Physical Geology Review for Test 1 on Tuesday, Feb 11th Terms and Major Topics of Discussion

The Definition of a Mineral

terms - mineral, mineraloid, atom, element, chemical properties, nuclear properties, crystal, crystal form, mineral cleavage, fracture, ion, cation, anion, ionic bonding, covalent bonding, Van der Waal's forces, electron exchange, electron sharing, rock

- how ionic chemical bonds form
- what are the general physical properties of minerals that have ionic bonding?
- how covalent chemical bonds form
- what are the general physical properties of minerals that have covalent bonding?
- how Van der Waals' forces form
- what are the general physical properties of minerals that have Van der Waals' forces?
- the definition of a mineral (5 separate parts)

Physical Properties of Minerals

terms - physical properties, hardness, luster, metallic luster, nonmetallic luster, streak, specific gravity, crystal form, Mohs Hardness Scale, silicon-oxygen tetrahedron, silicate mineral, rock-forming minerals, nonsilicate mineral, isolated tetrahedral silicate, chain tetrahedral silicate, sheet tetrahedral silicate, framework tetrahedral silicate ferromagnesian silicate, nonferromagnesian silicate

- the physical properties of minerals controlled by chemical bonding
- the difference between crystal form and cleavage
- know the Mohs hardness scale
- the physical properties of minerals controlled by chemical composition
- how different arrangements of metals and tetrahedra make the different silicate mineral groups
- the group properties of the different silicate mineral groups
- the difference between ferromagnesian and nonferromagnesian silicate minerals

The Rock Cycle

terms - rock cycle, mineralogy, texture, geothermal gradient, lithostatic pressure, igneous rock, magma, lava, plutonic igneous rock, volcanic igneous rock, crystallization, weathering, sediment, sedimentary rock, lithification, metamorphic rock, metamorphism

- what are the major elements that make up the earth's crust
- know the three major rock groups and their definitions
- the processes that form each of the three main rock groups

Igneous Rocks

terms - magma, lava, mineralogy, texture, Bowen's Reaction Series, phaneritic texture, plutonic igneous rock, volcanic igneous rock, volatiles, xenoliths, porphyritic texture, pyroclastic texture, rhyolite, granite, magma chamber, batholith, diorite, andesite, gabbro, basalt, dunite, kimberlite, assimilation, magmatic differentiation, magma mixing, fractional crystallization, shield volcano, composite volcano, volcanic dome

- know Bowen's Reaction Series
- how to use texture and mineralogy to name igneous rocks
- how N.L. Bowen devised his Reaction Series to explain the mineralogy of igneous rocks
- how can you get different types of igneous rocks from the same magma body?
- texture of plutonic and volcanic igneous rocks as it relates to cooling history
- the types of volcanoes, their compositions and where they form