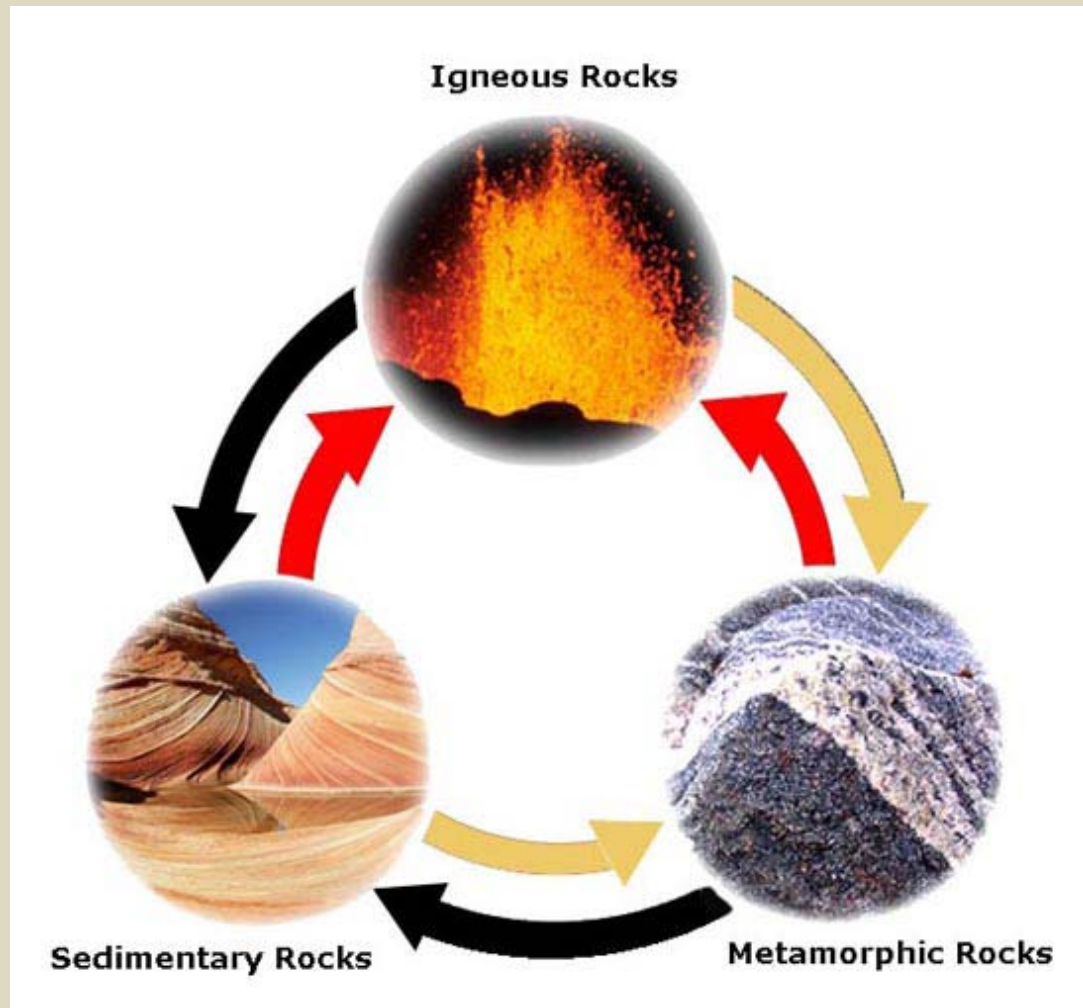


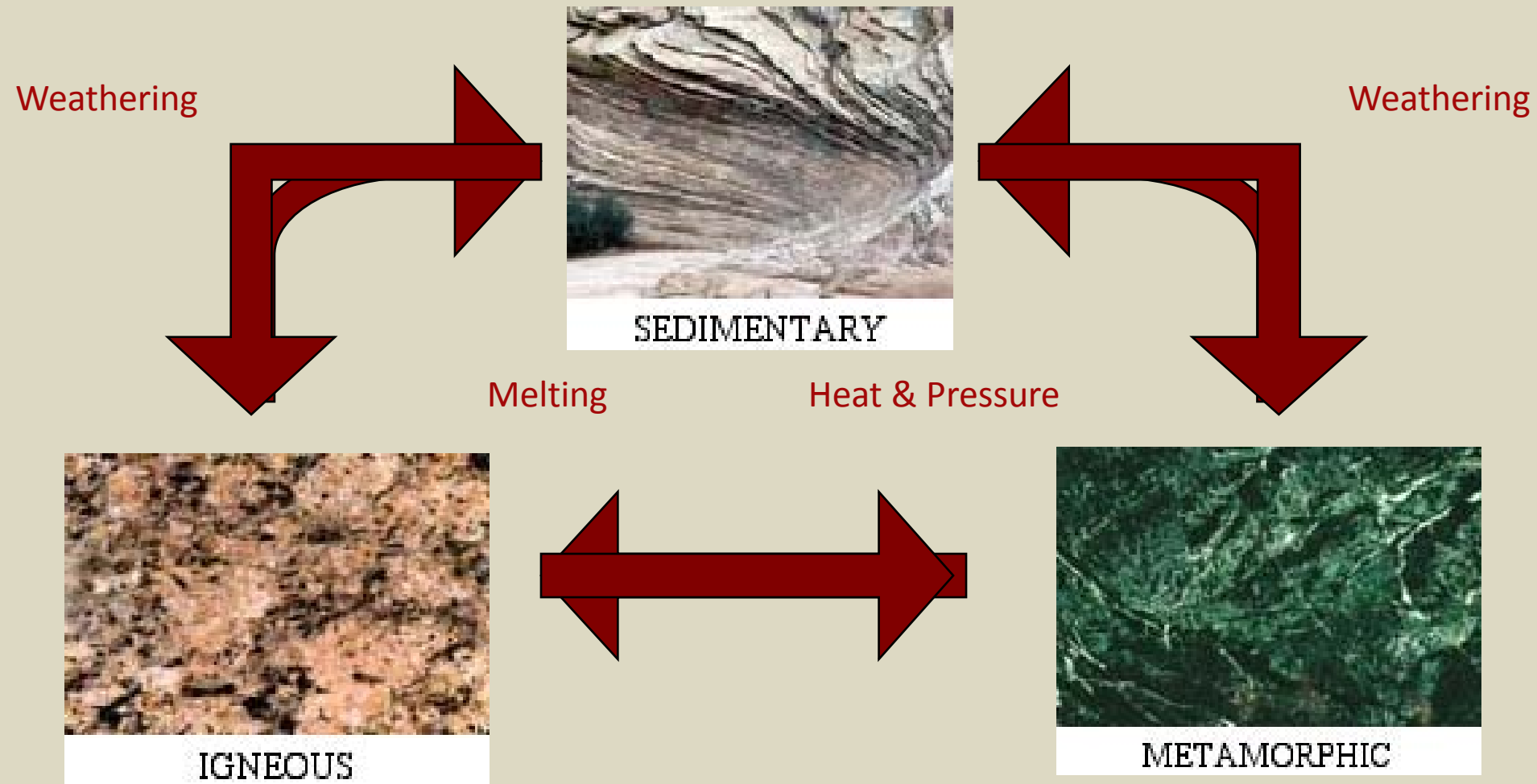
ROCKS



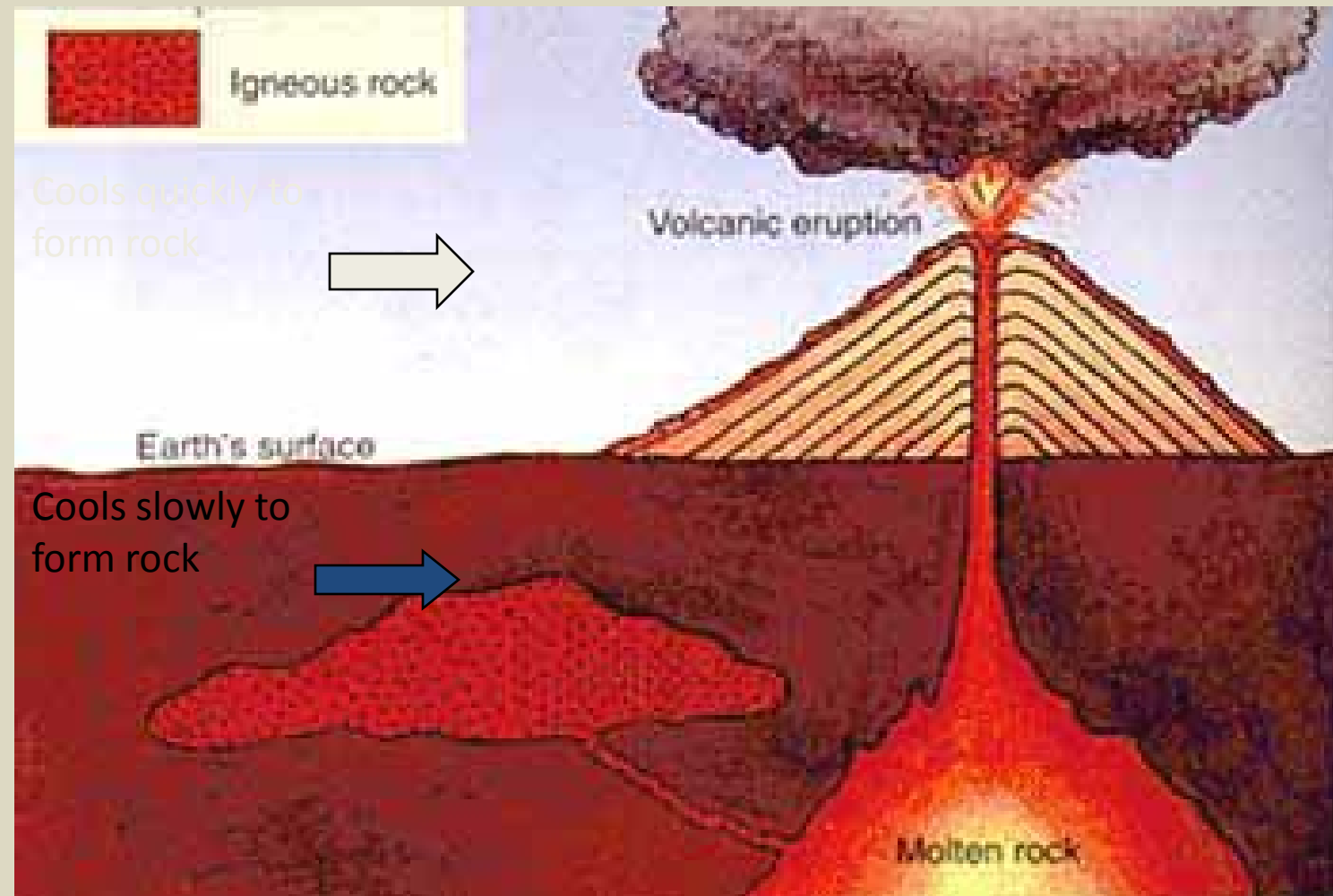
ROCK FORMATION



3 Types of Rocks: Based on how they Form



Igneous Rocks = Fire Rocks



Liquid layer
cools and
forms
igneous
rocks

Igneous Rocks

Granite:

