RECOVERY CURRICULUM

Subject: Mathematics
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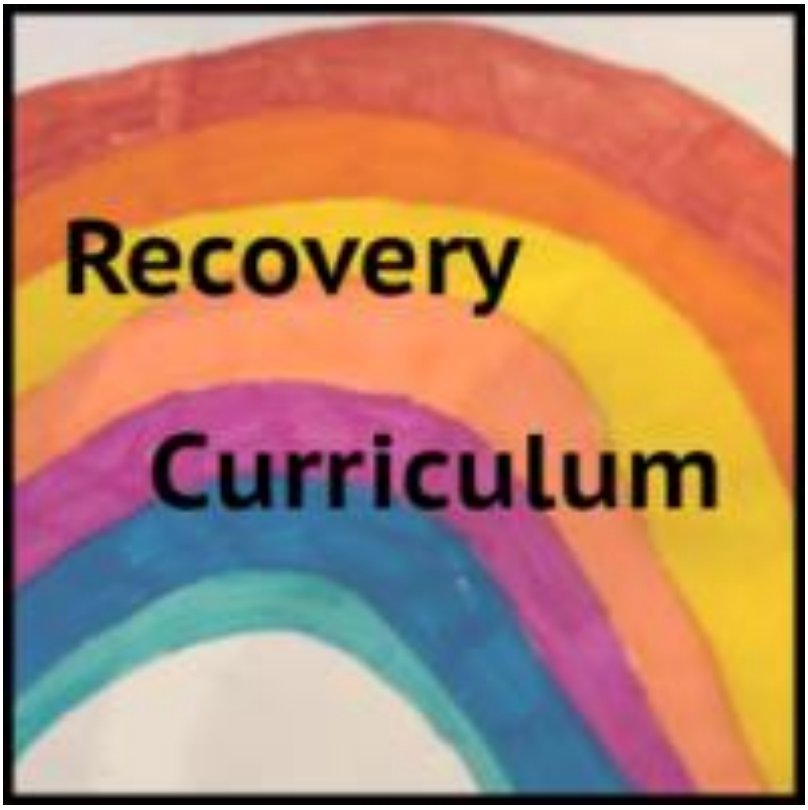
Created: July 2020
Updated:



Subject:	Mathematics	Teacher:	LEG
Year:	11	Class:	11 Higher
Unit title:	Algebraic skills and Equations		
Duration:	2 weeks (9 lessons)		

Intent

Intent Statement - at Landau Forte Amington, we believe learning powerful knowledge helps students achieve and creates a fairer society. How are you trying to accomplish this, with this unit/topic?

This topic will focus on student recovery following the pandemic, which has resulted in students experiencing the following possible losses: routine, structure, friendship, opportunity and freedom. It will support students academically, socially and emotionally, in order to transition students back to Academy life and support with the issues resulting from loss.

Aims - what do you want pupils to be able to know and do by the time they finish this unit/topic?

Algebraic Skills

- Expanding single and double brackets
- Factorising polynomials
- Collecting Like Terms
- Laws of Indices

Equations

- Forming and solving linear equations.
- Solving Simultaneous Equations by both elimination and substitution

Academy values – at Landau Forte Amington, we want students to be ambitious, brave and kind. How are these values promoted in this PoS?

- Ambitious – aims to quickly and effectively fill gaps then progress to existing SOL
- Brave – encourage students to persevere and show resilience through problem solving tasks

Kind – Culture of error fostered, classroom rules clearly established to support learning without ridicule

Content – what is being covered, ensuring breadth & depth?	National Curriculum/Exam Specification - how does the content link to the NC or Exam Spec?
Covers a range of skills and content overlapping the Year 10 and Year 11 scheme of learning to “recover” lost learning and further develop student learning.	

Powerful Knowledge - what powerful knowledge is included in this SoW? Consider what knowledge is it important for our students to know, so that when they leave school they can engage in and lead discussions, with people from the most advantaged backgrounds?

