

Name: _____

Types of Rocks

Metamorphic Rock

Metamorphic rocks form deep within the Earth when heat and pressure are applied to either igneous, sedimentary, or even other metamorphic rocks—*without completely melting the rocks*. The heat and pressure *partially* melt the rocks, basically 'cooking' the rocks, changing them into something new. (Remember: if the rocks melt completely, they become magma. Any new rock that is formed from this magma would be an igneous rock, *not* a metamorphic rock.)

The final state of a metamorphic rock depends on the amount of pressure applied to the rock, the amount of heat applied, and the amount of time the rock was subjected to (put under) the pressure and heat.

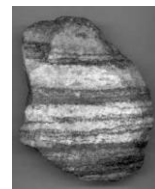
Common metamorphic rocks are marble, gneiss (pronounced "nice") and slate.

Marble is a metamorphic rock formed from limestone. *Limestone* is a sedimentary rock made up of tiny particles of sea shell. The chalk you draw with is a kind of limestone.



Marble is prized by sculptors for its beauty and strength. It is soft enough to allow the carving of tiny details, but strong enough not to split or break. Polished marble is smooth, shiny and very beautiful.

Gneiss is a metamorphic rock formed from granite. The heat and pressure cause the tiny mineral crystals in granite to line-up together. This makes gneiss look striped.



Slate is a metamorphic rock formed from shale (mudstone). Old-fashioned blackboards were made from slate. Today slate is used for roof and floor tiles.

Rock Distribution

Most of the earth's crust is made up of igneous rock (mainly) and metamorphic rock (some).

The most common rock type *near the surface* (top) of the crust, however, is sedimentary rock. This is because of the many rivers, lakes, and seas that have covered the surface at one time or another. And sediment beds most often form at the bottom of rivers, lakes, and seas.

This layer of sedimentary rock is very thin, however, extending downward only a mile or so in depth. Below this, the crust is mainly igneous rock and metamorphic rock.