BALLYMENA ACADEMY CHEMISTRY DEPARTMENT

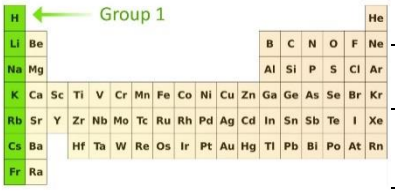
Year 10 Chemistry
Revision Checklist (Summer 2022)

Your Chemistry assessment will be 60 minutes long and will cover the following topics:

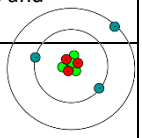
1. **Periodic Table Booklet including graphs** 2. **Atomic Structure Booklet** 3. **Chemical Symbols and Simple Formulae** 4. **Chemical World Booklet (up to and including page 8)**	Bring the following with you to the examination: 1. 2 pens, a pencil, rubber and sharpener 2. 30 cm ruler 3. Calculator may be used

1. Periodic Table

Learning Outcome/Objective	Notes to help with learning/revision
1. Explain briefly the work of Dmitri Mendeleev in developing the periodic table.	See page 2, in particular the summary at the bottom of the page.
2. Omit	
3. Label the main areas of the periodic table to include metals, non-metals, alkali metals, halogens, transition metals, noble gases.	See page 3 and your coloured version of the GCSE Data Leaflet/Periodic Table. Can you recall the two elements which are liquid at room temperature, or those which are gases?
4. Locate an element by using the terms period and group.	See page 3. Example of this type of exercise is in parts (i) and (j)
5. Know the symbols for common elements in the periodic table.	See page 4. Learn these! Remember if an element has a two letter symbol the first letter is upper case and the second letter is lower case, e.g. "NA", "nA", "na" are all **wrong** – it should be "**Na**".
6. Define the term 'element'.	See page 4
7. State observations when alkali metals react with water.	See page 5.
8. Recall the colours and states of the halogens at room temperature	See page 7.
9. Describe simple trends in the properties of the alkali metals.	See page 6. Don't try to learn off figures and detail.
10. Recognise similarities in alkali metals' properties	See page 6. All react with water; all produce an alkaline solution; all reactive. Some of the alkali metals float in water.
11. Describe simple trends in the properties of the halogens	See page 7. It the general trends that are important – don't try to learn off figures and detail.
12. Recognise similarities in the properties of halogens	See page 7
13. Describe simple trends in the properties of some elements based on data within the periodic table's group	
14. Recognise similarities in the properties of the noble gases	
15. Predict the properties of some elements based on data within the periodic table's group	
16. Recall uses for chlorine, iodine and noble gases	
17. Construct, and read information, from tables	See pages 9 - 15
18. Construct and interpret graphs including pie charts, bar charts, scatter graphs and line graphs	
19. Draw lines of best fit and recognise anomalous results	
20. Describe the relationship or trend between two sets of data from a table or a graph	



