

# Preparing for Secondary Science - Year 6: Scientific Enquiry Overview

Lesson:	Objectives:	Scientific Enquiry:	Equipment:
<b>Lesson 1. How can we improve observations?</b>	<ul style="list-style-type: none"> <li>Identify the basic parts of a microscope.</li> <li>Describe the basic functions of a microscope.</li> <li>Identify when to use a microscope in scientific observations.</li> </ul>	<p>Identifying, classifying, and grouping: Pupils label microscope parts.</p> <p>Observing over time: Pupils observe objects at different magnifications and record observations.</p>	<p>Microscope, slides, small objects (e.g., leaves, fabric), observation journals.</p>
<b>Lesson 2. Acid or alkali?</b>	<ul style="list-style-type: none"> <li>Give some examples of acids and alkalis.</li> <li>Describe uses of indicators.</li> <li>Investigate some natural indicators.</li> </ul>	<p>Identifying, classifying, and grouping: Pupils sort substances into acids, alkalis, or neutral.</p> <p>Comparative testing: Pupils make and use red cabbage indicator to test various substances.</p>	<p>Red cabbage, hot water, test tubes, various substances (vinegar, baking soda, soap), droppers.</p>
<b>Lesson 3. How can we separate colours?</b>	<ul style="list-style-type: none"> <li>Recall some mixtures.</li> <li>Explain some uses of chromatography.</li> <li>Carry out an investigation.</li> </ul>	<p>Identifying, classifying, and grouping: Pupils separate colours in ink using chromatography.</p> <p>Observing over time: Pupils observe the separation of colours and record changes.</p>	<p>Filter paper, black markers, plastic cups, water, rulers, pencils, paper clips.</p>
<b>Lesson 4. What can affect photosynthesis?</b>	<ul style="list-style-type: none"> <li>Recall that plants make their own food.</li> <li>Describe the factors affecting photosynthesis.</li> <li>Carry out an investigation.</li> </ul>	<p>Observing over time: Pupils observe oxygen production by plants under different light intensities.</p> <p>Comparative testing: Pupils vary light intensity and measure oxygen bubble production.</p>	<p>Aquatic plants (e.g., Elodea), clear plastic cups, water, lamps, magnifying glass (optional).</p>
<b>Lesson 5. How can we change sound?</b>	<ul style="list-style-type: none"> <li>Recall how sounds can be changed.</li> <li>Describe the factors affecting sounds.</li> <li>Carry out an investigation.</li> </ul>	<p>Comparative testing: Pupils compare the pitch of sounds produced by bottles with different water levels.</p> <p>Identifying, classifying, and grouping: Pupils classify sounds based on pitch and volume.</p>	<p>Plastic bottles, water, permanent markers, rulers.</p>
<b>Lesson 6. How is energy transformed?</b>	<ul style="list-style-type: none"> <li>Recall some examples of energy.</li> <li>Describe some energy changes.</li> <li>Explain one energy change in detail.</li> </ul>	<p>Identifying, classifying, and grouping: Pupils investigate and classify different energy transformations in common devices.</p> <p>Researching using secondary sources: Pupils create visual aids explaining energy changes.</p>	<p>Everyday devices (toaster, flashlight), visual aid materials (poster paper, markers), secondary sources on energy.</p>