Year 8- Term one- Who owns our ideas?

Scheme of Learning (SOL)

Subject: Science	**Year: 2020**	**Group: Year 8**
Term: 2	**Topic: Energy calculations, atomic structure and cells**	**Duration: 7 weeks**

Curriculum Intent: An ambitious and rich curriculum with opportunities to develop thinking skills, promote curiosity and to nurture lifelong learners

Faculty vision: To develop inquiring minds and curiosity about science and the natural world, from the subatomic to the intergalactic, so that students are able to solve problems and make informed decisions on scientific and technological issues.

Overview of unit:
Links to National Curriculum/specifications/other topics in faculty/other topics
KS3 National Curriculum
Fuels
Energy costs and power
Periodic table
Development of the atomic model

The Big Question:
Who owns our ideas?

Assessment Objectives		Literacy Pillars:	
Skills students will have by the end of this SOL	**<u>Processing data (results tables and graphs)</u>** **Selecting equipment** **Choosing ranges of variables** **<u>Interpreting graphs</u>** **Constructing results tables** **Identifying anomalies** **Calculating averages** **Drawing lines of best fit**	**Reading**	**Scientific methods, information and theories, scientific evidence**
		Writing	**Recording results, describing patterns and relationships in the results, explaining results linked to scientific theories**

Knowledge students will have by the end of this SOL	Discovery of DNA Extraction of DNA Reactivity of group 1 and 7 elements Burning fuels Domestic energy bills	**Vocabulary**	**Use of key terms linked to particle theory, cells and energy as identified in the knowing more column for each section**
		Oracy	**Discussing results with peers, explaining outcomes from practical tasks, debates linked to scientific evidence**
Topics for interleaving	Constructing hypothesis Variables Methods and Equipment Conducting an experiment Measurements and SI units Drawing Graphs and Tables Interpreting graphs and making conclusions Scientific attitudes Cells Energy transfers Periodic table	**Presentation**	**Presenting data in a range of formats, using diagrams**

Week or lesson	**Link to the Big Question [promote enquiry, linking learning and stimulating ideas]**	**Knowing more [retention, breadth, context, LO, vocabulary]**	**Understanding more [depth of knowledge, application of knowledge, agility of thinking, fluency of expression]**	**Demonstrating more [Bloom's questioning, transferable skills, subject specific understanding]**
Prompts to include	How will you introduce the big question? What stimuli will you use? What links to previous topics? What links to topics in other subject areas?	What prior learning will you assess/identify with a recall/retrieval activity? What key knowledge/vocab do you want students to know by the end of the lesson?	What activities will students do to consolidate this knowledge? What activities will support them in applying this new knowledge to new and unfamiliar contexts?	How will you assess students' knowledge, skills and understanding during and at the end of the lesson? What questioning techniques?

1 Introduce BQ and Critical thinking	**The Big Question:** Who owns our ideas? Introduce the BQ, allowing students to show what they already know. Give students the big question ask them to glue this in the middle of a page (show example) , allow them to discuss with their peers what the BQ means and annotate around their BQ. At this stage accept any ideas that students come up with. Encourage them to make links to previous concepts. Discuss students ideas. **Connect** Show logos for Apple/Samsung - what do they already know about these companies? Then show images of different phones - can they guess what they have in common? **Planning for support** At this stage accept any ideas that students come up with. Encourage them to make links to previous concepts	**Retrieval/interleaving:** Ask students to read through a piece of text and ask them to identify the key variables and how the practical in the text could be improved. Feedback from students, allow time for students to go back and amend/change thier answers. **Planning support** Do not worry this first lesson if students appear to have forgotten most of the information, this is an opportunity to identify gaps in thier knowledge. Do not spend a huge amount of time going over all of the questions if most do not have any answers just in this instance ensure they have the first one correct.	**Activate** Watch video clip about the court cases between Apple and Samsung and ask students to make notes as they watch the video. Discuss thier ideas, then show the video again. Ask students to summarise thier ideas about the video **Planning support** Some students may require prompt questions during the discussion in order to summarise ideas from the video. Introducing the term 'intellectual property' and asking students to consider what this might mean could provide stretch and challenge. **Demonstrate** Pose the question 'If somebody takes an idea and develops it, is it stealing?' students to have a 'silent discussion' with each other in pairs.. **Planning support** You may need to explain what you are asking students to do here as many could be unfamiliar with this type of activity.	**Consolidate** Students can read through information on the invention of the light bulb. To promote ambitious learning, they could then take on the role of either Edison or Swan and create an argument for why they feel they should be credited with the invention of the light bulb. **Planning support** After the sharing of ideas the students need to go back to their BQ and add ideas from the critical thinking task.