Implementation

GAPS	
Identification – how are you going to identify the gaps in knowledge/skills?	**Triage** – how are you going to rank order these gaps in knowledge/skills and 'fill' them, in order of importance?
MWB activities to assess existing knowledge Use of DNA to probe existing understanding Cold call questioning in lessons to gain insight into knowledge	Rank in order of severity (numbers affected) in order of progression (indicated by the order of aims listed above)
KEY CONCEPTS	
Key Concepts – what are the key concepts being taught?	**Progression** – how will studying these key concepts support progression to the traditional curriculum that has been planned?
Algebraic Skills (expanding, factorising), Laws of indices, solving equations (incl. simultaneous)	Bridges gaps between Y10 and Y11 scheme of learning, builds using spiral curriculum already planned
WELLBEING	
Lockdown – how will students share their experiences of lockdown?	**Social and Emotional** – how will student social and emotional health be supported?
Encourage to look at how this might link to experiences in lockdown	Positive classroom atmosphere, opportunities to work as a team / group, whole class discussions
RE-ESTABLISH	
Learning Skills – how are you going to re-establish the skills for learning?	**Relationships** – how are you going to re-establish classroom relationships?

Model how to solve problems, explicit direction on strategies and skills, "thinking out loud"	Standards lesson first lesson back, learn names of students quickly (seating plans)
OPPORTUNITIES	
Discussion – what are the discussion based opportunities?	**Group** – what are the group work based opportunities (while still ensuring social distancing)?
Maths team games or more complex problem/reasoning resources provided for each lesson to be discussed whole class in plenary / in groups during deliberate practice	Maths team games or more complex problem/reasoning resources provided for each lesson to be discussed in groups/pairs during deliberate practice

Delivery

1

Number of lessons in cycle: 1

1) Lesson Type (classroom or blended for remote homework)		2) DNA (Do Now Activity/Reading)	3) Learning Intentions (what, why & how)	
Classroom (whole sequence completed)	☒	Targeted DNA	What	To expand binomials
Blended (live and remote as independent study)	☐		Why	Fill in gaps, develop fluency and understanding
			How	Expand simple, double and triple brackets.

4) New Material (previous learning/ new material)	5) Check for Understanding (questioning/checking)	6) Prepare for Practice (model/ scaffold)	
Previous learning - Expand single brackets Expand double brackets, including squares (FOIL Method)	MWB questions – multiple choice diagnostic questions.	Modelled examples – two and three brackets.	Synchronous (live)
7) Deliberate Practice (guided/ independent)	8) Feedback (light/deep)	9) Review (daily/monthly)	Asynchronous (remote)
Expanding two or more binomials partner square grid.	Share answer and self-assess		

2

Number of lessons in cycle: 1

1) Lesson Type (classroom or blended for remote homework)		2) DNA (Do Now Activity/Reading)	3) Learning Intentions (what, why & how)	
Classroom (whole sequence completed)	☒	Factorising single brackets (Mathsbot)	What	To factorise quadratic equations
Blended (live and remote as independent study)	☐		Why	Fill in gaps, develop fluency and understanding

