

METAMORPHIC ROCKS KEY POINTS

- 1) **Any type of rock can be metamorphosed, or recrystallized from subjecting parent rocks to variations in temperature, pressure, and fluid chemistry over long periods of time.**
- 2) There are **foliated and non-foliated metamorphic rocks**; foliated rocks have alternating dark and light layers, or (bands when seen on one rock face) while non-foliated rocks are generally homogenous and can be monomineralic (mostly comes of one mineral like quartz, for example.)
- 3) **Hornfels** are low-grade metamorphic rocks usually non-foliated, metamorphosed sedimentary rocks from having prolonged contact with cooling igneous bodies.
- 4) **Slate** (low-grade) and **phyllite** (low- to medium grade) are metamorphic rocks usually foliated, mudrock that is not thoroughly recrystallized and therefore retain some diagnostic sedimentary primary fabrics
- 5) **Quartzite** and **marble** can also be foliated or non-foliated depending upon their chemical purity. They can also range in metamorphic grade from low- to high-grade and it can be difficult to tell because your recrystallizing homogenous material that may not display foliation.
- 6) **Schist is medium-grade, foliated metamorphic rock** having abundant *mica* (variations of biotite [dark] and muscovite [light]), *garnet* (complex silicate minerals with Al, Mg, Fe among other elements), and other diagnostic minerals that crystallize at known T&Ps. They can also show tectonic fabric resulting from shearing and folding (secondary structures).
- 7) Amphibolite is a medium- to high-grade metamorphic rock that is foliated, very dark and reflective as it's principally composed of black amphibole and Ca-plagioclase, with or w/o biotite.
- 8) **Gneiss is high-grade foliated metamorphic rock** having apparent light- and dark-colored alternating layers or banding and often show shearing and folding fabrics and mineral assemblages that are similar to those plutonic igneous rocks (like granite), having formed at similar temperatures.
- 9) **Migmatite is high-grade foliated metamorphic rock** is foliated and partially melted so that it has visible characteristics of both gneiss (metamorphic) and granite (igneous) mineralogy and textures.
- 10) **Talc, serpentinite, and asbestos** are all low-grade metamorphic minerals that incorporate water (or OH-) in their crystalline structure and therefore have a soft, or fibrous texture.