	Encourage students to discuss their ideas and improve on the range of vocabulary they are able to use to express their ideas.			
2 Practical enquiry: 2 Diffusion Collins book 1/ 5.4	**Interleaving/retrieval** Link back to the particle model and the movement of particles. Use QLA to support your planning. Give students the retrieval task and ask them to complete this. Feedback from their answers **LO:** To investigate diffusion and formulate a method **Vocabulary** Diffusion Concentration Particles Variables Method Hypothesis Evidence **Planning support** Remember differentiation doesn't mean a lower level task, you are identifying areas students don't understand, or giving them more support to reach the understanding the lesson aims for.	**Connect** Project up the image of diffusion ask students to come up with a definition using the image to support. Feedback on thier ideas. Then project up the simple definition. **Planning support** This is an opportunity to identify students' understanding of diffusion and any misconceptions they might have, allowing you to differentiate in the rest of the lesson. Remember differentiation doesn't mean a lower level task, you are identifying areas students don't understand, or giving them more support to reach the understanding the lesson aims for.	**Activate** Show students the images of the diffusion experiment, explain that if we put the pink cube in HCl it will turn colourless as HCl neutralises the cube. Allow the students to complete the investigation and record thier results. Encourage them to make notes to use later in the lesson. **Demonstrate** Ask students to write a simple conclusion and evaluation of their investigation. Feedback to the class on thier findings. **Planning support** Encourage students to use the term surface area instead of size. Where support is needed sentence starters could be given or key words. You will need to order the practical resources.	**Consolidate** Ask students first to sort the method, allow them to discuss with their peers. Feedback to the class. Project up the image of the cartoon swimming pool, allow students time to read the information and then decide who is correct and explain why using scientific ideas. They will complete this around thier BQ Feedback on students ideas. **Planning support** To promote ambitious learning, students will apply their knowledge to a concept cartoon on diffusion. Whose ideas are scientifically correct and why? Can they improve the other statements? Where more support is needed have some support ready for students such as starter sentences or key words to use.

3 Practical enquiry: Demo of alkali metals Collins book 1/ 6.2	**Interleaving/retrieval** Use QLA to identify areas for retrieval that are linked to this lesson content. Give students the retrieval task and ask them to complete this. This has been RAG explain to students that R is easier getting harder at G, they can choose thier own level. Feedback from their answers **LO:** To record practical observations and investigate the alkali metals **Vocabulary** Alkali metals Reaction Results table Observation **Planning support** Remember differentiation doesn't mean a lower level task, you are identifying areas students don't understand, or giving them more support to reach the understanding the lesson aims for.	**Connect** Display a number of different chemical reactions using photographs and ask students which picture showed the most intense reaction. Allow students to discuss this. Ask students how they knew this. **Planning support** This is an opportunity to identify misconceptions by making use of good AfL.	**Activate** Display a reactivity series for common metals and give students a copy of the image. Students will then come up with a mnemonic or silly sentence to help them remember it in order. Project up the example. **Demonstrate** Demo the alkali metals, but without talking, ask students to make notes in their table they have been given. Discuss thier observations. Ask students to analyse their observations and decide which alkali metal is the most reactive and why. **Planning support** Print the table for the students to save wasted time. Students need to learn the order of reactivity. The key points they need are that all alkali metals can be cut with a knife as they are soft, Li fizzes and moves around. Na fizzes and moves more rolls into a ball. K ignites with a purple flame fizzes more moves more than the other two. Students only need these three in exams but the others are really	**Consolidate** Give students the exam style questions, ask them to complete these independently. Then ask them to share their answers with each other, do they want to change their mind? Ask them to make changes with a green pen. To support students access they could be given key words sentence starters or sentences with gaps. **Planning support** Students should use notes from their observations. To promote ambitious learning, students should try and apply their knowledge to other real-life applications, such as whether they believe there is any knowledge that it would be better not to have. Link to properties of francium and that this can be created artificially even though it is very rare naturally. Should scientists be allowed to create elements artificially, even if they may have dangerous properties? Remind students that there is no right or wrong answer as this is based on their own opinions.