**Cooled Slowly
Underground**



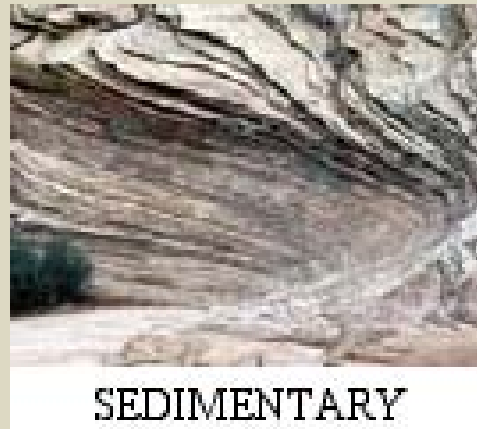
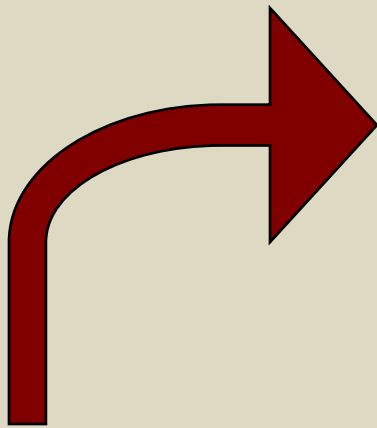
Basalt:

**Cooled Quickly
Above Ground (Ocean)**



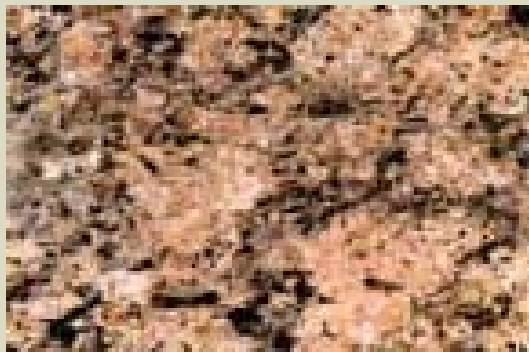
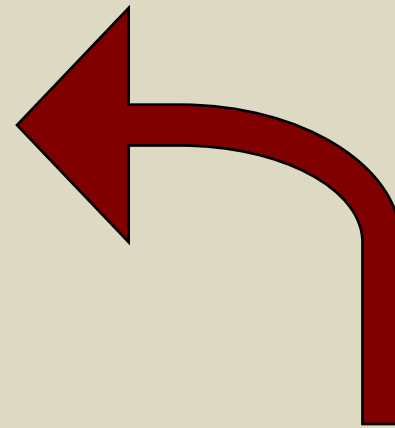
3 Types of Rocks: Based on how they Form