2. Atomic Structure

Learning Outcome/Objective	Notes to help with learning/revision
1. Name the three particles making up an atom	See page 2. Take care with spelling of "n **e u** t r o n" and also "n **u** c l **e u** s"
2. State the mass, charge and location of the particles in an atom	See table 1 on page 2. Note that the mass of an electron is 1/2000 of a proton. When you're asked for the charge of a proton or an electron don't forget to write the sign e.g. "+1" for the charge of a proton
3. Calculate, from given data, the number of protons, electrons and neutrons	See pages 2 – 3 ***No of protons = atomic number*** ***No of electrons = atomic number*** ***No of neutrons = mass number – atomic number***
4. Describe the structure of atoms in terms of numbers of protons, electrons and neutrons	Look at pages 4 – 5. Can you draw an atom to show the number and the location of the different particles? (electrons are in shells, protons and neutrons are in the nucleus)
5. Define the terms ***atomic number*** and ***mass number*** in terms of particles.	Definitions are on page 2 ***Atomic number = number of protons*** ***Mass number = number of protons and neutrons added together*** 
6. Represent elements in a shorthand way to include atomic number and mass number	You will see examples of this shorthand on page 3 of your booklet
7. Draw diagrams to represent the structure of an atom from the first twenty elements of the periodic table.	See page 5 of your booklet for examples. Practise doing this if you were given the atomic number and the mass number. Redo some of the questions from page 5 to help you revise.
8. Write the electronic configurations for an element	See examples in table 3 on page 4. Remember you should never be using the figures "0" or "9" when writing an electronic configuration.
9. Relate the electronic configuration to reactivity and position in the periodic table	This links with your Periodic Table topic. The number of electrons in the outer shell is the same as the Group number in the Periodic Table; e.g. Potassium 2.8.8.**1** so group 1, therefore a reactive metal (alkali metal)
10. State the approximate size of atoms	See page 6. Typical diameter of an atom is 10^{-10} m, or 1/10 of a nanometre. A nanometre is a billionth of a metre i.e. 1 x 10^{-9} m
11. Briefly explain what is meant by ***nanoscience*** and give one example of where nanoparticles are used.	See page 6. Nanoscience is the study of nanoparticles. [Size of nanoparticle is between 1 – 100 nm].
12. List one advantage and one disadvantage of nanoparticles	See the examples, advantages, disadvantages on page 6 of your booklet.

3. Chemical Symbols and Simple Formulae

Learning Outcome/Objective	Notes to help with learning/revision
1. List the number of atoms and the names of the elements in a chemical formula.	Page 1 of booklet e.g. in MgF_2 there are two elements (Magnesium and fluorine) and 3 atoms: 1 x Mg and 2 x F
2. Name simple chemical formulae.	Page 2 of booklet e.g. Al_2O_3 is NOT aluminium *oxygen*, it is called aluminium *oxide*.
3. Write simple chemical formulae using the idea of valency.	Pages 3 and 4. You need to be able to **work out the valency from a section of the periodic table – you do NOT need to remember all the valencies**

4. Chemical World (up to and including page 8)

Learning Outcome/Objective	Notes to help with learning/revision
1. Recall the key points about the positive and negative effects of quarrying limestone	Be able to list one advantage and one disadvantage of extending a limestone quarry
2. Omit	
3. Safely carry out the chemical reactions involved in the limestone cycle	Be able to list the safety requirements in the experiment
4. Explain what is meant by thermal decomposition	See page 3
5. Describe the main chemical reactions in the limestone cycle, including observations	Read over pages 3 – 4. Be able to list the observations for each stage of the cycle and know the cycle diagram from bottom of page 4
6. State the chemical name for common salt	See page 5
7. Recall three ways to obtain salt from the sea or below the ground	
8. Explain what is meant by solar evaporation	
9. Explain how solution mining works	
10. Explain how to prepare pure salt from rock salt including drawing appropriately labelled diagrams of the apparatus	See pages 6 and 7. Be able to draw neat, labelled diagrams of the apparatus used for **filtration**, **heating**/**dissolving** salt and **evaporating** water from salt solution.
11. Calculate the solubility of a salt given the mass of salt required to saturate a mass of water	Know how to calculate the solubility using the formula in your notes (page 8)
12. Draw a solubility graph accurately and read from the graph	Be able to draw a solubility graph like the example in question 2 (Page 8)

M. Christie (April 2022)

Key words – know what these words means:

Periodic Table topic:	alkali metals, anomaly, boiling point, density, element, group, halogen, inert, melting point, noble, period, sublimes
Atomic Structure topic:	atom, atomic number, electron, electronic configuration, mass number, nanoparticle, nanoscience, neutral (electrically), neutron, nucleus, proton, shell
Chemical symbols and simple formulae topic:	valency, group number
Chemical World topic:	brine, crystallise, evaporation, filtrate, limewater, residue, salt, solar evaporation, solution mining, thermal decomposition

End of Revision Sheet