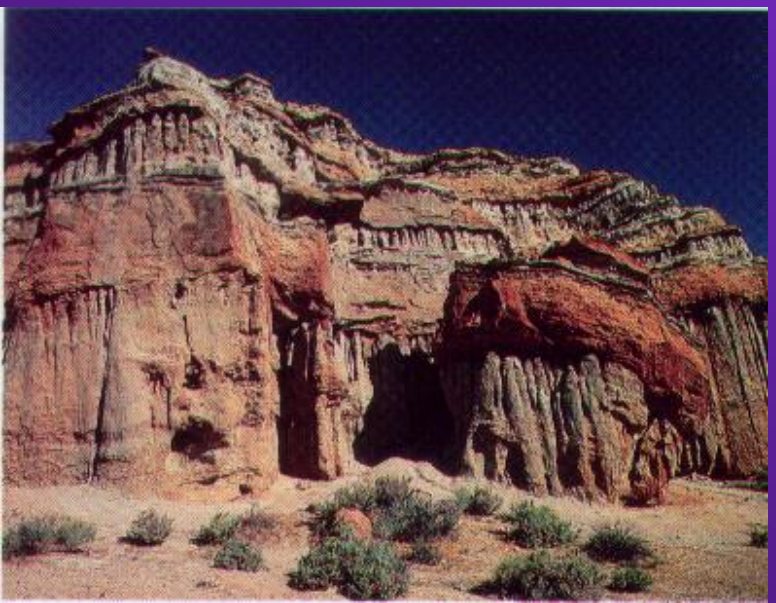
Bell Ringer

1. Name three of the five qualifications to be considered a mineral.
2. Is lava a mineral? Why or why not?
3. How would rapid cooling affect the formation of a mineral?

Rocks & The Rock Cycle



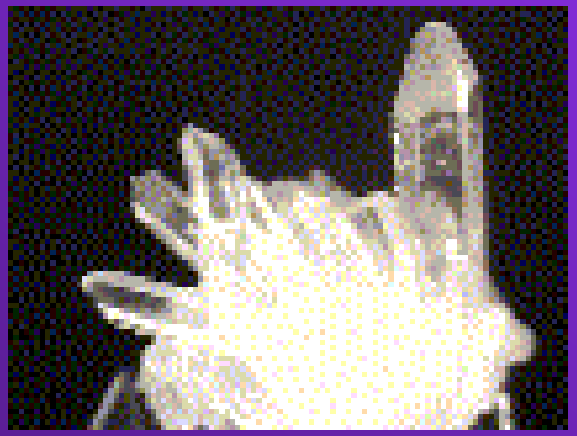
Rocks vs Minerals

- ROCKS
  - SOLID MIXTURE OF MINERALS
  - MAY BE ORGANIC

- MINERALS
  - NATURALLY FORMED OF ELEMENTS OR COMPOUNDS
  - INORGANIC SOLID
  - HAVE CRYSTALS
  - NOT MADE OF ROCKS
  - HAS A DEFINITE CHEMICAL MAKEUP

Rocks vs Minerals

- MINERALS ARE CLASSIFIED BY
  - CHEMICAL COMPOSITION



Rocks vs Minerals

- ROCKS ARE -CLASSIFIED BY HOW THEY ARE FORMED

- EACH TYPE OF ROCK IDENTIFIED BY

-COMPOSITION= what minerals the rock is made of.

-TEXTURE=sizes, shapes and positions of grains in the rocks

TYPES OF ROCKS

- THE COMPOSITION OF ROCKS IS DETERMINED
  - BY THE KIND OF MINERALS &
  - THE AMOUNT OF MINERALS THAT MAKE IT UP

TYPES OF ROCKS

- 3 TYPES OF ROCKS
  - IGNEOUS
  - SEDIMENTARY
  - METAMORPHIC

IGNEOUS ROCKS

- FORMED WHEN MAGMA or LAVA COOLS AND HARDENS (SOLIDIFIES)
- 2 TYPES
  - INTRUSIVE
    - MAGMA COOLS SLOWLY BENEATH EARTH'S SURFACE
    - LARGER CRYSTALS
    - COARSE GRAINED (TEXTURE)

