

Combined science - Physics

Key stage 4 - Atomic Structure

Radioactivity

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What is emitted?

Radiation type	Symbol	What is it?



Properties of nuclear radiation

Radiation type	Penetrating power	Range in air	Ionising power
α			
β			
γ			



Exam Question

Radioactive nuclei can emit alpha, beta and gamma radiation.

1. Which type of radiation is the most penetrating?

Alpha

Beta

Gamma

Question taken from Exampro



Exam Question

Radioactive nuclei can emit alpha, beta and gamma radiation.

2. Which type of radiation is the most ionising?

Alpha

Beta

Gamma

Question taken from Exampro



Exam Question

Radioactive nuclei can emit alpha, beta and gamma radiation.

3. Which type of radiation has the longest range in air?

Alpha

Beta

Gamma

Question taken from Exampro



Exam Question

Gamma radiation is emitted from the nucleus of some atoms.

4. What is a gamma ray?

A helium nucleus

A high speed electron

A neutron

A type of electromagnetic radiation

Question taken from Exampro



Exam Question

Gamma radiation is emitted from the nucleus of some atoms.

5. Which would be the best absorber of a gamma ray?

A few mm of air

**A thick sheet of
cardboard**

A thick sheet of lead

A thin sheet of paper

Question taken from Exampro



Exam Question

6. Explain how the properties of alpha, beta and gamma radiation affect the level of hazard at different distances.

Question taken from Exampro

