

<p>This half term: Skills, Knowledge and Understanding to be developed:</p> <p>Skills (students <u>WILL BE ABLE</u> to by the end of the Learning Programme):</p> <p>Knowledge (students <u>WILL KNOW</u> by the end of the Learning Programme): how the public water supply is treated; Students will know the advantages and disadvantages to the fluoridation of the water supply;</p> <p>Understanding (students <u>WILL DEMONSTRATE THEIR UNDERSTANDING</u> by the end of the Learning Programme): by answering a range of questions that focus around 'describe', 'explain', 'compare', 'analyse' and 'plan'; interpreting graphs and trends within a set of data; interpreting solubility curves.</p>		<p>Key Terms / Words: chlorination, filtration, sedimentation, fluoridation, fluorosis, distillation, desalination, solubility, soluble, insoluble, solubility curve</p>	
<p>LP 3 – Weeks 1&2 Learning Outcomes:</p> <p>1. Water composition and water treatment</p> <ul style="list-style-type: none"> Students will be aware of the composition of water in 'natural' water supplies, including dissolved gases, ions, microorganisms and pollutants Students will understand the need for a sustainable water supply to include reducing our water consumption, reducing the environmental impacts of abstracting, distributing and treating water Students will explain how the public water supply is treated using sedimentation, filtration and chlorination. <p>2. Fluoridation of the water supply.</p> <ul style="list-style-type: none"> Students will know the arguments for and against the fluoridation in order to prevent tooth decay. <p>3. Separation of water and other solids/liquids.</p> <ul style="list-style-type: none"> Students will know how sea water is desalinated to supply drinking water including the sustainability of the process. Students will know the terms associated with solutions. Students will know how to separate water and other miscible liquids by distillation. <p>4. Solubility and solubility curves.</p> <ul style="list-style-type: none"> Students will know what is solubility and simple methods to determine solubility and produce solubility curves. <p>5. Hard Water.</p> <ul style="list-style-type: none"> Students will know the causes of hard water and how to distinguish between hard and soft waters by their action with soap. 		<p>Success Criteria</p> <ul style="list-style-type: none"> Answer exam style questions relating to the treatment of the public water supply To be able to interpret graphs on fluoridation of drinking water to answer a QER question. To be able to describe the process of distillation. 	<p>Homework LP3</p> <p>Answer HWK assignment on google classroom.</p>
<p>LP 3 – Weeks 3&4 Learning Outcomes:</p> <p>6. Hard Water.</p> <ul style="list-style-type: none"> Students will know the causes of hard water and how to distinguish between hard and soft waters by their action with soap. Students will carry out practical activities to place 4 samples of water in order of hardness. 	<p>Assessment →</p> <p>MOCK</p> <p>Mark</p> <p>Grade</p>	<p>Success Criteria</p> <ul style="list-style-type: none"> To be able to determine the order of hardness of different water samples. 	<p>Homework LP3</p> <p>Revise for the mock exam through completing the blended learning exercises on WJEC website.</p>

LP 3 – Weeks 5&6 Learning Outcomes:

7. Hard water

- Students will know the difference between temporary and permanent hard water.
- Students will know the processes used to soften water to include boiling, adding sodium carbonate and ion exchange.


8. Hard Water

- Students will know the advantages and disadvantages of different methods of water softening **and the explanation of how these methods work.**
- Students will know the health benefits of hard water and its negative effects, e.g. on boiler elements.

9. Metal carbonates

- Students will identify the trend in stabilities of metal carbonates and their thermal decomposition to produce oxides and carbon dioxide.
- Students will be able to recall the chemical names for limestone, quicklime and slaked lime.

Students will apply and demonstrate new knowledge and skills in APP assessment.

Assessment 

APP

Mark

Success Criteria

- To be able to explain how to soften different types of hard water and explain the advantages and disadvantages of each method.
- Complete thermal decomposition practical task.
- Use results from practical tasks to identify reactivity of metal carbonates

Homework LP3

Complete quiz on google classroom on water.