  - -EXTRUSIVE
    - LAVA COOLS QUICKLY ON THE SURFACE
    - SMALLER CRYSTALS
    - FINE GRAINED (TEXTURE)

IGNEOUS ROCKS

- ALL TYPES OF ROCKS CAN BE CHANGED INTO IGNEOUS ROCK BY *MELTING & COOLING* OF ANY ROCK

IGNEOUS ROCKS

- KEY WORDS
  - MELTING and COOLING

SEDIMENTARY ROCKS

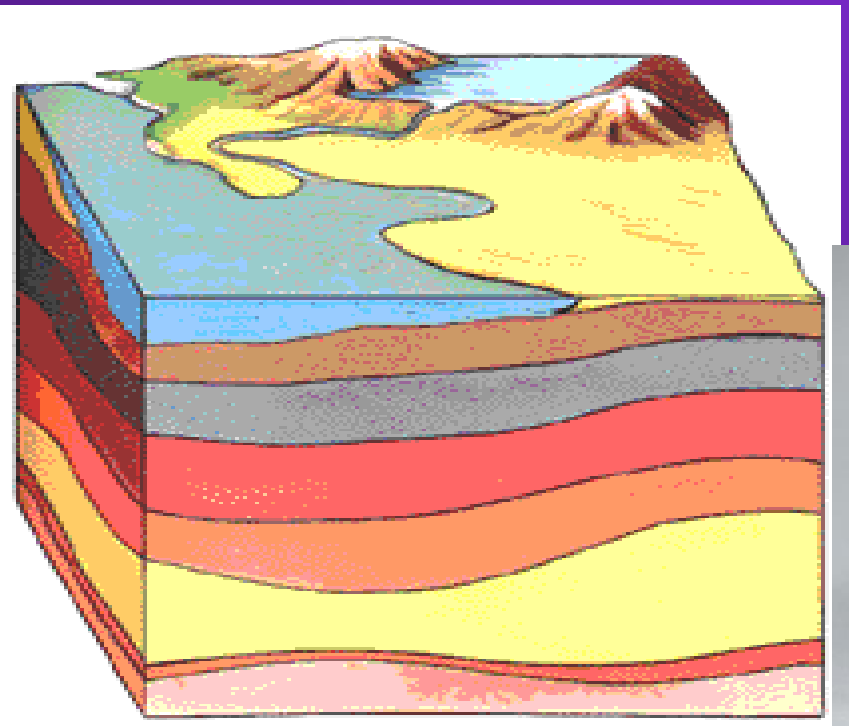
- FORMED WHEN ROCKS ARE WEATHERED AND ERODED (BROKEN APART), SEDIMENTS COMPACT AND CEMENT TO FORM SOLID ROCK
- 3 TYPES
  - ORGANIC
    - FOSSILIZED REMAINS OF PLANTS OR ANIMALS
  - CLASTIC (MOST COMMON TYPE) Animation
    - FRAGMENTS OF OTHER ROCK ARE COMPACTED TOGETHER
  - CHEMICAL
    - SEDIMENTS ARE "GLUED" TOGETHER BY DISSOLVED MINERALS

