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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 ofSlide #3 links back to radiation safety and how we monitor dosage in workers in the UKSlide #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 neededSlide #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 areaSlide #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 |

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