Weathering

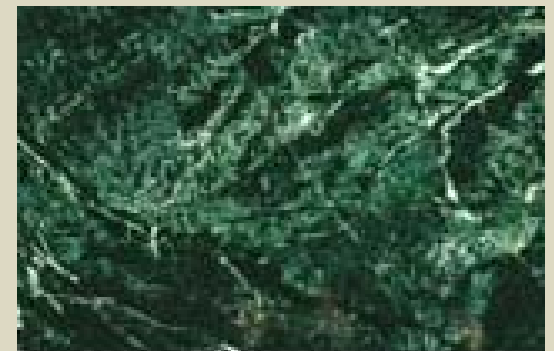


SEDIMENTARY

Weathering



IGNEOUS



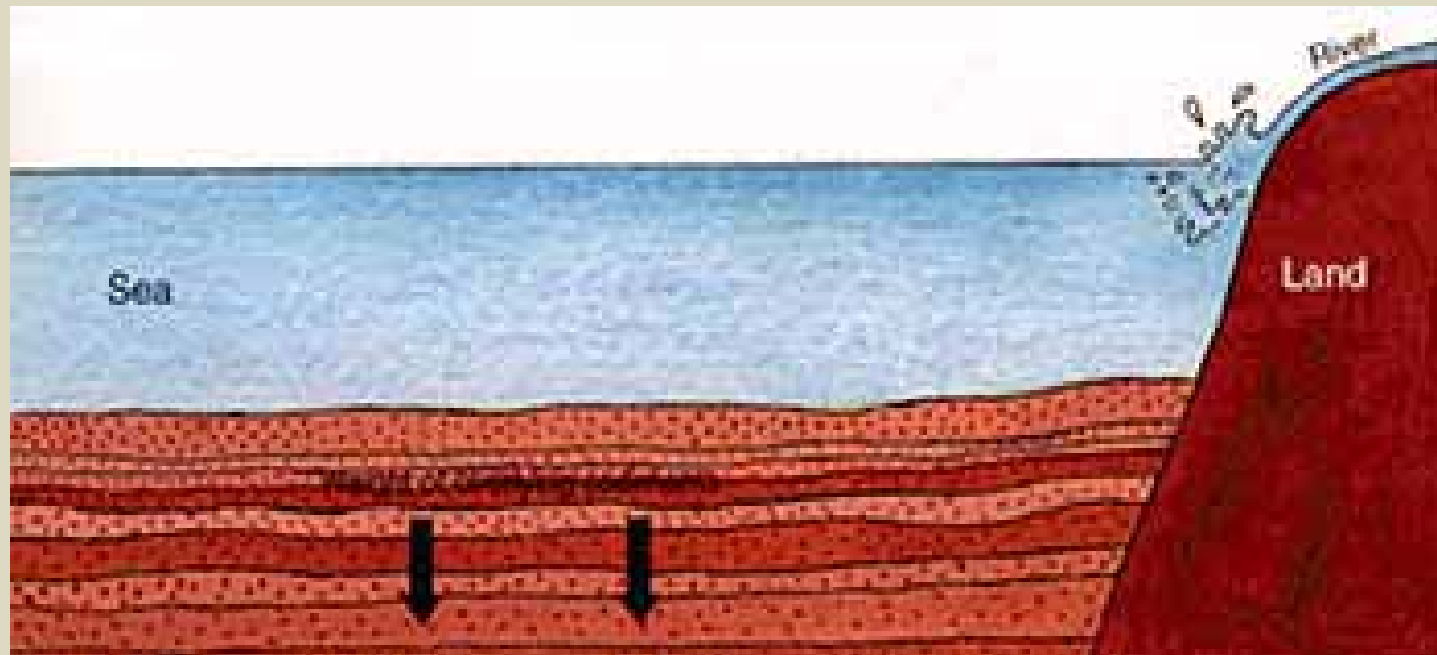
METAMORPHIC

Sedimentary Rocks = Secondary Rocks



Existing rocks break down into grains.

Over time these grains form solid sedimentary rocks.



Sedimentary Rocks

Sandstone - Solidified Sand



Shale - Solidified Clay



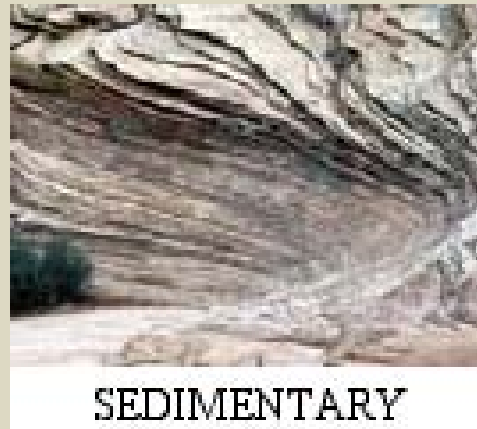
Sandstone - Solidified Cobbles



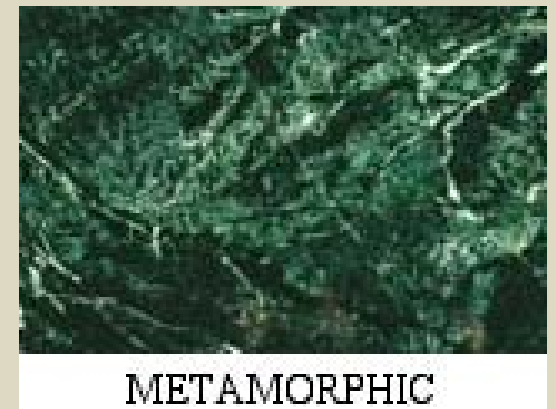
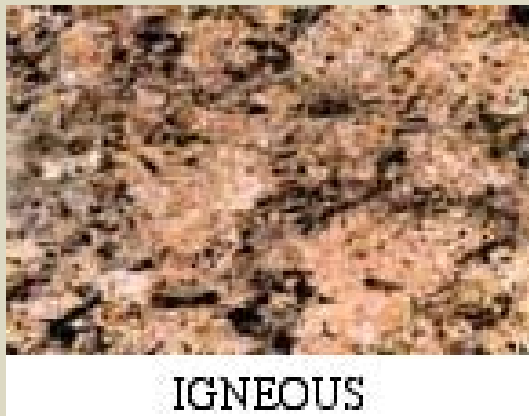
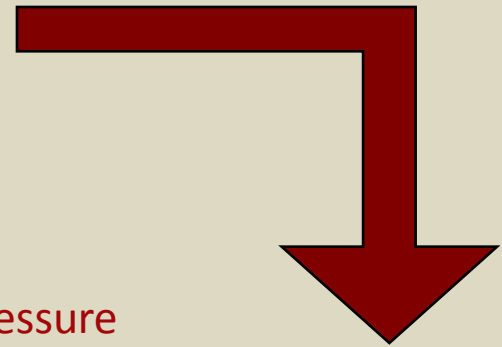
Limestone - Solidified Shells



