



Year 7

Pathway 2/3/4

Science - Autumn Term 1

Learning Intention: Health, safety and materials and behaviour

Students will have the opportunity to learn and extend their understanding of the health and safety in the Laboratory ..This unit develops an understanding of the different properties of solids, liquids and gases, the water cycle and compounds and mixtures. By using this knowledge they will go on to identify hazards in the laboratory, this also provides opportunities to introduce the methods of working in a science lab, which will differ from the science learning experience that most students will have had previously.

Key knowledge that should be learned during this SoW

All (Pathway 2)

Most (Pathway 3)

Some (Pathway 4)

Concept:

Scientific methods and ideas on experiments, observation, hypotheses and theories are discussed, leading to an understanding of the particle theory of matter.

Knowledge:

To know and identify the hazards in the laboratory, know how to separate mixtures. To identify the arrangement of particles and how compounds are formed.

To understand and identify the hazards in the laboratory, know how to separate mixtures. To describe the arrangement of particles and how compounds are formed.

To gain understanding of the hazards in the laboratory, know how to separate mixtures. To explain the arrangement of particles and how compounds are formed.

Key Skills:

- To spot some hazards in the laboratory

- To describe some hazards in the laboratory.

- Little/no support when taking part in practical tasks.

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| | <ul style="list-style-type: none"> ● How to light a Bunsen burner safely with some support . ● How to identify and name basic laboratory equipment. ● To identify solids, liquids and gases. ● How to make a compound. ● To describe energy changes when ice melts. ● How to separate different mixtures. | <ul style="list-style-type: none"> ● To light and label parts of the Bunsen burner. ● How to identify ,name basic laboratory equipment and match them to their functions. ● To describe the water cycle. ● To describe properties of solids,liquids and gases. ● Make a model of a compound using smarties. ● Limited support when taking part in practical task. ● To be able to carry out simple separation tasks like filtration and chromatography. | <ul style="list-style-type: none"> ● Make a compound using molymed kits. ● How to identify ,name basic laboratory equipment and describe their functions ● To be able to carry out simple separation tasks like filtration , chromatography and distillation. ● To gain understanding of the states of matter and describe the states using kinetic theory of matter. ● To make a compound using simple elements. |
| Language and/or communication skills: | <ul style="list-style-type: none"> ● Particles ● Hazards ● Boiling ● Filtration | <ul style="list-style-type: none"> ● Apparatus ● Evaporation ● Precipitation ● Physical change | <ul style="list-style-type: none"> ● Compressed ● Condensation ● Chemical change ● Irreversible |
| Curricular Links | Links to other learning within the subject are: Science/Resistant Materials/ Geography | | |



Year 7

Pathway 2/3/4

Science - Autumn Term 2

Learning Intention: The Environment ,Earth and the universe

Students will have the opportunity to learn and extend their understanding that natural causes and mankind can affect climate change. This includes the impact of human activity and the importance of biodiversity. With a general theme about explorers, this unit looks at ecosystems and the factors that affect them. This includes the impact of human activity and the importance of biodiversity. This unit builds on work from KS2 on the Solar System and looks at the Earth, including the seasons and the Earth's magnetic field and gravity. It also looks at the Solar System and what is beyond the Solar System. The theme is exploring the Solar System – in terms of observations and the use of models as well as via astronauts.

Key knowledge that should be learned during this SoW

All (Pathway 2)

Most (Pathway 3)

Some (Pathway 4)

Concept:

Scientific methods and ideas on experiments, observation, hypotheses and theories are discussed, leading to an understanding of the impact of natural and human activity on the environment and exploring the Solar system.

Knowledge:

To recall the natural causes and mankind can affect climate change.
To identify the harm plastic waste poses to life in the oceans.

To understand that natural causes and mankind can affect climate change.
To focus on the harm plastic waste poses to life in the oceans.

To gain understanding that natural causes and mankind can affect climate change.
To focus on the harm plastic waste poses to life in the oceans.

Key Skills:

- To recall that plastics can harm organisms.
- To match pictures of the some phases of the Moon
- To be able to make crystals.

- To describe natural causes and mankind can affect climate change.
- To understand how day and night occur on Earth.

- To understand that natural causes and mankind can affect climate change.
- Little/no support when taking part in practical tasks.

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| | <ul style="list-style-type: none"> ● Making a model of a volcano ● To identify some rock types. | <ul style="list-style-type: none"> ● To know how a solar eclipse occurs. ● To know the names and order of planets from the Sun. ● To understand the eight phases of the Moon. ● To research facts about a planet and produce a poster. ● To understand the rock cycle. ● To investigate the three types of rock; ● Making a model of a volcano and describing how volcanoes are formed. ● To be able to make and discuss the size of crystals to the rate of cooling. | <ul style="list-style-type: none"> ● To outline the Rock cycle in detail. ● To be able to make and compare the size of crystals to the rate of cooling. |
| <p>Language and/or communication skills:</p> | <ul style="list-style-type: none"> ● Planets ● Moon ● Solar system ● Volcano | <ul style="list-style-type: none"> ● Sedimentary ● Magma ● Lava ● Volcano ● Heat | <ul style="list-style-type: none"> ● Igneous ● Metamorphic ● Pressure ● Irreversible |
| <p>Curricular Links</p> | <p>Links to other learning within the subject are: Science/Resistant Materials/ Geography</p> | | |