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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 slidesSlides #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 #2A 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 badIs 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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