

# YEAR 10 – AUTUMN CHEMISTRY

## KNOWLEDGE ORGANISER

C1.1 How has the Earth's atmosphere changed over time, and why?

C1.1.1 recall and explain the main features of the particle model in terms of the states of matter and change of state, distinguishing between physical and chemical changes and recognise that the particles themselves do not have the same properties as the bulk substances

C1.1.2 explain the limitations of the particle model in relation to changes of state when particles are represented by inelastic spheres

C1.1.3 use ideas about energy transfers and the relative strength of forces between particles to explain the different temperatures at which changes of state occur

C1.1.4 use data to predict states of substances under given conditions

C1.1.5 interpret evidence for how it is thought the atmosphere was originally formed

C1.1.6 describe how it is thought an oxygen-rich atmosphere developed over time

C1.1.7 describe the major sources of carbon monoxide and particulates (incomplete combustion), sulfur dioxide (combustion of sulfur impurities in fuels), oxides of nitrogen (oxidation of nitrogen at high temperatures and further oxidation in the air)

C1.1.8 explain the problems caused by increased amounts of these substances and describe approaches to decreasing the emissions of these substances into the atmosphere including the use of catalytic converters, low sulfur petrol and gas scrubbers to decrease emissions

C1.1.9 use chemical symbols to write the formulae of elements and simple covalent compounds

C1.1.10 use the names and symbols of common elements and compounds and the principle of conservation of mass to write formulae and balanced chemical equations

C1.1.11 use arithmetic computations and ratios when balancing equations  
M1a, M1c

C1.1.12 describe tests to identify oxygen, hydrogen and carbon dioxide  
PAG2

C1.1.13 explain oxidation in terms of gain of oxygen

For a more in-depth version plus resources go to –

<https://www.ocr.org.uk/qualifications/gcse-twenty-first-century-science-suite-chemistry-b-j258-from-2016/delivery-guide/topic-gcvt01-c1-air-and-water/delivery-guide-gcdgb001-c11-how-has-the-earths-atmosphere-changed-over-time-and-why>