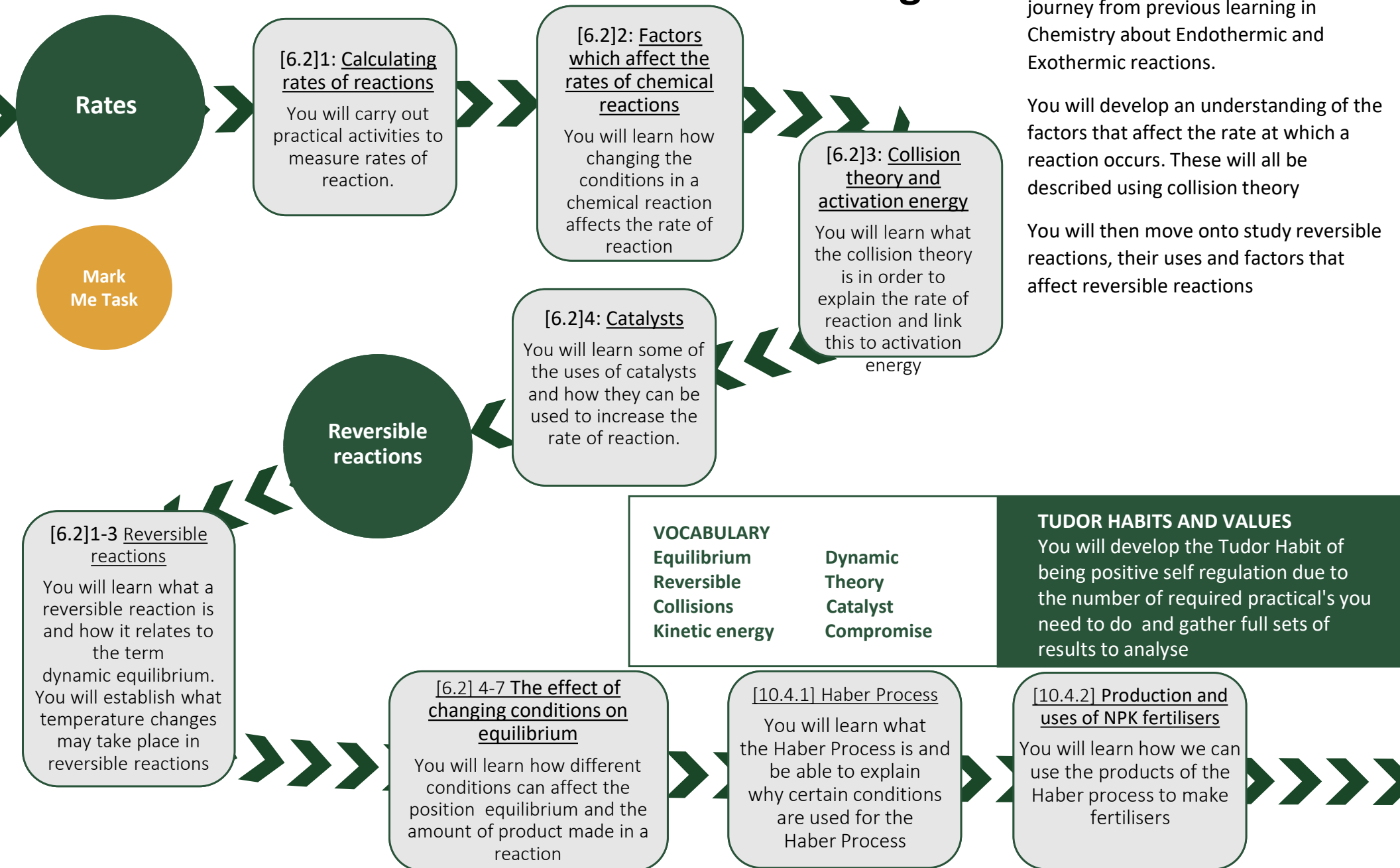




C06 – The rate and extent of chemical change





C4 – Electrolysis (Trilogy and Separates)

Electrolysis

Intro to electrolysis

You will learn what the term electrolysis means recap the reactivity series and the properties of ionic compounds

Molten Electrolysis

You will learn how electrolysis is used to separate ionic compounds which are melted and how to identify the products made.

