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How Do Scientists Know the Earth Is Over 4 Billion Years Old?



Have you ever wondered how old the Earth is? Scientists believe Earth is about 4.5 billion years old. But how do they know that? After all, no one was around that long ago to take notes! The answer comes from studying rocks, space, and special science tools.

One of the best ways scientists figure out Earth's age is by looking at very old rocks. Some of the oldest rocks on Earth have been found in Australia,

Greenland, and Canada. These rocks are more than 4 billion years old! Scientists study the tiny parts inside the rocks using a method called radiometric dating. This helps them learn how old the rocks are by looking at how certain materials inside them have changed over time.

But Earth is always changing. Wind, water, and even people break down rocks and form new ones. So scientists also study space rocks called meteorites. These rocks come from space and sometimes fall to Earth. Meteorites were formed at the same time as Earth and the rest of our solar system. When scientists test these space rocks, they find that most are around 4.5 billion years old.

The Moon also gives scientists clues. Rocks brought back from the Moon during space missions are also billions of years old. Since Earth and the Moon formed at the same time, this helps confirm Earth's age.

Scientists don't just guess. They use math, chemistry, and careful testing to make sure their results are accurate. They often compare the ages of many rocks and meteorites to check their answers. This way, they're more sure their answer is correct.

So, even though no one was alive billions of years ago, science has tools that help us learn about Earth's deep past. By studying ancient rocks and meteorites, scientists have unlocked the story of our planet's birth.