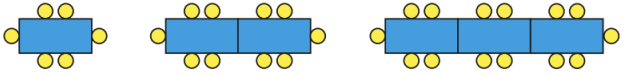
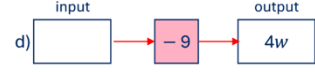
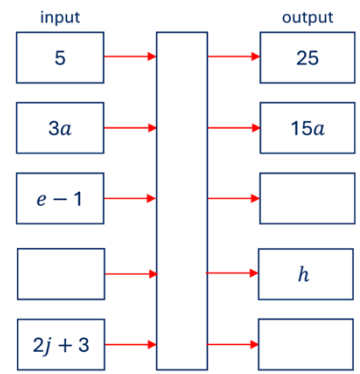


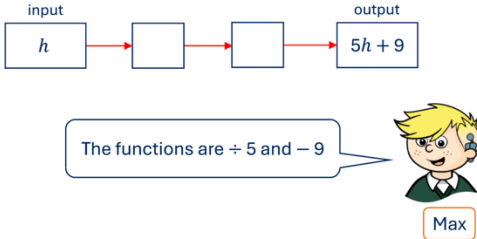
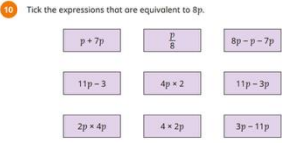
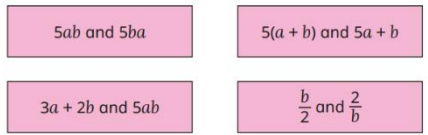
Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions	Red Zone
Week 1 (Thurs & Fri) - ORIENTATION & EXPECTATIONS						
Week 2 Lesson 1 To describe and continue sequences.	Shapes Sequence Colour Category	ALGEBRA	Numeracy facts Knowledge / categorisation of shapes	I will be able to: - Describe a sequence made using shapes - Continue a sequence using shapes	Which shape comes next? ▲ ● ▲ ● ▲ ? A. ▲ B. ● C. ▲ ▲ D. ● ●	10 Amir is looking at a sequence.  The number of circles halves each time. Draw the sequence. Compare your answer with a partner's. Are your sequences the same?
Week 2 Lesson 2 To find the next term(s).	Term Sequence Shape	ALGEBRA	Numeracy Facts Place Value Shape sequences	I will be able to: - Find the next term in a pattern of increasing numbers of shapes - Find the number of shapes in a specific term.	Find the next term... 2, 5, 8, 11, __ A. 13 B. 14 C. 15 D. 16	The sequence is made up of circles and rectangles.  a) How many circles are there in each term in the sequence? 1st 2nd 3rd b) How many circles will there be in the 10th term? c) How many circles will there be in the 100th term? d) Is there a term that will contain 80 circles? ____ Explain your answer.

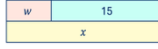
Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions	Red Zone
Week 2 Lesson 3 To use linear and non-linear sequences.	Linear Sequence Non-linear Sequence Difference term	ALGEBRA		I will be able to: - To know the difference between linear and non-linear sequences. - To recognise the graphs of linear & non-linear sequences.	Which sequence is linear? A. 3, 6, 9, 12, ... B. 1, 4, 9, 16, ... C. 2, 4, 8, 16, ... D. 1, 8, 27, 64, ...	4 Is each sequence linear or non-linear? a) 3, 9, 15, 21 ... _____ b) 1, 3, 6, 10 ... _____ c) 81, 72, 63 ... _____ d) 12.5, 13, 13.5, 14, 14.5 ... _____ e) $3, 3\frac{2}{3}, 4\frac{1}{3}, 5$... _____ f) 7, 5, 3, 1, 0 ... _____
Week 3 Lesson 1 To continue linear sequences	Linear Non-linear Sequence Common difference Decimal	ALGEBRA	Linear or non-linear Divide by 100 Write a number in words	I will be able to: - To understand ascending & descending sequences - To continue a sequence using a common difference, including decimals.	Continue the linear sequence... 4.5, 5.0, 5.5, 6.0, __ A. 6.1 B. 6.5 C. 7.0 D. 7.5	8 a) An ascending sequence has a common difference of 9 and the 3rd term is 27 Find the missing terms. _____, _____, 27, _____ b) An ascending sequence has a common difference of 27 and the 3rd term is 592 Find the missing terms. _____, _____, 592, _____ c) A descending sequence has a common difference of 19 and the 4th term is 101 Find the missing terms. _____, _____, _____, 101, _____