    -TEXTURE IS DETERMINED BY THE SIZE OF PARTICLES OF SEDIMENT

SEDIMENTARY ROCKS

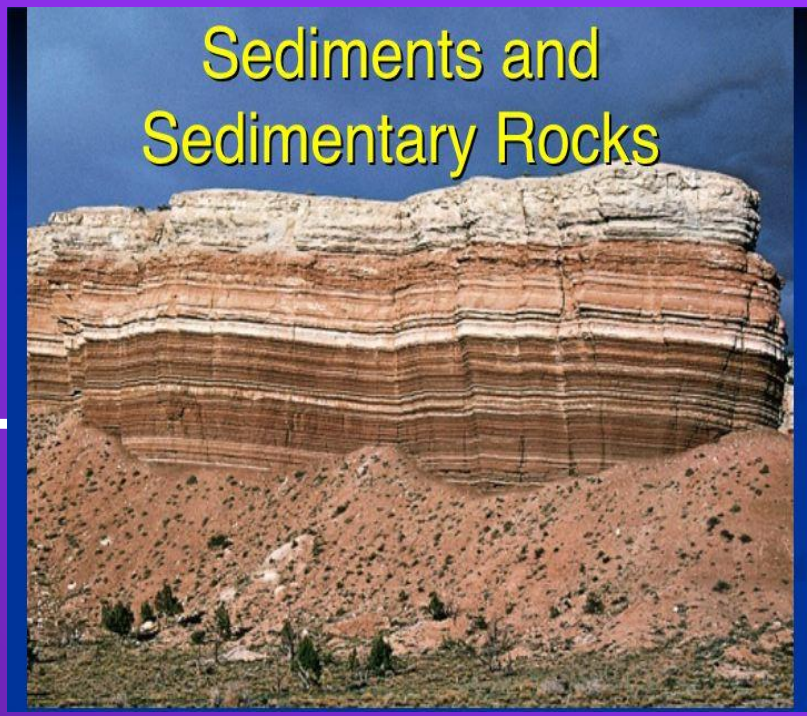
- ALL TYPES OF ROCKS CAN BE CHANGED INTO SEDIMENTARY ROCK BY:

  WEATHERING, EROSION, & SEDIMENTS COMPACTING & CEMENTING TOGETHER



Sedimentary Rocks

KEY WORDS



WEATHERING and EROSION

COMPACTING and CEMENTING

METAMORPHIC ROCKS

FORMED WHEN EXISTING ROCK IS CHANGED INTO NEW ROCK BY THE HEATING OF THE ROCK AND PRESSURE FROM OTHER ROCKS AROUND IT.

- 2 TYPES
  - FOLIATED **Animation**
    - CRYSTALS ALIGNED IN LAYERS
  - NON-FOLIATED
    - CRYSTALS ARRANGED IN RANDOM MANNER

