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Year 7 Overview 2025-26 – *Subject*

Date	Wk	Week	Units Studied & Learning Outcomes	Key Concepts & Assessment
8 weeks (8 Lessons) (38Days)				
Tues 2-Sep Tues Y7 only Wednesday-whole school	A	1	**Overview of Unit/No. lessons** Acids & Alkalis: 10 lessons C2 Lesson **Sequence** of Content: Lesson1- Identify characteristics of acids & alkalis Lesson 2- Red cabbage indicator Lesson 3- Litmus indicator Lesson 4- Universal indicator Lesson 5-pH of soil Lesson 6- Neutralisation Theory Lesson 7- Neutralisation Practical Lesson 8- Neutralisation Method and Analysis Lesson 9- Quick quiz assessment Lesson 10- Long answer question Unit Learning Outcomes: **GW:** Recall properties of acids & alkalis **BI**: Understand how indicators allow us to identify acids & alkalis **EW**: Understand what neutralisation is and recall some uses **Prior (Y6):** N/A **Current (Y7):** Understand properties of acids & alkalis **Next:** Year 8 – Metals & acids; Year 11 – Reactions of metals **Assessment** ○ HSW practical task – students should be able to explain findings using their Science knowledge ○ End of unit quiz ○ Long answer extension question at the end of the unit ○ Application task **Common misconceptions** Students believe that only acids are corrosive, alkali are also corrosive	**Foundational concepts:** Chemical reactions **Outcomes** • Identify examples of acids and alkalis in the home & laboratory. • Describe the properties of acids & alkalis. • Understand what an indicator is. • Be able to create your own indicator using red cabbage and understand the results • Give examples of different laboratory indicators • Understand how to test the pH of a substance and know the difference between strong/weak acid/alkali. • State what a neutralisation reaction is and give some everyday examples. • Know the ions involved in neutralisation. • Be able to write word equations for neutralisation reactions. • Understand how an antacid works. **Skills used/learned** • Practical skills • Method writing • Interpretation skills • Evaluation skills • Maths skills **Tier 2/3 Vocabulary** Referenced on PowerPoint slides, quick quizzes. **KW:** acid, alkali, neutralisation, corrosive, caustic, concentration, dilute, indicator **Links to root words-Etymology** • The words 'acid' and 'acetic' derive from the Greek word 'acere' meaning sour tasting **Links to culture** • Links to stomach acid to aid digestion • Everyday uses of acids and alkalis in the home e.g. toothpaste, vinegar, bleach etc • Neutralisation reactions- bee stings are acidic. Uses of antacids. Neutralising acidic soils. Making salts. **History** • John Haigh tried to dispose of 6 bodies of people that he had murdered by dissolving them in sulfuric acid. Pieces of bone, human fat, gallstones
8-Sep	B	2		
15-Sep (INSET Friday)	A	3		
22-Sep	B	4		
29-Sep	A	5		
6-Oct	B	6		
13-Oct	A	7		
20-Oct	B	8		

				and false teeth resisted the acid and he was arrested. • Robert Boyle suggested that if it is possible to produce more than 200 different colours from a single dye by the addition of acids & alkalis, then it should be possible to use these colour changes to test for the presence of acids & alkalis • A test originated in the 14th century, when scientists discovered that litmus, which is a mixture of coloured compounds obtained from lichens, turns red in acid solutions and blue in alkali solutions. • Clay tablets from ancient Sumerian cities; Tablet of Nippur there is a description of a curative given to those suffering from stomach pains, consisting of a mixture of milk, peppermint and sodium carbonate. **Career ideas-**Farmers, gardeners, flavour chemist and innovator, household goods scientist, toxicologist, fine fragrance evaluator **EDI links:** Scientists from different nationalities contributed to discoveries Alkali- Arabic word • ***Equality Diversity and Inclusion (EDI) links?*** *Parent and Carers month/Black History month* *World afro day* *International day of sign languages* *world mental health day* *world teachers day* *World cerebal palsy day* • **Assessment** (Quiz/Tests/application tasks/ ST: Including foundational concepts, wider disciplinary knowledge, key content.) Please Highlight the week number where formal feedback will be given (once per half term)
Half-Term			**7** weeks (7 lessons) (35 Days)	
3-Nov	A	9	**Overview of Unit/No. lessons** Separating Mixtures: 9 lessons C1 Lesson **Sequence** of Content: Lesson 1- Recognising substances Lesson 2-Purity Lesson 3-Dissolving HSW Lesson 4-Filtration Lesson 5-Distillation Lesson 6-Chromatography Theory Lesson 7-Chromatography Practical and Analysis Lesson 8-Quick quiz assessment Lesson 9-Long answer question Unit Learning Outcomes:	**Foundational Concepts:** Substances, structures & properties **Outcomes** • Be able to recognise types of substances • State definitions for key terms element, compound, mixture, soluble, insoluble etc. • Know what a pure substance is in terms of particles and be able to give everyday examples. • Understand what is meant be dissolving • Describe what affects the speed of dissolving • Understand how we can separate a solid from a liquid (filtering) • Understand what evaporation and distillation are • Describe how distillation works • Understand how to separate rock salt • Understand what chromatography is
10-Nov	B	10		
17-Nov	A	11		
24-Nov	B	ST1 (core only)		
1-Dec	A	ST1 (core only)		
8-Dec	B	14		
15-Dec	A	15		

