

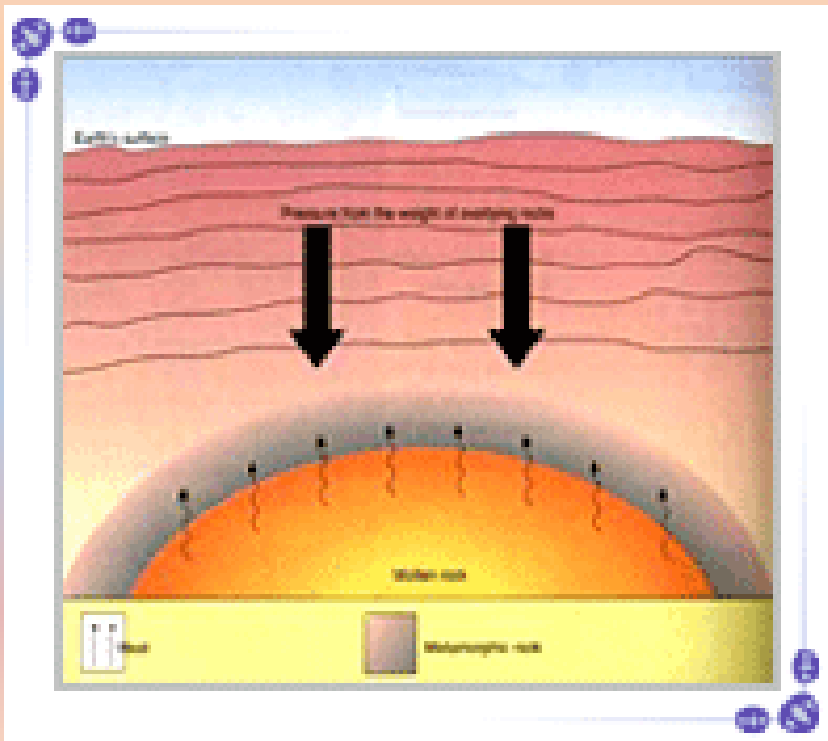
# Metamorphic Rocks

How do metamorphic rocks form?



# Metamorphic Rocks

- Rocks that are created because of a change in pressure and temperature.



# Metamorphic Rock Formation

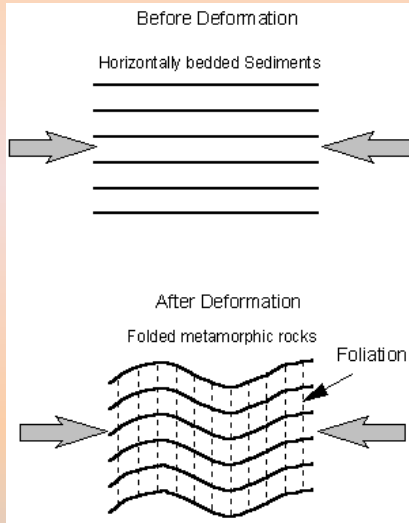
- Metamorphic rocks can form igneous, sedimentary, or other metamorphic rocks.
- Pressure on these rocks can be due to the immense amount of force applied from the rock above it.
- Temperature can come from a rock being in close proximity of magma.

# Classification of Metamorphic Rock

Rocks are classified according to composition and texture.

- **Foliated rocks** – formed when mineral grains line up in parallel layers.
  - Ex: Slate – used for blackboards, roofs, sidewalks

