

Module Map

Ideas about Science		Module story	Science Explanations	
<i>In other modules</i>	<i>In this module</i>		<i>In this module</i>	<i>In other modules</i>
<p>laS5: Risk in P2 <i>Radiation and life and</i> C3 <i>Food matters</i></p>	<p>Distinguish what can be done (technical feasibility) from what should be done (values).</p> <p>Ways of reducing specific risks. Interpret information on the size of risks, presented in different ways.</p>	<p>Energy patterns</p> <p>↓</p> <p>Radiation all around</p> <p>↓</p> <p>Radiation and health</p> <p>↓</p> <p>Changes inside the atom</p> <p>↓</p> <p>Nuclear power</p> <p>↓</p> <p>Nuclear waste</p> <p>↓</p> <p>Energy futures</p>	<p>Convenience of electricity as an energy source. Efficiency of energy conversion, shown with a Sankey diagram. Power station carbon emissions.</p> <p>Radioactivity is a chance process. Source – journey – detector. Radon gas and alpha radiation. Irradiation v. contamination.</p> <p>Effects of ionizing radiation on living cells, measuring radiation dose.</p> <p>Beta and gamma radiation. Properties of alpha, beta, and gamma radiation. Medical and other uses of radiation, including sterilization. Measuring radiation dose (more detail). Radiation workers.</p> <p>Atomic and nuclear structure. Isotopes. Differences between parent and daughter elements.</p> <p>Nuclear fission, chain reaction. Main features of a nuclear reactor and power station. Radiation workers, radioactive waste.</p> <p>Radioactive half-life. Three types of nuclear waste. Possible methods of disposal.</p> <p>Primary and secondary energy sources. Interpret and evaluate information about different energy sources for generating electricity. Sankey diagrams.</p>	<p>Power station emissions in C1 <i>Air quality</i>. CO₂ and global warming in P2 <i>Radiation and life</i>.</p> <p>Source – journey – detector in P2 <i>Radiation and life</i>.</p> <p>Main parts of a power station in C1 <i>Air quality</i>. Kinetic energy in P4 <i>Explaining motion</i>.</p>
<p>Regulation of scientific applications (laS6.2) in C1 <i>Air quality</i> C2 <i>Material choices</i> C3 <i>Food matters</i> B2 <i>Keeping healthy</i>.</p>	<p>Balance of risk and benefit. Nothing is completely safe. Regulation: ways of reducing specific risk. The ALARA principle.</p>			
<p>Precautionary principle (laS5.5) in P2 <i>Radiation and life</i>.</p>	<p>Decision making: identify groups affected and costs of a course of action. The precautionary principle.</p>			
<p>Concept of sustainable development (laS6.3) in C2 <i>Material choices</i>. laS6: Making decisions about science and technology.</p>	<p>The idea of sustainable development. Distinction between technical feasibility and what should be done (values). Different courses of action in different social and economic contexts.</p>			