

**Web Enhanced Study Guide for Earth Science or Geology**

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**Earth Science and / or Geography and / or Geology**

**Igneous**

Igneous rocks are formed when molten [rock](#) ([magma](#)) cools and solidifies, with or without [crystallization](#), either below the surface as [intrusive](#) (plutonic) rocks or on the surface as extrusive ([volcanic](#)) rocks. This magma can be derived from either the [Earth's mantle](#) or pre-existing rocks made molten by extreme temperature and pressure changes. Over 700 types of igneous rocks have been described, most of them formed beneath the surface of the Earth's [crust](#). The word "igneous" is derived from the [Latin](#) *ignis*, meaning "fire".

**Metamorphic**

Metamorphic rock is the result of the transformation of a pre-existing [rock](#) type, the *protolith*, in a process called [metamorphism](#) (which means "change in form", derived from the Greek words meta, "change", and morphe, "form"), through which the protolith is subjected to extreme heat (>150 degrees Celsius) and pressure causing profound physical and/or chemical change. The protolith may be [sedimentary rock](#), [igneous rock](#) or another, older, metamorphic rock.

**Sedimentary**

Sedimentary rock is one of the three main rock groups (along with [igneous](#) and [metamorphic](#) rocks) and is formed in three main ways—by the deposition of the [weathered](#) remains of other rocks (known as *clastic* sedimentary rocks); by the deposition of the results of biogenic activity; and by precipitation from [solution](#).

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**The WWW resource for this WESG is [Wikipedia](#).**

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