# Foliated rocks

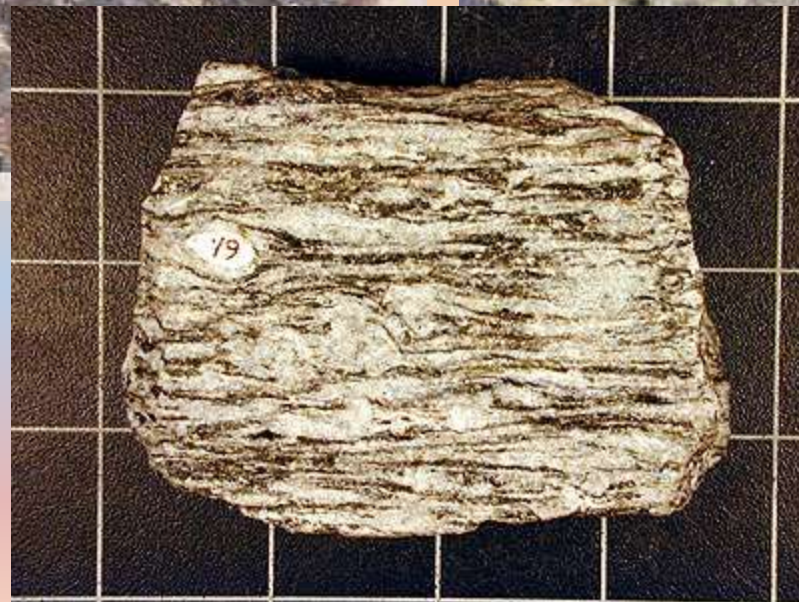
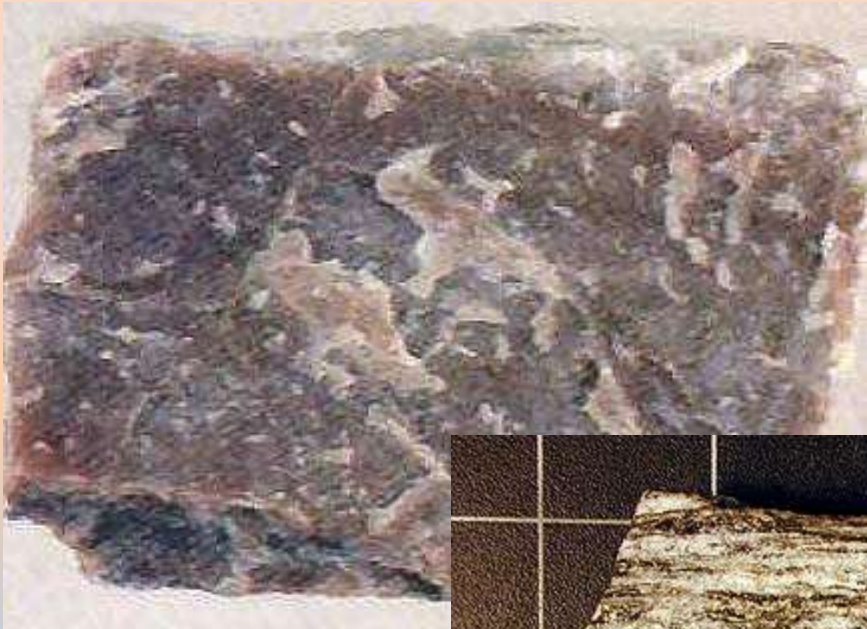


# Classification of Metamorphic Rock

Rocks are classified according to composition and texture.

- **Nonfoliated rocks** – metamorphic rocks where mineral grains (crystals) grow and rearrange, but they do not form layers.
  - **Ex:** Quartzite – formed from sandstone
  - **Ex:** Marble – marble forms when limestone.

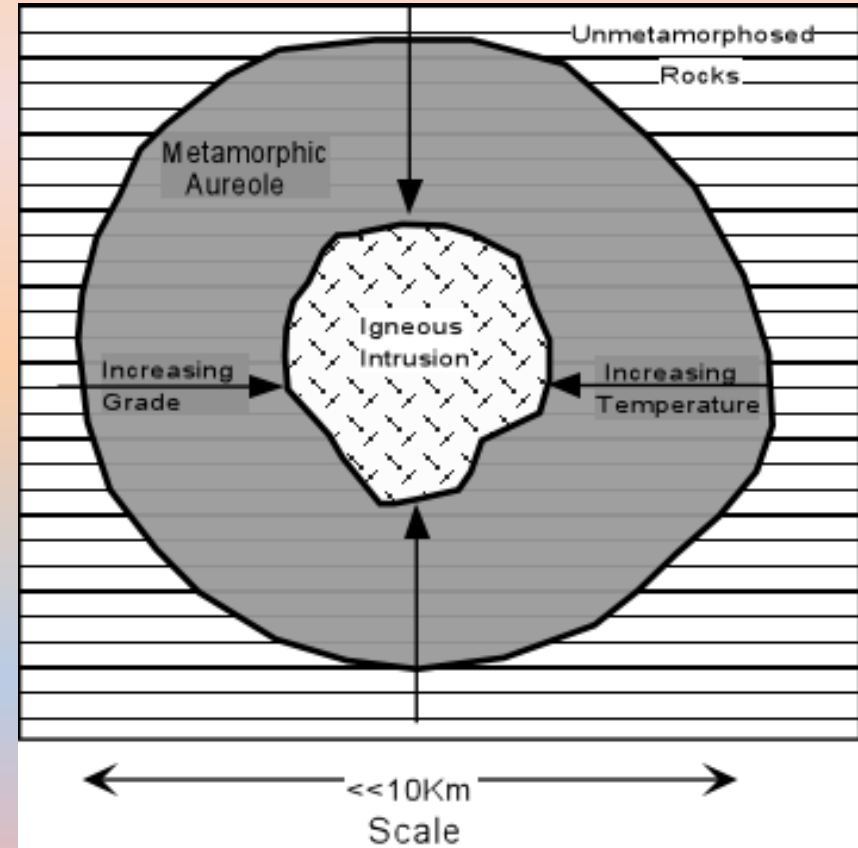
# Nonfoliated rocks



# Metamorphic Rocks

## Types of Metamorphism

- **Contact metamorphism**
  - occurs adjacent to igneous intrusions and results from high temperatures associated with the igneous intrusion.