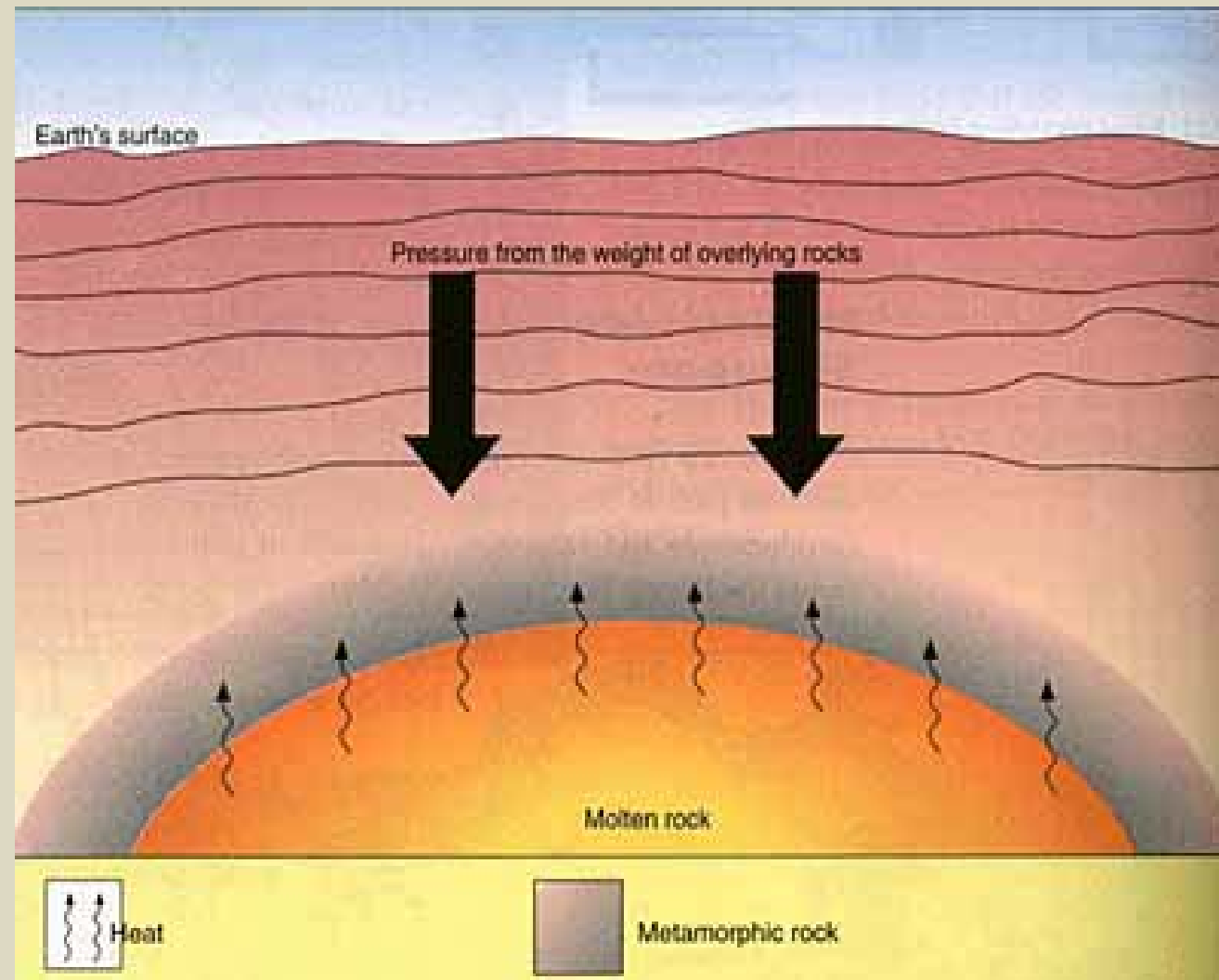
3 Types of Rocks: Based on how they Form



