**Carbon Dating exercise**

The A3 sheet represents the amount of C12 in a leaf… or some living thing

The A4 sheet represents the amount of C14 in the same leaf

What is the size (%) of the C14 sheet relative to C12 sheet at the start (ie count the squares)

This represents the C12/C14 ratio in a living thing…. When its alive

Leave the C12 sheet alone... its happy sitting there (it’s nucleus is stable)

Start a timer …. This represents when the leaf dies…. Now the C 14 starts to undergo radioactive decay

At 57 seconds cut the C14 sheet in half, keep one half and put the other half to the side (to calculate its relative size)

Repeat this 4 more times, ie each 57 seconds cutting what is left in half and putting the other half to the side

Calculate the size of the (shrinking) C14 sheet relative to the C12 (unchanged) sheet for each time interval... enter in table

|  |  |
| --- | --- |
| Time (s) | C14 size (%) |
| 0 | 50 |
| 57 |  |
| 114 |  |
| 171 |  |
| 228 |  |

Plot this data

Chart

Description automatically generated

Use your graph to work out the age of my bit of paper?

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| C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 |
| C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 |
| C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 |
| C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 |
| C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 |
| C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 | C 12 |
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| C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 |
| C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 |
| C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 |
| C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 |
| C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 |
| C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 |
| C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 |
| C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 |
| C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 |
| C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 |
| C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 |
| C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 | C 14 |
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