare and order nos to 10,000,000	What number is shown in the Gattegno chart? Look at how the chart works …. Chn play in pairs. They each write a 6-digit number, then take it in turns to roll a 0–9 dice. If the number rolled is a digit in their number they subtract the number it represents, E.g. they write 572,689 and roll 7, they subtract 70,000. First child to reach zero wins. **Day 4:** Investigate the Gattegno chart. Are the statements true or false? Adding ten thousand to a number only ever changes the digits in exactly one column. The number consisting of 70 thousands and 400 ones is 700,400 3 ten-thousands is the same as 30 thousands. 400 hundreds is the same as 4 ten-thousands. A large number added to a large number is always a large number. A large number subtracted from a large number is always a large number.	**Day 3:** Longer session - Reasoning with written explanation What is the value of the digit 5 in each of these numbers? a. 720,541 b. 5,876,023 c. 1,587,900 d. 651,920 e. 905,389 f. 2,120,806.50 g. 8,002,345 h. 701,003.15 Write a seven-digit number that includes the digit 8 once, where the digit has a value of: a. 8 million b. 8 thousand c. 8 hundred d. 80 thousand Fill in the missing symbols (< or >). 7,142,294 7,124,294 □ 99,000 600,000 □ 6,090,100 690,100 □ 1,300,610 140,017 □

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	See June 2020 document for assessment questions **Day 4:** Complete the part-whole model to show the number 2,046,143 WR … also try with other numbers Teacher planned revision of all work covered so far. CGP BK 6 pg. 8 and 9 **Day 5:** Use column addition to add pairs of 5-digit numbers with 6-digit answers. CGP BK 6 pg. 15 Busy Ant 6A pg. 52-52 / Target bk. 6 pg 10	**Day 5:** Times tables and square numbers. Square numbers and square roots. Triangular numbers. Camb 6A pg. 30 – 35 / WR Autumn Term Are the squares of even/odd numbers even or odd? Are the cubes of even/odd numbers even or odd? Can a number be both a square number and a cube number?	589,940 1,010,222 ? Put these numbers in order from smallest to largest. 8,102,304 8,021,403 843,021 8,043,021 **Day 4:** Pg 23. June 2020 curriculum doc – assessment Qs **Day 5:** Teacher feedback based on assessment
2	**Mental skills for week:** Counting on and back in steps of powers of ten (in tens, hundreds, thousands, tens of thousands, hundreds of thousands and in millions) Children will use their understanding of place value to support counting on or back, including with the use of an empty number line: 1,960 + 300 count on in hundreds from 2,960 12,250 + 260 count on in hundreds and then tens from 12,250 25,458 + 3,000 count on in thousands from 25,458 25,250 + 5,500 count on in thousands and then hundreds from 25,250 1,456,250 + 60,000 count on in tens of thousands from 1,456,250 2,256,500 + 200,000 count on in hundreds of thousands from 2,256,500 3,450,000 + 4,000,000 count on in millions from 3,450,000 Understand place value in numbers with 2 decimal places. Count in steps of 0.01 and 0.1 through multiples of 0.1 and 1		

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<table>
<tr><td></td><td colspan="3">Pairs of nos with 1dp and a total of 10
Round nos with 2dp to nearest 1 and 0.1</td></tr>
<tr><td></td><td colspan="3">Vocabulary for week:
FRACTIONS, DECIMALS, PERCENTAGES, RATIO AND PROPORTION decimal, decimal fraction, decimal point, decimal place, percentage, per cent, %
ADDITION AND SUBTRACTION add, addition, more, plus, increase, sum, total, altogether, ,score, double, near double, how many more to make…? subtract, subtraction, take (away), minus, decrease, leave, how many are left/left over? difference between</td></tr>
<tr><td></td><td>Decimals/Addition
Day 1: Understand place value in numbers with three decimal places.
WR- Year 6 | Spring term | Block 3 – Decimals | Step 1 and Step 2

Key questions
• What does each digit in a decimal number represent?
How do you know?
• How many tenths/hundredths/thousandths are there in
1 whole?
• How many thousandths are there in 1 hundredth?
• What is the value of the digit in the number?
• Which is greater, 0.3 or 0.14?
How do you know?

Camb 6B pg. 4 -7</td><td>Day 1: Look at numbers that are less than 1. Draw no. line on board with tenths – order. Introduce hundredths where do they go? Demo on activity as a class on board.
Place nos with 2dp on a line
Chn play in pairs. They shuffle a pack of 0–9 cards and sketch a 0–1 line for them both to use. The 1st child takes 4 cards and uses them in order to make a pair of numbers to mark on the line, e.g. 0.36 and 0.47. The other child takes the next two cards and tries to make a number in between.

Day 2: Count in steps of 0.01 and 0.1 through multiples of 0.1 and 1 Camb 6A pg. 8-9
Count round the class in steps of 0.01 from 4.85 to at least 5.15 and back. Count in steps of 0.1 from 2.34 to at least 4.44 and back.

Day 3: Pairs of no.s with 1dp and a total of 10</td><td>Decimals/Addition
Day 1: Ask chn to think of a number between 3 and 4 with 3 decimal places. They work as a group to put them in order.