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GW: Identify different substances and be able to describe whether they are pure or not
BI: Describe the different methods of separating mixtures
EW: Explain how to analyse Chromatograms

Prior (Y6)	Current (Y7)	Next
Year 6- Solids, liquids and gases. Properties of materials. Separating mixtures and dissolving	Understand how to separate mixtures.	Year 8 – Compounds and mixtures Year 9 – Evaluate separation techniques. Chromatography required practical. Rf Values.

Assessment

- HSW practical task – students should be able to explain findings using their Science knowledge
- End of unit quiz
- Long answer extension question at the end of the unit
- Application task

Common misconceptions

- **All mixtures are separated using only one separating technique;**
- **Evaporation and boiling are the same thing;**
- **Filtration can separate solutions;**
- **A solution is a single substance;**
- **Boiling points increase as a substance is heated;**
- **The boiling/condensation point is different eg if it boils at 100°C, it must condense at 99°C;**
- **Water flows through the condenser and not around it.**

- **Skills used/learned**
  - Practical skills
  - Method writing
  - Interpretation skills
  - Evaluation skills
  - Maths Skills

Tier 2/3 Vocabulary
Referenced on PowerPoint slides, quick quizzes.

- **KW:** Chromatography, mixture, dissolving, solvent, solute, pure, state, distillation.

Links to root words-Etymology

- Chromatography- Comes from its Greek toots 'Chroma-colour' and 'graphein' to write.
- Soluble- Late Latin *solubilis* "that may be loosened or dissolved," from stem of Latin *solvere* "to loosen, dissolve,"
- Distillation- from past-participle stem of Latin *distillare* "to trickle down in minute drops"

History

- The history of the atom begins around 450 B.C. with a Greek philosopher named Democritus. He called these "uncuttable" pieces atomos. This is where the modern term atom comes from.
- History: In ancient Greek and Sanskrit (India) writings dating back to 2000 BC, water treatment methods were recommended. People back than knew that heating water might purify it, and they were also educated in sand and gravel filtration, boiling, and straining. The major motive for water purification was better tasting drinking water, because people could not yet distinguish between foul and clean water
- Chromatography was first developed by the Russian botanist Mikhail Tswett in 1903 as he produced a colourful separation of plant pigments through a column of calcium carbonate.

Links to Culture

- Distillation has lots of everyday applications- water purification, produces a variety of alcoholic beverages, perfumes, crude oil (links to year 9)

Career ideas- Forensic scientist, formulation scientist, quality control technician, technical brewer, chemist, food technologist

- ***Equality Diversity and Inclusion (EDI) links:***

EDI links:

- Scientists from different nationalities

<table>
<tr><td></td><td></td><td></td><td></td><td>

- Treatment of water in different parts for the world
- Japanese Scientist developed Japanese Whiskey distillery

Mens health awareness month/disability confident month
Diwali
Remembrance Sunday
Transgender awareness week
World Diabetes Day
World AIDS day
Christmas Day
Assessment (Quiz/Tests/application tasks/ ST: Including foundational concepts, wider disciplinary knowledge, key content.) Please Highlight the week number where formal feedback will be given (once per half term)
</td></tr>
<tr><td colspan="2">Christmas Holiday</td><td colspan="3">6 weeks (6 lessons) (30 Days)</td></tr>
<tr><td>5-Jan</td><td>B</td><td>16</td><td rowspan="5"><u>Overview of Unit/No. lessons</u>
Structure of the Earth: 11 lessons

