

Our planet is no spring chicken. The history of the earth stretches over billions of years. In that time period, a lot has changed. Some of those changes took place over a very long time, too slowly and gradually for people to discern. Some changes, on the other hand, took place very quickly.

Water, wind and ice slowly shape the surface of the earth, constantly moving all around us. Activity just beneath the surface of the earth's crust creates rapid changes in the shape of the land—that's where we get volcanoes, landslides and earthquakes.

Glaciers - which are huge, very old formations made out of water, earth and ice - can even change the size and shape of the oceans. These major shifts take place over millions of years. We can see the results, but apart from measuring them and seeing where growth or change took place, we can't observe these changes as they occur. They simply happen too slowly.

Erosion is an example of a slow process that changes the surface of the earth. Think of a windy beach, how sand from the beach is carried toward the dunes or, depending on the behavior of the wind, how the sand from the dunes is carried further down the beach. We can see and feel the sand moving over the land and through the air, but the long-term effects of that movement won't be visible for years.

The earth's surface is also made up of very slowly moving parts, called tectonic plates. These plates fit like puzzle pieces and make up the outermost layer of the planet. When this layer moves around, it can cause earthquakes and volcanic eruptions. It's very easy to spot these changes as they're happening! In fact, we have to be very careful and prepare for them in advance, and take safety measures before and after they occur.

Volcanoes, earthquakes and landslides aren't everyday events. If they were, we'd be in big trouble! Ordinarily, the movement of the plates is extremely slow, yet very powerful. Plate movement is one of the major forces that changes the location and shape of continents and oceans—major changes that we can't detect and that appear gradually over millions of years.

Some earth-changing events occur naturally, but others come from us, from humans. It's important to remember that we have our own impact on the earth. In many cases, humans influence the earth's natural processes on purpose, speeding them up, slowing them down, or manipulating them in other ways to get something we want—usually a natural resource, like water or oil. Some of what we do to our planet is on purpose, and some of it is accidental.

Cutting down forests, building new houses, bridges, office buildings and movie theaters, can lead to quickening natural events that might have taken much longer without humans' involvement.

You can walk outside any time you like and see the planet stir: wind moving particles of sand and rock, water dripping from one surface onto another, seasons changing each year. Everything you see on a walk around your neighborhood contributes to the earth's changing and maturing, just like everything we do every day contributes to what we'll be like as people 10 years, 20 years, even 50 years from now. And those changes in our bodies and personalities—unless something unusual happens—take time to show up too.

It's interesting to think about how what we do and the forces that act on us affect who we become. The earth is a big, changing organism, just like we are.