			interesting and they should record thier observations of them.	Encourage students to justify their views.
4 Practical enquiry: Burning food Collins book 1/ 3.1	**Interleaving/retrieval** Use QLA to identify areas for retrieval that are linked to this lesson content. Give students a retrieval task about energy sources and ask them to complete this. Feedback on students answers **LO: To investigate the energy in different foods.** **Vocabulary** ● Fuel ● Mass ● Volume ● Energy ● kJ **Planning support** There are ideas on the ppt slides Use of AfL will identify any misconceptions. There is a wide range of energy stores that are possibly missing, accept any logical energy stores.	**Connect** Provide students with a picture of a lump of coal and some food. What is the link? Feedback on students ideas. **Planning support** Students should recognise that both coal and food are fuels. You can also relate to energy transfers. This is an opportunity to identify misconceptions by making use of good AfL. are possibly missing, accept any logical energy stores.	**Activate** Pose the question- How can we investigate the energy in different foods? Allow students to share ideas and feedback to share ideas with the class. Display a method that will allow students to investigate the energy in different foods when they burn the food. **Demonstrate** Ask students to calculate the temperature difference. Which food had the most energy according to their results? Ask students to analyse the results using the support slide to do this. Feedback from students' answers. **Planning support**- Print the results table for the students to save wasted time. Remember to order the practical. Make links back to previous lessons where analysis and evaluations have taken place.	**Consolidate** Display wrappers or packaging from the food and allow students to compare energy values of different foods (from labels) (kJ). Pose the question to students - how do we decide which ideas are best? If we take an idea and improve it, is it now our idea? Encourage students to add their thoughts to their BQ page. **Planning support** To promote ambitious and independent learning, Pose the question to students - how do we decide which ideas are best? If we take an idea and improve it, is it now our idea? Encourage students to add their thoughts to their BQ page. Revisiting the BQ can be done at any point or several times during the lesson.

5 **Knowledge builder:** Diffusion continued Collins book 1/ 5.4	**Interleaving/retrieval** Give students the retrieval task and ask them to complete questions using information from previous learning . Feedback on students answers **LO: To explore diffusion in liquids and gases** **Vocabulary** Particles Diffusion Liquid Gas Particles **Planning support** Remember differentiation doesn't mean a lower level task, you are identifying areas students don't understand, or giving them more support to reach the understanding the lesson aims for.	**Connect** Show students pictures of all the practical investigations they have previously researched this term. Then add a picture of a book and a brain. Can they make a connection? Feedback on students ideas **Planning support** Share ideas and then explain to students that they are now going to be building on their knowledge and the science behind the practical investigation they previously completed. Pictures are available on the planning power point.	**Activate** Revisit the definition of the term diffusion and the practical investigation students completed with different sized blocks of coloured agar and hydrochloric acid. Ask students if they can change the independent variable so that they no longer change the size of the agar but the concentration of the acid? Support pupils with creating and discussing a method. Feedback on thier methods. **Demonstrate** Ask students what their results show about how concentration can change the rate of diffusion? Feedback on thier ideas **Planning support** Project up the method on the PPt allow students to self assess thier own new methods. Extend thinking by asking them to think about their control variables and how they will keep these the same. Students should find that with a greater concentration of hydrochloric acid, the rate of diffusion occurs quicker and the agar changes colour quicker.	**Consolidate** Give students the exam style questions, ask them to complete these independently. Then ask them to share their answers with each other, do they want to change their mind? Ask them to make changes with a green pen. **Planning support** To promote ambitious learning, students should try and apply their knowledge to other real-world applications - such as returning to the BQ and adding their ideas from the images in the connect task Where support is needed students can be given key words, sentence starters or sentences with missing words.

