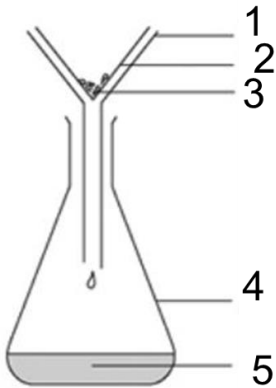
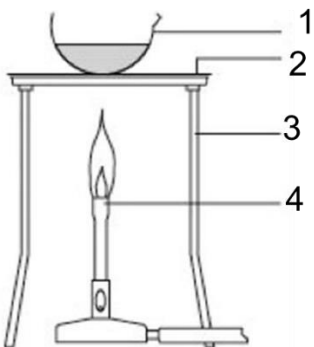
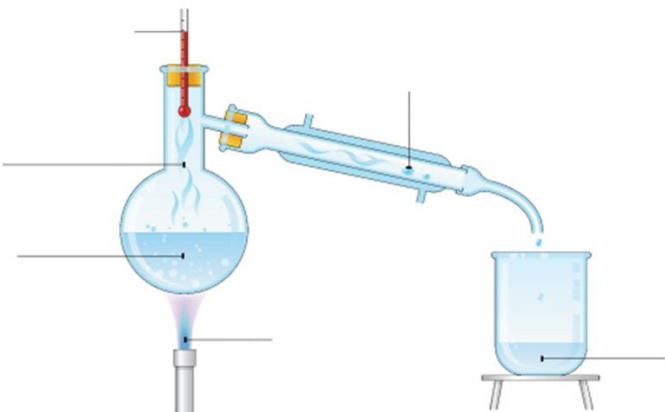
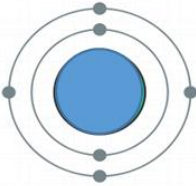
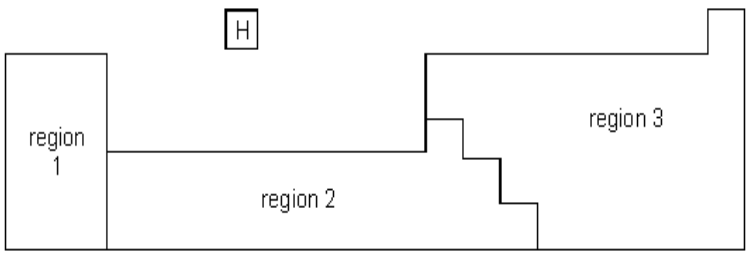


Year 9 C1 Atomic Structure Fact Sheet

Filtering	
1. What does it mean if a solid is insoluble?	It will not dissolve
2. Name the method of separating we use to separate a solid that hasn't dissolved from a liquid	Filtering
3. Label the diagram below 	1. Funnel 2. Filter paper 3. Residue/ solid 4. Conical flask 5. Filtrate/ liquid/ water
4. Explain how filtering separates the mixture	<ul style="list-style-type: none"> The liquid particles are small enough to fit through the filter paper The solid particles are too big to fit through the filter paper
Evaporation	
1. What does it mean if a solid is soluble in water?	It will dissolve
2. Name the method of separating we use to separate a solid that has dissolved from a liquid	Evaporation
3. Label the diagram below 	1. Evaporating dish 2. Gauze 3. Tripod 4. Bunsen burner
4. Explain how evaporation separates the mixture	<ul style="list-style-type: none"> The liquid particles turn into a gas and leave the mixture The solid particles do not evaporate so are left in the evaporating dish

Distillation	
1. How do we separate 2 liquids which have different boiling points?	Distillation
2. Where will the liquid with the lowest boiling point be at the end?	In the beaker
	
