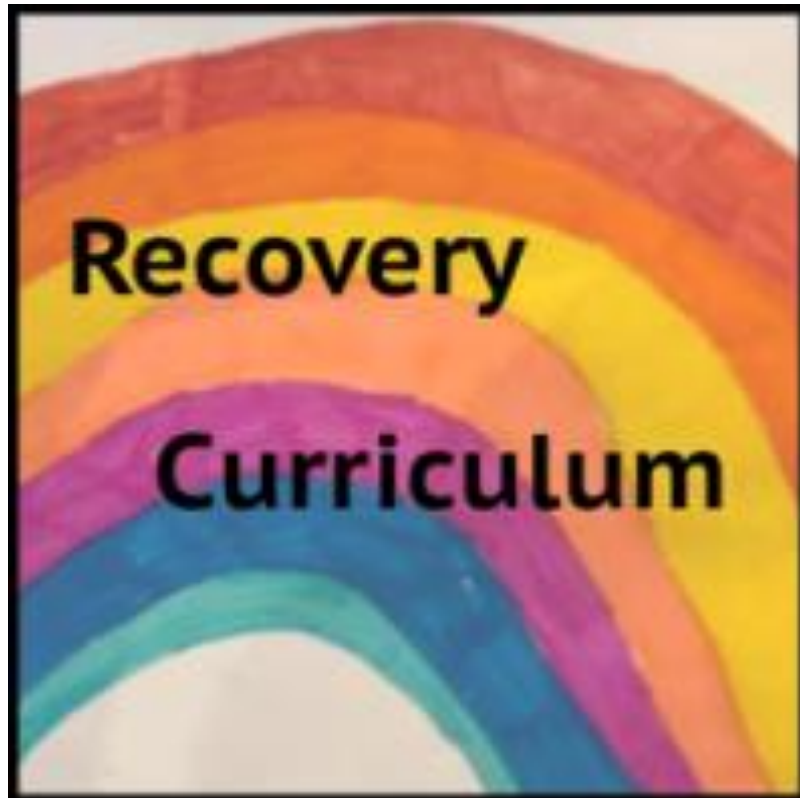


RECOVERY CURRICULUM

Subject: Science



Subject:	Science	Teacher:	
Year:	11	Class:	
Unit title:	C1 – Atomic Structure and the Periodic Table		
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?			
<ul style="list-style-type: none">• To be able to build and recap on their KS4 knowledge on atoms, elements and compounds. To be confident to apply this knowledge in different situations.• To describe the different separation techniques.• To be able to build their confidence with reading, writing and numeracy skills.			
Academy values – at Landau Forte Amington, we want students to be ambitious, brave and kind. How are these values promoted in this PoS?			
<ul style="list-style-type: none">• Ambitious - Students are able to access the content and their appropriate level and the content allows for all students to be stretched in their development of new skills, knowledge, and application. Students learn through a range of activities, including practical work where possible. All students will be stretched through the various forms of new learning and assessment.• Brave – Student will have to be brave and feel confident about using skills that haven't been used for a long period of time, and not be afraid to get things wrong.• Kind – Students will have to be kind to themselves about reintegrating themselves back into learning and using skills again that they may struggle with.			
Content – what is being covered, ensuring breadth & depth?		National Curriculum/Exam Specification - how does the content link to the NC or Exam Spec?	
<ul style="list-style-type: none">• A simple model of the atom, symbols, relative atomic mass, electronic charge and isotopes• Separation techniques• The history of the atom• The periodic table		5.1.1 A simple model of the atom, symbols, relative atomic mass, electronic charge and isotopes 5.1.2 The periodic table 5.1.2.3 Metals and non-metals 5.1.2.4 Group 0	

	5.1.2.5 Group 1 5.1.2.6 Group 7
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?	
<ul style="list-style-type: none"> • What is an atom and how we use this building block to predict properties based on our knowledge. • How to separate different substances using information about their properties. • Students will gain knowledge of basic lab techniques. • Students will be have an understanding of why and how scientific methods 	
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?
<ul style="list-style-type: none"> • DNA activities to assess prior knowledge • Quick quizzes • General questioning • Use activities that require reading, writing and numeracy skills to assess their skills 	<ul style="list-style-type: none"> • Assess student progress via numerous different activities, and prioritise skills that students struggle with • Ensure that the basics of cells are understood before moving on to further content
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?
<ul style="list-style-type: none"> • Atoms, elements and compounds • Separation technique • Groups 0, 1 and 7 • Metals and non-metals 	<ul style="list-style-type: none"> • Atoms, elements and compounds are the key areas that underpin the majority of the Chemistry topics.
WELLBEING	
Lockdown – how will students share their experiences of lockdown?	Social and Emotional – how will student social and emotional health be supported?

<ul style="list-style-type: none"> Within group discussion – this could be the very first discussion within a live lesson Analogies within the content 	<ul style="list-style-type: none"> Letting students know that it is important to talk about anything that they are struggling with, giving them options of how they can do this
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?
<ul style="list-style-type: none"> Use activities within the content that require students to use reading, writing and numeracy skills 	<ul style="list-style-type: none"> Use the first session to discuss experiences during lockdown, introductions and an icebreaking activity.
OPPORTUNITIES	
Discussion – what are the discussion based opportunities?	Group – what are the group work based opportunities (while still ensuring social distancing)?
<ul style="list-style-type: none"> Many opportunities throughout the topic, including discussing how scientific methods and theories develop over time. 	<ul style="list-style-type: none"> Group work looking at different separation techniques. Group presentation on the history of the atom