Day 2:
Complete the sentences.
a. 500 made 1,000 times the size is x.
b. 0.7 made 100 times the size is x .
c. 800,000 made 10 times the size is x.
d. 4,000,000 made one-thousandth times the size is x.
e. 9,000 made one-hundredth times the size is x.
f. 3 made one-tenth times the size is x.</td></tr>
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	Day 2: Multiply and divide by 10, 100 and 1000. WR - Year 6 | Spring term | Block 3 – Decimals | Step 5 Move digits around decimal point on grid Target Bk. 6 pg. 54-55 / Camb 6+ pg 50 / CGP Bk 6 pg 57-58 **Day 3:** Place numbers with 3 decimal places on lines; round to the nearest 0.01, 0.1 or 1; Compare 2 numbers. Rounding decimals WR - Year 6 | Spring term | Block 3 – Decimals | Step 3 & Camb 6C pg 8 Ordering decimals Camb 6C pg 6-7 / Camb 6+ pg 22-23 / WR Spring **Day 4:** Teacher planned revision of all work covered so far Add 2 or 3 amounts of money using column addition / subtraction; Use rounding to check answers. **Day 5:** Add 2 or 3 numbers with 2 decimal places	Play 'ping pong'. You call out a number with one decimal place, e.g., 3.6. Chn say the complement to 10, e.g., 6.4. Occasionally say 'ping' to which they reply 'pong'. Round nos with 2dp to nearest 1 and 0.1 **Day 4:** Longer session –introduce counting on and back in steps of powers of ten **Day 5:** Continue counting on and back in steps of powers of ten	The distance from London to Bristol is about 170km. The distance from London to Sydney, Australia is about 100 times as far. Approximately how far is it from London to Sydney? A newborn elephant weighs about 150kg. A newborn kitten weighs about 150g. How many times the mass of a newborn kitten is a newborn elephant? **Day 3**: NRICH link: **Round the Dice: Decimals 2** There are three dice, each of them with faces labelled from 1 to 6. When the dice are rolled they can be combined in six different ways to make a number less than 10 with two decimal places. For example, if I roll a 2, a 3 and a 6, I can combine them to make 2.36, 2.63, 3.26, 3.62, 6.23 or 6.32. Now round each of these numbers to the nearest whole number: 2.36 rounds to 2, 2.63 rounds to 3, 3.26 rounds to 3, 3.62 rounds to 4, 6.23 rounds to 6 and 6.32 rounds to 6. Repeat for other rolls of the dice. Can each of the six numbers round to the same whole number?

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	WR - Year 6 | Spring term | Block 3 – Decimals | Step 4 Busy Ant 6A pg. 16-17 / Camb 6C pg 10-11 Then in a measures context, e.g., metres; Use rounding to check answers. **Quick Rising Stars arithmetic - timed**		Can each of the six numbers round to a different whole number? **Day 4:** June 2020 document pg 35 **Day 5:** A scientist has added a pair of distances from the following, but can't remember which they were! Write 12.46m, 9.78m, 10.24m and 11.67m on the board. She only needed the answer to the nearest metre, and this as 24m. Which two numbers do you think she added?
3	**Mental skills for week:** Counting on and back in steps of powers of ten (in tens, hundreds, thousands, tens of thousands, hundreds of thousands and in millions) Children will use their understanding of place value to support counting on or back, including with the use of an empty number line: 1,045 – 200 count back in hundreds from 1,045 12,936 – 720 count back in hundreds and then tens from 12,936 125,856 – 235 count back in hundreds, tens and ones from 5,856 165,452 – 5,000 count back in thousands from 165,452 261,456 – 30,000 count back in tens of thousands from 261,456 1,857,450 – 500,000 count back in hundred thousand from 1,857,450 5,250,000 – 3,000,000 count back in millions from 5,250,000 Add several prices, then use a number line to find change from £50 and £100 How the times would appear on a digital clock that uses 24-hour format		
	Vocabulary for week:		

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	ADDITION AND SUBTRACTION add, addition, more, plus, increase, sum, total, altogether, score, double, near double, how many more to make…? subtract, subtraction, take (away), minus, decrease, leave, how many are left/left over? difference between TIME digital/analogue clock/watch, timer, 24-hour clock, 12-hour clock MONEY coin, note, price, cost, spend, spent, pay, change, dear, costs more, more/most expensive, cheap, costs less, cheaper, less/least expensive, how much…? how many…? total, amount, value, worth, discount, profit, loss, currency		
	Addition and subtraction **Day 1:** Add several prices, then use number line to find change from £50 and £100. Then larger multiples of notes. **Day 2:** Subtract amounts of money. WR Autumn Term. **Day 3:** Revise using column subtraction (decomposition) to subtract pairs of 5-digit numbers / Subtracting numbers to 3dp Camb 6C pg 12-13 / CGGP Bk. 6 pg 16 **Day 4: Teacher planned revision of all work covered so far** Use column subtraction (decomposition) from 7-digit numbers. **Day 5:** Mixed problems from work covered so far – reasoning.	**Day 1:** Continue counting on and back in steps of powers of ten **Day 2:** Continue counting on and back in steps of powers of ten **Day 3:** Add several prices, then use a number line to find change from £50 and £100 Choose two items and prices and ask chn to find the total, e.g. £38.79 and can use number line to help us to find how much change we would get from £50.  **Day 4:** As Wednesday **Day 5:** Ask chn to write on their w/bs how the times would appear on a digital clock that uses 24-hour format, not am and pm. Remind chn that they need to add 12 hours to each time as the 24-hour clock continues on from noon rather than starting again at 1.	***Addition and subtraction*** **Day 1:** Teacher feedback **Day 2:** Subtracting sequences until reach negative numbers **Day 3:** Finding Fifteen: NRICH Tim had nine cards, each with a different number from 1 to 9 on it. He put the cards into three piles so that the total in each pile was 15. How could he have done this? Can you find all the different ways Tim could have done this? **Day 4:** Two numbers have a difference of 2·38. The smaller number is 3·12. What is the bigger number? Two numbers have a difference of 2·3. They are both less than 10. What could the numbers be?