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions	Red Zone
Week 3 Lesson 2 To continue non-linear sequences	Linear Non-linear Sequence Common difference Geometric	ALGEBRA	Continue linear sequence Fraction of amount Position on a number line.	I will be able to: - To continue a geometric sequence - To recognise the common ratio between terms in words.	Continue the non-linear sequence... 3, 6, 12, 24, __ A. 30 B. 36 C. 48 D. 60	7 Here are two sequences. A 2, 6, 18, , , B 2, 32, 62, , , a) Continue the sequences. b) In which position is the term in sequence A greater than the term in sequence B for the first time? _____ c) Which sequence will be the first to reach 2000? _____ sequence _____ Explain how you know. _____ _____
Week 3 Lesson 3 To describe term-to-term rules	Term to term Sequence Linear Non-linear Algebraic	ALGEBRA	Continue a geometric sequence. Fraction of a diagram shaded. Greater or less than.	I will be able to: - Use words to describe a term to term rule. - Use words to describe term to term rules including algebraic forms.	Which rule describes: 7, 10, 13, 16, ... A. Add 2 B. Add 3 C. Multiply by 3 D. Double	8 Here is the term-to-term rule of a sequence. To find the next term, multiply the previous term by 3 and then add 7 The 1st term of the sequence is 20 Work out the first five terms of the sequence. _____ _____ 9 Here is the start of a sequence. 300, 500, 900, 1700, 3300 ... Describe the 2-step term-to-term rule. _____ _____

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions	Red Zone
Week 4 Lesson 1 To use function machines	Function machine Input Output Algebraic Term	ALGEBRA	Missing terms. Halving. Round to nearest 100.	I will be able to: - To use a 1 step function machine. - To use a 1 step function machine using algebraic notation.	Input = 5 Rule: $\times 3$ Output = ? A. 8 B. 10 C. 15 D. 25	Complete the function machines. a)  c)  b)  d) 
Week 4 Lesson 2 To use function machines	Function machine Input Output Algebraic Term	ALGEBRA	Function machines. Missing terms. Missing numbers in calculations.	I will be able to - To find a function for a given input & output. - To find a function in algebraic form.	Input 4 $\rightarrow$ Output 12 Input 6 $\rightarrow$ Output 18 What is the function? A. $+8$ B. $\times 2$ C. $\times 3$ D. $+12$	Complete the function machine. 

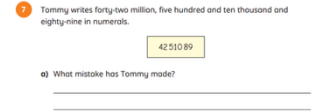
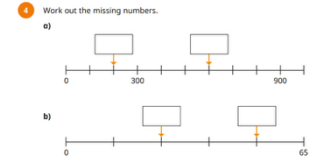
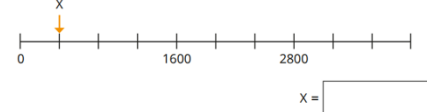
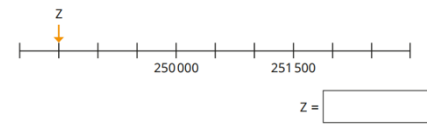
Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions	Red Zone
Week 4 Lesson 3 To substitute into expressions.	Function machine Input Output Expression Substitute Value	ALGEBRA	Function machine. Multiply by 100. Non-linear sequence. Ordering numbers.	I will be able to: To substitute a value into a one step expression.	If $a = 4$, what is $a + 3$? A. 3 B. 4 C. 7 D. 43	Tick the expressions that are true for any value of z . $z + 7 = 7 + z$ $\frac{z}{9} = \frac{9}{z}$ $z \times 2 = 2z$ $5 - z = z - 5$
Week 5 Lesson 1 To use two step function machines - number and algebra (extension)	Function machine Input Output Expression Substitute Value	ALGEBRA	Substitution. Term to term rules. Fraction of an amount.	I will be able to - I can use a two step function machine - To extend to use algebraic notation for 2 step function machines.	Input 4 $\times 2$ then $+ 3$ Output? A. 8 B. 10 C. 11 D. 14	Eva is thinking of a number.  If I halve my number and subtract 7, the result is 15.9 Eva