Heat & Pressure



Metamorphic Rocks = Changed Rocks



Existing rocks are exposed to pressure and/or heat to form Metamorphic rocks

Metamorphic Rocks

Clay → Shale + Heat/Pressure → Slate

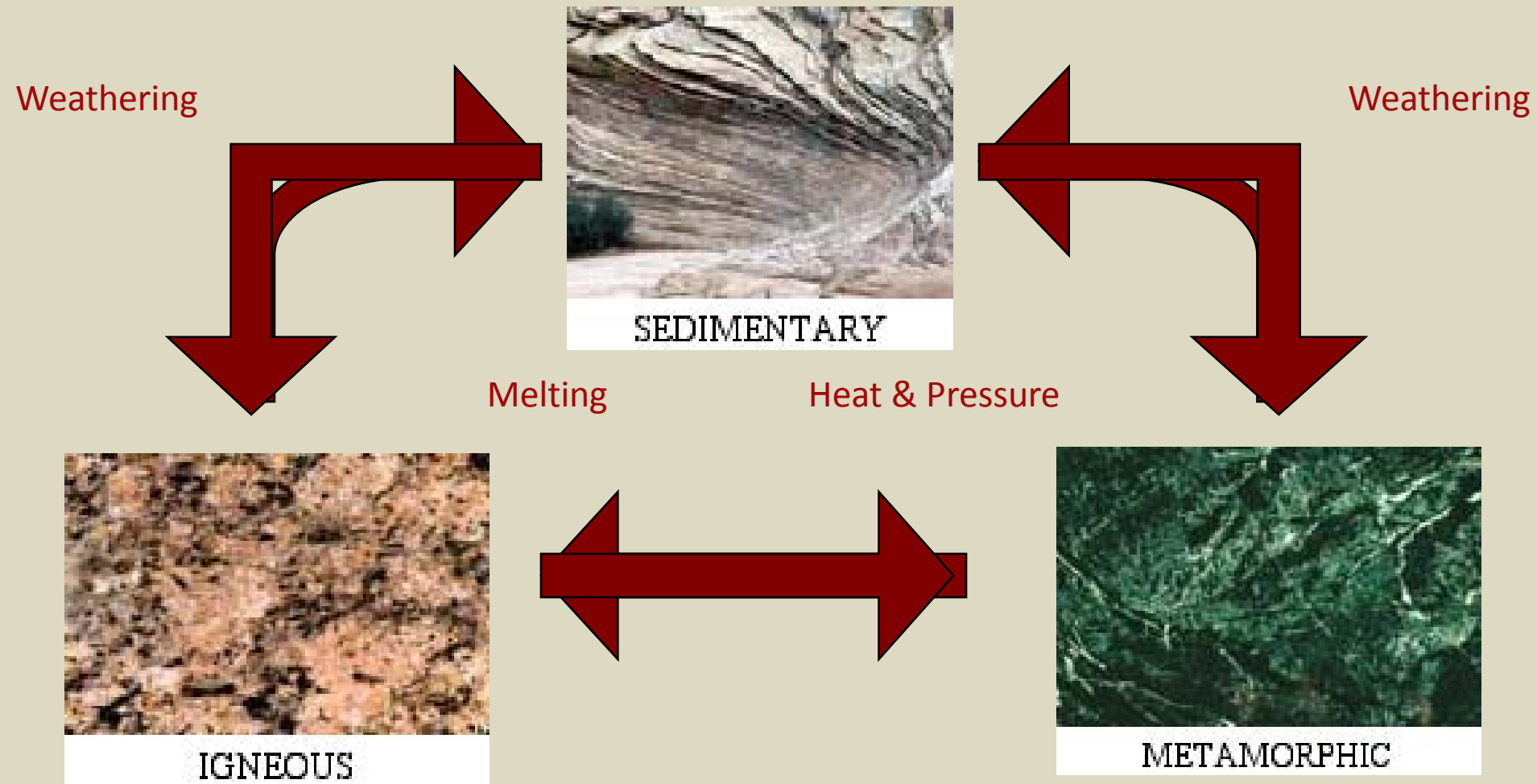


Granite + Heat/Pressure → Gneiss

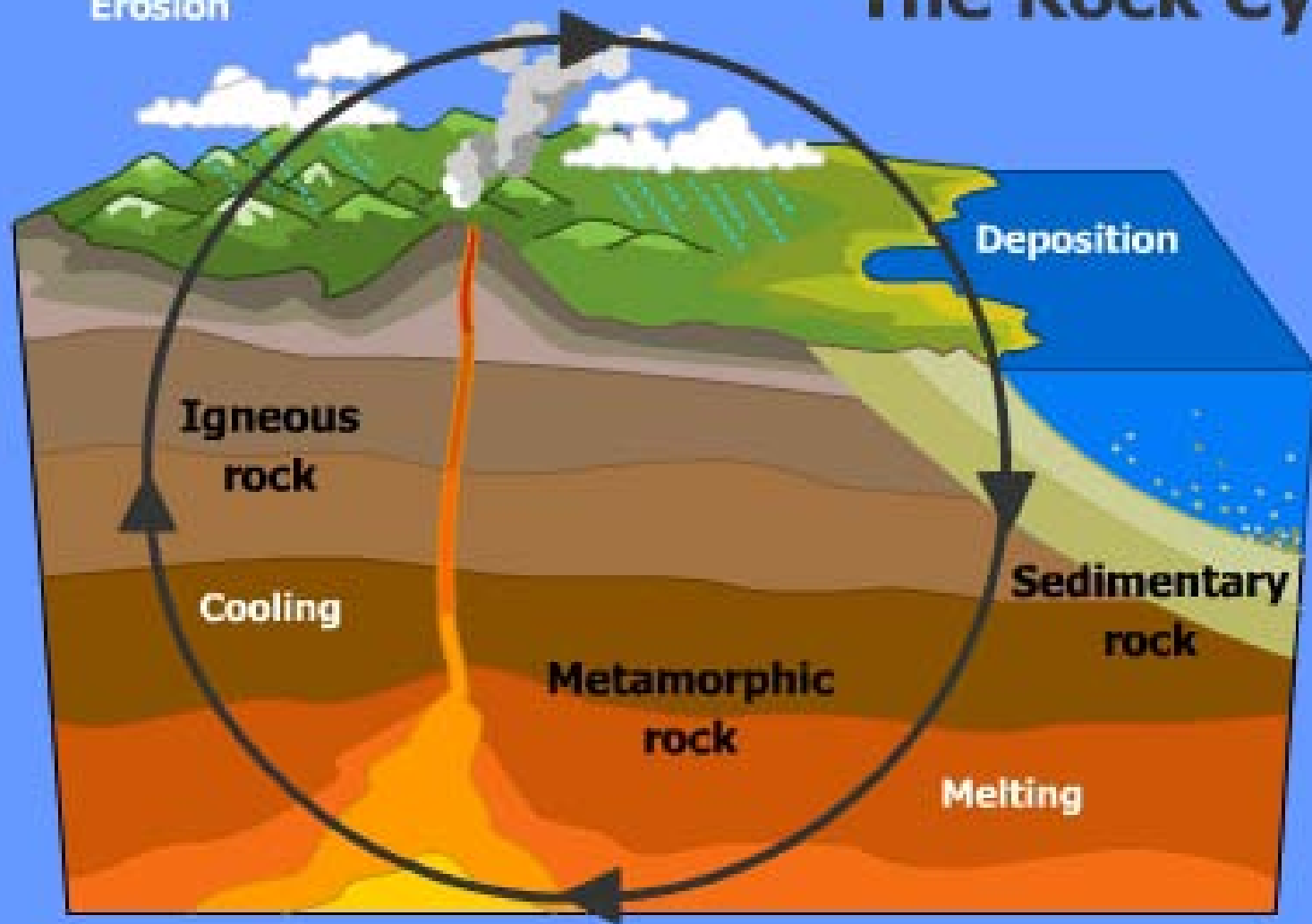


Shells → Limestone + Heat/Pressure → Marble

3 Types of Rocks: Based on how they Form



The Rock Cycle

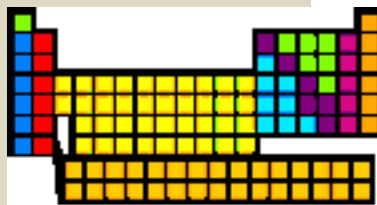
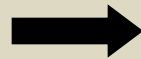


What is a Rock?

