

Geoacts

(AKA Geological Fun Facts)

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1. **Theory: diamonds are forever** – Actuality: Diamonds are actually not forever. They are unstable on the Earth's surface and will eventually degrade into a stable form of carbon (graphite). But don't worry, this will not happen in anyone's lifetime that you know.

2. **The only continent with no desert is Europe.** A desert is determined by the amount of precipitation not temperature and Antarctica gets very little snowfall.

3. **Theory: Birthstones are minerals or gems.** Actuality: Only 11 of the 12 birthstones are minerals. Minerals are naturally occurring substances with definite properties. The 12th, pearls, are not naturally occurring, they are produced biologically by mollusks.

4. **Theory: It is warmer in the summer because we are closer to the sun.** Actuality: Only the southern hemisphere is closer to the sun in their summer. The northern hemisphere is further away for theirs. The actual cause of the warmer season is due to the angle of sunlight. When the northern hemisphere is pointed towards the sun it is warmer and vice versa.

5. Naturally forming chalk is actually made up of millions of little fossils called coccoliths, which were the round "shells" of animals called coccolithophores.

6. **Theory: Concrete is a rock.** Actuality: Minerals are always considered naturally formed, whereas depending on the definition you look at, rocks don't always have to be. So in essence, sometimes concrete (and other non-natural rock/mineral conglomerates) can be considered rocks (from a certain point of view).

7. The study of earthquakes started in at least 350 BC when Aristotle noticed that soft grounds shake more than the hard rocky ground.

8. **Theory: Ice is a Mineral.** Minerals are defined by being an inorganic, naturally forming, substance with a definite chemical composition and usually a definite crystal structure. All of which ice satisfies. So by definition, ice is a mineral. Just one with a significant lower melting point than we are usually accustomed to.

9. **Question: What is the most common mineral on Earth?**

Answer: Looking at the bulk composition of the Earth the most common mineral is generally regarded as olivine since the mantle makes up the bulk of the Earth and olivine makes up the bulk of the mantle.

10. Question: What is the most common mineral in the crust and surface of the Earth?

Answer: Depending on how you look at it there are two possible minerals. Quartz is the most common mineral on the surface of the Earth but Feldspar is the most common mineral in the crust. Feldspar though, is commonly considered a group of minerals, which includes Potassium-Feldspar and Plagioclase.

11. Diamonds are older than the dinosaurs. The youngest natural diamond is over 900 million years old

12. Dense as a Rock? Rocks are generally assumed to be hard, dense objects that would sink in water without a problem. But there are rocks out there that are not dense at all. The lightest rock is pumice, which has a very low density and is produced during a volcanic eruption. Magma is blasted into the air and cools. The large amount of resulting pore space in the rock produces enough buoyancy that the rock can actually float.

13. Geology in Art: It is thought that the reason the sky is red in Edvard Munch's "The Scream" is due to the volcanic sunset caused by the eruption of Krakatoa in 1883.

14. Moonquakes? Even though the moon is technically "inactive" there is some shaking still going on. The epicenters range from 700 km below the surface to 10-20 km below. And since the moon is so dry, they can keep going for more than 10 minutes. It's like "vibrating ... A tuning fork".

15. What is the Age of the Oldest Rock on Earth? The oldest rock on Earth is a granite protolith that has been dated to 4.03 Ga (billion years). Although there are reports of a possibly older rock (a faux-amphibolite) dated up to 4.28 Ga but there is some controversy about those rocks. Both of these rocks have been found in northern Canada.

16. What kind of waves are produced in an earthquake?

It is usually thought that there are only two main types of seismic (earthquake) waves. These are the Primary (P) Waves and the Secondary (S) Waves. But there is also a third main category called Surface Waves. These can be broken into 2 categories called Love and Rayleigh Waves. Surface Waves are the actual waves that shake the ground during an earthquake. Love Waves shake the ground back and forth while Rayleigh Waves shake it up and down.

17. The Phanerozoic Eon is the time period consisting of the last 540 million years and means "Visible life". Although originally thought to correspond with the evolution of life it is now known to represent the evolution of hard parts (like shells). Life truly evolved over 3.2 Ga (billion years ago) and possibly even as early as 3.85 Ga.

18. Myth: Volcanoes grow slowly. While often true in terms of human perception (not in geologic terms) there are some notable exceptions. One of the fastest growing

volcanoes in recorded history is a cinder cone that came up in a farmer's field in Mexico. The volcano, Paricutin, grew over 336 meters in 1943, the first year of its life.

19. Myth: Dinosaurs are Extinct. While all non-flying dinosaurs are extinct, there is overwhelming evidence that birds are descendants of dinosaurs, making them dinosaurs themselves. So the next time you eat a turkey or a chicken, you are eating a dinosaur.