

Name _____ Class _____ Date _____

Chemical changes

| Lesson | Aiming for 4 | | Aiming for 6 | | Aiming for 8 | |
|-----------------------------|--|--------------------------|---|--------------------------|---|--------------------------|
| C5.1 The reactivity series | I can list the order of common metals in the reactivity series. | <input type="checkbox"/> | I can describe oxidation and reduction in terms of gain or loss of oxygen. | <input type="checkbox"/> | I can justify uses of metals in the reactivity series based on their chemical reactivity. | <input type="checkbox"/> |
| | I can use general equations to write specific word equations for metals listed in the reactivity series reacting with oxygen, water, and acid. | <input type="checkbox"/> | I can write word equations for the metals listed in the reactivity series reacting with oxygen, water, and acid and balance given symbol equations. | <input type="checkbox"/> | I can write balanced symbol equations, with state symbols, for the metals listed in the reactivity series reacting with oxygen, water, and acid. | <input type="checkbox"/> |
| | I can safely make and record observations. | <input type="checkbox"/> | I can predict observations for the metals listed in the reactivity series reacting with oxygen, water, and acid. | <input type="checkbox"/> | I can evaluate in detail the investigation of metals plus acid, assessing the control of variables and the validity of conclusions drawn from the data collected. | <input type="checkbox"/> |
| C5.2 Displacement reactions | I can recall a definition of a displacement reaction. | <input type="checkbox"/> | I can explain why a displacement reaction occurs. | <input type="checkbox"/> | I can describe displacement reactions using an ionic equation. H | <input type="checkbox"/> |
| | I can use the reactivity series to determine whether a reaction between a metal and a different metal salt would happen or not. | <input type="checkbox"/> | I can write word equations and straightforward balanced symbol equations for displacement reactions. | <input type="checkbox"/> | I can write balanced symbol equations, with state symbols, for displacement reactions. | <input type="checkbox"/> |
| | I can safely make and record observations. | <input type="checkbox"/> | I can predict observations for the metals listed in the reactivity series reacting with a different metal salt. | <input type="checkbox"/> | I can determine and explain which species is oxidised and which species (metal atom or ion) is reduced in a displacement reaction in terms of electron transfer. H | <input type="checkbox"/> |
| C5.3 Extracting | I can define oxidation and reduction in terms of oxygen. | <input type="checkbox"/> | I can identify species that are being oxidised and reduced in a chemical reaction. | <input type="checkbox"/> | I can explain how carbon or hydrogen can be used to reduce an ore. | <input type="checkbox"/> |

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| metals | I can describe how metals can be extracted. | <input type="checkbox"/> | I can explain why some metals are found uncombined in the Earth's crust. | <input type="checkbox"/> | I can evaluate the extraction process to obtain a metal from its ore. | <input type="checkbox"/> |
| C5.4 Salts from metals | I can recall a definition of a salt. | <input type="checkbox"/> | I can describe how to make a salt by reacting a metal with an acid. | <input type="checkbox"/> | I can explain the reaction between a metal and an acid. H | <input type="checkbox"/> |
| | I can name a salt formed between a metal and sulfuric acid or hydrochloric acid. | <input type="checkbox"/> | I can write a balanced symbol equation to describe a reaction between a metal and sulfuric acid or hydrochloric acid. | <input type="checkbox"/> | I can write ionic and half equations, including state symbols, to describe a reaction between a metal and sulfuric acid or hydrochloric acid. H | <input type="checkbox"/> |
| | I can recall a general equation for a metal reacting with an acid and use it to write specific word equations. | <input type="checkbox"/> | I can identify the formula of the salt produced from the reaction between an acid and a metal. | <input type="checkbox"/> | I can identify and explain in detail which species is oxidised and which is reduced in a reaction. H | <input type="checkbox"/> |
| C5.5 Salts from insoluble bases | I can safely prepare a pure, dry sample of a soluble salt from an insoluble base and a dilute acid. | <input type="checkbox"/> | I can describe a method to prepare a pure, dry sample of a soluble salt from an insoluble substance and a dilute acid. | <input type="checkbox"/> | I can explain the reaction between a metal oxide or metal hydroxide and an acid, including an ionic equation. H | <input type="checkbox"/> |
| | I can name a salt formed between a metal hydroxide or metal oxide and sulfuric acid or hydrochloric acid. | <input type="checkbox"/> | I can write a balanced symbol equation to describe a reaction between a metal hydroxide or oxide and sulfuric acid or hydrochloric acid. | <input type="checkbox"/> | I can generate the formulae of salts given the names of the metal or base and the acid. | <input type="checkbox"/> |
| | I can recall a general equation for a base reacting with an acid and use it to write specific word equations. | <input type="checkbox"/> | I can explain why the reaction between a base and a dilute acid is a neutralisation reaction. | <input type="checkbox"/> | I can explain how alkalis are a subgroup of bases. | <input type="checkbox"/> |
| C5.6 Making more salts | I can safely make a salt by reacting a metal carbonate with a dilute acid. | <input type="checkbox"/> | I can describe how to make a dry sample of a salt from reacting a metal carbonate or an alkali with a dilute acid. | <input type="checkbox"/> | I can explain the reaction between ammonia and dilute acids to produce salts and the agricultural importance of the salts. | <input type="checkbox"/> |
| | I can write a general word equation for metal carbonates and alkalis reacting with dilute acids and use this to make specific word equations. | <input type="checkbox"/> | I can write balanced symbol equations for neutralisation reactions. | <input type="checkbox"/> | I can describe neutralisation using ionic equations, including the ionic equation for a carbonate plus an acid. | <input type="checkbox"/> |

AQA Chemistry

GCSE Student checklist

C5

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| C5.7 Neutralisation and the pH scale | I can safely use universal indicator to classify as acidic or alkaline. | <input type="checkbox"/> | I can describe how universal indicator can be used to classify a chemical as acidic or alkaline. | <input type="checkbox"/> | I can evaluate how universal indicator or a data logger can be used to determine the approximate pH of a solution. | <input type="checkbox"/> |
| | I can describe the pH scale. | <input type="checkbox"/> | I can describe how solutions can be acidic or alkali. | <input type="checkbox"/> | I can use ionic equations to explain how solutions can be acidic or alkali. | <input type="checkbox"/> |
| | I can recall an example of an alkali, neutral, base, and acidic chemical. | <input type="checkbox"/> | I can describe the relationship between alkalis and bases. | <input type="checkbox"/> | I can explain how the pH of a solution changes as acid or alkali is added. | <input type="checkbox"/> |
| C5.8 Electronic structures H | | | I can recall examples of strong and weak acids. | <input type="checkbox"/> | I can explain the difference between concentration and strong or weak in terms of acids and alkalis. | <input type="checkbox"/> |
| | | | I can describe how an acid or alkali can be concentrated or dilute. | <input type="checkbox"/> | I can use ionic equations to explain how acids can be strong or weak. | <input type="checkbox"/> |
| | | | I can describe how an acid or alkali can be weak or strong. | <input type="checkbox"/> | I can quantitatively explain how the concentration of hydrogen ions relates to the pH number. | <input type="checkbox"/> |