MINERALS



ELEMENTS



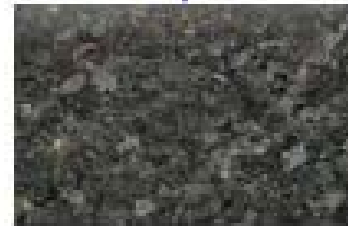
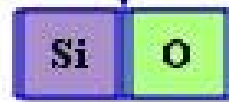
ELEMENTS



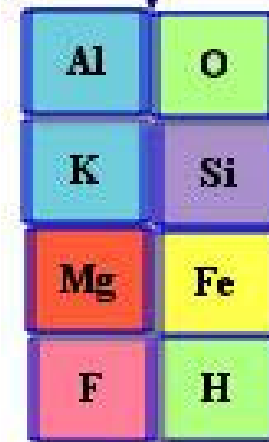
GRANITE



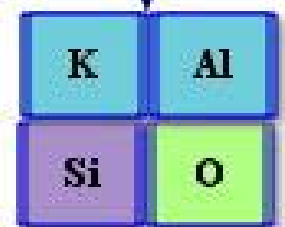
QUARTZ



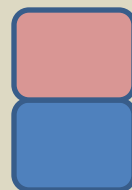
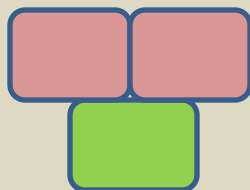
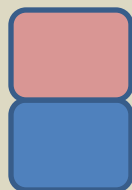
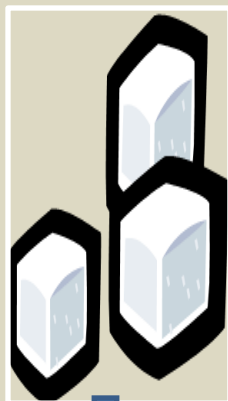
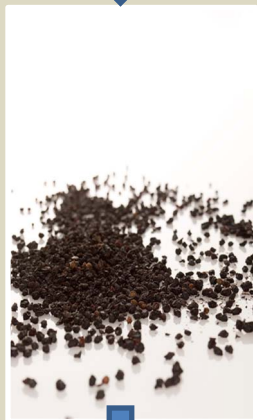
MICA



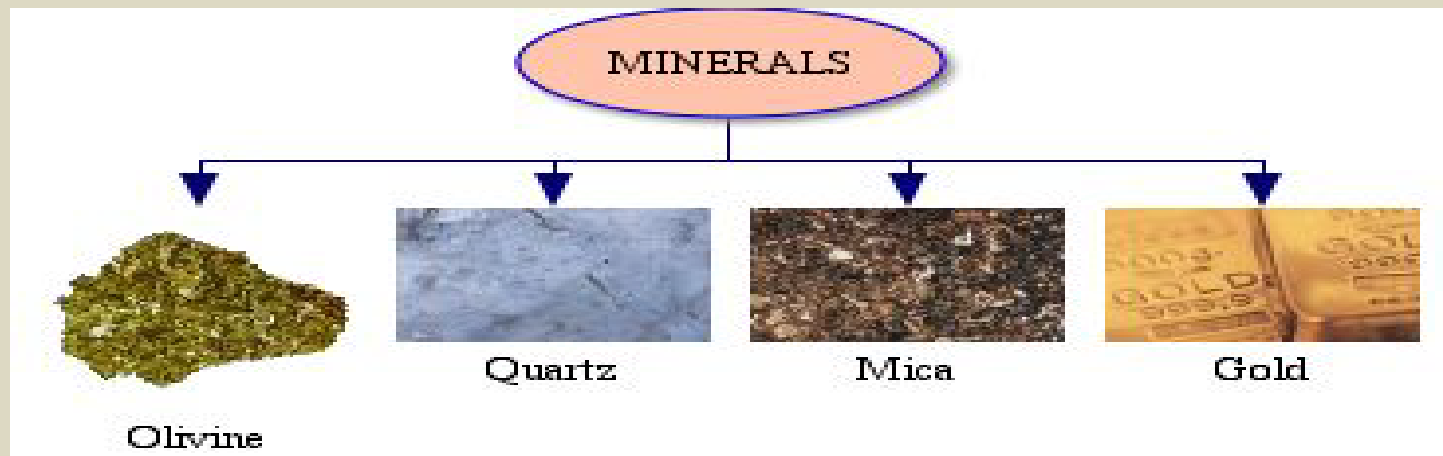
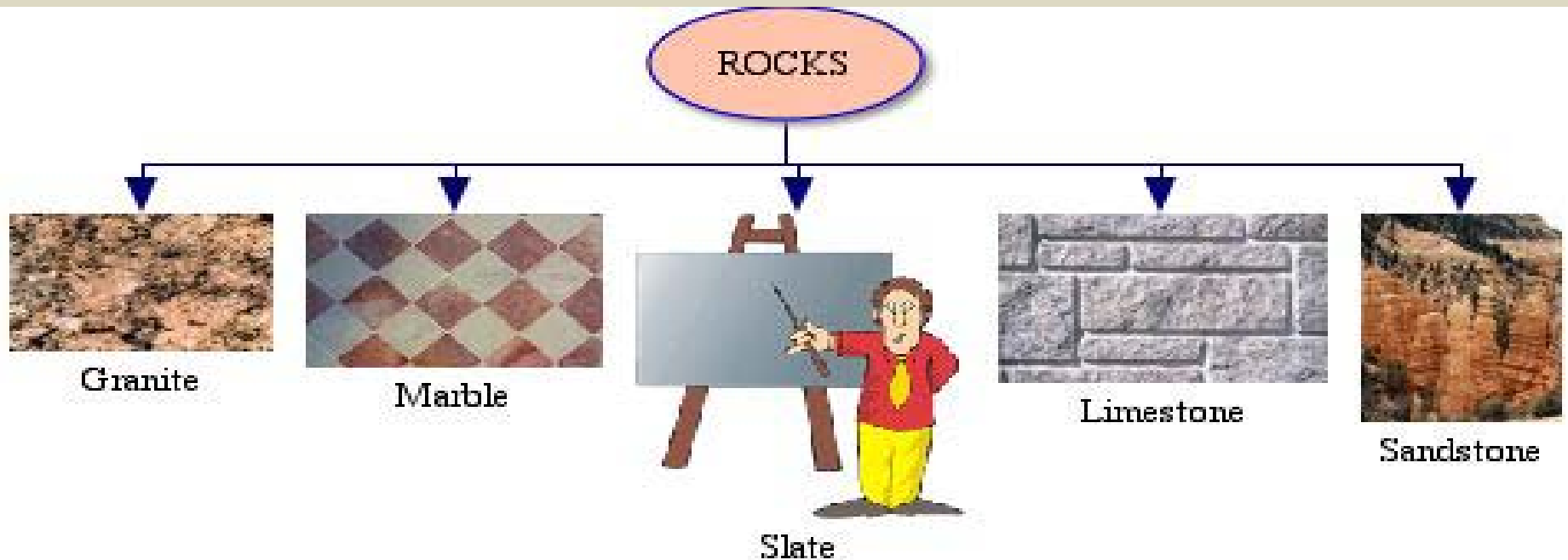
FELDSPAR



Raisin Bannock



What is a Rock

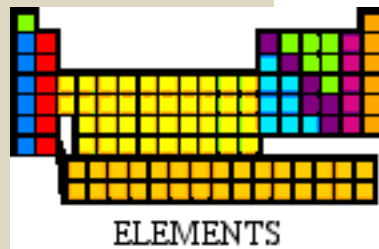
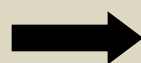


What is a Mineral?

