



Eduqas Physics – Component 3

Module 8: Nuclear Energy

This topic discusses the relationship between mass and energy and learners use the equation $E = mc^2$. Learners are shown how to calculate the binding energy per nucleon of a nucleus and relate this to the stability of the nucleus. The conservation of mass/energy is applied to particle interactions and the physics of fission and fusion is explored.

You should be able to demonstrate and show your understanding of:	Progress and understanding:			
	1	2	3	4
The association between mass and energy and that $E = mc^2$				
The binding energy for a nucleus and hence the binding energy per nucleon, making use, where necessary, of the unified atomic mass unit (u)				
How to calculate binding energy and binding energy per nucleon from given masses of nuclei				
The conservation of mass / energy to particle interactions – for example: fission, fusion				
The relevance of binding energy per nucleon to nuclear fission and fusion making reference when appropriate to the binding energy per nucleon versus nucleon number curve				