<u>Lesson Sequence of Content</u>:
Lesson 1-The Earth’s Structure
Lesson 2-Structure of Rocks
Lesson 3-Porosity
Lesson 4-Weathering
Lesson 5-Sedimentation
Lesson 6-Sedimentary Rocks
Lesson 7-Metamorphic Rocks
Lesson 8-Igneous Rocks
Lesson 9-Rock Cycle
Lesson 10-Quick quiz assessment
Lesson 11-Long answer question

<u>Unit Learning Outcomes</u>:
GW: Recall the Earth’s structure and different types of rocks
BI: Describe how the types of rocks form and the effects of chemical and physical weathering
EW: Explain what happens during the rock cycle

<table><tr><th>Prior (Y6)</th><th>Current (Y7)</th><th>Next</th></tr><tr><td>Year 6- Compare different rocks</td><td>Describe the structure of the Earth and the rock cycle</td><td>Year 9- Earth’s atmosphere and resources</td></tr></table>
Assessment
○ HSW practical task – students should be able to explain</td><td rowspan="5">Foundational concepts:
Earth’s resources

• Identify the different layers of the Earth
• Understand what rocks are made of
• State that rocks are made up of different grains
• Describe characteristics of different rocks
• Explain their grouping of different rock types
• Understand what porosity is
• Understand what chemical and physical weathering are
• Explain the effects of each type of weathering
• Understand what sedimentation is and how it occurs
• Describe characteristics of sedimentary rocks and how they form
• Understand how metamorphic rocks form and describe their features
• Understand how igneous rocks are formed
• Explain the difference between intrusive and extrusive igneous rocks.
• Describe what happens during the rock cycle.

• Skills used/learned
○ Creativity and Imagination skills
○ Interpretation skills
○ Evaluation skills
○ Practical skills
○ Observational skill

Tier 2/3 Vocabulary
Referenced on PowerPoint slides, quick quizzes.

• KW: Metamorphic, sedimentary, igneous, intrusive, extrusive, weathering, seismic, tectonic plates, core, crust, magma, erosion.

Links to root words-Etymology</td></tr>
<tr><td>12-Jan</td><td>A</td><td>17</td></tr>
<tr><td>19-Jan</td><td>B</td><td>18</td></tr>
<tr><td>26-Jan</td><td>A</td><td>19</td></tr>
<tr><td>2-Feb</td><td>B</td><td>20</td></tr>
<tr><td>9-Feb</td><td>A</td><td>21</td></tr>
</table>

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			findings using their Science knowledge ○ End of unit quiz ○ Long answer extension question at the end of the unit ○ Application task **Common misconceptions** The Earth's mantle is semi-liquid. This confusion stems from volcanic eruptions and the liquid nature of magma. In reality, the mantle is mostly made of solid rock. Only a tiny proportion is liquid, and even then only in specific regions such as spreading plate boundaries, subduction zones and hot spots. Because the majority of rocks sink in water, students often believe that the Earth's crust must be both very dense and denser than the mantle beneath it. A third persistent earth science misconception regards the temperature inside the Earth. This confusion originates from visits to caves; students will recall having stepped inside one on a warm day and finding it cool. This can lead students to believe that it is colder inside the Earth because the sun cannot reach it. The Mponeng gold mine in South Africa is the deepest mine in the world and extends up to four kilometres below the Earth's surface. In the deepest parts of the mine, rock temperatures reach up to 60ºC and air conditioning is required for the miners to work safely. Use this as an example to help students contextualise the known increase in temperature with proximity to the Earth's core.	• The scientific name for Earth is 'Terra' which comes from the Latin root word 'terr', which means earth • Metamorphic rock gets its name from 'morph' meaning form and 'meta' meaning 'change' **History** • The Earth formed 4.6 billion years ago out of solar nebula • the zircon crystal is the oldest crystal on Earth. It was from Jack Hills in Australia and has been dated back to about 4.375 billion years ago – just 165 million years after Earth formed • clay is the most porous sediment, but is the least permeable. Clay acts as an aquitard – impeding the flow of water. • In the city of Petra, a World Heritage site in Jordan is being destroyed by people touching, walking and climbing on them. • Glaciers store 75% of the worlds fresh water • Fossils 3.5 billion years old were found in Western Australia, these rocks contained organic life • Metamorphic rock gets its name from 'morph' meaning form and 'meta' meaning 'change' • The oldest rocks known – the faux amphibolite's of the Nuvvuagittuq greenstone belt in Quebec, Canada have an isotopic age of 4.28 billion years. • **Links to Culture** ○ The Earth's interior is the largest source of Earth's Carbon, which gets moved around and released via volcanoes. Rock cycle is important for fossil fuel formation. Tectonic activity links to activity of volcanoes, which can impact people's lives. **Career ideas**- Geoscientist, soil scientist, field seismologist, hydrologist, environmentalist, volcanologist, conservation worker, climate change research. • ***Equality Diversity and Inclusion (EDI) links?*** **EDI links:** • Theory of Big bang – awareness of religious beliefs • Dr Inge Lehmann discovered the Earths interior core - female seismologist • Mary Anning discovered the first complete dinosaur fossil *LGBT+ History month* *Holocaust memorial day* *World Hijab Day* *Children's mental health week.* *Safer internet day* *Chinese New Year*

