



## Year 7 Learning Journey

### Autumn Term

#### Introduction to lab safety

##### Core knowledge

1. Identify and describe the main hazards in a laboratory.
2. Explain how to work safely and minimise risks of working in a laboratory.
3. Name and identify a variety of hazard symbols.
4. Understand how scales can be used for making accurate measurements.

##### Learning Checkpoints

Learning Checkpoint Title	Attempt 1		Attempt 2 / Extend	
	Mark	RAG	Mark	RAG
Learning Checkpoint 1 – Safety & Scales				

##### Key Vocabulary

Tier 2

Identify, State, Suggest

Tier 3

Hazard, Risk, Remedy, Safety, Axis, Symbol



## Year 7 Learning Journey

### Spring

#### The Particle Model

Core knowledge
1. Name the three states of matter and give examples of each state.
2. Use diagrams to represent the arrangement of particles in the three states of matter.
3. Describe the arrangement of particles in each state of matter.
4. Describe the properties of the three states of matter.
5. Use the particle theory to explain the properties of the three states of matter.
6. Explain why materials expand and contract when the temperature changes.
7. State what is meant by density and recall its units.
8. <b>Key Practical Skill:</b> Describe how to measure the density of regular and irregular objects.
9. Recall and use the formula relating mass, volume and density.
10. Name the changes of state and describe what happens to particles during changes of state.
11. Recall that a substance does not change temperature while it is changing state.
12. Interpret graphs that show how the temperature of a pure substances changes as it is
13. <b>Maths Skill:</b> Convert between nanometres and metres.
14. State what is meant by diffusion.
15. Use the particle theory to explain diffusion in liquids and gases.
16. <b>Key Practical Skill:</b> Write and test a hypothesis.
17. State what is meant by gas pressure.
18. Describe the cause of gas pressure using the particle theory.
19. Explain some of the effects of air pressure and the ways in which gas pressure can be

#### Learning Checkpoints

Learning Checkpoint Title	Attempt 1		Attempt 2 / Extend	
	Mark	RAG	Mark	RAG
LC1				
LC2				

#### Key Vocabulary

##### Tier 2

Recognise, Identify, Illustrate, Define, Describe

##### Tier 3

Gas, Solid, Liquid, Density, Mass, Volume



## Year 7 Learning Journey

### Summer

#### Atoms, elements, molecules and compounds

Core knowledge
1. State what an atom is and describe the difference between an atom and a molecule.
2. Give definitions for elements, compounds and mixtures.
3. Draw and interpret particle diagrams to represent elements, compounds and mixtures.
4. Write and identify the chemical symbols for common elements.
5. Use the periodic table to look up symbols for elements.
6. Identify where metals and non-metals are found in the periodic table.
7. Describe the properties of metal and non-metal elements.
8. Relate the uses of different elements to their properties.
9. Name simple compounds formed between two elements.
10. Describe how compounds are formed.
11. Describe the observations that indicate a chemical reaction is taking place.
12. Describe what a thermal decomposition reaction is.
13. Identify the products and reactants in a chemical reaction using a word equation.
14. Write word equations for chemical reactions.

#### Learning Checkpoints

Learning Checkpoint Title	Attempt 1		Attempt 2 / Extend	
	Mark	RAG	Mark	RAG
LC1				
LC2				

#### Key Vocabulary

##### Tier 2

Relate, Identify, Memorise, Observe, Interpret

##### Tier 3

Atom, Molecule, Elements, Compounds, Mixtures, Products, Reactants



## Year 7 Learning Journey

### Spring Term

#### Mixtures and Separation

Core knowledge
1. Name the three states of matter and give examples of each state.
2. Describe what suspensions and colloids are.
3. Classify mixtures as suspensions, colloids or solutions.
4. <b>Key Practical Skill:</b> Identify the apparatus needed to separate an insoluble solid from a liquid and describe the method you would use.
5. Draw diagrams to show the apparatus used to separate mixtures.
6. Define the terms 'saturation' and 'solubility' and investigate the effect of temperature on solubility.
7. <b>Key Practical Skill:</b> Identify the apparatus needed to separate a soluble solid from a liquid and describe the method you would use.
8. Identify hazards and risks associated with experiments and describe how to minimise the risk.
9. Describe what happens in evaporation and boiling and describe the differences between the two processes.
10. Use the process of paper chromatography to separate inks in a sample pen.
11. Describe how chromatography is used to separate inks and interpret a chromatogram.
12. Explain how distillation can be used to separate a solvent from a solution and give examples of where distillation is used.

#### Learning Checkpoints

Learning Checkpoint Title	Attempt 1		Attempt 2 / Extend	
	Mark	RAG	Mark	RAG
LC1				
LC2				

Key Vocabulary
<b>Tier 2</b> Separate, Summarise, Suspend, Saturate, Solution
Tier 3 States, Matter, Separate, Chromatography, Distillation, Solvent, Solute, Solution