Knowledge builder: 6 Hierarchical organisation of multicellular organisms Collins book 1/ 8.5	**Interleaving/retrieval** Give students the exam question about cells, ask them to complete the question. Feedback on thier answers, allow students to self assess thier work. **LO- To explore the organisation of multicellular organisms** **Vocabulary** Unicellular Multicellular Organism Cell Tissue Organs **Planning support** Remember differentiation doesn't mean a lower level task, you are identifying areas students don't understand, or giving them more support to reach the understanding the lesson aims for.	**Connect** Show a range of pictures including a dog, cat, fish,human, bacteria and amoeba. Ask students to organise the pictures into two groups. Feedback on thier ideas. **Planning support** How did students organise and why? Do not talk about the names of the organisms students cannot identify themselves, this will be built upon in the activate and demonstrate task. Examples of images can be found on the planning powerpoint.	**Activate** Leading on from the connect, allow students to research the definitions of the terms unicellular and multicellular giving them the information sheet to use. Use the learning check slide to allow students to decide if they want to reorganise the organisms. Ask students how multicellular organisms are organised-cells, tissues, organs and organ systems. Students should be able to define the terms tissues, organs, organ system. **Demonstrate** Ask students if they can use humans as an example of a multicellular organism. Provide them with an outline of a person and ask them to name as many cells, tissues and organ systems found with a multicellular human. **Planning support** Provide pupils with pictures and key words that they can add to their human outline. Some examples could include circulatory system, nervous system, blood cell, heart,small intestine etc.	**Consolidate** Give students a consolidation task and ask them to complete these independently. Then ask them to share their answers with each other, do they want to change their mind? Ask them to make changes with a green pen. **Planning support** To promote ambitious learning, students could try and apply their knowledge to other real-world applications - such as the rights of an individual over organ donation. How much ownership should different groups of people have over whether organs are donated? E.g. the individual, family members, NHS, government? Where more support is needed have some support ready for students such as starter sentences or key words to use. Remind students that there is no right or wrong answer as this is based on their own opinions. Encourage students to justify their views.

Knowledge builder: 7 Watson and Crick discovery of DNA- Collins book 2/ 10.4	**Interleaving/retrieval** Use QLA to identify areas for retrieval that are linked to this lesson content. Give students the task on variation to complete. Feedback on their answers allowing them to self mark. **LO- To explore the discovery of DNA.** **Vocabulary** Chromosomes Genes DNA Heredity Watson Crick Wilkins Franklin **Planning support** Remember differentiation doesn't mean a lower level task, you are identifying areas students don't understand, or giving them more support to reach the understanding the lesson aims for.	**Connect** Show students a picture of two identical twins and a boy and girl, non identical set of twins. Ask them what both sets of twins have in common and what is different? **Planning support** Provide students with key words to support their ideas and thinking to link to chromosomes and genes. Please see the planning powerpoint for some examples.	**Activate** Show students the video of the discovery of DNA. Then show it again asking the students to make notes as they go. Share thier ideas with the class **Demonstrate** Ask students to read the information on Watson and Crick. Give students the list of questions, can they answer any? Feedback on thier answers. Where support is needed give students the storyboard photos in the wrong order ask them to arrange these in the correct order instead of answering the questions. **Planning support** Encourage students to read the information about DNA discovery in sillence. Then work through the questions using AfL to assess thier understanding and identify misconceptions.	**Consolidate** Ask students to write five key bullet points about the discovery of DNA, these need to be what the students feel are the most important points. Feedback on thier bullet points to the class. **Planning support** To promote ambitious learning, students could try and apply their knowledge to other real-world applications - Give students the information about the pros and cons of a DNA database, allow them to read this. Then pose the question who owns your DNA? Should anyone have the right to that information? Feedback on students ideas. Students could be given sentence starters to support access.
Knowledge builder: 8	**Retrieval/interleaving** Use QLA to identify areas for retrieval that are linked to this lesson content. Give each	**Connect** https://youtu.be/sG6QoLxwIw4 Show students the video of the	**Activate** Give students the sort task to put the discovery of the structure of the atom timeline ask them to	**Consolidation** Students have read about the development of our understanding of the structure of

Development of atomic structure Collins book 2/ 5.1	student a copy of the images. Ask students to describe what each image is showing, feedback on thier ideas. **LO** To understand the discovery of the structure of atoms. **Vocabulary** Proton Electron Neutron **Planning support** Remember differentiation doesn't mean a lower level task, you are identifying areas students don't understand, or giving them more support to reach the understanding the lesson aims for.	discovery of the structure of the atom **Planning support** It might benefit the students to see the video once and then try the activate task, before showing it again.	put this together. There is one with the dates one without depending on the needs of the student. Feedback on thier ideas. **Demonstrate** Give students the four mark exam question to complete independently. Students can peer assess using the mark scheme and green pen. There are support for students with key terms and sentence starters on slide 10. **Planning support** A large part of this lesson is the build up of skills and understanding that our ideas change over time. Allowing them time to read the key information will support thier understanding as you return to build on this later in the term.	the atom. Ask them to add thier ideas about what they think we might discover next and why we will be able to make more discoveries. **Planning support** To promote ambitious learning, students could try and apply their knowledge to other real-world applications- Ask them to add thier ideas about what they think we might discover next and why we will be able to make more discoveries. Where support is needed have key words and help desk ready.
Knowledge builder: 9 Group 1 Collins book 2/ 5.2	**Retrieval/interleaving** Use QLA to identify areas for retrieval that are linked to this lesson content. Give students the data on the density of the alkali metals, project up the questions. Ask students to complete the graph task. Faster workers can complete the additional	**Connect** Show students the video on the alkali metals reactions, use AfL to discuss what they are able to recall from previous lessons. **Planning support** Remember differentiation doesn't mean a lower level task, you are identifying areas students don't understand, or	**Activate** Give students a copy of the mind map ask them to add thier ideas from the video and previous work. Allow students to share their ideas and upgrade their mind maps. **Demonstrate** Give students the task about Ganny's saucepan, ask them to	**Consolidation** Give students the exam style questions, ask them to complete these independently. Then ask them to share their answers with each other, do they want to change their mind? Ask them to make changes with a green pen.