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			Day 5: Past paper Qs
4	**Mental skills for week:** Children will partition the second number and then add/subtract, including with the use of an empty number line: 6,540 + 1,284 = 6,540 +1,000 + 200 + 80 +4 8,456 - 2,500 = 8,456 - 2,000 - 500 455,460 + 2,458 = 455,460 + 2,000 + 400 + 50 + 8 Describe 2D shapes Recognise acute, obtuse, reflex angles Classify and sort quadrilaterals		
	Vocabulary for week: ADDITION AND SUBTRACTION add, addition, more, plus, increase, sum, total, altogether, score, double, near double, how many more to make…? subtract, subtraction, take (away), minus, decrease, leave, how many are left/left over? difference between 2D SHAPES two-dimensional, circle, circular, semi-circle, triangle, triangular, equilateral triangle, isosceles triangle, scalene triangle square, rhombus, ,rectangle, rectangular, oblong, pentagon, pentagonal, hexagon, hexagonal, heptagon, octagon, octagonal, polygon quadrilateral, kite, parallelogram, trapezium, radius, diameter, centre, circumference ANGLES whole turn, half turn, quarter turn, rotate, rotation, angle, …is a greater/smaller angle than, right angle, acute, obtuse, reflex degree, straight line, stretch, bend, ruler, set square, angle measurer, compasses, protractor		
	Shape and angles **Day 1:** Name parts of circles. CGP BK 6 pg. 137-8 **Day 2:** Classify and sort quadrilaterals. Camb 6A pg. 42 – 43 Camb 6B pg. 48 -51 WR Summer Term	**Day 1:** Choose a shape. In pairs, chn write at least 5 facts about it. Take feedback to include: regular/non-regular; number of vertices/sides; number of right/obtuse/acute angles; lines of symmetry. Remind chn that a polygon only has straight sides, so a circle, oval, semi-circle are not polygons but are 2D shapes. Secretly choose a shape, chn work out which it is by asking questions about its properties to which you can only answer only 'yes' or 'no'.	***Shape and angles*** **Day 1:** Teacher feedback **Day 2:** Shape Venn diagrams **Day 3:** Choose options 'intersect' and 'show all' at http://www.visnos.com/demos/basic-angles

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	Day 3: Revise angles round a point on a line; Find missing angles. CGP BK 6 pg. 125-126 / Target Bk. 6 pg. 114-115 WR Summer Term Find that opposite angles are equal; find angles in polygons. Busy Ant 6B pg 22 – 27 / Camb 6+ pg 84 **Day 4:** Draw 2D shapes to given dimensions; know the totals of angles inside triangles and quadrilaterals; use to find missing angles. CGP BK 6 pg. 120-123 / Target Bk. 6 pg. 117 -121 / Busy Ant 6B pg 20-21 WR- Year 6 | Summer term | Block 1 – Shape | Step 4 WR - Are the statements true or false? A triangle can have three acute angles. A triangle can have two right angles. A triangle must have at least one obtuse angle. All three angles can be the same	**Day 2:** Polygon shape quiz focusing on quadrilaterals. **Day 3:** Chn split their w/bs in 4, and write acute, right angle, obtuse and reflex in each of the 4 parts. Click the dice at http://www.visnos.com/demos/basic-angles to show random angles of different sizes. Chn point to the corresponding section on their w/bs. Ask them then to write an angle in degrees in each section. **Day 4:** A rhombus has equal sides, only squares have equal angles too. Click on 'angles' at http://www.mathsisfun.com/geometry/quadrilaterals-interactive.html and each shape in turn. Move a point and see what happens to the shape, e.g. how the lengths of sides are always the same in a rhombus, a kite has one pair of opposite angles the same and two pairs of sides the same length, a trapezium has at least one pair of parallel sides, a parallelogram has two pairs of parallel sides, etc. Point out how a square is actually a special rectangle, parallelogram, kite or rhombus! Repeat, this time clicking on 'diagonals'. Discuss which shapes have diagonals perpendicular to one another, reminding chn that perpendicular means at right angles to each other. Draw one each of square, rectangle, parallelogram, trapezium, rhombus and kite. Draw a blank Venn diagram. *What criteria could we use to sort these quadrilaterals?* Take suggestions, e.g. at least one pair of parallel sides, at least one line of symmetry.	Drag one circle round to show the opposite angles and pairs to 180°. **Day 4:** Teacher feedback **Day 5:** Which internal angles make a triangle / quadrilateral? Which do not?

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	in a triangle. If one of the angles in a triangle is a right angle, the other two angles must be the same as each other. Explain your answers. **Day 5:** Teacher planned revision of all work covered so far **Half-termly times table check up**	**Day 5:** Longer session –introduce / develop mental skills. Children will partition the second number and then add/subtract, including with the use of an empty number line.	
5	**Mental skills for week:** Children use their understanding of place value to partition decimal numbers and then add/subtract: 12.75 + 5.25 = 12.75 + 5.00 + 0.2 + 0.05 Double and halve numbers to 200. Divisibility by 2, 3, 5, 6 and 9 To work with factors and multiples		
	Vocabulary for week: FRACTIONS, DECIMALS, PERCENTAGES, RATIO AND PROPORTION decimal, decimal fraction, decimal point, decimal place, percentage, per cent, % ADDITION AND SUBTRACTION add, addition, more, plus, increase, sum, total, altogether, score, double, near double, how many more to make…? subtract, subtraction, take (away), minus, decrease, leave, how many are left/left over? difference between MULTIPLICATION AND DIVISION lots of, groups of, times, multiply, multiplication, multiplied by, multiple of, product, once, twice, three times… ten times… times as (big, long, wide… and so on), repeated addition, array, row, column, double, halve, share, share equally one each, two each, three each… group in pairs, threes… tens, equal groups of, divide, division, divided by, divided into, remainder factor, quotient, divisible by, inverse		
	Multiplication and division/Fractions **Day 1:** Find common multiples and factors. CGP BK 6 pg. 32 / Board work and sample questions from CGP box of books in class.	**Day 1:** Double and halve numbers to 200. **Day 2:** Divisibility by 2, 3, 5, 6 and 9 Remind chn that a number is divisible by 3 (has 3 as a factor) if the digits add up to a multiple of 3. Write the following numbers on the board: 462, 753, 875, 3470,	***Multiplication and division/Fractions*** **Day 1:** Write the following on the board: Every number that has 8 as a factor must also have the factors □ and □. Children