METAMORPHIC ROCKS

- ALL TYPES OF ROCKS CAN BE CHANGED INTO METAMORPHIC ROCK BY HEAT AND PRESSURE

METAMORPHIC ROCKS

- KEY WORDS

- HEAT and PRESSURE

ROCK CYCLE LAB

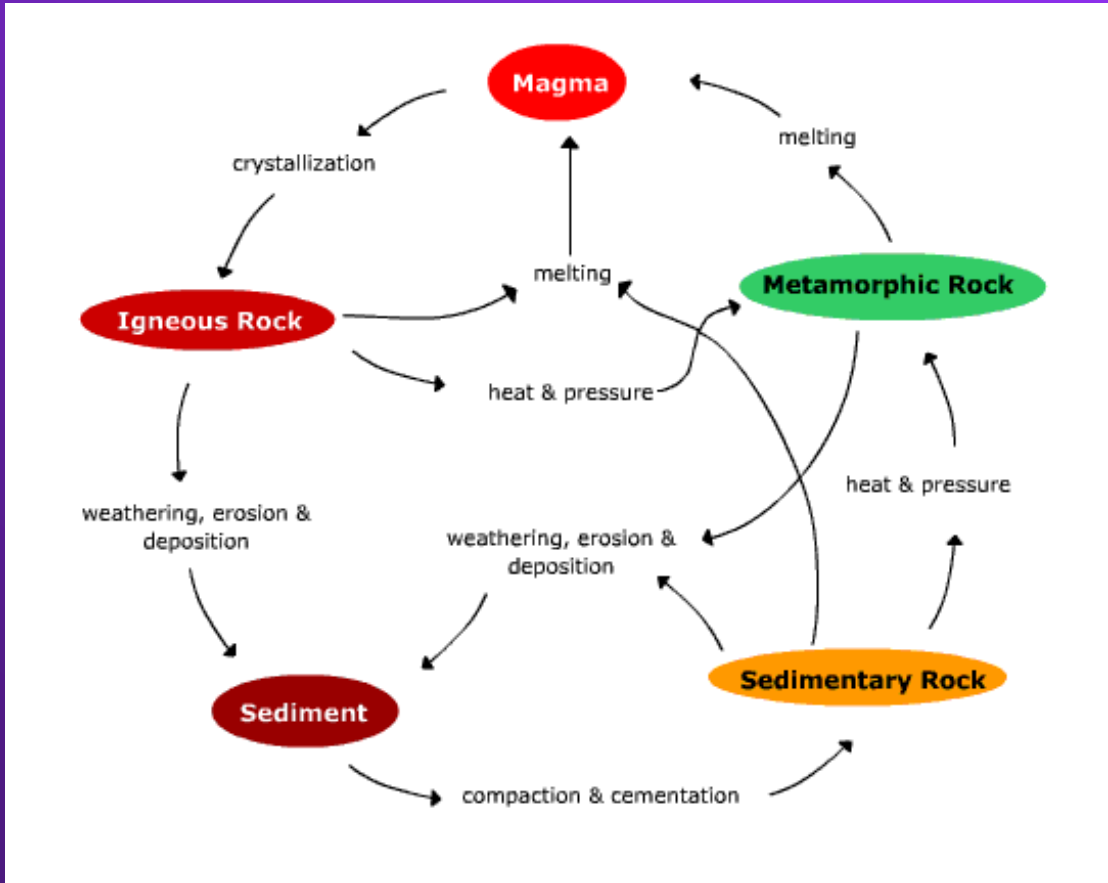
Rock Cycle Animations

You choose the path of your rock.

http://www.phschool.com/atschool/phsciexp/active_art/rock_cycle/

Rocks forming

http://www.classzone.com/books/earth_science/terc/content/investigations/es0602/es0602page02.cfm



THE ROCK CYCLE

- One of the cycles of nature that <u>continually recycles rocks & materials that make up Earth's crust</u>

