

Year 9 Chemistry

Target: To revisit the work you will have covered in class this year, including....

1. Atoms, elements, compounds and mixtures.
2. The periodic table.

Modification: We will not be able to incorporate the practical elements of the course, however we can use videos and recording to illustrate key ideas.

All work to be uploaded on teams.

<p>Week 1 focus: Elements, compounds and mixtures.</p>	<ol style="list-style-type: none"> 1. Video walking students through the basic structure of the atom and the differences between elements, compounds and mixture. 2. Students produce a labelled diagram of an atom, for each part identify the location, relative charge and relative mass. 3. Students produce a resource that could be used to teach someone else the differences between elements, compounds and mixtures. They could make models, a PowerPoint, a leaflet, a poster, a revision guide page or a series of flash cards.
<p>Week 2 focus: Separating techniques</p>	<ol style="list-style-type: none"> 1. Video summarising the separating techniques that they need to know. 2. Students to focus on one of the techniques and produce a labelled diagram, a step-by-step method and an explanation of how it works. 3. Students to describe a method that could be used to separate a mixture of salt, sand and iron fillings.
<p>Week 3 focus: History of the atom</p>	<ol style="list-style-type: none"> 1. Video covering the history of the atom in cartoon form from YouTube. 2. Students to create a storyboard showing the history of the atom with names of the models, approximate dates, names of key chemists and the details of the experiments that they conducted. 3. Exam question to illustrate typicality in exam requirements.
<p>Week 4 focus: Electron configuration</p>	<ol style="list-style-type: none"> 1. Video explaining how you can use the periodic table to find the electron configuration of the atoms up to element 20. 2. Students to draw all the electron structures for the first 20 elements in the same layout as the modern periodic table. 3. Students to identify trend in electron configuration across periods and down the groups on the periodic table.
<p>Week 5 focus: History of the periodic table</p>	<ol style="list-style-type: none"> 1. YouTube video with a cartoon telling the story of the development of the modern periodic table. 2. Students to create a timeline showing the development of the modern periodic table with the names of the key chemists, detail of their key ideas with an example to illustrate. 3. Multiple choice quiz
<p>Week 6 focus: Group 1, the alkali metals</p>	<ol style="list-style-type: none"> 1. Video showing the reactivity and properties of the group 1 metals. Write a summary of the observations. 2. Students to draw the symbols and electron configurations of the first three group 1 metals, identify how they change as we go down the group. 3. Students to write the word equations (and symbols if you can) of the reactions of group 1 metals with water, chlorine and oxygen. 4. Students draw a diagram to show what happens to the outer electrons of sodium and chlorine atoms when they react.
<p>Week 7 – Group 7, the halogens</p>	<ol style="list-style-type: none"> 1. Video showing the reactivity and properties of group 7. Write a summary of the observations. 2. Students to draw the symbols and electron configurations of the first two halogens, identify how they change as we go down the group. 3. Students draw a diagram to show what happens to the outer electrons of sodium and chlorine atoms when they react.

- Students to watch a video showing the displacement reactions of the halogens. Create a table to show the results and write an equation for the reactions that took place.

Year 10 Chemistry

Target: To revisit the work you will have covered in class this year, including....

- The chemistry of acids and alkalis.
- Metal extraction, including electrolysis.

Modification: We will not be able to incorporate the practical elements of the course, however we can use videos and recording to illustrate key ideas.

All work to be uploaded on teams.

Week 1 focus: Acids and alkalis	<ol style="list-style-type: none"> A video to show the pH scale and how we measure the pH of acids and alkalis. Students should draw a pH scale and identify where we would find strong and weak acids and alkalis and where neutral is. Both numbers and colours are needed. Students need to construct a word and ionic equation for neutralisation. Describe how we know that a neutralisation reaction has happened.
Week 2 focus: Titrations	<ol style="list-style-type: none"> Watch a video guiding them through how to conduct a titration. Students are to write a step-by-step method detailing how to conduct a titration, making sure that the key pieces of equipment are named correctly. Include a labelled diagram showing how to set-up the equipment. Students should answer an exam question on titrations.
Week 3 focus: The reactions that acids take part in.	<ol style="list-style-type: none"> A Video detailing all the chemicals that acids can react with and how salts are named. Students to write a guide/set of flash cards that include the reactions that acids take part in and how we name the salts formed. Students to watch a video showing the required practical of making soluble salts as a reminder. Complete an exam question on the required practical.
Week 4 focus: The reactivity of metals	<ol style="list-style-type: none"> A video lesson outlining the metal reactivity series and metal displacement. Students create a diagram of the metal reactivity series and use it to predict if metal displacement reactions will take place. Students to describe how to do an experiment to find out the order of reactivity of magnesium, iron, zinc and copper.
Week 5 focus: Metal reduction with carbon	<ol style="list-style-type: none"> A video lesson outlining how we use different methods to extract metals from their ores depending on their reactivity. Students to define the following keyword: oxidation, reduction, metal ore and displacement. Watch a video on the blast furnace. Explain what metals can be extracted using carbon. Write out equations for two different metals that can be extracted using carbon.
Week 6 focus: Electrolysis	<ol style="list-style-type: none"> A video lesson showing the differences between the electrolysis of a molten ionic substance and an aqueous substance. Draw a labelled diagram for the electrolysis of molten lead bromide and aqueous sodium hydroxide. The diagram must include the following labels: d.c. power supply, flow of electrons, negative electrode (cathode), positive electrode (anode), electrolyte. If you are doing higher tier: write the half equations happening at each electrode.
Week 7 – Aluminium production	<ol style="list-style-type: none"> A video lesson showing the production process for aluminium.

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| | <ol style="list-style-type: none">2. Draw a labelled diagram for the electrolysis of aluminium. The diagram must include the following labels: carbon anode (positive electrode), carbon lining cathode (negative electrode), bauxite dissolved in molten cryolite, molten aluminium. If you are doing higher tier: write the half equations happening at each electrode.3. Complete an exam question on the electrolysis of aluminium. |
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