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions	Red Zone
Week 5 Lesson 2 To find a 2 step function	Function machine Input Output Expression Substitute Value	ALGEBRA	Function machines	I will be able to To complete function machines using algebraic notation with 2 steps.	Input 3 → Output 11 Input 5 → Output 17 Which rule works? A. $\times 2 + 5$ B. $\times 3 + 2$ C. $\times 4 - 1$ D. $+ 8$	Max is working out the missing functions in the function machine.  Explain the mistake that Max has made.
Week 5 Lesson 3 To substitute into a 2 step function.	Function machine Input Output Expression Substitute Value	ALGEBRA	Function machines Squares of numbers.	I will be able to To substitute into a 2 step expression.	If $x = 2$, what is $3x + 4$? A. 8 B. 10 C. 12 D. 14	Order the expressions from smallest to greatest when $t = 4$ 
Week 6 Lesson 1 To understand equality & equivalence	Equality Equivalence Equals	ALGEBRA	Substitution. Function machines. Terms in a sequence of shapes.	I will be able to: To understand the terms equality & equivalence.	 Check your answers by substituting several values of p.	16 Tick the pair of equivalent expressions.  Explain your reasoning. Are any of the other pairs of expressions equal for particular values?

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Week 6 Lesson 2 To use related facts from one calculation.		ALGEBRA	Related fact Calculation Bar Model	I will be able to - Represent calculations using a bar model. - To create related facts from one calculation.	Identify the statements that are shown by the bar model.  A B C D $w + 15 = x$ $w - 15 = x$ $x - w = 15$ $w - x = 15$	5 Draw a bar model to represent each fact. a) $g + 98 = 152$ c) $51.6 = 82.3 - 30.7$ b) $k = 23 \times 4$ d) $\frac{108}{6} = w$ What other related facts can you see from your bar model?
Week 6 Lesson 3 To identify like & unlike terms To collect like terms		ALGEBRA	Related facts Function machines Linear or non-linear?	I will be able to - Identify like or unlike terms. - Collect like terms	Identify the like terms. 	11 Mo has simplified an expression. $8ab + 2ba \equiv 10ab$ Is Mo correct? _____ Discuss your answer with a partner. 12 Simplify the expressions. a) $5cd + 7dc \equiv$ _____ b) $12ef - 2fe \equiv$ _____ c) $6xy + 9y + 2yx \equiv$ _____ d) $15pq - 9p + 2q - p \equiv$ _____

