

Exploring Radiometric Dating

Dating methods in geology use the parent-daughter decay ($P \rightarrow D$), a known half-life, and the daughter/parent ratio determined by mass spectrometry to determine the age or time passed since formation of an igneous rock.

You will need the Excelet at

http://academic.pgcc.edu/~ssinex/excelets/age_dating.xls

How does the daughter/parent or D/P ratio change as time passes?

Radiometric dating methods assume that the initial amount of parent isotope, P_0 , is set at the formation of an igneous rock when it crystallizes, turns solid, from magma (molten rock). We assume that the amount of daughter isotope is zero ($D_0 = 0$). How is the age of the rock influenced if $D_0 > 0$ from other sources?

To correct for an initial amount of a daughter isotope (usually not known), geologists use the isochron plot. For any parent-daughter pair, how does the age, t , influence this plot?

How does the D_0 influence the isochron plot as well?

Determine the age of the rocks for the assess and assess II tabs. **Attach** the graphs of the isochron plots for both, any calculations, and answers to questions on the tabs.