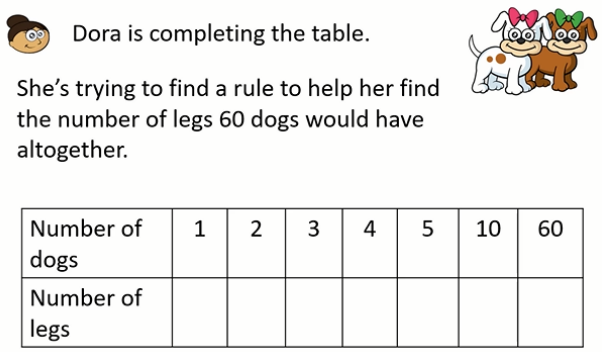
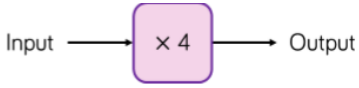
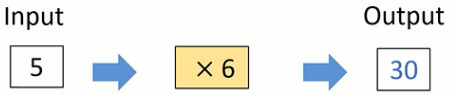
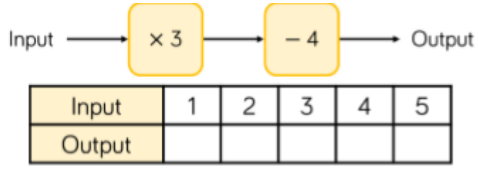
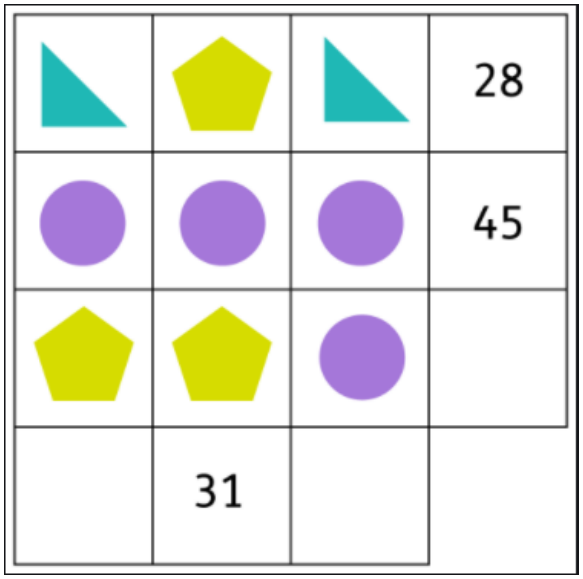
Weekly Maths Planning **Unit: Algebra** **Y5/6** **w/b: 15.3.2021**

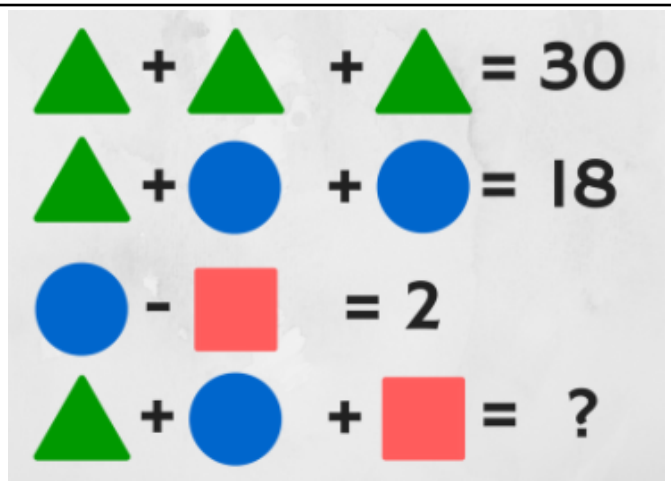
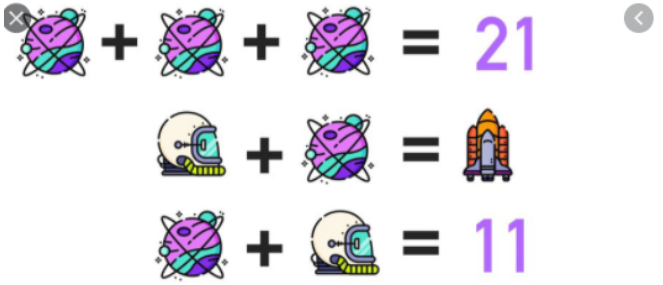
	Learning objective	Main teaching	Activity	Resources	Vocabulary
Monday	LO to find a rule using a one-step function	Copy and complete this table:  What did you do to complete the table? You could write this as:  Today we are looking at finding a rule using one-step function machines. A one-step function is where you perform just one operation on the input. E.G:  What would our output be if the input was 10? What about if the input was 12? Play: https://kids.classroomsecrets.co.uk/resource/year-6-find-a-rule-one-step-game/	IN CLASS: play guess my rule game AT HOME: Watch - https://vimeo.com/499979721 from 5:27 Copy and complete these questions: https://resources.whiterosemaths.com/wp-content/uploads/2019/12/Y6-Spring-Block-3-WO1-Find-a-rule-one-step-2019.pdf Mark and correct your answers where necessary: https://resources.whiterosemaths.com/wp-content/uploads/2020/08/Y6-Spring-Block-3-ANS1-Find-a-rule-one-step-2019.pdf	Pencil Ruler Maths book Questions Answers Video link	function input output rule operation

