Radioactive decay knowledge organiser

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This worksheet accompanies the above article 'The hunt is on'.

α decay	**β decay**	**γ decay**
alpha decay	beta decay	gamma decay
• He nucleus (containing 2 protons and 2 neutrons) is lost.	• A neutron turns into a proton and an electron. • The proton stays in the nucleus. • The electron is lost as a β particle.	• Electromagnetic waves emitted from the nucleus. • Often accompanies the other modes of decay.
• Atomic mass decreases by 4. • Atomic number decreases by 2. A new element is formed.	• Atomic mass stays the same. • Atomic number increases by 1. A new element is formed.	• No change of atomic mass or atomic number. • No new element formed.
$^{238}_{92}U \rightarrow {}^{234}_{90}Th + {}^{4}_{2}He$	$^{14}_{6}C \rightarrow {}^{14}_{7}N + {}^{0}_{-1}e$	
The same rules apply when writing a decay equation as for other equations. The equations must be **balanced.** The **mass numbers** on the left and right of the equations must be equal. The **atomic numbers** on the left and right of the equations must be equal.		