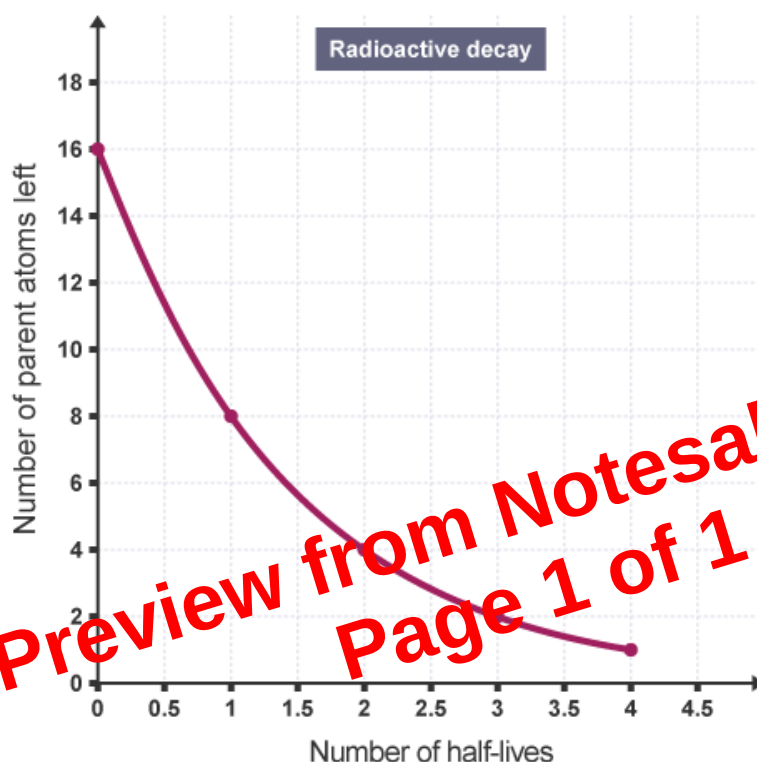


2.8: Half-life

Radioactive decay

- random
- can be modelled using a large collection of dice or coins or a suitably programmed spreadsheet

Decay curves for radioactive materials



Half-life

- the time taken for the number of radioactive nuclei to reduce to one half of its initial value
- Each radioactive material has a characteristic half-life.

Uses of radioactive materials

- smoke alarms using alpha radiation (long half-life; weak penetration so smoke can break small current in the air)
- measuring the thickness of paper using beta radiation (long half-life; medium penetration)
- external cancer treatment using gamma radiation (long half-life; strong penetration)