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	Day 2: Identify prime numbers, recognising their properties; Find numbers which have a pair of prime factors (folder sheets). Target Bk. 6 pg. 34-35 / Camb 6C pg 38-41 ** learn rhyme **Day 3:** Find equivalent fractions; Simplify fractions using multiples and factors. Target Bk. 6 pg. 42 Busy Ant 6A pg. 36-37 WR Year 6 | Autumn term | Block 3 – Fractions A | Step 1 Equivalent fractions on a number line: WR Year 6 | Autumn term | Block 3 – Fractions A | Step 2 **Day 4:** Compare and order fractions with unrelated denominators. CGP BK 6 pg. 48 / Target Bk. 6 pg. 43 Busy Ant 6A pg. 38-39 WR Autumn Term **Day 5:** Find unit and non-unit fractions of amounts. Target Bk. 6 pg. 48 Camb 6B pg. 98-99	7515, 6346. Which of these are divisible by 3? Give chn time to write them on their w/bs. Which are divisible by 2? Which are divisible by 2 and 3? So are divisible by 6. Digit sum rule also works for multiples of 9. **Day 3:** Divisibility by 2, 3, 5, 6 and 9 – Venn and Carroll diagrams **Day 4:** Children use their understanding of place value to partition decimal numbers and then add/subtract: 12.75 + 5.25 = 12.75 + 5.00 + 0.2 + 0.05 **Day 5:** Children use their understanding of place value to partition decimal numbers and then add/subtract: 12.75 + 5.25 = 12.75 + 5.00 + 0.2 + 0.05	discuss in pairs. Take feedback and agree 2 and 4. **Day 2:** June 2020 doc pg 45/46 **Day 3:** In each number sentence, replace the boxes with different whole numbers less than 20 so that the number sentence is true: see mastery document page 19. **Day 4:** Chn write down as many fractions equivalent to ¼ as they can, including 1/8s and 1/12s. What do you notice about these fractions? The numerator is ¼ of the denominator, as a quarter of the pieces are needed to show ¼ of the whole. Write: 23/40, 20/100, 14/48, 14/60, 3/16. Which are less than ¼? **Day 5:** **Magic multiplication squares** Children complete a magic multiplication square using their knowledge of number properties and relationships. They then explore factors and multiples to

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	Fraction of an amount – find the whole WR - Year 6 | Autumn term | Block 4 – Fractions B | Step 7 **Half – termly arithmetic test – formal to be analysed** **Half – termly reasoning test – formal to be analysed**		create a new multiplication magic square. **Two Primes Make One Square NRICH** Flora had a challenge for her friends. She asked, "Can you make square numbers by adding two prime numbers together?" Ollie had a think. "Well, let me see... I know that 4 = 2 + 2. That's a good start!" Have a go yourself. Try with the squares of the numbers from 4 to 20.
6	**Mental skills for week:** Children will use their knowledge of number bonds and place value to partition in different ways when adding and subtracting, bridging through multiples of powers of ten: 5,296 + 234 = 5,296 + 4 + 230 8,564 – 170 = 8,584 – 164 – 6 5.6 + 3.5 = 5.6 + 0.4 + 3.1 Consider using an empty number line to record jottings Revise prime factors Count on/back in 25s from 4-digit numbers Count round the class in steps of 25 from 1000 to at least 1500.		

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<table>
<tr><td></td><td colspan="3">Multiply by multiples of 10 and 100 (e.g., 7 × 80)
Find the time later using 24-hour clock</td></tr>
<tr><td></td><td colspan="3">Vocabulary for week:
PROPERTIES OF NUMBERS AND NUMBER SEQUENCES square number, one squared, two squared… prime, prime factor
ADDITION AND SUBTRACTION add, addition, more, plus, increase, sum, total, altogether, score, double, near double, how many more to make…? subtract, subtraction, take (away), minus, decrease, leave, how many are left/left over? difference between
MULTIPLICATION AND DIVISION lots of, groups of, times, multiply, multiplication, multiplied by, multiple of, product, once, twice, three times… ten times… times as (big, long, wide… and so on), repeated addition, array, row, column, double, halve, share, share equally
one each, two each, three each… group in pairs, threes… tens, equal groups of, divide, division, divided by, divided into, remainder
factor, quotient, divisible by, inverse
TIME digital/analogue clock/watch, timer, 24-hour clock, 12-hour clock</td></tr>
<tr><td></td><td>Number/Multiplication
Day 1: Number sequences Camb 6B pg. 24 -31 / Target BK 6 pg 86-89

WR: Year 6 | Spring term | Block 1 – Ratio| Step 1
The relationship between 2 and 8 can be described as additive or multiplicative.

