

## Common Sources of Radiation

### Apparatus

some (slightly) radioactive samples and/or laboratory sources, see table below  
Mantles for gas lanterns are also an excellent example.

### Action

The students measure the radiation from the sources and compare it to the background level.

### The Physics

Most of the sources will have levels barely above background. It helps to have a common laboratory source such as Cs for comparison.

Radioactivity in some common substances.

Substance	Activity (Bq/kg)
garden soil	2000
brazil nuts	400
human bodies	80
cows milk	50
sea water	12
tap water	0.1



A student at the Australian Catholic University measuring his own radioactivity.

Dosage limits for ionizing radiation (from the ARPANSA website):

The NHMRC recommended radiation dose limit for the public is 1 mSv (1000  $\mu$ Sv) per year.

ANSTO's dose constraint for reactors, which has been agreed by the Nuclear Safety Bureau, is 100  $\mu$ Sv per year for members of the public

### Accompanying sheet:

#### Common Sources of Radiation

Use the counter to measure the radiation coming from the various sources.

How do they compare to background radiation?

How do they compare to the recommended maximum dosages?