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions	Red Zone
Week 7 Lesson 1 To solve one step equations	Equation Variable Unknown Missing number Bar model Addition Subtraction	Algebra	Simplify Function machine Non-linear sequence	I will be able to Solving one step equations using addition and subtraction.	8 Tick the equations with the solution $x = 52$ $78 - x = 26$ $53 - x = 1$ $100 = x + 48$ $0.01 = 52.01 - x$ $315 = x - 263$ $52 + x = 52$	9 Here are two problems. Whitney thinks of a number. She adds 87 to her number and gets an answer of 153 Tommy thinks of a number. He subtracts his number from 302.1 and gets an answer of 149.8 a) Write an equation for each problem. b) Solve the equations.
Week 7 Lesson 2 To solve one step equations	Equation Variable Unknown Missing number Bar model Multiplication Division	ALGEBRA	Solve equations. Substitute. Term to term rule.	I will be able to Solving one step equations using multiplication and division.	9 Rosie and Amir are solving an equation. Rosie $+ 3 \left(\frac{x}{5} = 15 \right) \times 3$ Amir $\times 3 \left(\frac{x}{5} = 15 \right) \times 3$ Who is correct? Explain your answer.	10 Solve each pair of equations. a) $\frac{n}{10} = 5$ $\frac{10}{n} = 5$ b) $\frac{b}{2} = 8$ $\frac{2}{b} = 8$ c) $20 = \frac{5}{x}$ $20 = \frac{x}{5}$
Week 7 Lesson 3 To solve two step equations.	Equation Variable Unknown Missing number Bar model Multiplication Division	ALGEBRA	Multiply by 3 digit number. Solve 1 step equation. Missing terms of linear sequence.	I will be able to Solve 2 step equations using a balancing model.	10 Dexter and Annie are solving an equation. Dexter $\times 2 \left(\frac{y}{2} + 1 = 15 \right) \times 2$ Annie $- 1 \left(\frac{y}{2} + 1 = 15 \right) - 1$ Who is correct? Discuss your answer with a partner.	11 The rectangle has a side length of $3t$ cm and a width of 5 cm. The perimeter of the rectangle is 34 cm. Calculate the value of t.

$t = \boxed{}$

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions	Red Zone
				Solve problems requiring setting up an equation.		
Week 8 Lesson 1 To write numerals in words.	Integer Numeral Word Place value	NUMBER	Solve 2 step equation. Related facts. Function machines.	I will be able to: Write integers in numerals and words.		8 a) The population of the United States of America is 341 009 857. Write this number in words. _____ _____ b) The population of the United Kingdom is 68.27 million. Write this number in words and numerals. _____ _____
Week 8 Lesson 2 To represent intervals on a number line.	Interval Number line	NUMBER	Numerals Like terms Function machines.	I will be able to: Represent intervals on a number line.		5 Work out the values of X, Y and Z. a)  X = b)  Y = c)  Z =

Learning Intention	Vocab	Concept	Retrieval	Success Criteria	Hinge Questions	Red Zone																															
Week 8 Lesson 3 To compare and order integers.	Integer Place value Greater than. Less than.	NUMBER	Intervals Collect like terms. Function machines.	I will be able to: Compare and order integers by analysing place value.	9 The table shows the distance between the Sun and some planets. <table><thead><tr><th>Planet</th><th>Distance from the Sun (km)</th></tr></thead><tbody><tr><td>Venus</td><td>107.84 million</td></tr><tr><td>Mercury</td><td>59 503 000</td></tr><tr><td>Mars</td><td>208.6 million</td></tr><tr><td>Earth</td><td>151 750 000</td></tr></tbody></table> a) Which of the planets is closest to the Sun? _____ b) Which of the planets is farthest from the Sun? _____	Planet	Distance from the Sun (km)	Venus	107.84 million	Mercury	59 503 000	Mars	208.6 million	Earth	151 750 000	10 The populations of some cities are listed in the table. <table><thead><tr><th>City</th><th>Country</th><th>Population</th></tr></thead><tbody><tr><td>Tokyo</td><td>Japan</td><td>37 100 000</td></tr><tr><td>Delhi</td><td>India</td><td>33 800 000</td></tr><tr><td>Shanghai</td><td>China</td><td>29 900 000</td></tr><tr><td>São Paulo</td><td>Brazil</td><td>22 800 000</td></tr><tr><td>Mexico City</td><td>Mexico</td><td></td></tr><tr><td>Mumbai</td><td>India</td><td>21 600 000</td></tr></tbody></table> The population of São Paulo is expected to increase by 6 million by 2050 The population of Shanghai is expected to increase by 3 million by 2050 a) Is there expected to be more people in São Paulo or Shanghai by 2050? _____ b) The population of Mexico City is in 5th position. What could be the population of Mexico City? How many possible answers are there?	City	Country	Population	Tokyo	Japan	37 100 000	Delhi	India	33 800 000	Shanghai	China	29 900 000	São Paulo	Brazil	22 800 000	Mexico City	Mexico		Mumbai	India	21 600 000
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