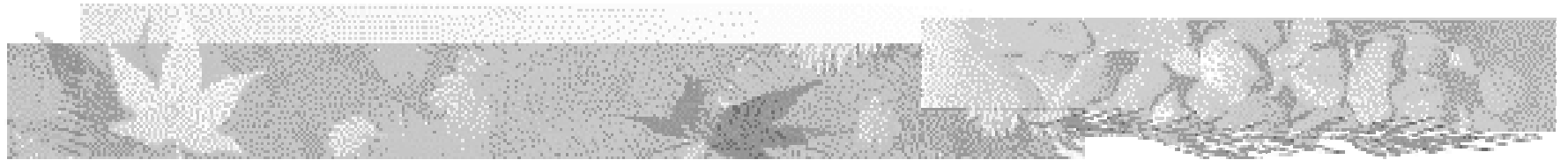
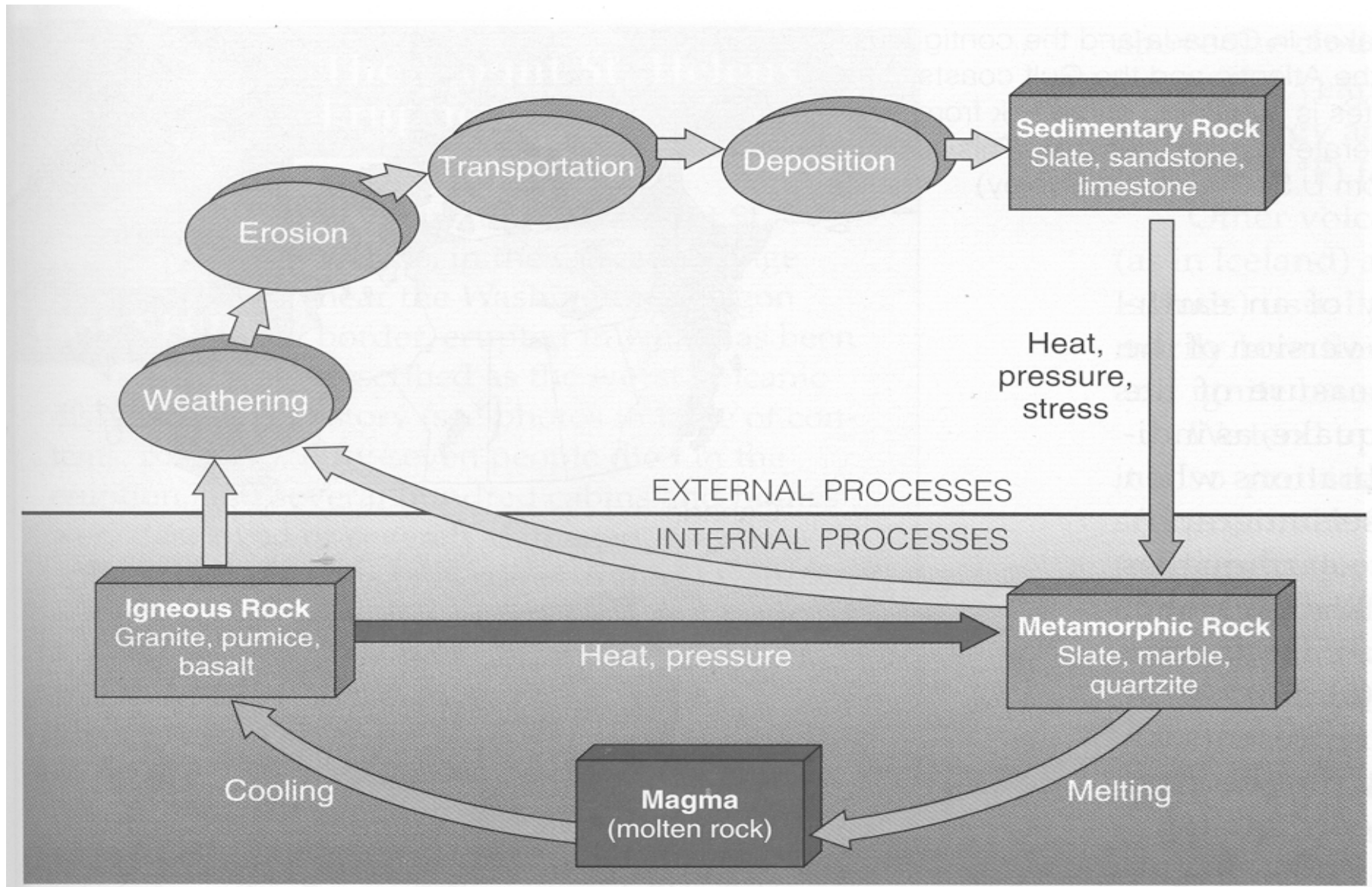


The Rock Cycle – the interaction of processes that change rocks from one type to another



Steps





Oxygen

- The most abundant element in Earth's crust.



Nitrogen

- The most abundant element in the Earth's atmosphere.



Iron

- The most abundant element in the Earth's core.



Aluminum

- The element commercially extracted frp, bauxite



Relationships Between All Three Rocks

- All three rocks are being recycled and converted to all of the classes



Rock Classification

Igneous

- Description – forms the bulk of the earth's crust. It is the main source of many non-fuel mineral resources.
- Classification –
 - Intrusive Igneous Rocks – formed from the solidification of magma below ground
 - Extrusive Igneous Rocks – formed from the solidification of lava above ground




Igneous (Continued)

- Examples – Granite, Pumice, Basalt, Diamond, Tourmaline, Garnet, Ruby, Sapphire



Sedimentary

- Description – rock formed from sediments. Most form when rocks are weathered and eroded into small pieces, transported, and deposited in a body of surface water.



■Clastic – pieces that are cemented together by quartz and calcium carbonate (Calcite).

■Examples: sandstone (sand stuck together), Conglomerate (rounded & concrete-looking) and Breccia (like conglomerate but w/ angular pieces)



Sedimentary (Continued)

- Nonclastic –
 - Chemical Precipitates – limestone precipitates out and oozes to the bottom of the ocean (this is why there is a lot of limestone in S.A.)
 - Biochemical Sediments – like peat & coal
 - Petrified wood & opalized wood




Metamorphic

- Description – when preexisting rock is subjected to high temperatures (which may cause it to partially melt), high pressures, chemically active fluids, or a combination of these
- Location – deep within the earth



Examples:

- Contact Metamorphism- rock that is next to a body of magma
 - Ex. limestone under heat becomes marble through crystallization
 - Limestone -> marble
 - sandstone -> quartzite
 - shale -> hornfelds (slate)

- 
- Dynamic Metamorphism – earth movement crushes & breaks rocks along a fault. Rocks may be brittle- (rock and mineral grains are broken and crushed) or it may be ductile- (plastic behavior occurs.)
 - Rocks formed along fault zones are called **mylonites**.



Metamorphic (Continued)

- Regional Metamorphism – during mountain building; great quantities of rock are subject to intense stresses and heat
 - Ex. cont. shelves ram together



■ Progressive Metamorphism – One form of rock changing into another

■ shale->slate->schist->gneiss

■ coal->graphite

■ granite->gneiss