Igneous Rock

The Center for Science Seekers believes that Vastland contains one or more ancient volcanic zones. These are places where, long ago, hot liquid rock from deep underground erupted at the surface and cooled to form solid rock.

Fossil-hunting in a volcanic zone isn't a great idea because igneous rock is unlikely to contain fossils. Fossils buried inside rock deep underground would melt along with the rock that melts to form magma.

So where does magma come from? Any rock on Earth can get recycled to become liquid rock. As Earth’s crustal plates move around, rocks that were once close to the surface can sink deep underground. There, intense heat and pressure can sometimes melt solid rock. This is part of the rock cycle, the process through which all rocks on Earth are constantly changing from one form to another.

How Igneous Rock Forms

Igneous rock forms when hot melted rock from deep inside Earth rises into Earth’s crust, cooling and hardening into solid rock.

1. Melted rock is called magma when it's underground, and lava when it erupts at the surface. Lava spills out of cracks in Earth's crust and spreads over the land like a giant puddle, forming large, flat areas of rock called lava plateaus.

2. Volcanoes are places where magma has broken through the surface. In some places, violent eruptions of hot lava build up the sides of the volcano into a steep cone-shaped mountain. In other places, the lava just gently oozes out of the ground. This creates more gently sloped volcanoes called shield volcanoes.

3. Sometimes hot magma underground pushes up the rock layers above it, creating a bulge in the surface. These dome-shaped hills are called laccoliths.

4. When magma forces its way between layers of underground rock, it forms a batholith. Batholiths can be ten or fifteen football fields in size, or even bigger.

The movement of Earth's crustal plates can pull rock from the surface deep underground, where it might melt to form magma.