MINERALS



ELEMENTS



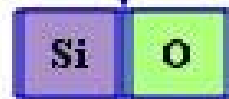
ELEMENTS



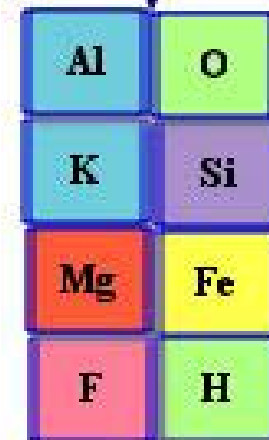
GRANITE



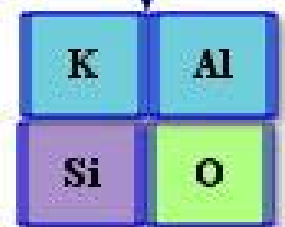
QUARTZ



MICA



FELDSPAR



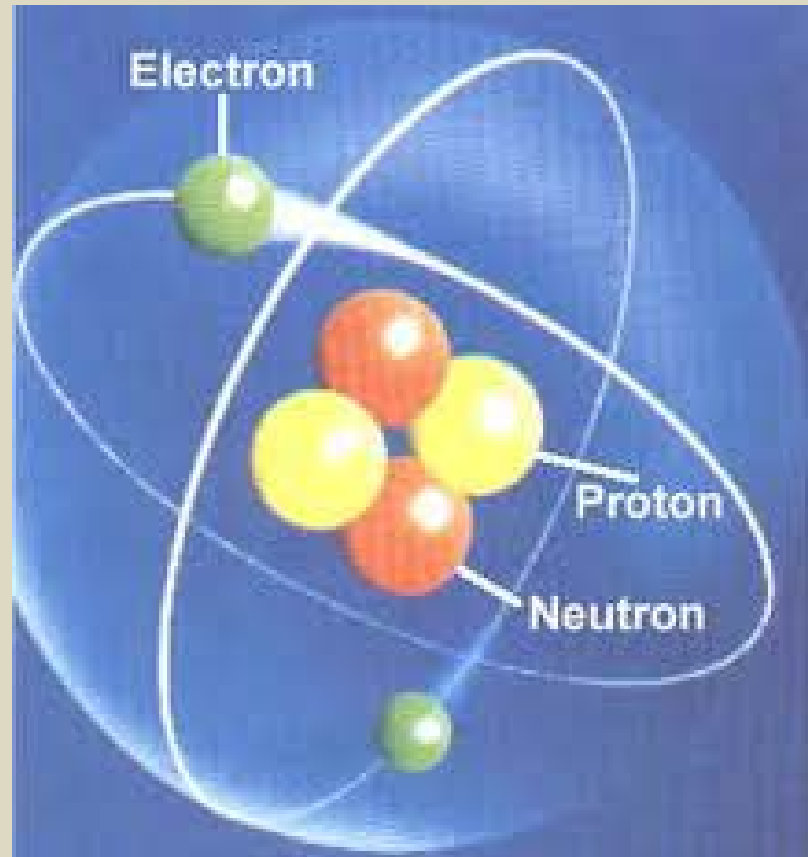


What is an Element?

H																	He
Li	Be											B	C	N	O	F	Ne
Na	Mg											Al	Si	P	S	Cl	Ar
K	Ca	Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn	Ga	Ge	As	Se	Br	Kr
Rb	Sr	Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd	In	Sn	Sb	Te	I	Xe
Cs	Ba		Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg	Tl	Pb	Bi	Po	At	Rn
Fr	Ra		Rf	Db	Sg	Bh	Hs	Mt	Uun	Uuu	Uub						
		La	Ce	Pr	Nd	Pm	Sm	Eu	Gd	Tb	Dy	Ho	Er	Tm	Yb	Lu	
		Ac	Th	Pa	U	Np	Pu	Am	Cm	Bk	Cf	Es	Fm	Md	No	Lr	

What are Elements made of?

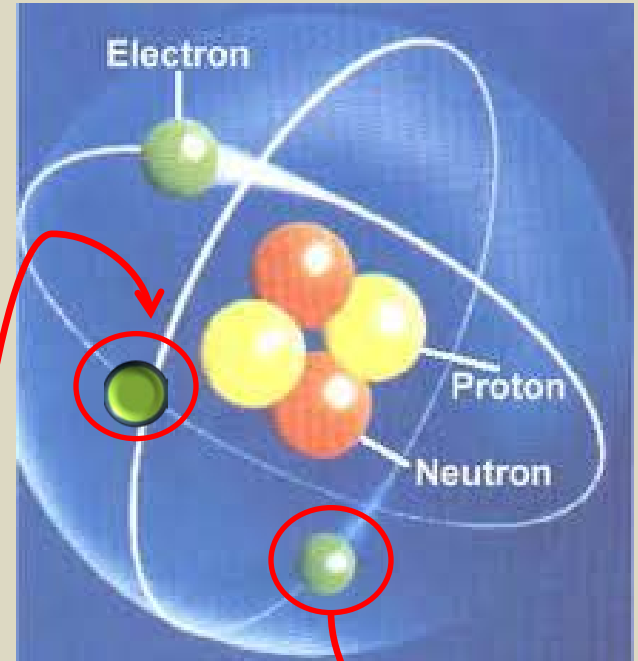
- Neutrons
- Protons
- Electrons



An Atom – the basic unit of matter

An **ION** has a positive or negative charge

- Neutral (Elemental State)
 - Equal protons and electrons
- Positive (Cation)
 - More protons than electrons
- Negative (Anion)
 - More electrons than protons

