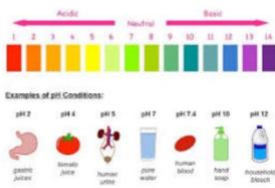
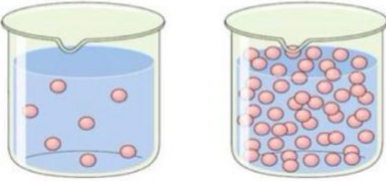
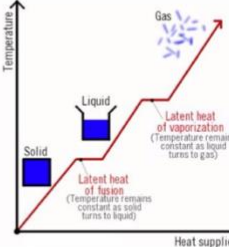
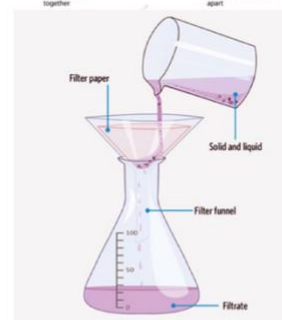
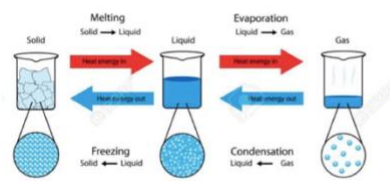


Topic	Learning outcomes
Acids and bases	<p>CW8 - Investigate reactions between acids and bases; use indicators and the pH scale</p> <ul style="list-style-type: none"> - Define what is meant by an acid, base and neutralization - Recognise the products of neutralization reactions and the corresponding pH value - Describe the structure of the pH scale 
Carbon cycle	<p>E55 - Describe the cycling of matter, including that of carbon and water, associating it with biological and atmospheric phenomena</p> <ul style="list-style-type: none"> - Outline the stages in the water cycle and draw a relevant diagram - Outline the stages in the carbon cycle and draw a relevant diagram - Distinguish between a carbon source and a carbon sink and give examples of each.
Water cycle	<p>E55 - Describe the cycling of matter, including that of carbon and water, associating it with biological and atmospheric phenomena</p> <ul style="list-style-type: none"> - Outline the stages in the water cycle and draw a relevant diagram - Outline the stages in the carbon cycle and draw a relevant diagram - Distinguish between a carbon source and a carbon sink and give examples of each.
Solubility/Conductivity	<p>CW6 - Investigate the properties of different materials including solubility, conductivity, melting points and boiling points</p> <ul style="list-style-type: none"> - Define what is meant by solubility, concentrated solution and dilute solution and use appropriate diagrams to represent each - Draw and interpret solubility curves - Define what is meant by conductivity, boiling point and melting point  

Mixtures and separation techniques

CW2 - Develop and use models to describe the atomic nature of matter; demonstrate how they provide a simple way to account for the conservation of mass, changes of state, physical change, chemical change, mixtures and their separation

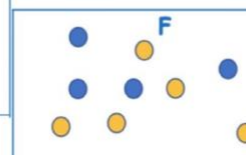
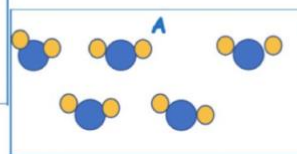
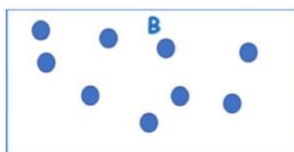
- Distinguish between a chemical and physical change and use an appropriate diagram to show the difference between
- Give examples of chemical and physical changes
- Define the law of conservation of mass
- Describe what is meant by matter (something that has mass and volume)
- List 3 states of matter - solid, liquid and gas
- Draw the particle structure of solids, liquids and gases
- Use the particle theory to describe the changes that happen to each state as heat is added and taken away
- Explain the terms melting, boiling, evaporation, condensation and freezing
- Define what is meant by a mixture, solute, solvent, solution, soluble and insoluble
- Describe the steps involved in the main separation techniques (filtration, evaporation, distillation and chromatography) and recognise what they are used to separate e.g filtration - insoluble solid and a liquid



Elements/Compounds/ Mixtures

CW4 - Classify substances as elements, compounds, mixtures, metals, non-metals, solids, liquids, gases and solutions

- Define what is meant by an element, compound, mixture, metal, non-metal
- Distinguish between metals and non-metals on the periodic table
- State what an alloy is and give an example and a use for it
- Give the names of the groups 1,2,7 and 8 in the periodic table.
- List 3 states of matter - solid, liquid and gas
- Draw the particle structure of solids, liquids and gases
- Use the particle theory to describe the changes that happen to each state as heat is added and taken away
- Explain the terms melting, boiling, evaporation, condensation and freezing



Hazards/Benefits of space exploration	<p>ES8 - Examine some of the current hazards and benefits of space exploration and discuss the future role and implications of space exploration on society</p> <ul style="list-style-type: none"> - Recognise some key stages in the history of human space flight such as the first man on the moon, first person in space etc. - Describe hazards and benefits of space exploration
Forces	<ul style="list-style-type: none"> • Balanced vs unbalanced forces • Calculating balanced and unbalanced forces • Calculating force (units) • Calculating weight <p>PW3: Investigate patterns and relationships between</p> <ul style="list-style-type: none"> • State Hooke's Law • Investigate the relationship between the spiral spring and the force causing that extension
Earth/Sun/Moon	<p>ES4 - Develop and use a model of the Earth-Sun-Moon system to describe predictable phenomena observable on Earth, including seasons, lunar phases, and eclipses of the Sun and the Moon</p> <ul style="list-style-type: none"> - Define what is meant by a season - Explain and illustrate how the Earth's tilt affects the seasons and draw a relevant diagram to outline the seasons in the Northern and Southern Hemisphere - Outline the phases of the moon and define relevant terms such as waxing, waning, gibbous, crescent and new moon - Distinguish between solar and lunar eclipses and draw relevant diagrams <div data-bbox="963 965 1350 1406"> <p>The diagram illustrates the Earth-Sun-Moon system. The top part shows Earth's orbit around the Sun, with the Earth's axis tilted. The four positions of Earth are labeled: 21 June solstice (northern summer, southern winter), 21 March equinox (northern spring, southern autumn), 22 December solstice (northern winter, southern summer), and 23 September equinox (northern autumn, southern spring). The bottom part shows the Moon's orbit around Earth. It illustrates the phases of the Moon: New Moon, Waxing Crescent, First Quarter, Waxing Gibbous, Full Moon, Waning Gibbous, Third Quarter, and Waning Crescent. It also shows a Solar Eclipse (Sun, Moon, Earth in a line) and a Lunar Eclipse (Sun, Earth, Moon in a line).</p> </div>

Ecology

BW5 - conduct a habitat study; research and investigate the adaptation, competition and interdependence of organisms within specific habitats and communities

- Define what is meant by ecology, habitats and ecosystems
- Describe how to use a quadrat, sweep net, pitfall trap and pooter
- Distinguish between qualitative and quantitative data
- Recall how to carry out a qualitative study of plants and animals
- Recall how to carry out a quantitative study of plants and animals (percentage frequency and percentage cover)
- Define what is meant by adaptation, competition and interdependence and give examples of each
- Distinguish between a food chain and a food web and represent energy flow using both
- Define what is meant by a producer, primary consumer, secondary consumer and tertiary consumer



Plant species	1	2	3	4	5	Freq
Grass	✓	✓	✓	✓	✓	
Dock leaf		✓				
Lesser celandine			✓		✓	
Thistle	✓		✓			
Dandelion		✓	✓	✓		