Aluminium Oxide

You will learn how aluminium oxide is separated in industry and what the products are and what conditions are needed.

Aqueous Solutions

You will learn how aqueous solutions can be separated using electrolysis and identify the products at each electrode.

Required Practical

You will complete a required practical to investigate the products of different electrolysis examples.

Mark Me Task

VOCABULARY

Anode	Electrode
Cathode	Ion
Electrolyte	Rechargeable
Cryolite	
Molten	

TUDOR HABITS

You will develop the Tudor Habit of Open to Failure and Feedback when you learn about the products at each electrode.

Separate Chemistry Content

Cells and Batteries (Seps Only)

You will learn how batteries work and compare the difference between single-use and rechargeable batteries

Hydrogen Fuel Cells (Seps Only)

You will learn about how we can use hydrogen as an energy supply and look at the benefits and drawbacks of this.

Mark Me Task

This module continues your learning journey from previous modules on ionic bonding and structures as well as reactivity and purification of metals.

Electrolysis is the use of electrical current to separate ionic substances. You will learn about and be able to explain the products for molten electrolysis and aqueous electrolysis.

For Separate Chemistry students you will take this further and apply learning to look at batteries and hydrogen fuel cells.



C3 – Quantitative chemistry Part 2 – Trilogy and Sep's

Moles and concentration

Quantitative Chemistry Recap

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

Limiting Reactants

In a chemical reaction involving two reactants, it is common to use an excess of one of the reactants to ensure that all of the other reactant is used

Concentration of Solutions

Many chemical reactions take place in solutions. The concentration of a solution can be measured in mass per given volume of solution, eg grams per dm³ (g/dm³).

Using concentrations

The concentration of a solution can be measured in mol/dm³.

pH & concentration Recap

For a given concentration of aqueous solutions, the stronger an acid, the lower the pH.

As the pH decreases by one unit, the hydrogen ion concentration of the solution increases by a factor of 10.

Separate Chemistry Content only

Percentage Yield

Even though no atoms are gained or lost in a chemical reaction, it is not always possible to obtain the calculated amount of a product because:

Atom Economy

The atom economy (atom utilisation) is a measure of the amount of starting materials that end up as useful products. It is important for sustainable development and for economic reasons to use reactions with high atom economy.

Gas Volumes

Equal amounts in moles of gases occupy the same volume under the same conditions of temperature and pressure.

Titration (2 lessons)

The volumes of acid and alkali solutions that react with each other can be measured by titration using a suitable indicator.

Carrying out titrations (RQP)

You will learn the purpose of an indicator when carrying out a titration and complete the RQP

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.

