



LEARNING JOURNEY

Chemistry

The Periodic Table

The Periodic Table

The Periodic Table

You will learn and reinforce previous learning of The Periodic Table and how the atomic structure is linked to the periodic table.

Development of the Periodic Table

You will research about how the modern periodic table was developed and how a prediction can support or refute a scientific data

Metals and Non-Metals

You will learn about the positions of metals and non-metals on the periodic table and how this impacts their structures and properties.

Group 0- The Noble Gases

You will learn about the reactivity of the Noble gases in comparison to other groups and the trends in melting and boiling points.

Group 1- The Alkali Metals

You will learn about how the atomic structure of Group 1 metals link to its general chemical and physical properties

Group 7 :The Halogens

You will learn about the general nature of the halogens and predict halogen displacement reactions.

Mark Me Task

Seps only content

Transition Elements: comparison with Group 1

You will learn about the location of transition metals and how their properties differ to the properties of Group 1 metals.

Transition Elements: Properties

You will learn to apply knowledge of the properties of transition metals to explain how different metals are used.

This module continues your learning journey from previous learning in Chemistry about the periodic table. This module will develop understanding on how the periodic table provides chemists with a structured organisation of the known chemical elements from which they can make sense of their physical and chemical properties.

This module will develop understanding on the historical development of the periodic table and models of atomic structure to provide good examples of how scientific ideas and explanations develop over time as new evidence emerges.

VOCABULARY

Property	Period
Reactivity	Trend
Displacement	Halogen
Noble Gas	Reaction

TUDOR HABITS AND VALUES

You will develop the Tudor Habit of being open to failure and feedback and you learn from making mistakes in



LEARNING JOURNEY

Year 10 Spring

Chemistry

C3 – Quantitative chemistry Part 1 – Trilogy and Sep's

Conservation of mass

Conservation of mass and mass changes

The law of conservation of mass states that no atoms are lost or made during a chemical reaction so the mass of the products equals the mass of the reactants.

Balancing equations (recap)

Understand the use of the multipliers in equations in normal script before a formula and in subscript within a formula.

Relative formula Mass

The relative formula mass (M_r) of a compound is the sum of the relative atomic masses of the atoms in the numbers shown in the formula.

Moles

Moles

Chemical amounts are measured in moles. The symbol for the unit mole is mol.

Chemical Measurements

Whenever a measurement is made there is always some uncertainty about the result obtained.

VOCABULARY

Conservation
Relative
Uncertainty
Moles
Stoichiometry

Amount of substances in equations

calculate the masses of reactants and products from the balanced symbol equation and the mass of a given reactant or product.

Mark Me Task

Using moles to balance equations

Balance an equation given the masses of reactants and products.

Chemists use quantitative analysis to determine the formulae of compounds and the equations for reactions. Given this information, analysts can then use quantitative methods to determine the purity of chemical samples and to monitor the yield from chemical reactions.

Chemical reactions can be classified in various ways. Identifying different types of chemical reaction allows chemists to make sense of how different chemicals react together, to establish patterns and to make predictions about the behaviour of other chemicals. Chemical equations provide a means of representing chemical reactions and are a key way for chemists to communicate chemical ideas.

TUDOR HABITS AND VALUES

You will develop the Tudor Habit of being curious due to the variety of ways you can use the relationship between moles, mass, concentration and balanced equations.



LEARNING JOURNEY

Chemistry

C4 – Chemical Changes– Tril and Sep's

The reactivity series

The reactivity series

You will learn the order of common metals in the reactivity series

Displacement reactions

You will learn what a displacement reaction is and when they occur

Extracting metals

You will learn how metals can be extracted and define the terms oxidation and reduction

Making salts

Salts from metals

You will plan and carry out an experiment and naming the salts made by reacting different metals and acids together .

Salts from an insoluble base – RQP

You will carry out the required practical showing how to make a salt from an insoluble base

Making more salts

You will carry out a second required practical but this time making salts from metal carbonates

Mark Me Task

VOCABULARY

Carbonate
Indicator
Neutralisation
Reactivity
Reduction

Oxidation
Displacement
Base
Salt
Partial

TUDOR HABITS AND VALUES

You will develop the Tudor Habit of process not product as a key element to this topic is being able to write a method to fit the reactants given or the product needed.

Acids and neutralisation

Neutralisation and the pH scale

You will understand how universal indicator and the pH scale are used to identify acids and alkalis

Strong and weak acids(H)

You will learn how to use the terms strong and weak and concentrated and dilute in relation to acids and how they ionise

Mark Me Task

This module continues your learning journey from previous learning in Chemistry about properties of metals and displacement reactions

You will develop an understanding of the methods of extracting metals and how the reactivity of these metals depends on the method used

You will also support this learning with practical work that looks at how metal salts can be formed and in particular the detail in the methods to make them.

You will also look at what a Neutralisation reaction is and how the type of acid helps you to understand its pH and how reactive it is.



C05 – Energy Changes (Trilogy and Separates)

Energy Changes in Reactions

Energy transfer during exothermic and endothermic reactions

You will learn that all reactions are exothermic (give out energy) or endothermic (take in energy).

Reaction profiles

You will learn how we can represent energy changes in reactions using graphs called reaction profiles

The energy change of reactions (HT only)

You will calculate the energy changes in reactions using supplied data to identify if a reaction is exothermic or endothermic.

Required Practical

You will develop a method to test a series of reactions and identify them as endothermic or exothermic.

VOCABULARY

Exothermic Surrounding
Endothermic Profile
Activation Energy
Enthalpy Change

This module continues your learning journey from previous learning in Chemistry about the bonding and chemical reactions.

You will now look at how energy changes when bonds break in the reactants and bonds are made in products. This will then explain why reactions are either exothermic or endothermic as you will have learnt in Key Stage 3 Science.

TUDOR HABITS AND VALUES

You will develop the Tudor Habit of Process not Product as you will have to invest in calculation stages of enthalpy calculations.