	questions. Feedback from the class **LO** to understand and use the periodic table and identify patterns **Vocabulary** periodic table period group atomic number **Planning support** Ask students to hold up thier graphs so they can see each other's work. Revisit SPATULA so students can self assess thier graphs. Where additional support is needed the axis, labels, scale could be given.	giving them more support to reach the understanding the lesson aims for.	complete this using their mind map and previous understanding. Alow them to feedback thier stories to the class. **Planning support** Where more support is needed students could be given key terms, sentence starters.	**Planning support** To promote ambitious learning, students could try and apply their knowledge to other real-world applications- pose the question Why might some people say that artificial elements are not true elements? Ask students to add this around their BQ. Where support is needed have key words and help desk ready.
Knowledge builder: 10 Group 7 and Displacement Collins book 1/ 6.3	**Interleaving/retrieval** Use QLA to identify areas for retrieval that are linked to this lesson content. Give students a copy of the reactivity series and ask them to create their own mnemonic. Feedback to the class. **LO- To explore the reactivity series**	**Connect** Show students the displacement video. Then show a second time pausing at each part of the experiment to discuss what the students are seeing. **Planning support** Students may need to watch the video more than once, allow them to see it the whole way	**Activate** Go over the reactivity football game and show students how to play this. Give them the cards and the grid to complete. Allow them to play the game. **Demonstrate** Feedback on students answers to the game, do they match the reactivity series?	**Consolidate** Give students the exam question and ask them to complete the question independently. Allow them to share their ideas with each other, the self assess using a green pen. **Planning support** To promote ambitious learning, students could try and apply their knowledge to other real-world

	Vocabulary Trends Reactivity Displacement **Planning support** Remember differentiation doesn't mean a lower level task, you are identifying areas students don't understand, or giving them more support to reach the understanding the lesson aims for.	through the first time and then, make pauses for the second viewing when you ask questions.	**Planning support** The activate and demonstrate build on each other to support students' understanding of the reactivity series and displacement.	applications- Let students read the information about Rosalind Franklin and her stolen idea pose the question How do think Rosalind Franklin would have felt about her ideas being stolen had she lived?
Knowledge builder: 11 Domestic fuel bills, fuel use and cost Collins book 1/ 3.3	**Interleaving/retrieval** Use QLA to identify areas for retrieval that are linked to this lesson content. Give students the retrieval task linked to presenting data and ask them to complete this. Feedback on students answers **LO: To investigate the energy in different foods.** **Vocabulary** ● Fuel ● Mass ● Volume ● Energy ● kJ **Planning support**	**Connect** Give students the meter reading document, ask them what it is showing. Feedback on thier ideas **Planning support** This is an opportunity to identify misconceptions by making use of good AfL. Some students may never have seen a meter reading before especially in the digital age.	**Activate** Give students the code breaking task to complete the sentences, allow them to work as a pair and share their answers. **Demonstrate** Give students the two equations to stick in thier books, then work with them to complete the two calculations. Feedback on thier answers **Planning support**- Projecting a calculator on to the white board to work together will support the students completing the calculations.	**Consolidate** Give students the information for the consolidation task ask them to work independently to complete this Allow them to share their answers with each other and then feedback to the class. **Planning support** To promote ambitious and independent learning, students could be tasked with comparing more than one method and explaining which is the better method and why. Pose the question to students - how do we decide which ideas are best? If we take an idea and improve it, is it now our idea? Encourage

