



## Curriculum Intent

The aim of the Chemistry Department is to develop natural curiosity through inspiring teaching and learning. Chemistry affords exciting opportunities for our students to develop their understanding of the world at an atomic level. They will be challenged to tackle difficult concepts and formulate their own judgements. Our students will develop a high level of scholarly understanding of the world around them, enabling them to function as global citizens.

## Y7 Chemistry Components

### Big Idea: Matter

- The particle model
- States of matter
- Melting and freezing
- Boiling
- Changes in state
- Diffusion
- Gas pressure
- Inside particles

To be able to complete tasks such as:

- o Describe how the properties of a substance change as it melts or freezes
- o Describe the properties of a substance in its three states
- o State definitions of atoms, elements, molecules and compounds and give examples of them

### Big Idea: Reactions

- Chemical reactions
- Acids and alkalis
- Indicators and pH
- Acid strength
- Neutralisation
- Making salts

To be able to complete tasks such as:

- o Describe, in simple terms, what the key words 'concentrated' and 'dilute' mean
- o State that acids have a pH below 7, neutral solutions have a pH of 7, alkalis have a pH above 7

### Big Idea: Earth

- Structure of the Earth
- Sedimentary rocks
- Igneous and metamorphic rocks
- Rock cycle
- ceramics

To be able to complete tasks such as:

- o State the processes shown by different models of the stages in sedimentary rock formation
- o Suggest a simple method for comparing the strength of ceramic materials given a choice of apparatus



## Y8 Chemistry Components

### **Big Idea: Elements**

- ✓ Elements of the periodic table
- ✓ Atoms
- ✓ Compounds
- ✓ Formulae
- ✓ Polymers

To be able to complete tasks such as:

- Defining how you identify something as an element or compound
- To represent atoms using particle diagrams
- Using the formula to decide how many atoms of each element are present □ to describe the structure of polymers

### **Big Idea: Periodic table**

- ✓ Periodic table
- ✓ Group 1
- ✓ Group 7
- ✓ Group 0

To be able to complete tasks such as:

- Explain what the groups and periods in the periodic table tell you
- Use data to explain properties and trends in reactivity within groups

### **Big Idea: Reactions part 2**

- ✓ Atoms in chemical reactions (balancing equations)
- ✓ Combustion and fuels
- ✓ Thermal decomposition
- ✓ Conservation of mass

To be able to complete tasks such as:

- Write word and symbol equations for certain reactions
- Calculate masses of reactants and products
- Use particle diagrams to describe what is happening within the reaction



### **Big idea : Chemical energy**

- ✓ Exothermic and endothermic reactions
- ✓ Energy level diagrams and activation energy
- ✓ Bond energies

To be able to complete tasks such as:

- Explain what the terms endothermic and exothermic mean
- Use observations to distinguish between endothermic & exothermic
- Use energy level diagrams to explain changes in energy during a reaction

### **Big idea : Earth's climate and resources**

- ✓ Extracting metals
- ✓ Recycling
- ✓ Global warming
- ✓ Climate change

To be able to complete tasks such as:

- Naming the greenhouse gases and explaining how they cause global warming
- Describing how human activity affects the planet
- Explaining why recycling is important