limestone

marble

siltstone

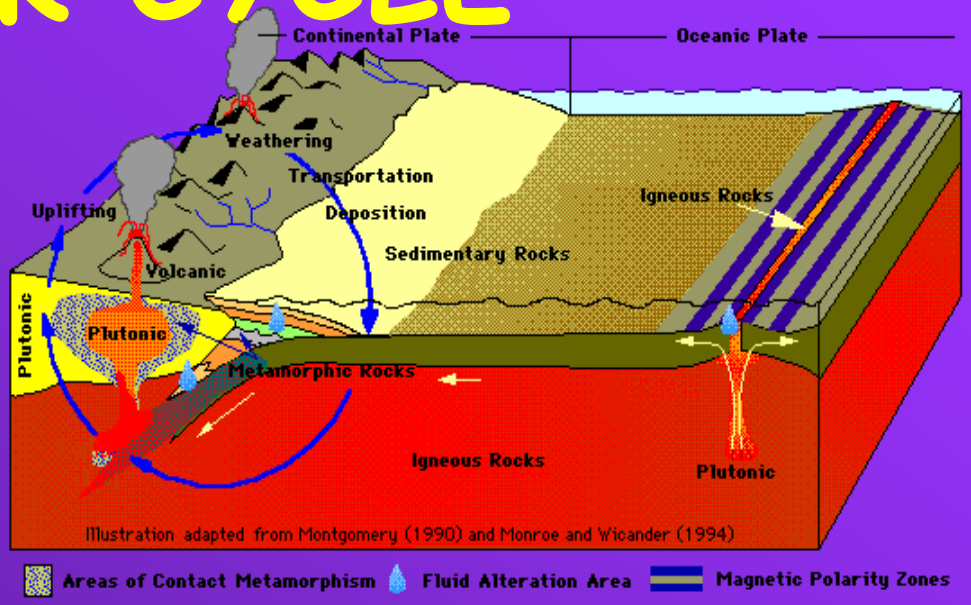
shale

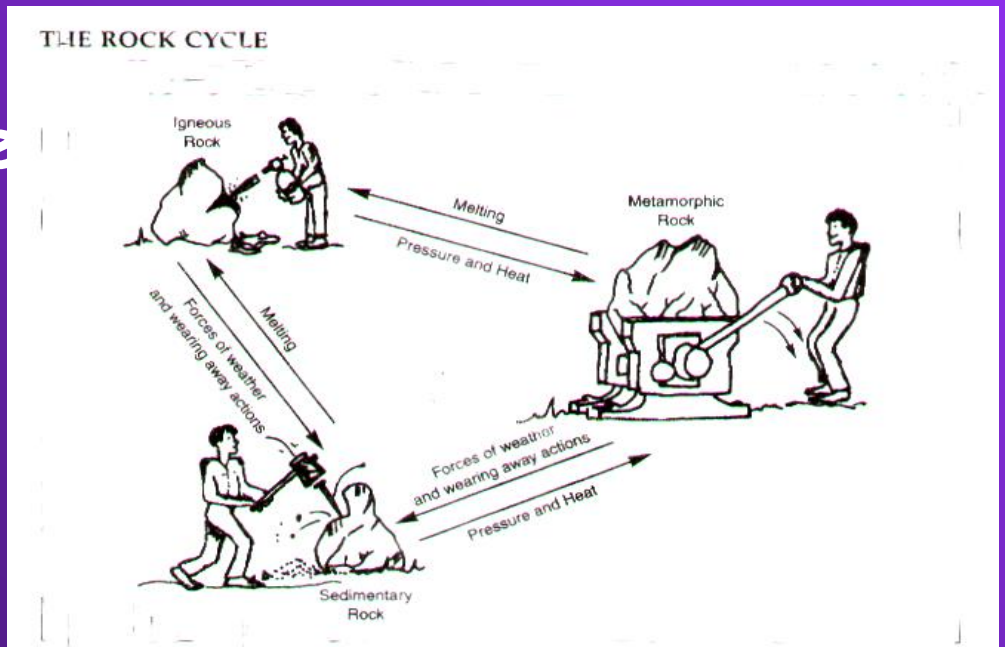
slate

gneiss

ROCK CYCLE

- There are <u>many different paths a rock may follow</u> to go through the process of changing from one type of rock to another





THE ROCK CYCLE

Gneiss

(m)

Schist

(m)

Phyllite

(m)

Siltstone

(s)

Shale

(s)

Slate

(m)

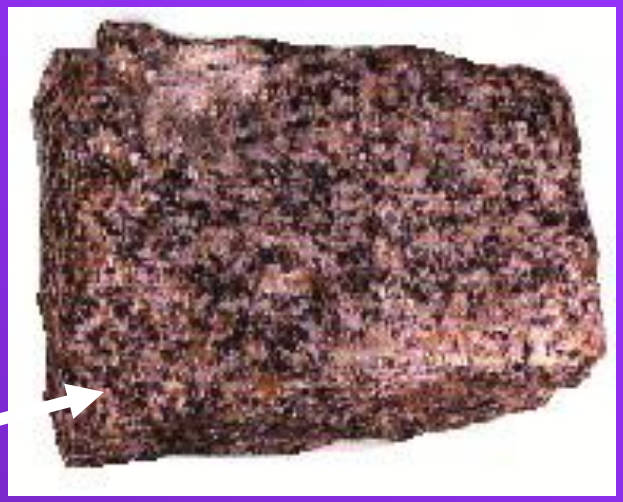
THE ROCK CYCLE

Sandstone

(s)

Quartzite

(m)



Granite

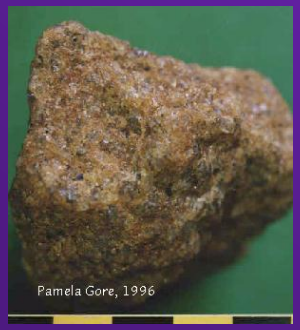
(i)

The color of rocks may be different because of the minerals or other substances that make it up.



Breccia *Sedimentary*


Gneiss Metamorphic




Quartzite *Metamorphic*


Granite Igneous

The ROCK CYCLE

- Rock Cycle Diagram

Rock Key

Metamorphic rocks

- Gneiss
- Marble
- Quartzite
- Schist
- Slate
- phyllite

Sedimentary rocks

breccia
conglomerate
limestone
sandstone
siltstone
shale

Igneous rocks

- Basalt
- Granite
- Obsidian
- Rhyolite
- Pumice