

## Rocks

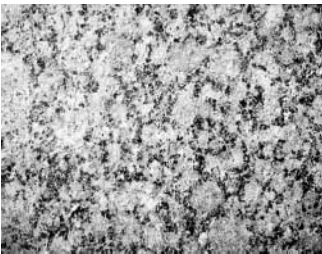
Rocks are the building blocks of the Earth. They shape our mountains and the very ground that we walk on. The outer layer of the Earth's crust is made up of different types of rock, formed in different ways. Rock can be divided into three main types, based on the way they were formed:

**Igneous rocks, Sedimentary rocks and Metamorphic rocks.**

All **Igneous rock** begin as molten rock or magma. Depending on how the molten rock cools, it will change in appearance – crystals can form in the rock if it cools slowly and glass if it cools quickly. Sometimes the molten rock is forced between other rocks underneath the Earth's surface where it cools. Other times molten rock is forced out of the Earth with the help of geological activity, such as volcanoes, and is cooled by water or air.

**Sedimentary rocks** are formed when layers of sediment (such as mud and sand) build up over time on the sea or lake floor. As the layers build up, crystals grow in the sediment, binding the layers together and forming them into hard rock.

**Metamorphic rocks** are formed when cooled rocks are heated by molten igneous rock or the heat from inside the Earth. The heat causes the rocks to crystalize or to recrystalize. This transformation is called *metamorphism* and produces metamorphic rock.



### Granite

*Igneous Rock*

Granite is an igneous rock and is formed inside the Earth. As the molten rock cools, crystals are sometimes formed and become part of the rock. Depending on the minerals in the granite, it can be pink, dark grey or even black. Granite is a hard rock and is hardwearing. Because of this it is used for such things as buildings, counter tops and headstones. Granite can be found in the Wicklow mountains.



### Basalt

*Igneous Rock*

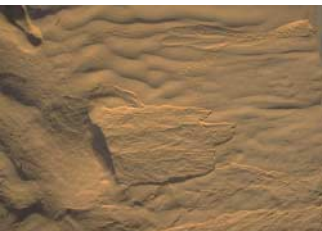
Basalt is also an igneous rock but it is formed when molten rock flows out of the Earth and is cooled by either water or air. The best example of basalt rock in Ireland is at the Giant's Causeway. There the molten rock cooled rapidly and as it did so it contracted (or shrunk), causing vertical cracks and columns to be created.



### Limestone

*Sedimentary Rock*

Limestone is a sedimentary rock and is made from sediment and a mineral known as calcite. Calcite comes from sea creatures, such as algae and coral. Remains of these creatures would have settled on the ocean floor and mixed with the mud and sand, eventually forming into rock. The Burren in Co. Clare is a good example of limestone rock. Limestone is easy to work with so is used for building, as well as in the manufacture of cement.



### Sandstone

*Sedimentary Rock*

Sandstone is also a sedimentary rock and is made up of sand-sized grains of minerals and rocks. It forms when sand settles on a seabed and is compacted over time. Crystals in the sand bind the layers together forming rock. Like limestone, sandstone is also used for building as it is easy to work with. Sandstone can be found in the Munster mountains.



### Marble

*Metamorphic Rock*

Marble is a metamorphic rock. It was originally limestone, but was transformed by great heat. The heat causes the rock to crystalize and these crystals make the rock very decorative, particularly when polished. It has been used for thousands of years for the carving of sculptures and as decorative building material. Marble can be found in Connemara.