

LEARNING JOURNEY

Physics



Nuclear Physics

Year 10 Autumn Term

Nuclear physics is a very important part of modern life. It is used for energy, food preparation and medicine. But it also poses challenges, such as the cost of dealing with radioactive waste.

You will learn the basic structure of the atom and how discoveries changed our understanding of atoms. You will study the processes behind nuclear radiation (decay) and how nuclear fission and fusion produce energy from matter.

Atoms, Isotopes and Ions

You will learn the structure of the atom, how atoms can change and why they are radioactive

History of the Atom and Discoveries

You will look at how the model of the atom has changed over time thanks to new evidence

Decay

You will be able to describe and model alpha decay and beta decay

Properties of alpha, beta and gamma

You will learn about the properties and some uses of the main types of nuclear radiation.

Half-Life

You will be able to define and model half-life and perform half-life calculations.

Irradiation and Contamination

Nuclear radiation has benefits and risks. You will learn how we can manage these

SEP PHYSICS ONLY

Nuclear Power; Fission and Fusion

How the processes of fission and fusion work and how we can use these for power

TUDOR HABITS AND VALUES:

You will be systematic as you outline processes and perform calculations. You will be curious as you explore a fascinating topic. You will take pride in your work to use models neatly.

VOCABULARY

Ion, Isotope, Decay, Ionise, Irradiate, Fission, Fusion, radioactive, ionising, half-life, contamination