				How: Factorise quadratics with a coefficient of x^2 equal to one	
	Number of lessons in cycle:	4) New Material (previous learning/ new material)	5) Check for Understanding (questioning/checking)	6) Prepare for Practice (model/ scaffold)	Synchronous (live)
		Revise and practise factorising brackets (coefficient of x^2 equal to one) https://www.mathspad.co.uk/interactives/quadraticsTool/quadraticsTool.php	MWB questions (Mathsbot) https://mathsbot.com/questionGenerator	Worked examples with coefficients of x^2 equal to one.	
		7) Deliberate Practice (guided/ independent)	8) Feedback (light/deep)	9) Review (daily/monthly)	Asynchronous (remote)
		Paired connect 4 activity Alternative: https://www.mathspad.co.uk/interactives/expandingQuadsGame/expandingQuadsGame.php	Share answers and self-assess.	Forwards and Backwards https://www.mathspad.co.uk/teach/worksheets/factorising/backwardsAndForwards.php	
3	1	1) Lesson Type (classroom or blended for remote homework)	2) DNA (Do Now Activity/Reading)	3) Learning Intentions (what, why & how)	
		Classroom (whole sequence completed) ☒ Blended (live and remote as independent study) ☐	Targeted DNA (last week + problem topics from exam practice)	What: To factorise quadratics Why: To extend knowledge and understanding of factorising quadratics How: Factorise quadratics with the coefficient of x^2 greater than one.	
	Number of lessons in cycle:	4) New Material (previous learning/ new material)	5) Check for Understanding (questioning/checking)	6) Prepare for Practice (model/ scaffold)	Synchronous (live)
		Recap previous learning – factorising quadratics with coefficient of x^2 equal to one. New learning – identify the different in the process of factorising with coefficient of x^2 greater than one. https://www.goteachmaths.co.uk/solving-quadratic-equations-using-factorisation-with-coefficients/	MWB questions – ask for working out shown. https://www.mathspad.co.uk/interactives/quadratics/factorising2.php	Model worked solution, with a step by step guide.	
		7) Deliberate Practice (guided/ independent)	8) Feedback (light/deep)	9) Review (daily/monthly)	Asyn chro

		Factorising maze https://www.goteachmaths.co.uk/wp-content/uploads/2019/03/Quadratic-Equations-Factorisation-With-Coefficients-Answer-Maze-A4.pdf	Answers, shared feedback		
4	2	1) Lesson Type (classroom or blended for remote homework) Classroom (whole sequence completed) ☒ Blended (live and remote as independent study) ☐	2) DNA (Do Now Activity/Reading) Targeted DNA (last week + problem topics from exam practice)	3) Learning Intentions (what, why & how) What: Indices: Negative and Fractional Why: Fill in the gaps, develop fluency and understanding. How: Answer and analyse questions involving negative and fractional indices.	
	Number of lessons in cycle:	4) New Material (previous learning/ new material) Previous learning: Basic index laws • Negative indices • Fractional indices • Combined (part cycle repeated based on three learning episodes over two lessons)	5) Check for Understanding (questioning/checking) MWB CFU throughout new material.	6) Prepare for Practice (model/ scaffold) Examples and model solution. https://www.goteachmaths.co.uk/wp-content/uploads/2019/03/Indices-Negative-Link-A5.pdf Left and right link: https://www.goteachmaths.co.uk/wp-content/uploads/2019/03/Indices-Fractional-Link-A5.pdf	Synchronous (live)
		7) Deliberate Practice (guided/ independent) Indices follow me worksheet	8) Feedback (light/deep) Share answers and respond to verbal feedback	9) Review (daily/monthly) True or False shootout	Asynchronous (remote)
6	1	1) Lesson Type (classroom or blended for remote homework) Classroom (whole sequence completed) ☒ Blended (live and remote as independent study) ☐	2) DNA (Do Now Activity/Reading) Targeted DNA	3) Learning Intentions (what, why & how) What: Forming and solving equations Why: Fill in the gaps, develop fluency and understanding How: To form equations from worded questions and solve.	

	Number of lessons in cycle:	4) New Material (previous learning/ new material)	5) Check for Understanding (questioning/checking)	6) Prepare for Practice (model/ scaffold)	Synchronous (live)
		Forming and solving equations. Worded questions, including algebraic skills.	MWB questions – Thinking logically question	Examples on worded and shape questions – emphasis on annotating the questions to pick out the key information before solving.	
		7) Deliberate Practice (guided/ independent)	8) Feedback (light/deep)	9) Review (daily/monthly)	Asynchronous (remote)
		Forming equations worksheet	Share answers and respond to verbal feedback	Exam exit ticket https://www.goteachmaths.co.uk/wp-content/uploads/2019/08/Quadratic-Equations-Forming-Solving-Higher-GCSE-Questions-AQA-Standard.pdf	

