

## Chemistry

Outcomes	Periodic Table	Chemical Energy	Climate	Elements	Types of reaction	Earth Resources	On course for GCSE grade
<b>Developing</b>	I can decide if an element is a metal or a non-metal using the periodic table to help.	I know that a chemical bond is a force that holds atoms together in molecules.	I know that methane and carbon dioxide are greenhouse gases.	I know that most substances are not pure elements, but compounds or mixtures containing atoms of different elements.	I can use the word combustion to describe a reaction with oxygen in which energy is transferred to the surroundings as heat and light.	I know that there is only a certain quantity of any resource on Earth, so the faster it is extracted, the sooner it will run out.	<b>1-3</b>
<b>Emerging</b>	I can identify Group 1, Group 7 and Group 0 on the periodic table.	I can use the terms exothermic and endothermic to describe reactions that get hot or cold.	I can use the terms global warming and greenhouse effect correctly.	I can use the words, element, compound, atom and molecule correctly.	I can use the word thermal decomposition to describe a reaction where a single reactant is broken down into simpler products by heating. I can identify reactants and products in a chemical reaction.	I can explain why recycling of some materials is particularly important.	<b>3-5</b>
<b>Secure</b>	I can use data to describe a trend in physical properties.	I can explain the terms exothermic and endothermic in terms of energy transfer.	I can use a diagram to show how carbon is recycled in the environment and through living things.	I can represent atoms, molecules and elements, mixtures and compounds using particle diagrams.	I can write word equations from information about chemical reactions.	I know that most metals are found combined with other elements, as a compound, in ores. The more reactive a metal, the more difficult it is to separate it from its compound.	<b>4-6</b>
<b>Advanced</b>	I can use data showing a pattern in physical properties to estimate a missing value for an element.	I know that during a chemical reaction bonds are broken (requiring energy) and new bonds formed (releasing energy). If the energy released is greater than the energy required, the reaction is exothermic. If the reverse, it is endothermic.	I can describe how global warming can impact on climate and local weather patterns.	I can, given chemical formulae, name the elements present and their relative proportions.	I can balance a symbol equation.	I can justify the choice of extraction method for a metal, given data about reactivity.	<b>6-8</b>
<b>Excelling</b>	I can predict the position of an element in the periodic table based on information about its physical and chemical properties.	I can predict whether a chemical reaction will be exothermic or endothermic given data on bond strengths.	I can evaluate claims that human activity is causing global warming or climate change.	I can deduce a pattern in the formula of similar compounds and use it to suggest formulae for unfamiliar ones.	I can use known masses of reactants or products to calculate unknown masses of the remaining reactant or products.	I can suggest ways in which changes in behaviour and the use of alternative materials may limit the consumption of natural resources.	<b>7-9</b>