Subject: MATHS	White Rose Maths & functional skills	**Algebraic thinking**
		OUR TOPICs:
		Place Value and Proportion
		Sequences
		Understand and use algebraic notation
		Equality and equivalence
Class: T4	Teacher: BC	Term: 1 Autumn 2021
Key Vocabulary:	Alternative Learning Environments	Resources: Pencils, Rulers, Rubbers, White Rose scheme resources, white board, squared paper, cheese, sticky cubes Pupil specific activities at the beginning of each lesson on board including lesson descriptor rules and/or formula

Pupil	Pupil Asset Stage at Start Of Term	Pupil Asset Stage End Of Year Target
	5 Dev +	5 beg+
	K9 Emb	K9 dev
	4 Beg+	4 dev
	3 Beg	3 beg+
	5 Emb	5 emb+
	3 Beg+	3 dev
	6 Beg+	6 dev
	3 Dev+	3 dev+
	4 Beg+	4 dev

Learning Intentions.

Current Unit –	Prior Learning –	Future Learning –
Algebraic thinking	New to school: Intro to describing and continuing sequences started on transitional days	Place, Value and proportion: Year 7 - Autumn Block 4 - Place Value & Ordering Year 7 - Autumn Block 5 - FDP Equivalence

Pupil Asset Milestones to be achieved:

Year 7 - Autumn Block 1 – Sequences
Describe and continue sequences
Predict and check next term(s)
Sequences in a table and graphically
Linear and non-linear sequences
Continue linear sequences
Continue non-linear sequences
Explain the term-to-term rule
Find missing terms (H)

Year 7 - Autumn Block 2 - Understand & Use Algebraic Notation
Given a numerical input, find the output of a single function machine
Use inverse operations to find the input given the output
Use diagrams and letters to generalise number operations
Use diagrams and letters with single function machines
Find the function machine given a simple expression
Substitute values into single operation expressions
Find numerical inputs and outputs for a series of two function machines
Use diagrams and letters with a series of two function machines
Find the function machines given a two-step expression
Substitute values into two-step expressions
Generate sequences given an algebraic rule
Represent one- and two-step functions graphically

Year 7 - Autumn Block 3 - Equality & EquivalenceUnderstand the meaning of equality
Understand and use fact families, numerically and algebraically
Solve one-step linear equations involving +/- using inverse operations
Solve one-step linear equations involving x/÷ using inverse operations
Understand the meaning of like and unlike terms
Understand the meaning of equivalence
Simplify algebraic expressions by collecting like terms, using the ≡ symbol

Half Term

Week	Session 1	Session 2	Session 3	Session 4
1	**Lesson Objective:** Recap confirm understanding of previous weeks topics, develop independent working skills, thought, problem solving. Alongside developing mental maths skills and rehearsing number bonds **Activities:** 20 questions on board relating to topic differentiated for all students	**Lesson Objective** Sequences in a table and graphically **Activities** Recap All students ▮▮▮▮ as exercises on w/b with me.	**Lesson Objective** Linear and non-linear sequences **Activities** White Rose worksheets as above	**Lesson Objective** Continue linear sequences **Activities** White Rose worksheets as above

	Students completing activities with a range of concrete materials as required Peer support – working in set groups with staff support.			
2	**Lesson Objective:** Recap confirm understanding of previous weeks topics, develop independent working skills, thought, problem solving. Alongside developing mental maths skills and rehearsing number bonds **Activities:** 20 questions on board relating to topic differentiated for all students Students completing activities with a range of concrete materials as required Peer support – working in set groups with staff support.	**Lesson Objective** Continue non-linear sequences **Activities** Examples of	**Lesson Objective** Explain the term-to-term rule **Activities** White Rose worksheets as above	**Lesson Objective** **Find missing terms (H)** Completion and understanding of topic **Activities** Additional plenary questions on board
3	**Lesson Objective** Completion and understanding of topic **Activities** Topic plenary questions on board from all levels to give opportunity to improve and develop knowledge and understanding; incorporating extension activities and further real-world applications and examples for all students combining themes	**Lesson Objective** Given a numerical input, find the output of a single function machine **Activities** White Rose worksheets as above	**Lesson Objective** Use inverse operations to find the input given the output **Activities** White Rose worksheets as above	**Lesson Objective** Use diagrams and letters to generalise number operations **Activities** White Rose worksheets as above

4	**Lesson Objective:** Recap confirm understanding of previous weeks topics, develop independent working skills, thought, problem solving. Alongside developing mental maths skills and rehearsing number bonds **Activities:** 20 questions on board relating to topic differentiated for all students Students completing activities with a range of concrete materials as required Peer support – working in set groups with staff support.	**Lesson Objective** Use diagrams and letters with single function machines **Activities** White Rose worksheets as above	**Lesson Objective** Find the function machine given a simple expression **Activities** White Rose worksheets as above	**Lesson Objective** Substitute values into single operation expressions **Activities** White Rose worksheets as above
5	**Lesson Objective** Find numerical inputs and outputs for a series of two function machines **Activities** White Rose worksheets as above	**Lesson Objective** Use diagrams and letters with a series of two function machines **Activities** White Rose worksheets as above	**Lesson Objective** Find the function machines given a two-step expression **Activities** White Rose worksheets as above	**Lesson Objective** Substitute values into two-step expressions **Activities** White Rose worksheets as above
6	**Lesson Objective** Generate sequences given an algebraic rule **Activities** White Rose worksheets as above	**Lesson Objective** Represent one- and two-step functions graphically **Activities** White Rose worksheets as above	**Lesson Objective** Completion and understanding of topic **Activities** Topic plenary questions on board from all levels to give opportunity	**Lesson Objective:** Recap confirm understanding of previous weeks topics, develop independent working skills, thought, problem solving. Alongside developing mental maths skills and rehearsing number bonds

			to improve and develop knowledge and understanding; incorporating extension activities and further real-world applications and examples for all students combining themes	**Activities:** 20 questions on board relating to topic differentiated for all students Students completing activities with a range of concrete materials as required Peer support – working in set groups with staff support.
7	**Lesson Objective** Understand and use fact families, numerically and algebraically **Activities** White Rose worksheets as above	**Lesson Objective** Solve one-step linear equations involving +/- using inverse operations **Activities** White Rose worksheets as above	**Lesson Objective** Solve one-step linear equations involving x/÷ using inverse operations **Activities** White Rose worksheets as above	**Lesson Objective** Understand the meaning of like and unlike terms **Activities** White Rose worksheets as above
8	**Lesson Objective** Understand the meaning of equivalence **Activities** White Rose worksheets as above	**Lesson Objective** Simplify algebraic expressions by collecting like terms, using the ≡ symbol **Activities** White Rose worksheets as above	**Lesson Objective** Completion and understanding of topic **Activities** Topic plenary questions on board from all levels to give opportunity to improve and develop knowledge and understanding; incorporating extension activities and further real-world applications and examples for all students combining themes	