

Chemistry Learning Journey- 5 Year Curriculum Combined Science

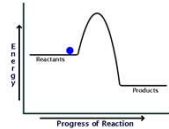


A level Sciences – Biology, Chemistry and Physics
(Need grade 6 and above and grade 6 in Maths)



Other post 16 options –
Apprenticeships, other A
level subjects, other
BTEC subjects, other
training, College?

BTEC National
Diploma in
Applied Science
(Need Grade 4 in
Science)



End of year
exams!!



YEAR
11

C12 Energy changes
Understanding that every chemical
reaction has an energy change
associated with it and how knowing
this information can help the
chemical industry

Exothermic
and
Endothermic
**Required practical –
Temperature changes**
Bond energy
calculations
Equilibrium
The Haber
process

Making more
salts
**Required practical –
Making salts**

Using energy transfers
from reactions
Reaction profiles
Reversible
reactions
The effect of
changing
conditions on
equilibrium (HT)
Making
fertilisers in the
lab

Making salts from
insoluble bases
**Required practical –
Electrolysis**

Making salts
from metals
Electrolysis of
metal ores
Changes at the
electrodes
Introduction to
electrolysis
Reduce, reuse
and recycle
Extraction of
metals from
low grade ores
**Required practical
– Water
purification**

Strong and weak
acids (HT)

Electrolysis of
aqueous solutions
C11 Electrolysis and making salts
Understanding how electricity
can be used to separate compounds
and how acids can be used to make
salts

**Required practical
Electrolysis**

Life cycle
assessment
Waste water
treatment
Earth's resources
and sustainability
C9 Quantitative Chemistry
The knowledge and skills that
are essential for laboratory
work in industry and medicine.
Being able to demonstrate
analytical skills.

Electrolysis of
aqueous solutions

Chemical reactions
Calculating rates of
reaction
The effects of
Temperature
The effects of
surface area
**Required
Practical - Rates
of reaction**

**C8 Rates of reaction and
extent of change**
Understanding how in
industry the rate or chemical
reaction can be altered to
make the product quicker

Balancing
equations using
reactants
Calculating masses
from reactants
and products
C10 Using resources
Understanding that all the Earth's
resources are finite and how humans
can reduce the use of these resources

Chemical reactions
Calculating rates of
reaction
The effects of
Temperature
The effects of
surface area
**Required
Practical - Rates
of reaction**

Volume of
gases
More on
concentrations
Percentage
yield
Concentration
of a solution
Limiting
reactants
The mole
Balancing
equations using
reactants
Calculating masses
from reactants
and products

Cracking
Rates of reaction
graphs
The effects of
concentration
and pressure
The effects of
catalysts
**Required
Practical - Rates
of reaction**

Relative
formula mass
and % mass
Conservation
of mass
Chemical
measurements
C6 Bonding and structure
Understanding how chemical bonds
explain
many of the chemical and physical
properties of
substances and chemical phenomena

Cracking
Rates of reaction
graphs
The effects of
concentration
and pressure
The effects of
catalysts
**Required
Practical - Rates
of reaction**

States of matter
Metallic bonding
and alloys
Giant covalent
structures
Simple
molecules
Ionic
formula
Types of bonding

Cracking
Rates of reaction
graphs
The effects of
concentration
and pressure
The effects of
catalysts
**Required
Practical - Rates
of reaction**

Nanoparticles
Graphene and
fullerenes
Polymers
Covalent bonding
Atoms and ions
C7 Organic Chemistry
Understanding how we separate
a useless mixture to get a variety
of products we use everyday

Cracking
Rates of reaction
graphs
The effects of
concentration
and pressure
The effects of
catalysts
**Required
Practical - Rates
of reaction**

Sedimentary rocks
Igneous rocks
Gases in the
atmosphere
Pollutants and
their effects
C5 Chemistry of the atmosphere
Understanding the impact that
human
activity has on the atmosphere and
the
climate through the gases that are
produced

Cracking
Rates of reaction
graphs
The effects of
concentration
and pressure
The effects of
catalysts
**Required
Practical - Rates
of reaction**

Alloys
The reactivity
series
Reactions of acids
with metals
Corrosion and
rusting
C4 The Rock cycle
Understanding the structure of the
Earth
and how rocks are formed and
weathered

Cracking
Rates of reaction
graphs
The effects of
concentration
and pressure
The effects of
catalysts
**Required
Practical - Rates
of reaction**

Metals and
conductivity
Metal oxides
Displacement
Testing for
gases
The Earth's
structure
Metamorphic
rocks
The rock cycle
The early
atmosphere
C1 Foundations of Chemistry
Understanding what all matter is
made up of and
the structure of the atom. To
understand
different elements have different
properties and
these can be used for different
uses

Cracking
Rates of reaction
graphs
The effects of
concentration
and pressure
The effects of
catalysts
**Required
Practical - Rates
of reaction**

Group 0-
Noble gases
Group 1
Alkali metals
The Periodic
Table
Acids and
alkalis
Solubility
Separating
mixtures -
Distillation
States of
matter
C2 The Periodic Table
Understanding that scientific
models develop over time and that
things can change in the light of
new
evidence is an important concept.

Cracking
Rates of reaction
graphs
The effects of
concentration
and pressure
The effects of
catalysts
**Required
Practical - Rates
of reaction**

Formulations
Chromatography
Purity and
melting point
Separating
mixtures -
Filtration
Atoms,
elements,
compounds.
**Required
Practical -
Chromatography**

Cracking
Rates of reaction
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The effects of
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The effects of
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**Required
Practical - Rates
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Development of
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The effects of
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The effects of
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**Required
Practical - Rates
of reaction**

Neutralisation
and salts
Formulations
Chromatography
Purity and
melting point
Separating
mixtures -
Filtration
Atoms,
elements,
compounds.
**Required
Practical -
Chromatography**

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Li
Na
K
Rb
Cs
Fr

Periodic Table of the Elements																	
[Detailed periodic table grid]																	

welcome