Tuesday	LO to find a rule using a two-step function	Today we are looking at two step function machines! E.G: If…  • What is the output if the input is 5? • What is the input if the output is 19? • What is the output if the input is 3.5? Copy and complete the table below:  • What patterns do you notice in the outputs? • What is the input if 20 is the output? How did you work it out? Watch and complete any activities: https://vimeo.com/499980302	Copy and complete these questions: https://resources.whiterosemaths.com/wp-content/uploads/2019/12/Y6-Spring-Block-3-WO2-Find-a-rule-two-step-2019.pdf Mark and correct your answers where necessary: https://resources.whiterosemaths.com/wp-content/uploads/2019/12/Y6-Spring-Block-3-ANS2-Find-a-rule-two-step-2019.pdf CHALLENGE: Roshni and Darren are using sequence-generating rules. Roshni's rule is: 'Start at 5, and then add on 9, and another 9, and another 9, and so on.' Darren's rule is: 'Write out the numbers that are multiples of 3, starting with 3, and then subtract 1 from each number.' What might Roshni and Darren notice about the numbers in the sequences generated by each of these rules? Explain your reasoning.	Pencil Ruler Maths book Questions Answers Video link	function input output rule operation

Input	1	2	3	4	5
Output					

Wednesday	LO to form expressions	 **Introduce word 'substitute' with the shapes and also write the expression with shapes to represent unknown numbers.** **Key vocab: expression, unknown, represent** Show that you have a small bag and jiggle it so that pupils can hear the marbles/counters etc. How many marbles are in this bag? Elicit that we don't know. If I add 3 marbles, how could you write an expression to say how many marbles are in the bag? M (original number of marbles) + 3	What if I add 7 marbles? What if I add 10? What if I have a bag (b) of marbles and I remove 1, 3, 12? How could you express this? What does b represent in the expression? NB b-2, b-3 etc are all algebraic expressions. Write the number sentence where I add 2 to 6. Now write the number sentence where I add x to 6 Subtract 3 from 4 (nb might get this the wrong way around) Subtract 3 from y: y-3 What is 4 more than 8? What is x more than 8? Continue to substituting letters for values – start with y = 9 then substitute other values for y. Repeat with subtraction y – 7 when y is any value greater than 7 (to avoid –ve numbers) https://vimeo.com/499980673 **Write the algebraic expression for these:** **These questions are on the 'Algebra Notebook'** Add 5 to z Add z to 8 Subtract 7 from z Subtract z from 10 9 more than z z more than 9 11 less than z z less than 11	Shape activity Marbles Bag (opaque) Whiteboards Maths books Pens Questions from box	Represent Substitute Expression Algebra Unknown Letter Symbol Number Addition Subtraction

Thursday	LO to substitute letters and symbols for unknown numbers	I have 2 bags of marbles, each containing the same amount of marbles. If M represents the number of marbles in each, can you write an expression for how many marbles there will be if I have 2 bags? Either M + M or 2 x M What if I have 4 bags? M + M + M + M or 4 x M 7 bags? Etc until all pupils are with you Explain in algebra the x sign isn't needed and so 4 bags can be written as 4M. What expression tells me how many marbles are in 5 bags? 5M If M = 8, what is the total number of marbles in each bag? Practice with a few more representations of M = 12, 15, 33 until all pupils understand. New story: Jim has M marbles and wants to share them with his 2 friends. Write an expression for how many marbles each person will receive. M ÷ 3. Repeat with different amounts of people to share between to get the general idea. Explain M ÷ 3 in algebra is written $\frac{M}{3}$ Knowing what we do about 4M and $\frac{M}{3}$ how can we write the equation for find the area of a rectangle? Triangle? https://vimeo.com/500489180	All can have a go at 'Generating Expressions' worksheet. Can they create a story to go with each one e.g. **4 more than y** 'Sam has a number of sheep in his field. He buys 4 more. What is the algebraic expression to show the number of sheep in his field now?' **Y6 Extra work** Complete the 'Substitution Codes' worksheet. Can they crack the code?	Shape activity Marbles Bag (opaque) Whiteboards Maths books Pens Questions from box	Represent Substitute Expression Algebra Unknown Letter Symbol Number Addition Subtraction Multiplication Division

Friday	LO to write and understand simple formulae	   Look at the SATs questions on the Algebra Notebook (AND OR the SATs questions saved in the folder.) Work through some as a class and ensure that children use the key vocabulary: ● Represent ● Expression ● Unknown ● Express https://vimeo.com/500489558	Y6: Work through the algebra SATs questions. Focus on reading question carefully and using learning from beginning of the lesson to help.	2 picture activities ← SATs questions Algebra notebook Pencil Maths Books	Represent Substitute Expression Algebra Unknown Letter Symbol Number Addition Subtraction Multiplication Division