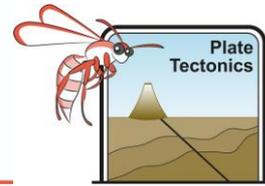# Rock Age Data - Student Activity

Part of the geologically recent history of Earth is recorded in the basalts on either side of mid-ocean ridges. We can observe basalt flowing out from trenches at the centre of mid-ocean ridges. We can also estimate the ages of these rocks using data from natural radioactive decay. Decay starts as soon as the radioactive minerals become solid.
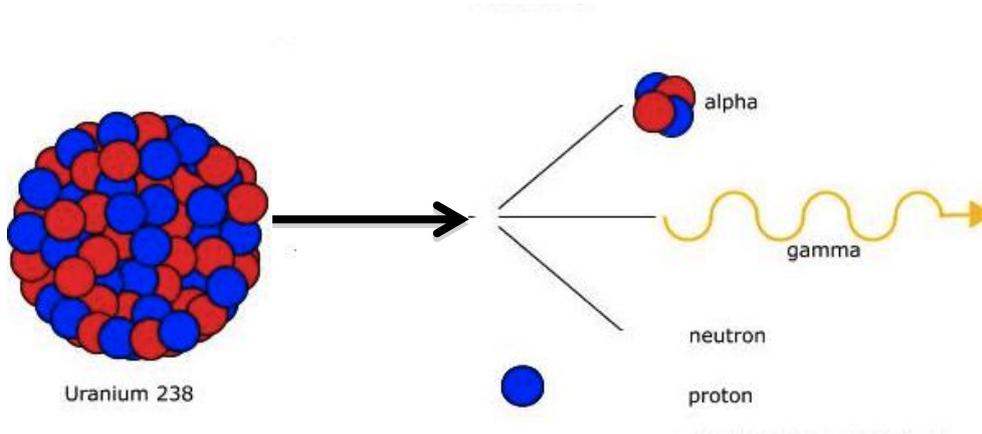
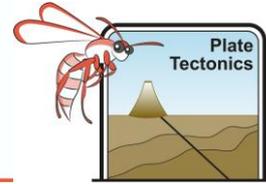**Materials**
- Sharp pencil (not HB) and eraser
- Ruler

Not all rock-forming minerals are radioactive. When a rock solidifies its unstable radioactive minerals start to decay. They lose their radioactive energy at a known rate. The time it takes to lose half their radioactivity is called their half-life.

Plot the decay curve for radioactive mineral X on the graph paper provided. Mineral X has a half-life of 100 years. Every 100 years it remaining radioactivity will be halved.
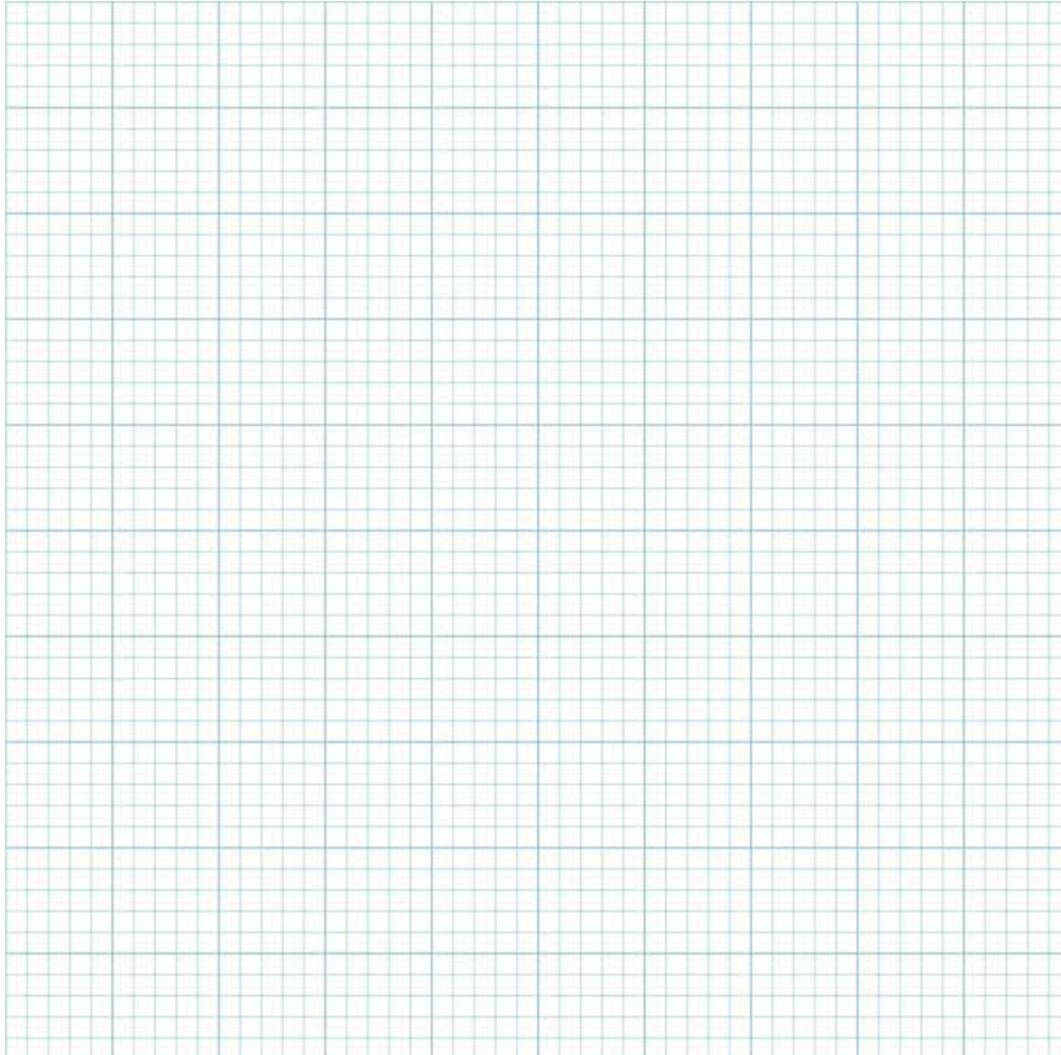If its initial radioactivity is 80 units calculate what its remaining radioactivity be in 600 years?

Calculations of radioactivity remaining

Time (years)	Remaining radioactivity (units)
0	80
100	
200	
300	
400	
500	
600	

Plot this data on your graph paper

HINT A graph needs:
1. A title
2. The correct style of graph chosen. (Line or bar graph?)
3. Its X and Y axes labeled including the correct units
4. Data points plotted in pencil
5. Data points joined to draw the graph

Using your graph answer the following questions

If a radioactive mineral X in basalt has 15 units of radioactivity, how long ago was it erupted? _____

How many units of radiation would basalt erupted 350 years ago have? _____

Can we estimate how much radiation a basalt erupted 1,000 years ago might have using this data? Explain your answer

_____