



# Year 11 Physics Curriculum Summary



**YEAR GROUP:** 11 FMS

**SUBJECT:** Physics

When?	Knowledge	Understanding	Assessment
<p><b>Wave properties</b></p>	<p><b>Be able to:</b></p> <ul style="list-style-type: none"> <li>• <b>Define transverse and longitudinal waves</b></li> <li>• <b>Describe and explain amplitude, frequency and wavelength of a wave</b></li> <li>• <b>Describe how sound waves are detected by the ear</b></li> <li>• <b>Define ultrasound waves and describe how they are used</b></li> <li>• <b>Define seismic waves and describe how they are produced</b></li> </ul>	<p>Students will carry out a range of practical experiments during these topics.</p> <p><b>wave properties key words:</b>            amplitude            compression            echo            electromagnetic waves            frequency            longitudinal waves            mechanical wave            oscillate            rarefaction            reflection            refraction            speed            transmission/transmitted            transverse wave            vibrate            wavelength</p>	<p><b>wave properties assessment</b></p>
<p><b>Electromagnetic waves</b></p>	<p><b>Be able to:</b></p> <ul style="list-style-type: none"> <li>• <b>Give examples that illustrate the transfer of energy by electromagnetic waves</b></li> <li>• <b>Understand and explain what the different types of electromagnetic waves are used for</b></li> <li>• <b>Describe what X-rays are used for in medicine and why they are dangerous</b></li> </ul>	<p>Students will carry out a range of practical experiments during these topics.</p> <p><b>Electromagnetic waves key words:</b>            carrier waves            charge-coupled device (CCD)            contrast medium            electromagnetic spectrum            microwaves            optical fibre</p>	<p><b>Electromagnetic waves assessment</b></p>



		<p>radiation dose radio waves ultraviolet radiation (UV) wave speed white light X-rays</p>	
<b>Light</b>	<p><b>Be able to:</b></p> <ul style="list-style-type: none"> <li>• <b>Draw diagrams for reflection and refraction</b></li> <li>• <b>Explain reflection and refraction of light</b></li> <li>• <b>Describe what determines the colour of a surface</b></li> <li>• <b>Define a concave and convex lens</b></li> </ul>	<p>Students will carry out a range of practical experiments during these topics.</p> <p><b>Light key words:</b> angle of incidence angle of reflection concave (diverging) lens convex (converging) lens diffuse reflection focal length magnification magnifying glass normal opaque object principal focus real image refraction specular reflection translucent object transparent object virtual image</p>	<b>Light assessment</b>
<b>Electromagnetism</b>	<p><b>Be able to:</b></p> <ul style="list-style-type: none"> <li>• <b>Describe what induced magnetism is</b></li> <li>• <b>Describe how to plot the magnetic field pattern of a magnet using a compass</b></li> </ul>	<p>Students will carry out a range of practical experiments during these topics.</p> <p><b>Electromagnetism key words:</b> electromagnet Fleming's left-hand rule induced magnetism magnetic field</p>	<b>Electromagnetism assessment</b>



	<ul style="list-style-type: none"> <li>• Describe how the strength and direction of a magnetic field varies with position and with the current</li> <li>• Describe an electromagnet and what they can be used for</li> <li>• Describe how the potential difference can be induced in a wire</li> <li>• Explain what step up and step down transformers can be used for</li> </ul>	<p>magnetic field line magnetic flux density motor effect solenoid split-ring commutator</p>	
<p>Space</p>	<p><b>Be able to:</b></p> <ul style="list-style-type: none"> <li>• Explain how the solar system is formed and how energy is released inside the sun</li> <li>• Describe why stars eventually become unstable</li> <li>• Explain what a supernova is</li> <li>• Explain what force keeps planets and satellites moving along their orbits and the direction of force</li> <li>• Explain what is meant by the red-shift of a light source and what it depends on</li> </ul>	<p>Students will carry out a range of practical experiments during these topics.</p> <p><b>Space key words:</b> Big Bang theory black dwarf black hole centripetal force cosmic microwave background radiation (CMBR) dark matter main sequence neutron star protostar red giant red supergiant red-shift supernova white dwarf</p>	<p>Space assessment</p>

