



Metamorphic Rocks  
4.3

# I. Origin of Metamorphic Rocks

## A. Metamorphic Rocks

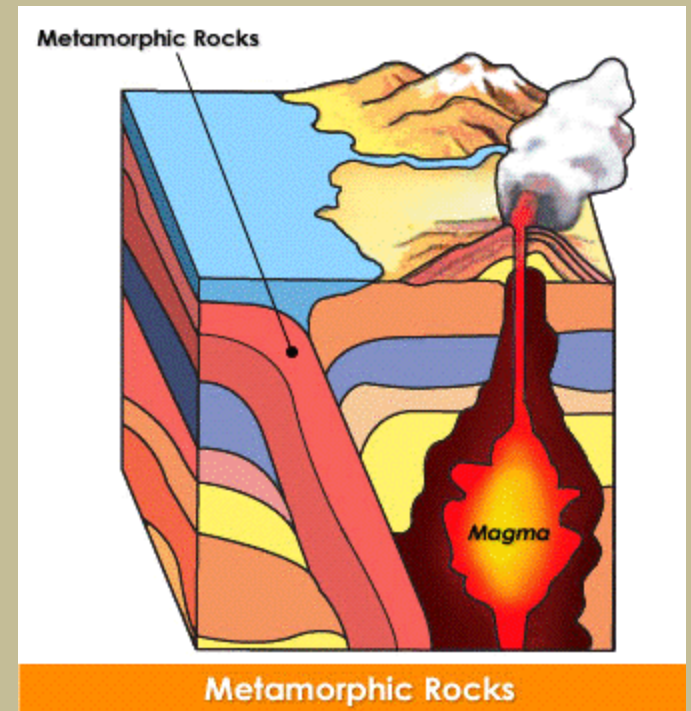
- a. Rocks that have changed due to temperature and pressure increases or that undergo changes in composition are metamorphic rocks
  - Metamorphic rocks can be formed from changes in igneous, sedimentary or other metamorphic rocks

## B. Heat and Pressure

- a. Rocks beneath Earth's surface are under great pressure from overlaying rock layers
  
- b. Once the heat and pressure reach a certain point the rocks may melt and magma forms
  - In areas where melting doesn't occur some mineral grains are flattened
  
  - Sometimes minerals exchange atoms with surrounding minerals and new or bigger minerals form

## II. Classification of Metamorphic Rocks

- a. Metamorphic rocks can be formed from changes in igneous, sedimentary or other metamorphic rocks – Heat and pressure trigger the changes



# A. Foliated Rocks

- a. When mineral grains flatten and line up in parallel bands, the metamorphic rock has a foliated texture

Example: slate and gneiss



## B. Nonfoliated Rocks

- a. In nonfoliated metamorphic rock no banding occurs, the mineral grains change, grow and rearrange but they don't form bands

– Example: Marble