A sequence starts 3, 6 …
Explain why the next number could be 9
Explain why the next number could be 12

What could the next number be in these sequences?
5, 10 …
7, 21 …</td><td>Day 1: Revise prime factors & Count on/back in 25s from 4-digit numbers
Count round the class in steps of 25 from 1000 to at least 1500. Rpt this counting on from 1003, and back, then on from 1007.

Day 2: Multiply by multiples of 10 and 100 (e.g., 7 × 80)

Day 3: Longer session –introduce / develop mental skills – practise, jottings and applying - Children will use their knowledge of number bonds and place value to partition in different ways when adding and subtracting, bridging through multiples of powers of ten

Day 4: As Wednesday

Day 5: Find the time earlier/later using 24-hour clock. Add on increments of time.</td><td>Number/Multiplication
Day 1: Ramesh is exploring two sequence-generating rules.
Rule A is: ‘Start at 2, and then add on 5, and another 5, and another 5, and so on.’
Rule B is: ‘Write out the numbers that are in the five times table, and then subtract 2 from each number.’
What’s the same and what’s different about the sequences generated by these two rules?

Ramesh is exploring three sequence-generating rules.
Rule A is: ‘Start at 30, and then add on 7, and another 7, and another 7, and so on.’</td></tr>
</table>

	100, 50 … Find two answers for each (x and +) **Day 2:** Place 6-digit numbers on a line and round to nearest 10, 100, 1000, 10,000 or 100,000. No line sheets in Yr 6 lever arch folder WR Year 6 | Autumn term | Block 1 – Place value | Step 5 **Day 3:** Revise using short multiplication to multiply 4-digit numbers by single-digit numbers and decimal numbers; Round to approximate answers. Busy Ant 6A pg. 28-29 CGP Bk 6 pg 25 **Day 4: Teacher planned revision of all work covered so far** Revise using short multiplication to multiply 4-digit numbers by single-digit numbers; Use rounding to approximate answers. WR Autumn Term **Day 4a**: Protractor – teach to use Camb 6B pg. 82-83		Rule B is: 'Write out the numbers that are in the seven times table, and then add 2 to each number.' Rule C is: 'Start at 51, and then add on 4, and another 4, and another 4, and so on.' What's the same and what's different about the sequences generated by these three rules? Explain why any common patterns occur. **Day 2:** Teacher feedback **Day 3:** Write a 5-digit number which rounds to 23,000. Write a number which rounds to 23,500. Write a number which rounds to 23,560. Rpt for 73,000, 73,800 and 73,850. Challenge chn to include some numbers which round down as well as up. **Day 4:** Teacher feedback **Day 5:** Teacher feedback

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	Day 5: Revise using short multiplication to multiply 4-digit amounts of money by single-digit numbers. WR Autumn Term **Quick Rising Stars arithmetic - timed**		
7	**Mental skills for week:** Re-ordering numbers when adding. Children will know that it can sometimes be easier to re-order numbers when adding: Re-order to start with the largest number and understand the commutative property of addition 640 + 5,257 becomes 5,257 + 640 Re-order to find pairs that total multiples of power of ten when adding/subtracting three numbers 1,488 + 165 + 12 becomes 1,488 + 12 + 165 = 1,500 + 165 4.8 + 2.5 –1.8 becomes 4.8 –1.8 + 2.5 Count along fractions number line		
	Vocabulary for week: FRACTIONS, DECIMALS, PERCENTAGES, RATIO AND PROPORTION part, equal parts, fraction, proper/improper fraction, mixed number numerator, denominator, equivalent, reduced to, cancel, one whole, half, quarter, eighth, third, sixth, ninth, twelfth, fifth, tenth, twentieth hundredth, thousandth ADDITION AND SUBTRACTION add, addition, more, plus, increase, sum, total, altogether, score, double, near double, how many more to make…? subtract, subtraction, take (away), minus, decrease, leave, how many are left/left over? difference between		
	Fractions/Division **Day 1:** Recognise fraction and decimal equivalents. Target Bk. 6 pg. 49 / CGP Bk 6 pg 63 WR Autumn Term **Day 2:** Use short division to divide up to 5-digit by 1-digt numbers and	**Day 1:** Count in 1/4s then 1/8s along a number line Show the line marked in 1/8s Ask for equivalent fractions then count using the simplest possible fractions: 1/8, ¼, 3/8, ½… **Day 2:** Re-ordering numbers when adding.	***Fractions/Division*** **Day 1:** Teacher feedback **Day 2:** For 143 ÷ 8 we got 17 r 7. How could we check this? Chn work out 17 × 8: But this is 136 not 143? Agree that we need to add the remainder of 7, to get

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	by 11 and 12; Round up or down. Camb 6C pg 14-17 WR Autumn Term **Day 3:** Use short division to divide up to 5-digit numbers by 1-digt numbers and by 11 and 12, with fraction parts of answers, e.g., 23¾. / Target Bk 6 pg 16-17 WR Autumn Term **Day 4:** Teacher planned revision of all work covered so far Use short division to divide 4-digit numbers by 1-digt numbers, writing fraction parts of answers as decimals, e.g., 23¾ as 23.75./ Target Bk 6 pg 16-17 **Day 4a:** Line graphs Camb 6B pg. 66 – 67 / Target Bk 6 pg 1460149 **Day 5:** Solve division word problems (including answers with fractions); Round up or down after division. Target Bk. 6 pg. 25	**Day 3:** Re-ordering numbers when adding. **Day 4:** Catch up session **Day 5:** Catch up session	143. Chn work in pairs to check one of their divisions. **Day 3:** Write divisions on board – which have the same answer? **Day 4:** Teacher feedback **Day 5:** Teacher feedback
8	**Mental skills for week:** Add and subtract multiples of 10, 100 or 1,000 and adjust		

