

Carbon-14 Dating

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This comic simply Talk about

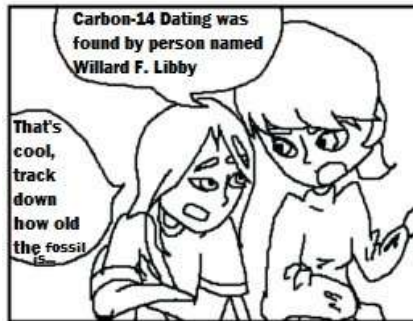
-What is Carbon-14 Dating

-Who discover it

-How it is made

-When it decay and How

*-One more random fact with Discussion of
any one conversary related to the topic.*



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Name: Willard F. Libby
Born: December 17, 1908, Grand Valley, UT
Died: September 8, 1980, Los Angeles, CA

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Short bio:

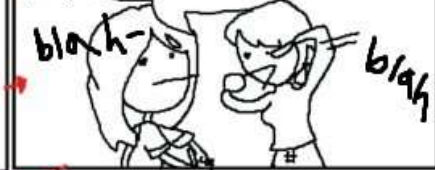
While associated with the Manhattan Project (1941–45), Willard Libby helped develop the atomic bomb. Libby began experimenting with carbon-14, radiocarbon, in the late 1930s and discovered that it could be used to determine the age of very old things. In 1947, Libby obtained the first age determination using the carbon-14 dating technique and won the Nobel Prize for his discovery in 1960.



Anyways.... since Willard Libby story came out, now let's talk about how Carbon-14 Dating is made.



Cosmic rays enter the earth's atmosphere in large numbers every day. It is not uncommon for a cosmic ray to collide with an atom in the atmosphere, creating a secondary cosmic ray in the form of an energetic neutron, and for these energetic neutrons to collide with nitrogen atoms. When the neutron collides, a nitrogen-14 (seven protons, seven neutrons) atom turns into a carbon-14 atom (six protons, eight neutrons) and a hydrogen atom (one proton, zero neutrons). Carbon-14 is radioactive, with a half-life of about 5,700 years.

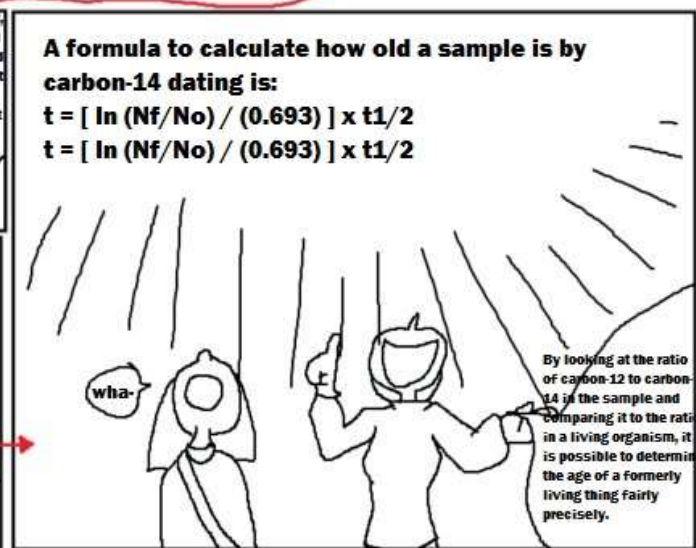


A formula to calculate how old a sample is by carbon-14 dating is:

$$t = [\ln (N_f / N_o) / (0.693)] \times t_{1/2}$$

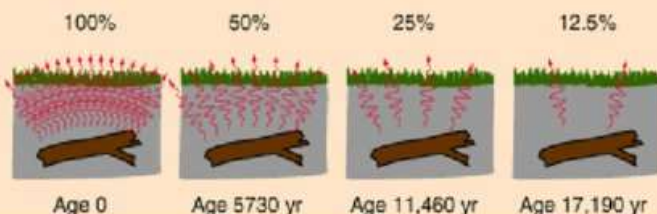
$$t = [\ln (N_f / N_o) / (0.693)] \times t_{1/2}$$

It start to decay AS SOON AS LIVING ORGANISMS DIES. Like this bone that i try to figure out how old it was. The ratio of carbon-12 to carbon-14 at the moment of death is the same as every other living thing, but the carbon-14 decays and is not replaced. The carbon-14 decays with its half-life of 5,700 years, while the amount of carbon-12 remains constant in the sample.



EXT

Measurement of the beta decay activity of a buried piece of wood provides a measurement of the time elapsed since it was living and in equilibrium with the atmosphere.



Well I can tell you something relate to it... since it's a "Carbon" here is 10 fact about CARBON. Carbon is the basis for organic chemistry, as it occurs in all living organisms. Carbon is a nonmetal that can bond with itself and many other chemical elements, forming nearly ten million compounds. Elemental carbon can take the form of one of the hardest substances (diamond) or one of the softest (graphite). Carbon is made in the interiors of stars, though it was not produced in the Big Bang. Carbon compounds have limitless uses. In its elemental form, diamond is a gemstone and used for drilling/cutting; graphite is used in pencils, as a lubricant, and to protect against rust; while charcoal is used to remove toxins, tastes, and odors. The isotope Carbon-14 is used in radiocarbon dating. Carbon has the highest melting/sublimation point of the elements. The melting point of diamond is ~3550 °C, with the sublimation point of carbon around 3800 °C. Pure carbon exists free in nature and has been known since prehistoric time. The origin of the name 'carbon' comes from the Latin word carbo, for charcoal. The German and French words for charcoal are similar. Pure carbon is considered non-toxic, although inhalation of fine particles, such as soot, can damage lung tissue. Carbon is the fourth most abundant element in the universe (hydrogen, helium, and oxygen are found in higher amounts, by mass).



The End

Work Cited:

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