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There are relative dating methods and absolute dating methods. Relative dating methods let us understand the context fossils and artifacts are in, like what kind of animals lived at the same time or what the weather might have been like at the time. Absolute dating methods give a short range of times (because of a margin for error) and are much more accurate at giving an age.

Radiocarbon dating looks at the amount of carbon 14 an individual has and compares it to the amount of nitrogen 14. This measurement is useful because carbon 14 decays at a predicable rate, so if you do the math to compare how much carbon 14 is in a fossil with the level of nitrogen 14 you can tell how long it has been since the individual was exposed to carbon 14.

Genetic dating works by looking at the number of mutations that happen per generation then multiplying it out to a point where the current genetic code is as different as other species. If a species has 36 mutations per generation and a generation is about every 20 years, and you want to see how far back this species is related to another, you look at the difference between the two species. If they have 1 million differences you would take the 1 million and divide it by the number of mutations per generation. This would give us 27,777 total generations at minimum between the two. Then you multiply that by the space between generations, 20 years, and you would get 555,540 years as a minimum since these two species shared a common ancestor.