Elements, mixtures and compounds	
1. What do we call a substance made up of only one type of atom?	Element
2. What do we call a substance made up of 2 or more elements chemically bonded?	Compound
3. What do we call 2 or more elements/compounds not chemically bonded together?	Mixture
4. What do we call 2 or more atoms bonded together?	Molecule
Atomic structure	
1. State an approximate radius of an atom	0.1 nm
2. What proportion of the radius of an atom is the nucleus?	1/ 10,000
3. What is the centre of the atom called?	Nucleus
4. Name the 2 particles in the nucleus	Protons and neutrons
5. Where are electrons found?	In shells
6. State the charge of a proton	+1
7. State the charge of an electron	-1
8. State the charge of a neutron	0
9. The number of protons is the same as the number of in an atom	Electrons
10. What is the overall charge of an atom?	0
11. What is the maximum number of electrons in the first shell?	2
12. What is the maximum number of electrons in the second and third shells?	8
13. The atomic number shows the number of	Protons

14. The mass number shows the number of	Protons and neutrons
15. The number of electrons in the outer shell is the the group number on the Periodic Table	Same as
16. Name this atom (you will need a periodic table) 	Carbon
17. To calculate the number of neutrons we do the mass number take away the	Atomic number
18. State the relative mass of a proton	1
19. State the relative mass of a neutron	1
20. State the relative mass of an electron	Very small
21. Where is nearly all the mass of the atom?	Nucleus
Atomic structure skills – you need to know how to work these out!! Different elements will be on the test!	
22. The mass number of Magnesium	24
23. The number of protons in a Nitrogen atom	7
24. The number of electrons in a Fluorine atom	9
25. The number of neutrons in a Lithium atom	4
The Periodic Table	
1. Describe how the periodic table is organised	<ul style="list-style-type: none"> • By atomic mass • The group number shows the number of electrons in the outer shell • The period number shows the number of electron shells
2. On the periodic table below, which letters show: a. Metals b. Non-metals 	a. Regions 1 and 2 b. Region 3

Group 1	
1. What are the elements in group 1 called?	Alkali metals
2. State 2 properties of alkali metals that make them different to most other metals	<ul style="list-style-type: none"> • Low density • High reactivity
3. Describe what you see when group 1 metals react with water	<ul style="list-style-type: none"> • Fizzing • Gas given off (hydrogen) • Metal moves around • If there is universal indicator in the water, it goes purple
4. Why do alkali metals all have similar properties and similar reactions?	Because they all have 1 electron in their outer shell
5. How does reactivity change down group 1?	Increases
6. Why does reactivity increase down group 1?	Electron which is lost is further away from the nucleus
7. How do melting and boiling points change down group 1?	Decrease
8. Why are group 1 metals stored under oil?	Because they react vigorously with water and oxygen from the air
Group 7	
1. What are the elements in Group 7 called?	Halogens
2. Do halogens consist of atoms or molecules?	Molecules
3. Why do group 7 elements all have similar properties	Because they all have 7 electrons in their outer shell
4. How does reactivity change down group 7?	Decreases
5. Why does reactivity decrease down the group?	Electron that is gained will be further away from the nucleus
6. How do melting and boiling points change down group 7?	Increase
7. Which halogens can displace iodine? Why?	<ul style="list-style-type: none"> • Chlorine and bromine • They are more reactive than iodine
8. Which halogen can displace bromine? Why?	<ul style="list-style-type: none"> • Chlorine • It is more reactive than bromine
Group 0	
1. What are the elements in Group 0 called?	Noble gases
2. Why are the elements in group 0 unreactive?	Full outer shell of electrons
3. How does the boiling point of the Nobel Gases change down the group?	increases
4. Explain why the boiling point increases down the group	<ul style="list-style-type: none"> • The atoms get larger • So more energy is needed to turn them into a gas

Word equation skills – you need to know how to do these, different ones will be on the test!

1. Lithium + oxygen →	Lithium oxide
2. Sodium + oxygen →	Sodium oxide
3. Sodium + water →	Sodium hydroxide + hydrogen
4. Potassium + water →	Potassium hydroxide + hydrogen
5. Lithium + chlorine →	Lithium chloride
6. Potassium + chlorine →	Potassium chloride
7. Chlorine + potassium iodide →	Iodine + potassium chloride (because chlorine is more reactive)