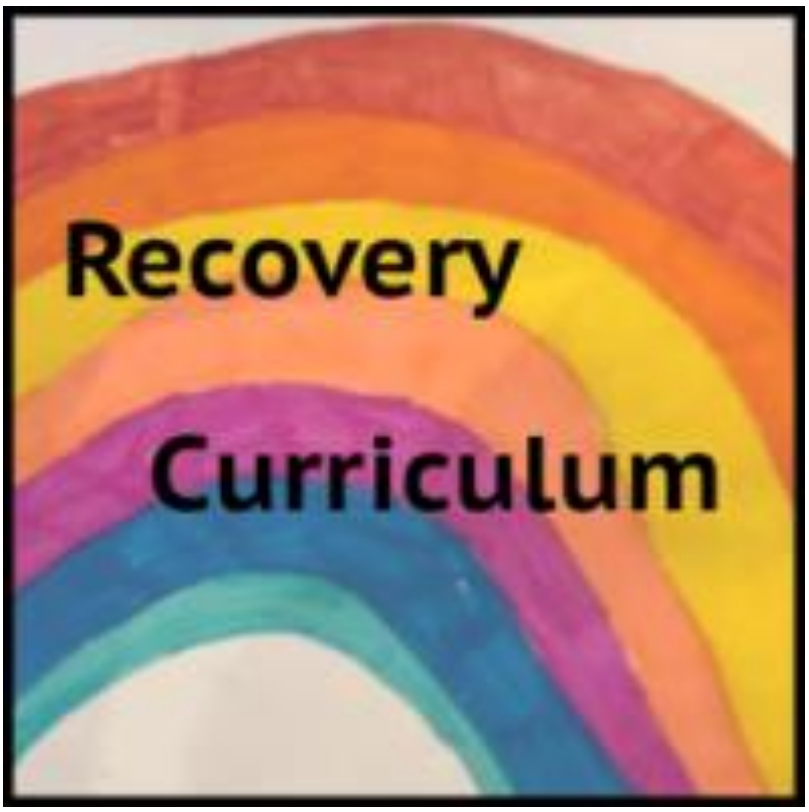
RECOVERY CURRICULUM

Subject: Science



Subject:	Science	Teacher:	Science staff
Year:	Year 9	Class:	Year 9 classes
Unit title:	8D Unicellular organisms, 8F The Periodic Table, 8K Energy Transfers		
Duration:	2 weeks		

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?	
Students need to be able to identify and label unicellular organisms such as a bacterium. Students need to be able to label the periodic table and discuss how elements react together to form compounds. Students also need to be able to Draw energy transfer diagrams to show how energy can be transferred.	
Academy values – at Landau Forte Amington, we want students to be ambitious, brave and kind. How are these values promoted in this PoS?	
• 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?
Students will learn about the transfer of energy, Power, Efficiency and how to calculate energy used and the energy efficiency of different appliances. Introduction to Microorganisms, unicellular and multicellular organisms. Students will study the structure and behaviour of bacteria, viruses and fungi. Students can then begin to	The periodic table – pupils should know about the varying physical and chemical properties of different elements, the periodic table: periods and groups; metals and non-metals, how patterns in reactions can be predicted with reference to the periodic table, and the properties of metals and non-metals

associate this behaviour with diseases and start to understand how bacteria and viruses cause illness and what can be done to treat them. Students will hopefully realise that antibiotics are not necessary for all illnesses. Introduction to elements in the Earth and where to find them. Students will explore some of the elements that we can find in the Periodic Table and how we then use these elements to make everyday products.	Energy changes and transfers - pupils should know about heating and thermal equilibrium: temperature difference between 2 objects leading to energy transfer from the hotter to the cooler one, through contact (conduction) or radiation; such transfers tending to reduce the temperature difference; use of insulators. Cells and organisation - cells as the fundamental unit of living organisms, including how to observe, interpret and record cell structure using a light microscope. Students should know the functions of the cell wall, cell membrane, cytoplasm, nucleus, vacuole, mitochondria and chloroplasts and be able to describe the similarities and differences between plant and animal cells.
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?	
Energy Transfers – The range of energy transfers that can take place and how we change these energy stores. Unicellular organisms –To understand what unicellular organisms are and their structure and functions. The Periodic Table – Understand how useful the Periodic Table is and what is found in it. To be able to state how we can use the Earth's resources.	

