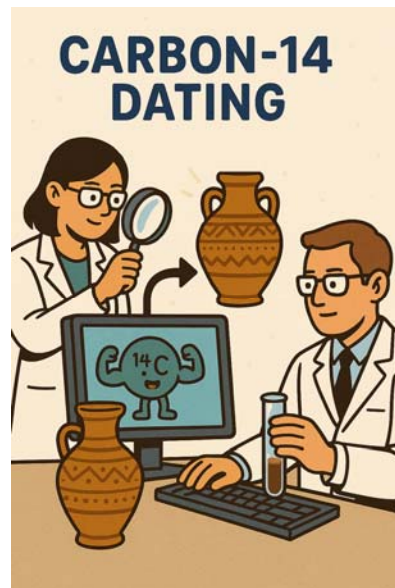


Name _____

How Do Scientists Use Carbon-14 to Date Ancient Artifacts?



Have you ever wondered how scientists figure out how old something is—like an ancient bone or a piece of wood from a long-lost village? One important tool they use is called carbon-14 dating.

Carbon is a common element found in all living things. There are different types of carbon atoms, and one special kind is called carbon-14. While a plant or animal is alive, it takes in carbon-14 from the air or from food. But when it dies, it stops taking in carbon-14. Slowly, the carbon-14 in its body begins to break down.

Scientists know how fast carbon-14 breaks down. It takes about 5,730 years for half of it to disappear. This is called a half-life. By measuring how much carbon-14 is left in something that was once alive, scientists can figure out how long ago it died.

This method works well for things that are up to about 50,000 years old. It's been used to date ancient tools, wooden boats, cloth, and even the bones of people who lived thousands of years ago.

Let's say scientists find a piece of charcoal from an old fire. They test it in a lab to see how much carbon-14 it still has. If it has half the amount it started with, then it's about one half-life old—so around 5,730 years.

Carbon-14 dating is very helpful, but it doesn't work on things that were never alive, like rocks or metal. It also isn't perfect if the object has been touched by modern materials. Still, it gives scientists a very good idea of the age of many ancient things.

Thanks to carbon-14, we've learned more about how people lived in the past, when animals went extinct, and how Earth has changed over time. This tiny atom plays a big role in solving the puzzles of history!