# Contact Metamorphism

## Contact Metamorphism

Shale

Slate

Shale

Limestone

Quartz Sandstone

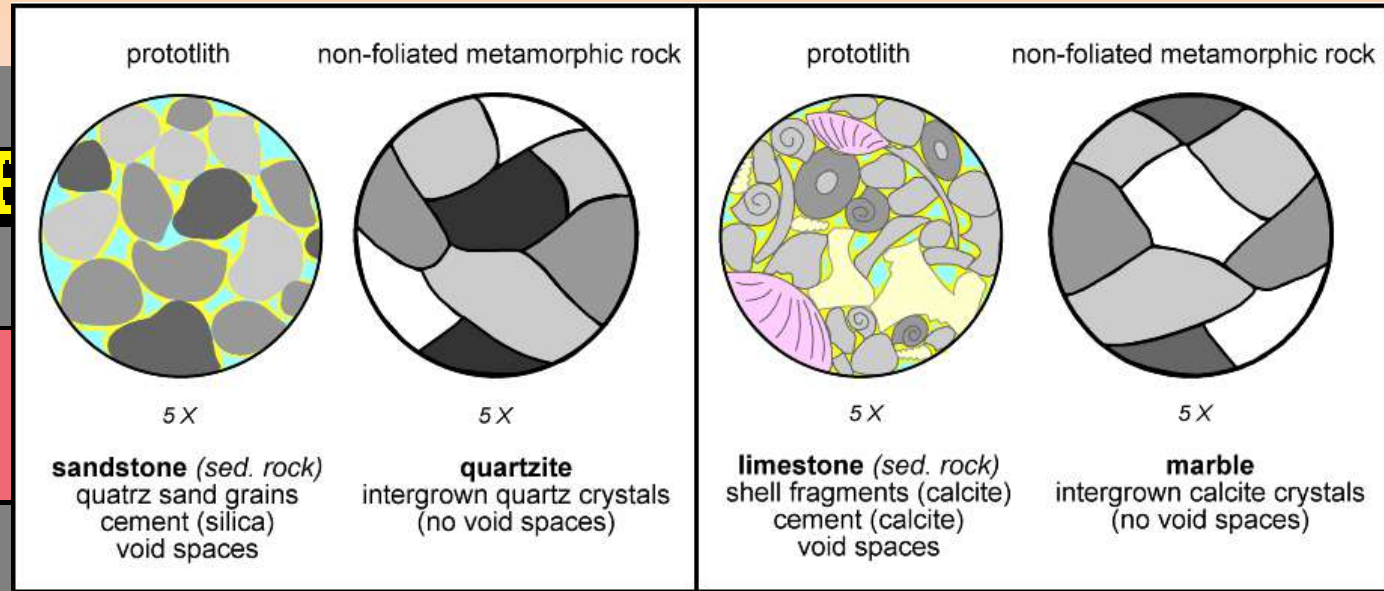
Shale

**Magma**

Marble

Quartzite

Hornfels

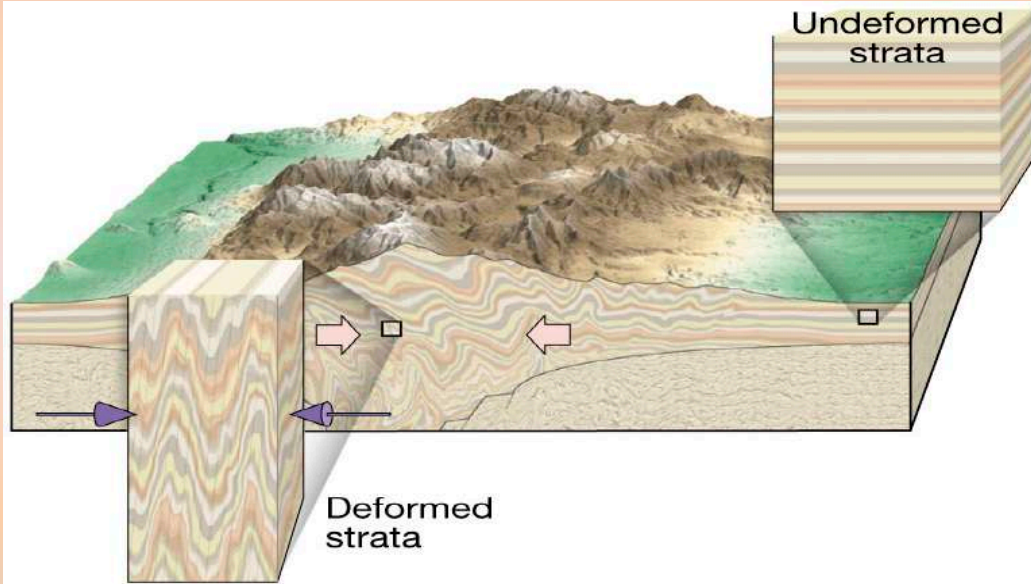


# Metamorphic Rocks

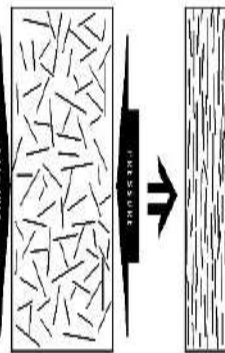
## Types of Metamorphism

- *Regional Metamorphism* – occurs under conditions of HIGH temperature and HIGH pressure.