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<table>
<tr><td></td><td colspan="3">Children will use their knowledge of adding and subtracting multiples of 10, 100 or 1,000 and adjusting to add/subtract, including with the use of an empty number line:
845 + 28 = 845 + 30 – 2 (28 rounds up to 30)
1,942 + 99 = 1,942 + 100 – 1 (99 rounds up to 100)
5,856 – 198 = 5,856 – 200 + 2 (198 rounds up to 200)
6,565 + 999 = 2,565 + 1,000 –1 (999 rounds up to 1,000)
8,250 – 998 = 8,250 –1,000 + 2 (998 rounds up to 1,000)

Double/halve numbers with 1 decimal place
Add pairs of decimals to make a whole number
Place value in nos with 3dp</td></tr>
<tr><td></td><td colspan="3">Vocabulary for week:
PLACE VALUE, ORDERING AND ROUNDING place, place value, stands for, represents
FRACTIONS, DECIMALS, PERCENTAGES, RATIO AND PROPORTION decimal, decimal fraction, decimal point, decimal place, percentage, per cent, %
ADDITION AND SUBTRACTION add, addition, more, plus, increase, sum, total, altogether, score, double, near double, how many more to make…? subtract, subtraction, take (away), minus, decrease, leave, how many are left/left over? difference between
MULTIPLICATION AND DIVISION lots of, groups of, times, multiply, multiplication, multiplied by, multiple of, product, once, twice, three times… ten times… times as (big, long, wide… and so on), repeated addition, array, row, column, double, halve, share, share equally
one each, two each, three each… group in pairs, threes… tens, equal groups of, divide, division, divided by, divided into, remainder
factor, quotient, divisible by, inverse</td></tr>
<tr><td></td><td>Decimals/Subtraction
Day 1: Add/subtract multiples of 0.01 to/from numbers with two decimal places, crossing multiples of 0.1.
WR Spring Term</td><td>Day 1: Add and subtract multiples of 10, 100 or 1,000 and adjust

Day 2: Add and subtract multiples of 10, 100 or 1,000 and adjust

Day 3: Double numbers with 1 decimal place / Halve numbers with 1 decimal place</td><td>Decimals/Subtraction
Day 1: Teacher feedback

Day 2: Challenge children to find pairs of lengths either side of 1m with a difference of 0.6m. Both distances must have two decimal places!</td></tr>
</table>

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	Day 2: Subtract pairs of numbers with two decimal places using counting up (use no. line) WR Spring Term **Day 3:** Subtract numbers with one or two decimal places by counting up from the smaller to the larger number, e.g., 3.76 – 1.8 or 13.4 – 2.76. (use no. line) WR Spring Term **Day 4: Teacher planned revision of all work covered so far** Count on and back in steps of 0.001 and 0.01. WR Spring Term **Day 5:** Roman Numerals – memory stick **Quick Rising Stars arithmetic - timed**	**Day 4:** Say how much is needed to the next metre Play 'Ping, pong'. You say a length, e.g. 3.74m; the children say how much is needed in metres to make the next metre, i.e. 0.26m. **Day 5:** Place value in nos with 3dp Chn play in pairs. They each write a 4-digit number with 3dp, all digits different, no zeroes, e.g. 5.274. They take in in turns to roll a 0–9 dice. They subtract what this is worth in their own number, e.g. if they roll 3 they don't subtract anything, if they roll 7 they subtract 0.07. If they roll 0 they can choose any digit to 'zap' by subtraction. First to reach 0 wins.	**Day 3:** Longer session - Reasoning with written explanation **Day 4:** Dicey differences Children use two dice with decimal numbers to find largest and smallest possible differences **Day 5:** Show children a counting stick with 3.5 on a Post-it™ to label the centre. Count on in steps of 0.001 from 3.5, then back in steps of 0.001 from 3.5. Rpt with 4.25 in the centre.
9	**Mental skills for week:** Add and subtract multiples of 10, 100 or 1,000 and adjust Children will use their knowledge of adding and subtracting multiples of 10, 100 or 1,000 and adjusting to add/subtract, including with the use of an empty number line: 845 + 28 = 845 + 30 – 2 (28 rounds up to 30) 1,942 + 99 = 1,942 + 100 – 1 (99 rounds up to 100) 5,856 – 198 = 5,856 – 200 + 2 (198 rounds up to 200)		

Medium term Plans for Autumn Term Year 6 – Beecroft Primary School

<table>
<tr><td></td><td colspan="3">6,565 + 999 = 2,565 + 1,000 –1 (999 rounds up to 1,000)
8,250 – 998 = 8,250 –1,000 + 2 (998 rounds up to 1,000)