				Assessment (Quiz/Tests/application tasks/ ST: Including foundational concepts, wider disciplinary knowledge, key content.) Please Highlight the week number where formal feedback will be given (once per half term)
Half-Term			6 weeks (6 lessons) (28 Days)	
23-Feb	B	22		
2-Mar	A	23		
9-Mar	B	24		
16-Mar	A	25		
23-Mar	B	26		
30-Mar (finish Wednesday 1st April)	A	27		
Easter Holiday			5 weeks (5 lessons) (24 Days)	
20-Apr	B	28		
27-Apr	A	29		
4-May (Bank holiday Mon)	B	30		
11-May	A	ST2		
18-May	B	ST2		
Half-Term			7 weeks (7 lessons) (35 Days)	
1-Jun	A	33		
9-Jun	B	34		
16-Jun	A	35		
23-Jun	B	36		
30-Jun	A	37		
7-Jul	B	38		
14-Jul	A	39		
(Total: 190 Days)				

Overview of Year 7	
Based on your Flight Path	**By the end of Year 7, students will have learned**
GW:	• Identify examples of acids and alkalis in the home & laboratory. • Understand what an indicator is. • Give examples of different laboratory indicators • Understand how to test the pH of a substance • State what a neutralisation reaction is and give some everyday examples. • Be able to recognise types of substances • State definitions for key terms element, compound, mixture, soluble, insoluble etc. • Know what a pure substance is in terms of particles and be able to give everyday examples. • Understand what is meant be dissolving • Understand how we can separate a solid from a liquid (filtering) • Identify the different layers of the Earth • State that rocks are made up of different grains • State what porosity is
BI:	• Describe the properties of acids & alkalis. • Be able to create your own indicator using red cabbage and understand the results • Know the difference between strong/weak acid/alkali.

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	• Know the ions involved in neutralisation. • Describe how an antacid works. • Describe what affects the rate of dissolving • Describe what evaporation and distillation are • Describe how to separate rock salt • Describe what chromatography is • Describe what rocks are made of • Describe characteristics of different rocks • Describe what chemical and physical weathering are • Describe what sedimentation is and how it occurs • Describe characteristics of sedimentary rocks and how they form • Understand how metamorphic rocks form and describe their features • Understand how igneous rocks are formed and describe their features
EW:	• Be able to write word equations for neutralisation reactions. • Explain how distillation works • Be able to analyse chromatograms • Explain the grouping of different rock types • Explain the effects of each type of weathering • Explain the difference between intrusive and extrusive igneous rocks. • Explain what happens during the rock cycle.

Prompt Questions

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Please revisit the prompts from last year:

- What are the Key concepts for this unit?
- How will it link to wider disciplinary knowledge/cultural capital: history, culture, authentic artefacts, music, art, literature?
- How does it build on prior knowledge and link to other units, concepts, years, GCSE?
- What is it intended students will have learned?
  - For each Unit? By the end of the Year?
    - GW: ; BI: ; EW
- Is it worth summarising in a knowledge organiser?
- **Assessment: how do you know they have learned the foundational concepts, curriculum and wider disciplinary knowledge? Does assessment look like GCSE light? Should it?**
- Skills used/learned
- Tier 2/3 vocabulary ((Etymology e.g. of Greek/Latin)
- How will you assess students understanding?
- How will written feedback be given?
- How can lessons be adapted?