RECOVERY CURRICULUM

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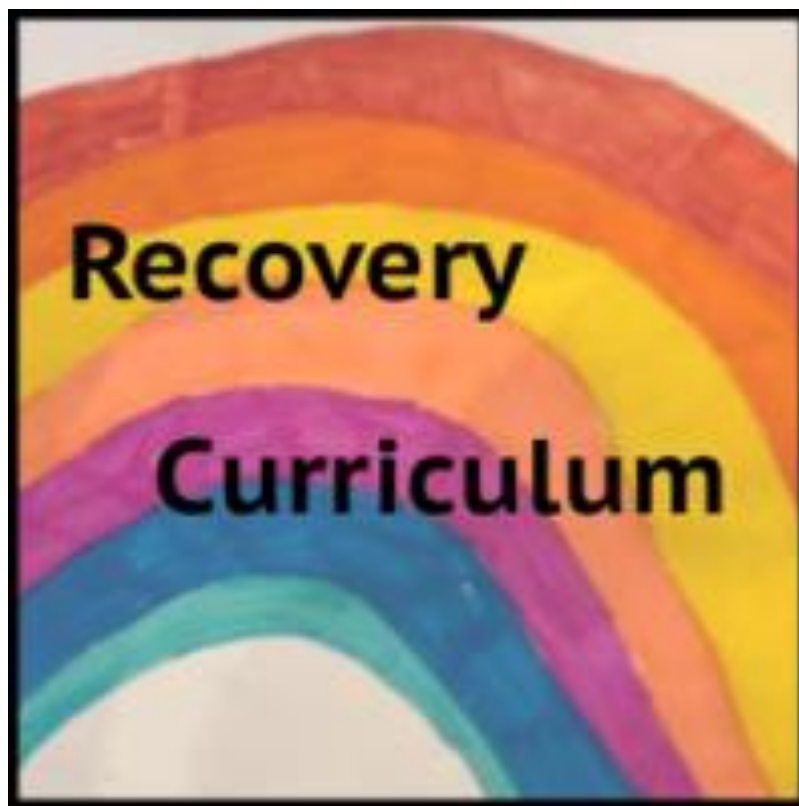
Subject:	CS		Teacher:	Lead: GMA
Year:	9		Class:	All
Unit title:	Data Representation.			
Duration:	Term 1			

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?

Can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
Can analyse problems in computational terms
Can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
Are responsible, competent, confident and creative users of information and communication technology.
Become digitally literate in order to able to use, and express themselves and develop their ideas through, information and communication technology
Become digitally literate in order to become active participants in a digital society and workplace.

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

Brave: Empower pupils to become digitally literate in order to able to use, and express themselves and develop their ideas through, information and communication technology.

Ambitious: Delivery of challenging concepts and ideas.

Kind to become digitally literate in order to become active participants in a digital society and workplace.

Content – what is being covered, ensuring breadth & depth?	National Curriculum/Exam Specification - how does the content link to the NC or Exam Spec?
Unit: Binary Topics: 1. What is Binary 2. Binary maths 3. Binary conversion 4. Sound representation Representing Images	understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal] understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits

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?
How data is stored.

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?
Create a baseline test of programming knowledge before the programming unit at the start of term. This will identify uptake/ areas of confusion etc.	The results of the baseline test will determine if a group needs to revisit a year 8 topic or spend extended time on a topic in year 9.

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?
What is Binary: definition. Binary maths: Using mathematical functions within programming. Binary conversion: Converting Units: Converting between binary, hex and decimal. Sound representation: digitally and storing sounds. Representing Images: digitally and storing imaes.	Allows pupils to refine knowledge and understanding in preparation for KS4. Taken from traditional curriculum but reordered to allow learning without ICT access. This will hopefully allow learners to use the ICT facilities for programming units.
WELLBEING	
Lockdown – how will students share their experiences of lockdown?	**Social and Emotional** – how will student social and emotional health be supported?
The big discussion will be part of a pupils learning during tutor time. This will encourage pupil dialogue and discuss issues of technologies impact on social and emotional wellbeing. For example is Facebook a positive for society? Cybersecurity project will run later in the year and will focus on the impacts of lockdown in more detail. Discussions on how they found using technology helped them when working from home. Conversations and resources linking how beneficial technology was in keeping people communicating during	The big discussion will be part of a pupils learning during tutor time. This will encourage pupil dialogue and discuss issues of technologies impact on social and emotional wellbeing. For example is Facebook a positive for society? Differentiation, peer assessment, classroom discussions. Conversations and resources linking how beneficial technology was in keeping people communicating during lockdown and how technology helped peoples social and emotional health thanks to this technology

lockdown and how technology helped peoples social and emotional health thanks to this technology	

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?
Introduction lesson: create rules for the Computer Science classroom.