Convert between grams and kilograms, millilitres and litres</td></tr>
<tr><td></td><td colspan="3">Vocabulary for week:
ADDITION AND SUBTRACTION add, addition, more, plus, increase, sum, total, altogether, score, double, near double, how many more to make…? subtract, subtraction, take (away), minus, decrease, leave, how many are left/left over? difference between
MEASURES (GENERAL) measure, measurement, size, compare, unit, standard unit, metric unit, imperial unit, measuring scale, division guess, estimate
LENGTH length, width, height, depth, breadth, long, short, tall, high, low, wide, narrow, deep, shallow, thick, thin, longer, shorter, taller, higher… and so on, longest, shortest, tallest, highest… and so on, far, further, furthest, near, close, distance apart/between, distance to… from… edge, perimeter, kilometre (km), metre (m), centimetre (cm), millimetre (mm), mile, yard, feet, foot, inches, inch, ruler, metre stick, tape measure, compasses
MASS mass: big, bigger, small, smaller, balances, weight: heavy/light, heavier/lighter, heaviest/lightest, weigh, weighs, tonne, kilogram (kg), half-kilogram, gram (g) pound (lb), ounce (oz), balance, scales
CAPACITY capacity, full, half full, empty, holds, contains, litre (l), half-litre, centilitre (cl), millilitre (ml), pint, gallon, container, measuring cylinder</td></tr>
<tr><td></td><td>Measures
Day 1: Convert between grams and kilograms, millilitres and litres. CGP BK 6 pg. 101 / Target Bk. 6 pg. 90 - 93

WR Year 6 | Autumn term | Block 5 – Converting units | Step 1

Rounding measures mass Camb 6B pg. 54 – 55 / Read scales – target BK 6 pg 93</td><td>Day 1:
Show chn a kg weight. How else can we write 1kg? Remind chn that ‘kilo’ means 1000. Stick on board, hang a 0 card at one end and 1000g/ 1kg pegged at the other. Write ½ kg, 250g, 100g, 0.2kg, 300g, 0.9 kg, 0.7kg, 0.458kg, 500g, 0.4kg, 0.678kg, 785g on cards, chn peg each one in appropriate place on washing line relative to other cards. Chn help you to write the corresponding amounts in g or kg on the back of each card as they are pegged. Take off the cards and shuffle. Hold up a card. If written in grams, chn write the amount in kg on their w/bs and vice versa if the amount is in kg.</td><td>Measures
Day 1: Show chn the containers with, capacity labels hidden. Write the containers’ capacities in random order, some in litres, and some in ml. Chn work in pairs to write them in order. Chn work in groups to guess which measurement goes with which container.

Day 2: Measure the height of a volunteer in metres and centimetres. Chn use</td></tr>
</table>

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	Day 2: Convert between metres and kilometres; Know approximate conversion between miles and km WR: Year 6 | Autumn term | Block 5 – Converting units | Step 4 Draw line graph and read intermediate points. CGP BK 6 pg. 99 to 100 Camb 6B pg. 56- 59 (reading scales) ** Needs more days Camb 6C pg 54 – 59 / Camb 6+ pg 105 - 07 **Day 3:** Know regularly used imperials units and approximate metric equivalents. Camb 6A pg. 78-79 / Camb 6C pg 62 - 63 **Day 4: Teacher planned revision of all work covered so far** Calculate time intervals using the 24-hour clock and add lengths of time. Y6 lever arch folder/memory stick **Day 5:** Read timetables using the 24-hour clock; calculate time	**Day 2**: Repeat as yesterday - Repeat with each card. Change the washing line to go from 0 to 2l. Write 1000ml, 0.5l, 1500ml, 1.9l, 1100ml, 1.6l, 1.25l, 1700ml, 1.425l, 1300ml, 1875ml on cards. Chn peg them on the line and write amounts in ml or l on the back of each card. Take off all the cards, shuffle them and hold up each card in turn. Chn write equivalent amount in ml or l. ** Needs more days **Day 3:** https://mathsframe.co.uk/en/resources/resource/87/itp-measuring-scales **Day 4:** https://mathsframe.co.uk/en/resources/resource/88/itp-measuring-cylinder **Day 5:** Add and subtract multiples of 10, 100 or 1,000 and adjust	information on their sheets/line graphs to work out the approximate equivalent in feet and inches. Discuss looking at how many multiples of 30cm (i.e. a foot) are in the height to give an approximation in feet, then converting the remaining cm to inches. **Day 3:** Teacher feedback **Day 4:** Teacher feedback **Day 5:** Ask question about the timetable requiring chn to convert between 12-hour and 24-hour clock times, such as: I'm thinking of a train that leaves Penzance between 5pm and 6pm. Which is it? I'm thinking of a train that gets into St Austell at 10 to 2 in the afternoon. Which is it?

<table>
<tr><td></td><td>intervals (at least 3 hours). Y6 lever arch folder/memory stick</td><td></td><td></td></tr>
<tr><td>10</td><td colspan="3">Mental skills for week:
Children will use their knowledge of doubles to add near doubles:
2.5 + 2.6 = double 2.5 and add 0.1
490 + 480 = double 500 and subtract 30

Properties of 3D shapes
Turn improper fractions into mixed nos & vice versa</td></tr>
<tr><td></td><td colspan="3">Vocabulary for week:
FRACTIONS, DECIMALS, PERCENTAGES, RATIO AND PROPORTION part, equal parts, fraction, proper/improper fraction, mixed number numerator, denominator, equivalent, reduced to, cancel, one whole, half, quarter, eighth, third, sixth, ninth, twelfth, fifth, tenth, twentieth hundredth, thousandth
3D SHAPES three-dimensional, cube, cuboid, pyramid, sphere, hemi-sphere, spherical, cone, cylinder, cylindrical, prism, tetrahedron, polyhedron, octahedron, dodecahedron</td></tr>
<tr><td></td><td>Shape/Fractions
Day 1: Recognise nets for a cube and other 3d shapes. Target Bk. 6 pg. 126-127 Busy Ant 6A pg. 22 – 27 / Camb 6C pg 44-47
WR Summer

Day 2: Recognise and build pyramids and prisms, making nets.
WR Summer

Day 3: Use common multiples to express fractions in the same denomination; Compare and order</td><td>Day 1: Demo for pupils and revise properties together. Show a selection of 3D shapes on each table, both regular and irregular. Ask a child to secretly choose one of the shapes and say one of its properties, one at time. Chn discuss in group which it might be. The first group to correctly guess the shape scores a point. Rpt with other chn.

