How do we know dinosaurs existed? (Fossils)

Dinosaurs are said to have existed a long time ago. How could we possibly know for sure? The answer is that we have found remains of these animals left behind in the Earth. At first glance these look like bones, but they are actually something called fossils. Very few plants or animals ever end up as fossils, which form when the material from their remains is replaced with minerals. This is how they survive for such long periods, when even bones would have long ago turned to dust.

To become fossilised, very specific things must occur.

1. The remains of the fossil must be buried before they are destroyed by the elements [sun, wind, water] or taken by scavengers. In many cases only part of the original organism [living thing] is left at this stage. Complete fossils are incredibly rare, much more rare than partial fossils.

2. Layers of sediment are deposited on top of the remains. This process can happen over a long period of time. As the layers build up they press down on the remains more and more.

3. Ground water needs to travel through the sediment where the fossil is located. The water brings dissolved minerals, which gradually replace the material or fill the holes left. In particular conditions this stage can result in preserving [keeping] of skin, hair and feathers!

4. The fossils remain there preserved, until found or destroyed. They can be uncovered naturally by erosion, or dug up. Some fossils have even been dug up by accident, such as when people are building roads! Fossils may also have been damaged or moved by movement of the Earth, so they can be destroyed or split into pieces and damaged.

Another way fossils are preserved is when sticky tree sap is buried and fossilised, becoming what is known as amber. Sometimes this amber can contain insects and other small organisms. This process provides us with excellent examples of prehistoric life, as the insect can be practically unchanged.