Exposure Levels

Apparatus

tables showing typical doses of radiation, for example those below, list of recommended exposure limits

Action

The students examine the tables and compare the typical dosages to the recommended limits.

The Physics

Radiation comes from many natural sources, as well as man made sources, and the typical exposures are well below recommended limits. People who work with radiation such as x-ray sources, especially radiographers and dentists, and aircraft pilots who are exposed to a lot of cosmic radiation receive much higher dosages of radiation than most other people.

Typical average annual doses due to natural radiation.

Source	**Dose (μSv / yr)**
local gamma radiation	400
carbon 14	10
radon and decay products	800
potassium 40 (in body)	200
cosmic radiation	300
uranium and thorium (in body)	170

Typical average annual doses due to man made radiation.

Source	**Dose (μSv / yr)**
diagnostic radiology (eg x-rays)	220
therapeutic radiology	30
radioisotopes in medicine	2
radioactive waste	2
fallout (nuclear weapons)	10

Dosage limits for ionizing radiation (from the ARPANSA website):
The NHMRC recommended radiation dose limit for the public is 1 mSv (1000 μSv) per year.
ANSTO's dose constraint for reactors, which has been agreed by the Nuclear Safety Bureau, is 100 μSv per year for members of the public

Accompanying sheet:

Exposure Levels

Look at the chart showing the recommended exposure limits.

How do these compare with the dosages shown in the table?

What sort of professions do you think have the highest exposure?