Structure of the atom

International Baccalaureate · IB Diploma · Physics · HL · Vocabulary in context

Word	Example
nucleus /ˈnjuːklɪəs/	The **nucleus** is at the centre of an atom.
plum-pudding model	In the **plum-pudding model**, electrons sit in a ball of positive charge.
nuclear model /ˈnjuːklɪə ˈmɒdl/	In the **nuclear model**, a tiny nucleus sits at the centre of the atom.
alpha particle /ˈælfə ˈpɑːtɪkl/	An **alpha particle** is a helium nucleus.
gold foil /gəʊld fɔɪl/	Rutherford fired alpha particles at thin **gold foil**.
evacuated	The tube is **evacuated**: all the air is pumped out.
nuclide /ˈnjuːklaɪd/	Carbon-14 is a **nuclide**. Carbon-14
nucleon number /ˈnjuːklɪən ˈnʌmbə/	The **nucleon number** counts protons and neutrons.
proton number /ˈprəʊtɒn ˈnʌmbə/	Carbon has a **proton number** of 6. 6
isotope /ˈaɪsətəʊp/	Carbon-14 is an **isotope** of carbon. Carbon-14
spectrum /ˈspektrəm/	A prism splits light into a **spectrum**.
continuous spectrum	A hot lamp gives a **continuous spectrum** of all colours.

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emission spectrum /ɪˈmɪʃn ˈspektrəm/	A hot gas gives a bright-line **emission spectrum**.
absorption spectrum /əbˈsɔːpʃn ˈspektrəm/	An **absorption spectrum** has dark lines.
discrete /dɪˈskriːt/	An atom has **discrete** energy levels, like the steps of a ladder.
energy level /ˈenədʒi ˈlevl/	The electron jumps to a higher **energy level**.
photon /ˈfəʊtɒn/	A **photon** is a small packet of light energy.
line spectrum /laɪn ˈspektrəm/	Hydrogen gas gives a **line spectrum** of a few bright colours.
ground state /graʊnd steɪt/	The **ground state** is the lowest energy level.
ionisation energy /ˌaɪənaɪˈzeɪʃn ˈenədʒi/	The **ionisation energy** of hydrogen is 13.6 eV. 13.6 eV
distance of closest approach	The alpha particle stops at the **distance of closest approach** and turns back.
strong nuclear force /strɒŋ ˈnjuːklɪə fɔːs/	The **strong nuclear force** holds protons and neutrons together.
femtometre	A nucleus is a few **femtometre**s across.
angular momentum /ˈæŋgjʊlə məʊˈmentəm/	A spinning ice skater has **angular momentum**.
principal quantum number /ˈprɪnsɪpl ˈkwɒntəm ˈnʌmbə/	The **principal quantum number** n = 2 means the second shell. n = 2

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