	Use of AfL will identify any misconceptions. There is a wide range of energy stores that are possibly missing, accept any logical energy stores.			students to add their thoughts to their BQ page.
Knowledge builder: 12 Energy resources Collins book 1/ 3.4	**Interleaving/retrieval** Use QLA to identify areas for retrieval that are linked to this lesson content. Ask students to build a series and parallel circuit with two bulbs, an ammeter and voltmeter. Ask them to show their diagrams to the class. Project up the correct diagrams ensure students make corrections. **LO- To compare renewable and non renewable energy resources.** **Vocabulary** Renewable Nonrenewable Advantages Disadvantages **Planning support** As classes are small students could be given the equipment and build circuits this will allow you to identify gaps in knowledge. Make sure	**Connect** Show students a range of renewable and nonrenewable energy resources. Ask students to explain what they are seeing, feedback on thier ideas. Then ask them to put the resources into two groups **Planning support** Discuss answers and dismiss any misconceptions. Then explain the meaning of the terms renewable and nonrenewable. Pictures of resources can be found on the planning powerpoint.	**Activate** Show students the short video on generating electricity, the link is on the document Give students the diagram of generating electricity and ask them to use the key words to complete the diagram. Allow them to share thier ideas, then go over the answers. **Demonstrate** Give students the task linked to the activate section of the lesson, ask them to work together and fill in the missing words from the bottom of the sheet. **Planning support** The activate and demonstrate tasks are linked, it may be worth showing the video in between completion of the tasks.	**Consolidate** Ask students to look at the information about the different types of renewable fuels. Set up a debate as to which they think is the best and why. **Planning support** To promote ambitious learning, allow students to return to their BQ page and reflect on the outcomes of the debate - Ask students to read the task 2 information and answer the questions. They then need to visit their BQ and decide who should benefit from the daughter's idea. You will need to print the energy resource posters that are at the end of the ppt for the consolidate task

	students know where ammeters and voltmeters are located in a circuit.			
Application: 13 DNA Collins book 2/ 10.4	**Interleaving/retrieval** Use QLA to identify areas for retrieval that are linked to this lesson content. Give students the images of cells and ask them to answer the question. Allow them to share their answers and then project up so they can self assess. **LO-** to explain the structure of DNA **Vocabulary** DNA Fruit Investigation Mass Volume **Planning support**	**Connect** Give students the connect task that links to the interleaving. Allow them to share their answers and then project up so they can self assess. **Planning support** Use data from hot tasks and baseline, also your knowledge of the students understanding of DNA for differentiation to support all students' access to the topic.	**Activate** Give students a range of materials so they can build thier own models of DNA, there are some examples on the next slide of materials and models. **Demonstrate** Projectup the questions about DNA, give students the diagram, ask them to complete the questions independently. Allow them to share their ideas with each other, the self assess using a green pen. **Planning support** Use data from hot tasks and baseline, also your knowledge of the students understanding of diffusion for differentiation to support all students' access to the topic.	**Consolidate** Give students the exam question and ask them to complete the question independently. Allow them to share their ideas with each other, the self assess using a green pen. **Planning support** To promote ambitious learning, students could try and apply their knowledge to other real-world applications - ask the students to read the information about NettieStevens, the decide who owns her ideas.
Application: 14 Analysing wider patterns	**Interleaving / retrieval** Give students the data and ask them to create a graph. Allow them to share thier graphs. Challenge students to identify patterns in the graph. Feedback on thier answers.	**Connect** Ask students what the following terms mean. Mass number Group Period Atomic/proton number Feedback on their ideas.	**Activate** Show students the video about the periodic table, give them a copy so they can add key ideas from the video as they watch. Allow them to share thier ideas with each other.	**Consolidate** If time allows, students can self assess thier answers using a green pen. **Planning support** To promote ambitious learning, students could try and apply their

within the periodic table Collins book2/ 5.4	**LO:** To explain the development of the periodic table **Vocabulary** periodic table period group atomic number **Planning support** The results table will be printed for you, allow students to complete this. This will give you time to complete the register and get set up whilst they work. Where additional support is needed the axis, labels, scale could be given.	**Planning support** These are new terms to the students so use of AfL to draw out thier ideas and identify thier understanding of any terms.	**Demonstrate** Give the students the task sheet ask them to use the information from the two lessons about tehr PT and complete the questions allow them to share thier answers. **Planning support** These are essential terms that students need to recall, ensure they know this.	knowledge to other real-world applications- Pose the statement The periodic table has been developed over time by a number of different scientists. Would the periodic table be whole and complete with just one persons input? Feedback on students ideas.