

Unit title	Absorption and transition of radiation
Topic	Atomic and Nuclear
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Aims of Unit	The Unit presents students with data about radioactive sources in diagrammatic form. Students are required to answer questions about the 3 types of radiation by interpreting the diagrams.
Indicative content	Alpha, beta and gamma radiation, penetrating properties of radiations.
Resources needed	None
Teachers notes	<p>Age 14 - 16</p> <p>This would make an ideal starter activity revisiting previous lessons on penetration and identification of types of radiation.</p> <p>Learning outcomes</p> <p>All pupils will be able to simply calculate the difference in radiation detected taking into account normal background levels.</p> <p>Most pupils will be able to identify the ability of several different materials to absorb different types of radiation.</p> <p>Some pupils will be able to identify types of radiation based on their ability to penetrate different materials.</p>

Lesson Plan for the starter activity identifying radio-active type by absorption

Date:	Topic: The Absorption and Transmission of radiation	Time:	Class: GCSE
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SEN pupils

Gifted and Talented

Class Room Support

Equipment needed for this activity:

This starter activity requires pupils to have access to the work sheet.

The will also need writing paper and pens/pencils

Health and Safety:

There are no health and safety issues involved with this activity.

Learning outcomes for this activity

All pupils will be able to simply calculate the difference in radiation detected taking into account normal background levels.

Most pupils will be able to identify the ability of several different materials to absorb different types of radiation.

Some pupils will be able to identify types of radiation based on their ability penetrate different materials.

Lesson Plan for the starter activity identifying radio-active type by absorption

Starter Activity

During this activity pupils must have access to the work sheet provided and work through the questions provided.

The activity will take 10 minutes.

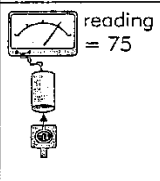
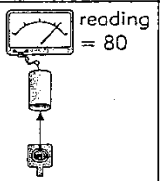
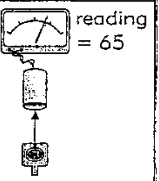
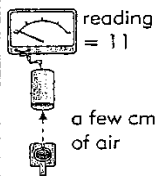
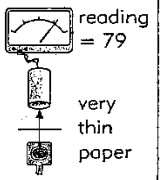
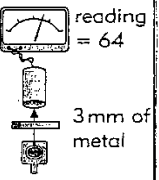
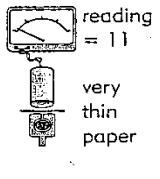
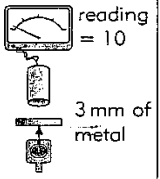
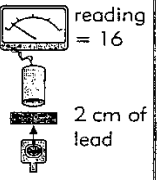
Main Activity

Plenary Activity

Reflections on the lesson

The Absorption and Transmission of Radiation

**ANSWER EACH QUESTION IN FULL SENTENCES
USING THE DIAGRAM BELOW**

Average background reading = 10 or 11		
Source A	Source B	Source C
 reading = 75	 reading = 80	 reading = 65
 reading = 11 a few cm of air	 reading = 79 very thin paper	 reading = 64 3 mm of metal
 reading = 11 very thin paper	 reading = 10 3 mm of metal	 reading = 16 2 cm of lead
A emits alpha (α) radiation.	B emits beta (β) radiation.	C emits gamma (γ) radiation.

1. What was the 'background radiation' before the experiment?
2. How much more radiation did source 'A' give at first?
3. How much more radiation did source 'B' give at first?
4. How much more radiation did source 'C' give at first?
5. Name 2 materials that totally blocked 'A's radiation.
6. Name 1 material that totally blocked 'B's radiation.
7. Name 1 material couldn't block 'B's radiation.
8. Name 1 material that mostly blocked 'C's radiation.
9. name 1 material that couldn't block 'C's radiation.
10. Name the 3 types of radiation in the diagram.
11. Which of the above radiations is most easily blocked?
12. Which of the above radiations is least easily blocked?