Mark Me Task

VOCABULARY

Limiting
Theoretical
Concentration

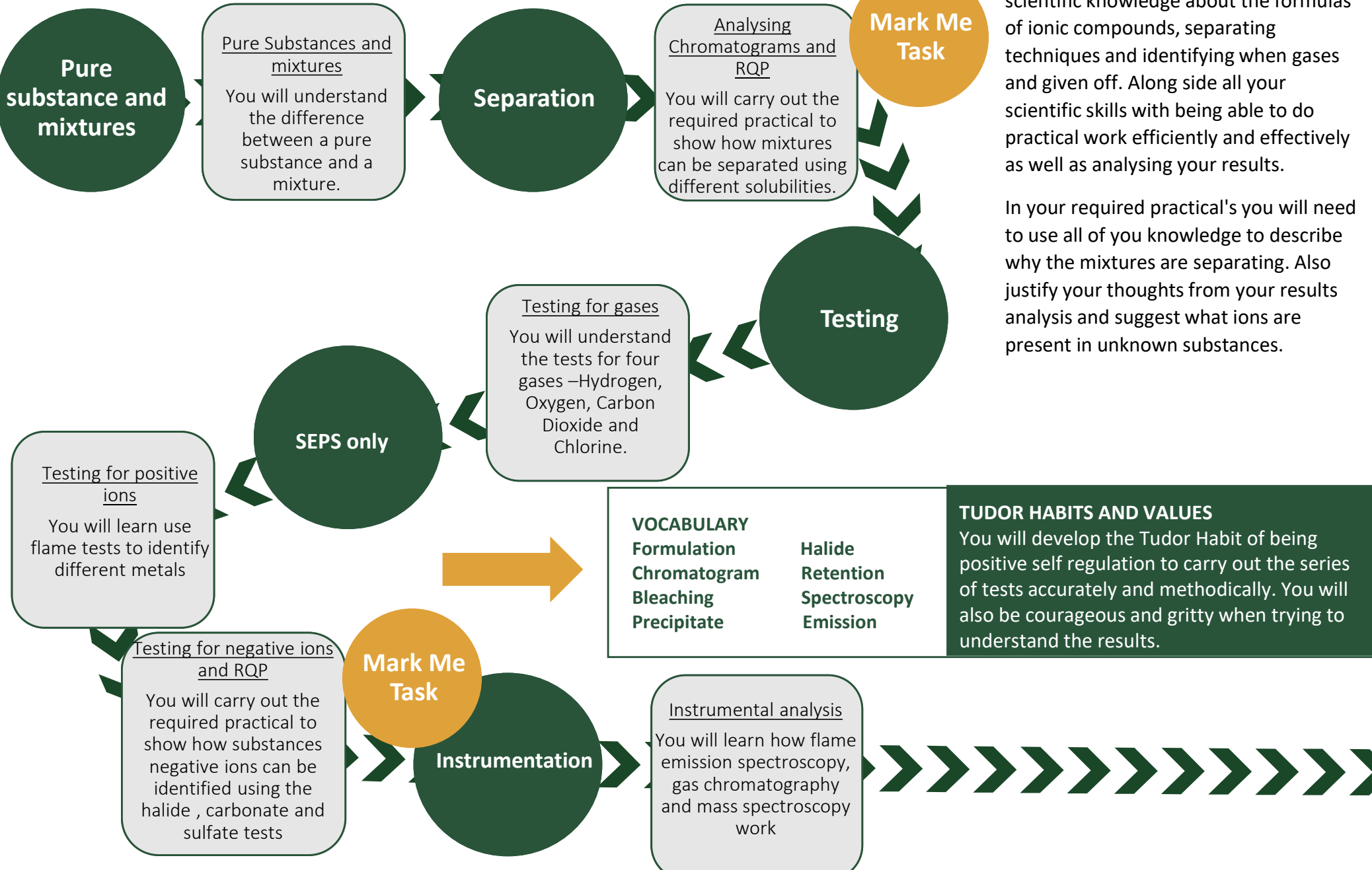
Volume
Titration

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.



C8 – Chemical Analysis – Tril and Seps





Year 11 Spring

LEARNING JOURNEY

Chemistry

C9 Chemistry of the atmosphere (Trilogy and Separates)



