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| **Lesson Number: 26.7** | | |
| **Lesson Title: Radioactive isotopes in use** | | |
| **Specification Reference** | | **3.8.1.2, 3.8.1.3** |
| **Learning Objectives** | | |
| Appreciation of balance between risk and benefits in the uses of radiation in medicine.  Applications e.g. relevance to storage of radioactive waste, radioactive dating etc. | | |
| **Opportunities for Assessment** | | |
| Questions page 461 | | |
| **Starter:** | Slide #1 enables a discussion of the pros and cons of radioactive sources and nuclear material in general | |
| **Main:** | Slide #2 shows the essential decisions that must be made and considerations needed in the selection of an isotope – It is useful if pupils write this list down and then discuss each point on it for each of the examples given in the coming slides  Slides #3 - #7 are the main uses of radioactive material, with the exception of nuclear fission and weapons as these are best discussed in the lessons on fission and fusion – Discuss each use in detail and link to slide #2  A nice activity here is to allocate a slide to each group and have them do research on the isotopes used and link them to the bullet points in slide #2, feeding back to the class their findings as presentations | |
| **Plenary:** | Slide #8 is a summary although feedback from students can perform the same task | |

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| **Homework:** | Questions page 461, researching uses and selection of isotopes | |
| **Differentiation / Extension / S&C** | | |
| Looking deeper into why certain isotopes are used; research the meta-stable state of technetium | | |
| **Numeracy / Literacy** | | **SMSC / Fundamental British Values** |
| N/A | | Use of radiation – balancing good against bad  Is science intrinsically good or bad or just the people who use it? |
| **RESOURCES:** | | |
| Computer room (Optional) | | |
| **Risk Assessment** e.g. CLEAPSS card reference | | |
| None | | |
| **Working Scientifically (HSW)** | | |
| N/A | | |

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