Discussion of exam key words.

Computing baseline.

Routine in look and structure of lesson with recap lessons at the end of each cycle. | The big discussion will be part of a pupils learning during tutor time. This will encourage pupil dialogue and discuss issues of technologies impact on social and emotional wellbeing. For example is Facebook a positive for society?

Introduction focused on kindness and compassion

Attempt to embed more classroom dialogue into planning. |

OPPORTUNITIES

Discussion – what are the discussion based opportunities?	**Group** – what are the group work based opportunities (while still ensuring social distancing)?
The big discussion will be part of a pupils learning during tutor time. This will encourage pupil dialogue and discuss issues of technologies impact on social and emotional wellbeing. For example is Facebook a positive for society?

Reflective discussion at the end of each lesson that looks at how each key abstract concept of each lesson is applied to the real world for example: how binary is used in electrical switches. | The big discussion will be part of a pupils learning during tutor time. This will encourage pupil dialogue and discuss issues of technologies impact on social and emotional wellbeing. For example is Facebook a positive for society?

Peer assessment.
Reflective discussion at the end of each lesson that looks at how each key abstract concept of each lesson is applied to the real world for example: how binary is used in electrical switches. |

Delivery

	1) Lesson Type (classroom or blended for remote homework)		2) DNA (Do Now Activity/Reading)	3) Learning Intentions (what, why & how)	
1	Classroom (whole sequence completed)	☐	**BEBRAS Activity**	**What**	How data is represented inside computers.
	Blended (live and remote as independent study) **IF A BLENDED LEARNING APPROACH IS REQUIRED, AN ALTERNATIVE SCHEME OF WORK ON THE SAME CONTENT IS AVAILABLE FROM THE TEACH COMPUTING HOME TEACHING REPOSITORY (6 LESSONS AVAILABLE).** https://teachcomputing.org/home-teaching/python-programming-pathway-1/ **THIS SERIES OF LESSONS COVERS THE SAME TOPICS BUT IN A MORE USER-FRIENDLY FORMAT FOR PUPILS STUDYING AT HOME.**	☐		**Why**	To understand how computers use binary
				How E	Recall how computers use binary to represent numbers and characters
				4 – 5	Demonstrate representing numbers in decimal and binary form
				5 +	Use conversion between decimal and binary form

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)
	Bit, Byte, binary, Ascii, Base Numbers, nibble, conversion. Live lesson supported by PPT and Worksheet.	A starter is used to gauge the classes basic knowledge of topic Use of various questioning techniques throughout the lesson In live lesson using hand up or chat function	At the task stage the teacher will model one of the examples, making it clear that this is just one way of completing the problem and as such the problem can still be attempted by the student in a different way. Modelling in presentation mode of teams.	

7) Deliberate Practice (guided/ independent)	8) Feedback (light/deep)	9) Review (daily/monthly)	Asynchronous (remote)
The tasks will be set via a MS Teams presentation and completed independently.	The teacher will ask for volunteers to demonstrate their Work, and display their code on the teams screen with permission.	N.A	

2 — Number of lessons in cycle:

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)	☐		What	
			Why	
Blended (live and remote as independent study)	☐		How	

4) New Material (previous learning/ new material)	5) Check for Understanding (questioning/checking)	6) Prepare for Practice (model/ scaffold)	Synchronous (live)

7) Deliberate Practice (guided/ independent)	8) Feedback (light/deep)	9) Review (daily/monthly)	Asynchronous (remote)

3 — Number of lessons in

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)	☐		What	
			Why	
Blended (live and remote as independent study)	☐		How	

4) New Material (previous learning/ new material)	5) Check for Understanding (questioning/checking)	6) Prepare for Practice (model/ scaffold)	Synchronous (live)

		7) Deliberate Practice (guided/ independent)	8) Feedback (light/deep)	9) Review (daily/monthly)	Asynchronous (remote)

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4	Number of lessons in cycle:	Classroom (whole sequence completed)	☐		What	
					Why	
		Blended (live and remote as independent study)	☐		How	
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					Why	
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6	Number of lessons in cycle:	Classroom (whole sequence completed)	☐		What / Why / How	
		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)
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