

Nuclear physics

Specification reference	Checklist questions	
6.4.4 a	Can you demonstrate Einstein's mass–energy equation, $\Delta E = \Delta mc^2$?	<input type="checkbox"/>
6.4.4 b	Can you understand how energy is released or absorbed in simple nuclear reactions?	<input type="checkbox"/>
6.4.4 c	Can you describe the creation and annihilation of particle–antiparticle pairs?	<input type="checkbox"/>
6.4.4 d	Can you define mass defect; binding energy; and binding energy per nucleon?	<input type="checkbox"/>
6.4.4 e	Can you explain the binding energy per nucleon against nucleon number curve; and energy changes in reactions?	<input type="checkbox"/>
6.4.4 f	Can you calculate the binding energy of nuclei using $\Delta E = \Delta mc^2$, and calculate the masses of nuclei?	<input type="checkbox"/>
6.4.4 g	Can you define induced nuclear fission and chain reaction?	<input type="checkbox"/>
6.4.4 h	Can you describe the basic structure of a fission reactor (components: fuel rods, control rods and moderator)?	<input type="checkbox"/>
6.4.4 i	Can you explain the environmental impact of nuclear waste?	<input type="checkbox"/>
6.4.4 j	Can you define nuclear fusion, fusion reactions and temperature?	<input type="checkbox"/>
6.4.4 k	Can you demonstrate balancing nuclear transformation equations?	<input type="checkbox"/>