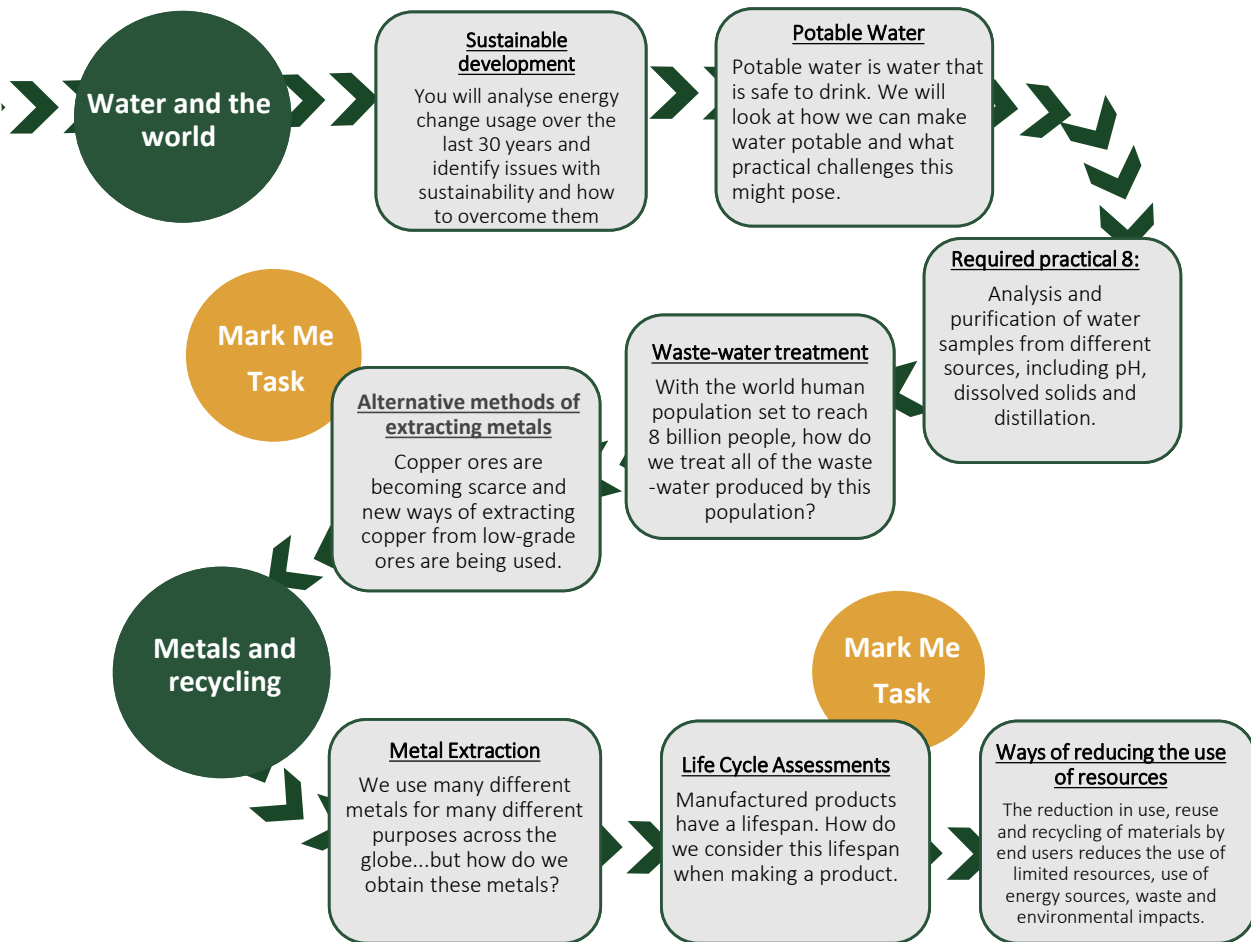


LEARNING JOURNEY

Year 11: Spring Term

Chemistry

C10 – Using resources (Trilogy and Separates)



This module continues your learning journey from the work covered in Key Stage 3 about the earth as a source of limited resources and the efficacy of recycling. You will also have looked at extracting metals from metal oxides.

During this module, you will develop an understanding of recycling in more detail. You will see how a range of different approaches now need to be taken as the world's finite resources start to diminish. You will also look at more ways to extract the remaining metals found in the earth's crust.

TUDOR HABITS: You will develop the Tudor Habit of being open to failure and feedback and you will learn from making mistakes and developing your resilience.

VOCABULARY: Finite, renewable, sustainable, potable, desalination, effluent, phytomining, bioleaching, reduction, recycle, lifespan.