Day 2: 3D shape mental maths questions from Y6 mental maths lever arch folder.

Day 3: Children will use their knowledge of doubles to add near doubles</td><td>Shape/Fractions
Day 1: Tell chn that opposite faces on a 1–6 dice have a total of 7, e.g. if 3 is on one face, 4 is on the opposite face. Challenge chn to work in pairs to draw a net for a dice like this. They can cut it out to check afterwards.

Day 2: Teacher feedback

Day 3: Longer session - Reasoning with written explanation</td></tr>
</table>

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	fractions with unrelated denominators. Camb 6C pg 98 **Day 4: Teacher planned revision of all work covered so far** **Day 5:** Add / Subtract fractions with related then unrelated denominators. Busy Ant 6A pg. 40-43 / Busy Ant 6B pg 52-53 / target BK. 6 pg 44-45 **Half-termly times table check up**	**Day 4:** Turn improper fractions into mixed nos & vice versa. Chn shuffle 1–9 digit cards, take two to make an improper fraction, then write as a mixed number. How many can they find in 3 mins? They use the 1 and two others to make a mixed number, e.g. 13/7. They write this as an improper fraction. How many can they write in 3 mins? **Day 5:** Catch up session	**Day 4:** Domino Fractions Children use dominoes to create fractions. They explore sums of fractions using equivalent fractions and related denominators **Day 5:** Sam added two fractions together and got 7/8 as the answer. Write down two fractions that Sam could have added. Tom wrote down two fractions. He subtracted the smaller fraction from the larger and got 1/5 as the answer. Write down two fractions that Tom could have subtracted. Tom and Sam shared equally one third of a chocolate bar. What fraction of the chocolate bar did each child get?
11	**Mental skills for week:** Finding the difference by counting on Children will use complementary addition to count on from the smaller number to the larger number to find a small difference, including with the use of an empty number line: 908 – 897 count up from 897 1,015 – 998 count up from 998 1,102 – 877 count up from 877		

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<table>
<tr><td></td><td colspan="3">2,017 – 1,988 count up from 1,988
3,000 – 2,899 count up from 2,899
10,004 – 8,997 count up from 8,997
19.5 – 16.3 count up from 16.3
Encouraging children to use number lines in this way provides a mental image that can assist with mental calculations

Solve a mix of +, -, × and ÷ mental calculations
Find squares and cubes.</td></tr>
<tr><td></td><td colspan="3">Vocabulary for week:
PROPERTIES OF NUMBERS AND NUMBER SEQUENCES square number, one squared, two squared… prime, prime factor
ADDITION AND SUBTRACTION add, addition, more, plus, increase, sum, total, altogether, score, double, near double, how many more to make…? subtract, subtraction, take (away), minus, decrease, leave, how many are left/left over? difference between
MULTIPLICATION AND DIVISION lots of, groups of, times, multiply, multiplication, multiplied by, multiple of, product, once, twice, three times… ten times… times as (big, long, wide… and so on), repeated addition, array, row, column, double, halve, share, share equally
one each, two each, three each… group in pairs, threes… tens, equal groups of, divide, division, divided by, divided into, remainder
factor, quotient, divisible by, inverse</td></tr>
<tr><td></td><td>Multiplication and division/Addition or subtraction
Day 1: Use long multiplication to multiply up to 4-digit numbers by 2-digit numbers. CGP BK 6 pg. 26

WR Year 6 | Autumn term | Block 2 – Addition, subtraction, multiplication and division | Step 7

Day 2: Use long multiplication to multiply up to 4-digit numbers by numbers between 10 and 20.</td><td>Day 1: Mental multiplication - Remind chn that we can multiply by 4 by doubling twice and multiply by 5 by halving and multiplying by 10 (or vice versa). Ask them to multiply each of the following numbers by 4 and 5: 72, 48, 54, 124, 232.

Day 2: Mental division. Remind chn that we can divide by 4 by halving twice. Challenge chn to divide as many numbers between 50 and 100 by 4 as they can in five minutes. Afterwards, take feedback about which numbers were easy to divide by 4 in this way (multiples of 4) and which were not (odd numbers).</td><td>Multiplication and division/Addition or subtraction
Day 1: Teacher feedback

Day 2: Past questions

Day 3: Longer session - Reasoning with written explanation

Day 4: June 2020 doc pg 34

Day 5: Teacher feedback</td></tr>
</table>

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	WR Autumn **Day 3:** Use long multiplication to multiply up to 4-digit numbers by numbers between 20 and 30. WR Autumn Target BK 6 pg 13-14 **Day 4: Teacher planned revision of all work covered so far** Choose how to solve a mix of +, -, × and ÷ mental and written calculations. Past Paper Qs **Day 5:** Choose which operation(s) are necessary to solve single-step and multi-step word problems. Booster 5 B. **Half – termly arithmetic test – formal to be analysed** **Half – termly reasoning test – formal to be analysed**	**Day 3:** Find squares and cubes Children work in pairs. Roll a 1–12 dice. One person in each pair squares the number, then the second person cubes the number. Rpt several times, then chn swap roles. Do chn see how they can multiply the square of the number by the number itself to give the cube? **Day 4:** Finding the difference by counting on **Day 5:** Finding the difference by counting on.	
12	**Mental skills for week:**		
	Vocabulary for week:		