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| **Lesson Number: 26.4** | | |
| **Lesson Title: Dangers of radioactivity** | | |
| **Specification Reference** | | **3.8.1.2** |
| **Learning Objectives** | | |
| Applications e.g. to safe handling of radioactive sources.  Background radiation; examples of its origins and experimental elimination from calculations. | | |
| **Opportunities for Assessment** | | |
| Question on page 451 | | |
| **Starter:** | Slide #1 poses some questions to start a discussion on radiation and safety | |
| **Main:** | Slide #2 recaps the main ionising radiation, the list may contain a few new ones the students don’t think of  Slide #3 links back to radiation safety and how we monitor dosage in workers in the UK  Slide #4 explains the difficulty in using simple units for dosage when different types of radiation have different outcomes – Sieverts must be known but calculations are not needed  Slide #5 is a simple pie chart of approximate background radiations. This is from the included excel sheet which can be used as a homework to research the actual values in your area  Slide #6 explains how radioactive materials are stored – There is remarkably little created in the UK; a power station can have a fuel rod that lasts up to 20 years!  Slide #7 is a good opportunity to go over the risk assessments from the practical work (#12) on gamma radiation | |
| **Plenary:** | Slide #8 is a summary | |

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| **Homework:** | Question on page 451, research the dosage limits for workers, public and nuclear workers in the UK | |
| **Differentiation / Extension / S&C** | | |
| Create a talk on nuclear safety in the UK quoting facts and figures from HSE | | |
| **Numeracy / Literacy** | | **SMSC / Fundamental British Values** |
| N/A | | Is there such a thing as a *safe* radiation limit? |
| **RESOURCES:** | | |
| None | | |
| **Risk Assessment** e.g. CLEAPSS card reference | | |
| None | | |
| **Working Scientifically (HSW)** | | |
| Radiation does limits, page 450 | | |

Pictures courtesy of:

Slides #1, #2 and #6 – Wikipedia (Public Domain)