



Year 9

Pathway 2/3/4

Science - Autumn Term 1

**Learning Intention: Chemistry - Properties and Changes of Materials**

**Periodic table/Chemical Reactions**

To recap safety in the Science Lab, describe the particle arrangement of solids, liquids and gases; to gain further understanding of the Kinetic Theory. To gain a deeper understanding of the properties of the elements in the periodic elements including the 'transition elements'. They will explore the factors that affect rates of a reaction and identify elements by using flame tests. To link basic Maths and English skills in context to help students develop their application skills, to improve on their transferable skills such as time-keeping, teamwork and develop students' learning skills and independence so they can go on to be life-long learners.

Key knowledge that should be learned during this SoW

All (Pathway 2)

Most (Pathway 3)

Some (Pathway 4)

**Concept:**

**Knowledge:**

**Key Skills:**

**Language and/or communication skills:**

**Curricular Links**

Links to other learning within the subject are: Science/Resistant Materials/ PSHCE/PE



Year 9

Pathway 2/3/4

Science - Autumn Term 2

**Learning Intention: Chemistry - Rocks**

**The Earth and Rock**

To gain an understanding of the Earth's Tectonic Plates. To recall the names of types of rock; To learn about the rock cycle and the different types of rocks in more detail and how they are formed. To extend their learning about the Earth's resources and why we should recycle the Earth's natural resources. To grasp the concept of gravitational force; To calculate weight if the mass and gravitational force is given. To recap the planets and explore space exploration.

Key knowledge that should be learned during this SoW

All (Pathway 2)

Most (Pathway 3)

Some (Pathway 4)

**Concept:**

They will test different hypotheses, measure and record different variables. Students will then have the opportunity to evaluate their results to find out there is a link between the dependent and independent variables. They will also begin to make meaningful connections in maths, science, and technology content to solve real-world problems through hands-on learning activities and creative design.

**Knowledge:**

To be able to recognise that scientists can use their knowledge of Maths, Engineering and Technology to solve problems.

To be able to understand that scientists can use their knowledge of Maths, Engineering and Technology to solve problems.

To gain understanding of how scientists can use their knowledge of Maths, Engineering and Technology to solve problems.

**Key Skills:**

- To investigate which balloon will travel the furthest when

- To measure and record data accurately( Runny lava investigation)

- To measure , record data, and evaluate data accurately( Runny lava investigation)

	<p>moving on different types of strings.</p> <ul style="list-style-type: none"> <li>● Making a string telephone</li> <li>● To use a choice chamber to investigate the choices regarding habitat made by woodlice.</li> <li>● Use the Model of a teeth investigation to learn how to brush the teeth correctly.</li> <li>● Fruit painting practical</li> </ul>	<ul style="list-style-type: none"> <li>● Investigating absorbency of different materials</li> <li>● To investigate the effects of counter balances on how far a missile travels.</li> <li>● To investigate the rate at which different types of chocolate melt.</li> <li>● Build a rocket investigation.</li> <li>● Limited support when taking part in practical task</li> </ul>	<ul style="list-style-type: none"> <li>● Investigating absorbency of different materials</li> <li>● To investigate the effects of counter balances on how far a missile travels.</li> <li>● To investigate the rate at which different types of chocolate melt.</li> <li>● To find out what variable they need to control to get their Rocket to travel the furthest during (Build a rocket investigation).</li> <li>● Little/no support when taking part in practical task</li> </ul>
<b>Language and/or communication skills:</b>	<ul style="list-style-type: none"> <li>● Control variables</li> <li>● Prediction</li> </ul>	<ul style="list-style-type: none"> <li>● Dependent</li> <li>● Control variables</li> </ul>	<ul style="list-style-type: none"> <li>● Independent variable</li> <li>● Gravity</li> <li>● Air resistance</li> <li>● Thrust</li> </ul>
<b>Curricular Links</b>	Links to other learning within the subject are: Science/Resistant Materials/ PSHCE/PE		