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| **Lesson Number: 26.3a** |
| **Lesson Title: Investigation of the inverse-square law for gamma radiation** |
| **Specification Reference** | **3.8.1.2** |
| **Learning Objectives** |
| Inverse-square law for γ radiation: Experimental verification of inverse-square law. |
| **Opportunities for Assessment** |
| Assessing the practical aspect of the lesson**Skills Assessment (Required practical 12)**AT (a),(b),(k),(l) |
| **Starter:** | Recap gamma radiation and the inverse square law from last lesson (Slides #1 and #2) |
| **Main:** | Slide #3 explains to students that their teacher will decide how much dependence they are given in this experiment. See pages 110-111 of the AQA practical handbook for Physics for full detailsSlide #4 outlines the assessed skills that will be looked at by the teacher. Students should keep these in mind and ensure that their teacher watches them perform these skills during the practical.Depending on the outcomes that the teacher wishes to assess, the pupils can either be given a method to follow or a lesson can be used as a full research and planning sessionThe experiment needs to be performed. See pages 110-114 of the practical handbook for A-Level Physics for full details. |
| **Plenary:** | Go over the experiment and the results; write up the experiment in full; discuss the assessing of the skills and the outcome assessed by the teacher. |
| **RESOURCES:** |
| Groups:* gamma source (e.g. 185 kBq (5 µCi) Cobalt 60 ‘closed’ source)
* source holder or retort stand, boss and clamp
* scaler with integral power supply for GM tube
* geiger muller tube suitable for gamma detection
* metre ruler
* stopclock
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| **Risk Assessment** e.g. CLEAPSS card reference |
| Radiation hazard risk assessment:* Follow in-house protocols on use and management of sources including:
	+ Do not point sources at people
	+ use at maximum distance (use forceps), and away from any students
	+ Use for least amount of time possible
	+ Ensure all sources are counted in and out
	+ Do not leave sources unattended
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