Delivery						
1 – 5.1.2.1 – 5.1.2.3 Atoms elements and compounds, Mixtures, The development of the model of the atom	3	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)	X	<ul style="list-style-type: none">• What is an atom? What is it made of? Write down an answer to be ready to share ideas• How could you separate sand and water?• Read about the history of the atom – highlight key facts	What	<ul style="list-style-type: none">• Describe the structure of an atom• Know that elements can react to form compounds• Be able to describe different separation techniques• Be able to describe the experiments that led to the current model of the atom
		Blended (live and remote as independent study)			Why	Atoms, elements and compounds are the building blocks to all chemistry topics
					How	You will be able to describe the structure of the atom, suggest separation techniques to separate substances, and understand how scientists contributed to the development of the model of the atom

2 – 5.1.2.4 – 5.1.2.7 Relative electrical charges of subatomic particles, size and mass of atoms, Relative atomic mass, electronic structure.	3	4) New Material (previous learning/ new material)		5) Check for Understanding (questioning/checking)	6) Prepare for Practice (model/ scaffold)	Synchronous (live)
		<ul style="list-style-type: none">Build on KS3 knowledge about atoms, elements and compoundsHome practical on separating techniquesBegin with the end – start from the current model of the atom and work backwards through the history		<ul style="list-style-type: none">Atoms, elements and compounds quizFill in the gaps activityLabelling diagrams of an atomHistory of the atom quiz	<ul style="list-style-type: none">Breakdown the steps on a separation techniquesScaffold exam questions on the history of the atom/separating techniquesPartial answer	
		7) Deliberate Practice (guided/ independent)		8) Feedback (light/deep)	9) Review (daily/monthly)	Asynchronous (remote)
		<ul style="list-style-type: none">Use books and website to produce a summary timeline on the history of the atomAttempt 6 mark exam question independently		<ul style="list-style-type: none">How to improve summaryMark exam question using mark scheme and write down improvements	<ul style="list-style-type: none">Quick quizExam questions	
2 – 5.1.2.4 – 5.1.2.7 Relative electrical charges of subatomic particles, size and mass of atoms, Relative atomic mass, electronic structure.	3	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)	X	<ul style="list-style-type: none">Read information about the atom (including relative charge and mass of subatomic particles) and highlight key words within text, then label a diagram of an atom.Watch a video clip on electronic structure. Write down 5 new learning pointsHow big do you think the atom is?	What	<ul style="list-style-type: none">Draw and write out the electronic structures of the first 20 elementsCalculate the relative atomic mass of an elementKnow the relative charge and mass of protons, neutrons and electrons
		Blended (live and remote as independent study)	<input type="checkbox"/>		Why	Atoms are the building blocks to all chemistry topics. This is knowledge underpins how atoms bond with each other.
					How	You will be able to answer exam questions on electronic structures of elements, the relative charges and masses of subatomic particles and calculate relative atomic mass.

	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)
		<ul style="list-style-type: none"> • Present method of how to fill shells with electrons • Fact file on the atom and relative charge/mass of subatomic particles • Describe what an isotope is 	<ul style="list-style-type: none"> • Electronic structure quiz • Fill in the gaps activity • Labelling diagrams of the atom including relative charge and masses of subatomic particles • Calculate relative atomic mass 	<ul style="list-style-type: none"> • Breakdown the steps of calculating relative atomic mass and drawing electronic structure • Partial answer 	
		7) Deliberate Practice (guided/ independent)	8) Feedback (light/deep)	9) Review (daily/monthly)	Asynchronous (remote)
		<ul style="list-style-type: none"> • Worksheet on electronic structure • Past exam questions on relative charge/mass of subatomic particles • Relative atomic mass calculation 	<ul style="list-style-type: none"> • Use mark scheme to assign a mark to the exam question. Students to write down corrections from mark scheme 	<ul style="list-style-type: none"> • Quick quiz • Exam questions 	

3 – 5.1.2 The periodic table	3	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)	X	<ul style="list-style-type: none"> Highlight different parts of the periodic table, giving a text book page to read to help What are the properties of metals and non-metals? – write down answers to discuss 	What	<ul style="list-style-type: none"> Describe the developments of the periodic table Identify the properties metals and non-metals Describe the reactivity and reactions in Group 0,1 and 7 		
		Blended (live and remote as independent study)			Why	<ul style="list-style-type: none"> It is important to know how new discoveries are made and accepted Many professions require the knowledge about reactivity of substances 		
					How	You will be able to give reasons why Mendeleev's periodic table was accepted and be able to successfully answer exam questions on the reactivity of groups 0, 1 and 7.		
	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)
		<ul style="list-style-type: none"> Watch a video about the reactivity of Group 0/1/7 Present the developments of the periodic table 		<ul style="list-style-type: none"> Alkali metals quiz Fill in the gaps activity Questions on Group 0,1,7 		<ul style="list-style-type: none"> Give example exam answers to a range of exam questions. Provide a good example and a poor example (particularly development of periodic table) Highlight common misconceptions 		
		7) Deliberate Practice (guided/ independent)		8) Feedback (light/deep)		9) Review (daily/monthly)		Asynchronous (remote)
	<ul style="list-style-type: none"> Use books and website to produce a summary timeline on the development of the periodic table, deliberately picking out key information Attempt exam questions based on Group 0, 1 and 7 of the periodic table Create a fact file on Group 0, 1 and 7 to use as a revision resource 		<ul style="list-style-type: none"> How to improve summary Mark exam question using mark scheme and write down improvements. Highlight areas of error to focus on 		<ul style="list-style-type: none"> Quick quiz Exam questions 			