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?
• DNA activities to assess prior knowledge • Quick quizzes • General questioning • Use activities that require reading, writing and numeracy skills to assess their skills	• 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 – Students will learn about the transfer of energy, Power, Efficiency and how to calculate energy used and the energy efficiency of different appliances.	**Progression** – how will studying these key concepts support progression to the traditional curriculum that has been planned? Cell biology forms the basis of key biology concepts. This is

Introduction to Microorganisms, unicellular and multicellular organisms. Students will study the structure and behaviour of bacteria, viruses and fungi. Students can then begin to associate this behaviour with diseases and start to understand how bacteria and viruses cause illness and what can be done to treat them. Students will hopefully realise that antibiotics are not necessary for all illnesses. Introduction to elements in the Earth and where to find them. Students will explore some of the elements that we can find in the Periodic Table and how we then use these elements to make everyday products.	necessary knowledge for students to progress to GCSE. Energy stores and their uses under pins most of our Physical processes. Atoms are our building blocks to make elements and compounds which is how we then make materials. These are
WELLBEING	
Lockdown – how will students share their experiences of lockdown?	**Social and Emotional** – how will student social and emotional health be supported?
• Within group discussion – this could be the very first discussion within a live lesson • Analogies within the content	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?
• Use activities within the content that require students to use reading, writing and numeracy skills	• 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)?
• Many opportunities throughout the topic, including a debate about renewable and non-renewable energy sources and their contribution to Global Warming	• Energy resources and Global Warming debate • Unicellular presentation focusing on viruses and COVID-19 • Video discussion of the position of elements in the Periodic Table

Delivery

1	3	1) Lesson Type (classroom or blended for remote homework) Classroom (whole sequence completed) X Blended (live and remote as independent study) ☐	2) DNA (Do Now Activity/Reading) • How many diseases can you name? What causes each of them? • Draw an animal cell, how is a bacterium cell different?	3) Learning Intentions (what, why & how) What: • Unicellular and multicellular organisms • Bacteria and their structure Why: • To learn why we get colds • To understand how bacteria can cause illness How: • By stating what the seven life processes are • To state what unicellular and multicellular organisms are • To use a microscope to observe unicellular organisms • By completing diagrams and questions about bacteria and their functions	
	Number of lessons in cycle:	4) New Material (previous learning/ new material) • Basic structure of animal cells and bacteria • New structure of viruses and mould	5) Check for Understanding (questioning/checking) • Quick Quiz style questions to check on unicellular organisms • Quick Quiz style questions to check the structure of viruses • Quick Quiz style questions to check on the structure of bacteria	6) Prepare for Practice (model/ scaffold) • Provide models of the structure of plant and animal cells • Provide diagrams to label • Provide writing frames for exit ticket style 6 mark exam questions.	Synchronous (live)
		7) Deliberate Practice (guided/ independent) • Attempt 6 mark exam question independently • Create a bacterium cell model using different materials	8) Feedback (light/deep) • Use mark scheme to assign a mark to the exam question. Students to write down corrections from mark scheme	9) Review (daily/monthly) • Quick quiz • Exam questions • End of topic test questions	Asynchronous (remote)

2	4	1) Lesson Type (classroom or blended for remote homework) Classroom (whole sequence completed) X Blended (live and remote as independent study) ☐	2) DNA (Do Now Activity/Reading) • List as many elements from the Periodic Table that you can think of • Give examples of three energy stores and draw a simple energy transfer diagram for each	3) Learning Intentions (what, why & how) What: • The structure and function of the Periodic Table and the reactions of elements from the Periodic Table. • The different energy stores and how they can be transferred Why: • To understand the usefulness of elements • To understand how energy transfers are used in everyday items How: • By completing tasks and questions to demonstrate understanding.	
	Number of lessons in cycle:	4) New Material (previous learning/ new material) • Basic concept of the Periodic Table • Describing patterns of elements in different groups of the Periodic Table • The 7 energy stores and how they are transferred. • Drawing complex energy transfer diagrams	5) Check for Understanding (questioning/checking) • True or false quiz • Fill in the gaps activity • Labelling diagrams • Drawing energy transfers	6) Prepare for Practice (model/ scaffold) • Provide examples of energy transfer diagrams • Provide diagrams to label • Provide writing frames for exit ticket style 6 mark exam questions.	Synchronous (live)
		7) Deliberate Practice (guided/ independent) • Attempt 6 mark exam question independently • Attempt to draw diagrams for elements bonding etc. and energy transfer independently	8) Feedback (light/deep) • Use mark scheme to assign a mark to the exam question. Students to write down corrections from mark scheme	9) Review (daily/monthly) • Quick quiz • Exam questions • End of topic test questions	Asynchronous (remote)

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) ☐		What / Why / How	
		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)	Synchronous (live)
		7) Deliberate Practice (guided/ independent)	8) Feedback (light/deep)	9) Review (daily/monthly)	Asynchronous (remote)
4		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 / How	
		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)	Synchronous (live)
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5		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 / How	
		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)	Synchronous (live)
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6		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 / How	
		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)	Synchronous (live)
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7		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 / How	
		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)	Synchronous (live)
		7) Deliberate Practice (guided/ independent)	8) Feedback (light/deep)	9) Review (daily/monthly)	Asynchronous (remote)
8		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 / How	
		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)	Synchronous (live)
		7) Deliberate Practice (guided/ independent)	8) Feedback (light/deep)	9) Review (daily/monthly)	Asyn chro

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