  - Produced from forces of tectonic plate contact
  - Occurs *over larger areas*

# Regional Metamorphism



Granite



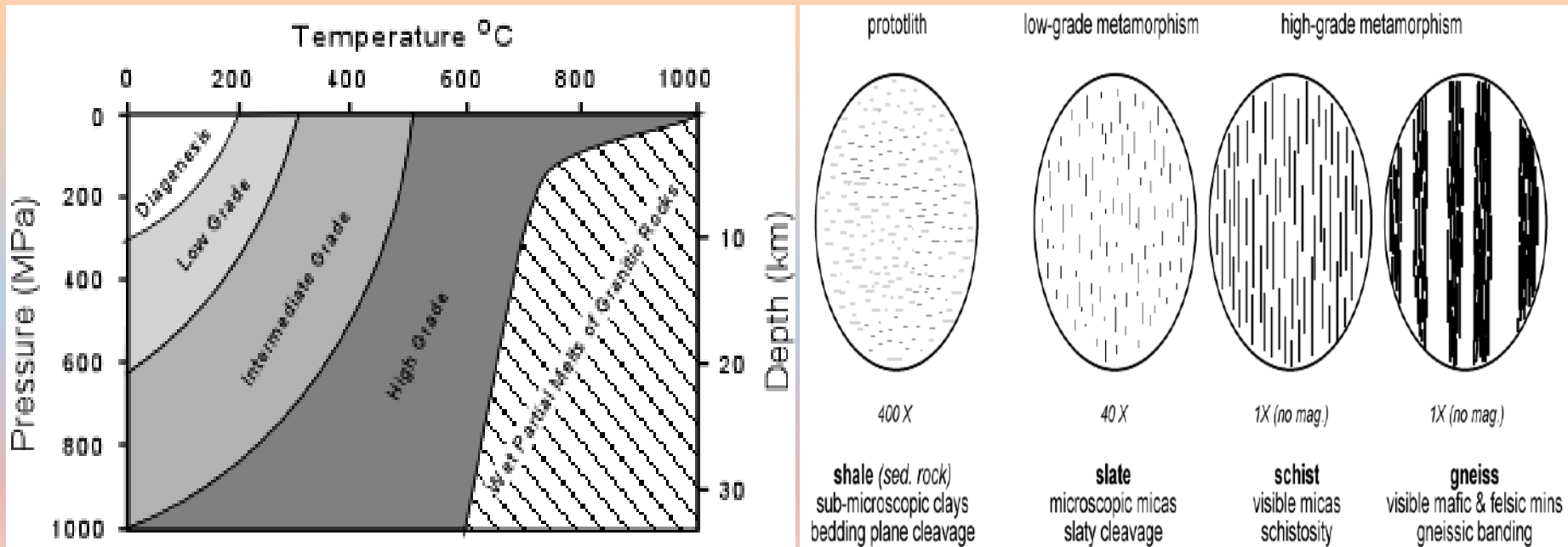
Gneiss





# Metamorphic Rocks

- Different combinations of temperature and pressure resulting in different degrees or **GRADES** of metamorphism.



# Metamorphic Rocks