7	1	1) Lesson Type (classroom or blended for remote homework)		2) DNA (Do Now Activity/Reading)	3) Learning Intentions (what, what & how)
		Classroom (whole sequence completed)	☒	Targeted DNA (last week + problem topics from exam practice)	What: Simultaneous: Elimination Why: Fill in gaps, develop fluency and understanding How: Solving simultaneous equations by process of elimination.
		Blended (live and remote as independent study)	☐		
	Number of lessons in cycle:	4) New Material (previous learning/ new material)		5) Check for Understanding (questioning/checking)	6) Prepare for Practice (model/ scaffold)
		Solving simultaneous equations by elimination. https://www.goteachmaths.co.uk/solving-simultaneous-equations-by-balancing-coefficients/ Form a basic simultaneous equation and solve. https://www.mathspad.co.uk/i2/teach.php?id=simultaneousPuzzles		MWB Questions https://www.transum.org/software/SW/Starter_of_the_day/Students/Simultaneous_Equations.asp?Level=1	Elimination investigation. Prepare by identifying why this may work. Collaborate as a class.
		7) Deliberate Practice (guided/ independent)		8) Feedback (light/deep)	9) Review (daily/monthly)
		Activity 1: Jigsaw Activity 2: Simultaneous equations puzzle https://www.mathspad.co.uk/resource.php?simultaneousPuzzles		Share answers and respond to verbal feedback	Spot the mistake (bottom question) https://www.mathspad.co.uk/resource.php?simultaneousEquationsElimination2

Synchronous (live)

Asynchronous (remote)

8	Number of lessons in cycle: 1	1) Lesson Type (classroom or blended for remote homework)		2) DNA (Do Now Activity/Reading)	3) Learning Intentions (what, why & how)	
		Classroom (whole sequence completed)	☒	Targeted DNA (last week + problem topics from exam practice)	What: Simultaneous Equations: Substitution Why: Extend knowledge and understanding of simultaneous equations How: Solving simultaneous equations by process of substitution	
		Blended (live and remote as independent study)	☐			
		4) New Material (previous learning/ new material)		5) Check for Understanding (questioning/checking)	6) Prepare for Practice (model/ scaffold)	Synchronous (live)
		Solving simultaneous equations using substitution. (PowerPoint of method available)		MWB Questions https://www.transum.org/software/SW/Starter_of_the_day/Students/Simultaneous_Equations.asp?Level=1	Modelling an solution using the substitution model – students prepare by coming up with their own step by step guide based on the modelled solution.	
		7) Deliberate Practice (guided/ independent)		8) Feedback (light/deep)	9) Review (daily/monthly)	Asynchronous (remote)
		Jigsaw or treasure hunt activity.		Answers are shared, students make any necessary corrections.	Exam question exit ticket style https://www.goteachmaths.co.uk/wp-content/uploads/2019/03/Simultaneous-Equations-Balancing-Higher-GCSE-Questions-Standard.pdf	
9	Number of lessons in cycle: 1	1) Lesson Type (classroom or blended for remote homework)		2) DNA (Do Now Activity/Reading)	3) Learning Intentions (what, why & how)	
		Classroom (whole sequence completed)	☒	Targeted DNA (last week + problem topics from exam practice)	What: Exam techniques Why: Develop confidence and skills answering exam style questions from Edexcel. How: Be able to annotate and answer exam style questions from a part paper.	
		Blended (live and remote as independent study)	☐			
		4) New Material (previous learning/ new material)		5) Check for Understanding (questioning/checking)	6) Prepare for Practice (model/ scaffold)	Synchronous (live)
		Review of a range of skills covered in past week / past year		Show call responses	Students collaboratively practise as a class how to annotate exam questions.	
		7) Deliberate Practice (guided/ independent)		8) Feedback (light/deep)	9) Review (daily/monthly)	Asynchro

		First 30 marks – non calculator higher paper (individual)	Mark-scheme, respond to verbal feedback	Self-marked at end, scores tracked by teacher, record most common errors for focus in DNAs next week	