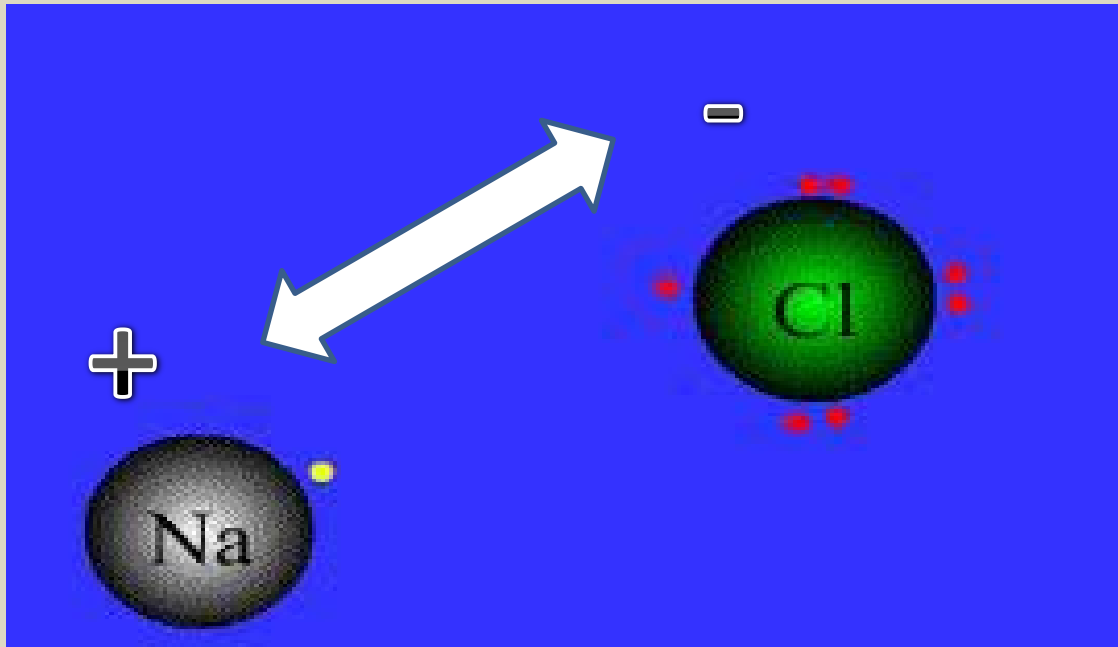


Gain an electron (-)

Lose an electron (-)

Atoms & Ions

- Opposites attract
- This is how the “ingredients” stick together

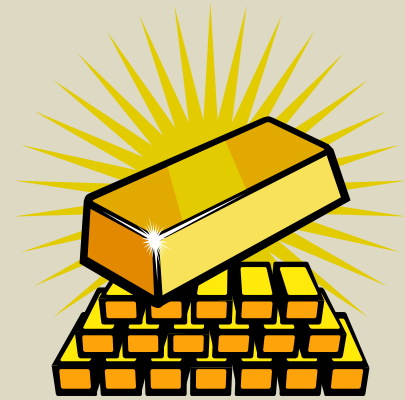


= SALT

Rocks Contain a lot of Metal



What is a Metal?



- Shiny
- Are malleable and ductile
- Form positively charged ions (cations)
- High melting points and boiling points
- High densities
- Good conductors of heat and electricity

Heavy Metals

- Metals with specific density greater than 6g/cm
- Includes most of the toxic elements
- Some metals are **toxic** and some are **essential**

☛ Lead

☛ Mercury

☛ Cadmium

☛ Aluminum

☛ Nickel

☛ Silver

☛ Gold

☛ Arsenic

☛ Silver

☛ Iron

☛ Selenium

☛ Chromium

☛ Zinc

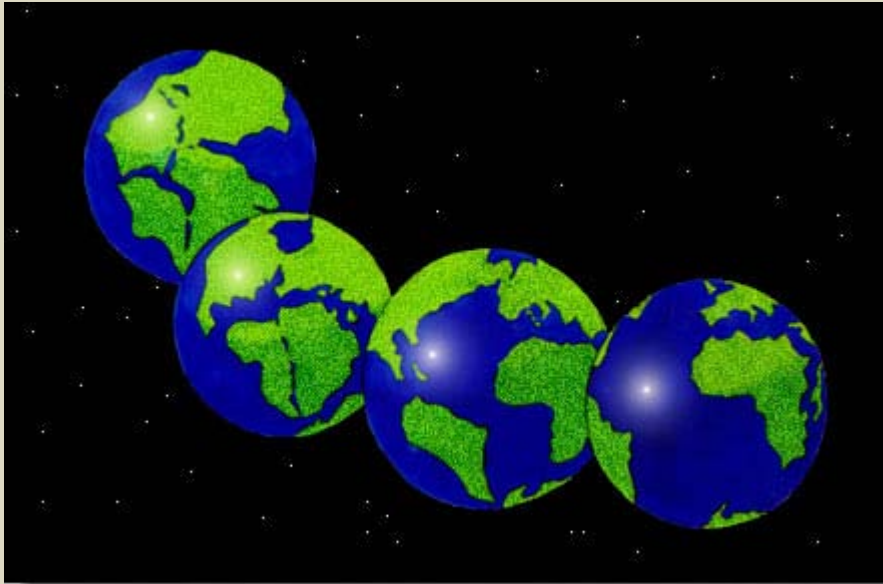
☛ Copper

☛ Manganese

What Types of Rocks are in NWT?



How the Earth has Changed



- The Earth's crust is separated into pieces (like a puzzle)
- Old pieces of this puzzle are called CRATONS

The Canadian Shield

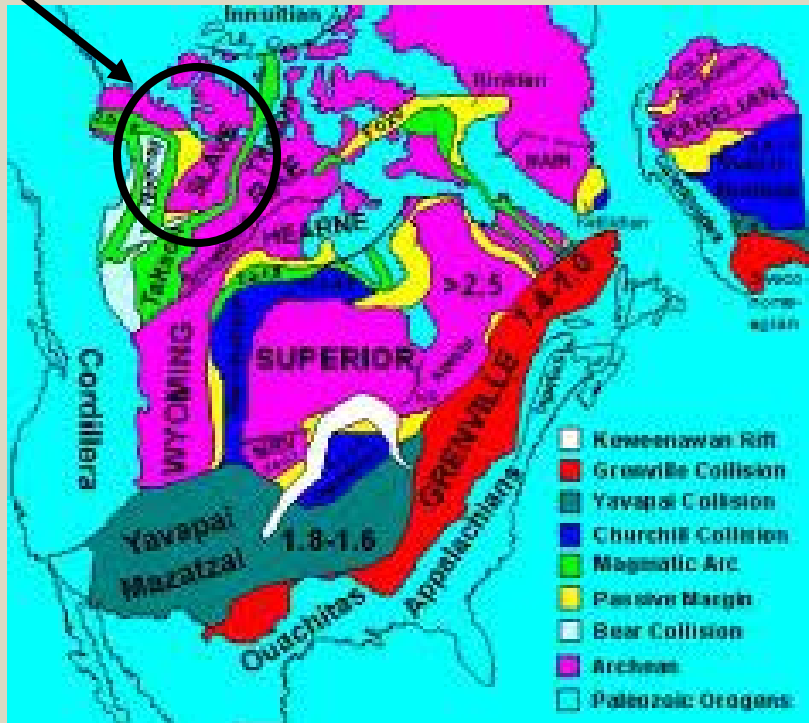
North American
Craton

Yellowknife



Geologic Provinces

Slave Province



Main NWT Rocks

Greenstone

Metamorphic



Sea Rocks

Sedimentary



Gneiss

Metamorphic



Granite

Igneous





Diamonds

Precious Metals

