

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>
		Time and space	Relative diameters of the Earth, Sun, and Milky Way. Relative ages of the Earth, Sun, and Universe. Earth's crust, mantle, and core.	
laS3: Developing explanations in B3 <i>Life on Earth</i> .	James Hutton: Identify statements that are data and statements that are (all or part of) an explanation. Identify the role of imagination in the development of an explanation.	↓ Deep time	Evidence for changes in the Earth (erosion and sedimentation, folding, fossils, radioactive dating, craters). Rock processes seen today can account for past changes.	Time needed for the evolution of life on Earth in B3 <i>Life on Earth</i> .
laS3: Developing explanations.	Wegener: Suggest reasons why scientists disagreed about explanations for same data.	↓ Continental drift	Match of fossils, rocks, and mountain chains on different continents. Continents move by about 10 cm a year. Zebra stripes and seafloor spreading.	
laS3: Developing explanations.	New explanation linking things previously unrelated.	↓ The theory of plate tectonics	Tectonic plates moving against each other account for mountain-building, the rock cycle, and most earthquakes and volcanoes . Public actions that can reduce damage.	
laS3: Developing explanations. laS4: Scientific community.	Barringer: New data increases confidence in explanation. Boast: Peer review. Alvarez: Prediction confirmed. Reasons why scientists disagree.	↓ The Solar System	Formation of the Solar System from clouds of gases and dust. Planets, moons, and asteroids. Extinction of dinosaurs.	
		↓ What are we made of?	Spectra of stars – colours and dark bands. Fusion of hydrogen. Star birth and life cycles.	More detail of spectra, formation of stars, and life cycles in P7 <i>Further physics</i> .
		↓ Are we alone?	Measuring star distances - relative brightness, parallax. Exoplanets, but no aliens.	More detail of parallax in P7 <i>Further physics</i> .
laS3: Developing explanations. laS4: Scientific community.	Peer review. Difficulty of prediction.	↓ How did the Universe begin?	Light pollution. Galaxies and the Universe. Expanding space . The big bang.	More details of galaxies in P7 <i>Further physics</i> .