**Earth Systems Final Exam Study Guide**

1. **Chemistry**
	1. Electron Dot Diagram
	2. Period
	3. Dimitri Mendeleev
	4. Nucleus
	5. Electrons
	6. Protons
	7. Neutrons
	8. Atomic Number
	9. Mass Number
	10. Isotope
	11. Average Atomic Mass
	12. Electron cloud
	13. Periodic Table
	14. Atom
	15. Group
2. **Minerals**
	1. Silicates
	2. Non-silicates
	3. Streak
	4. Luster
	5. Cleavage
	6. Fracture
	7. Density
	8. Mineral
	9. Color
	10. Hardness
	11. Radioactivity
	12. What happens when magma cools at different rates? Size? Coarse or Fine?
	13. What property does the presence of iron in minerals produce?
3. **Rocks**
	1. Igneous
		1. Extrusive
		2. Intrusive
	2. Sedimentary
		1. Cementation
		2. Compaction
		3. Clastic
		4. Chemical
		5. Organic
	3. Metamorphic
		1. Regional Metamorphism
		2. Contact Metamorphism
	4. Rock Cycle
	5. Bowen’s Reaction Series
	6. 3 factors of rock formation
	7. Chemical Stability of rocks is determined by what?
	8. Extrusive vs. Intrusive (Structures, formations, etc.)
4. **Weathering and Erosion**
	1. Sheet Erosion
	2. Solifluction
	3. Mass Movement
	4. Erosion
	5. Weathering
	6. Mudflow
	7. Rockfall
	8. Landslide
	9. Hydrolysis
	10. Mechanical Weathering types
	11. Carbonation
	12. Oxidation
	13. Chemical Weathering types
	14. Types of landforms: Mountains, buttes, peneplains, mesas, etc.
	15. Types of Agricultural Methods to reduce soil erosion
	16. How does surface area of a rock relate to the rate at which it weathers
	17. What climate has the fastest rate of weathering
5. **Geologic Timeline**
	1. Law of Uniformitarianism
	2. Law of Inclusion
	3. Law of Superposition
	4. Law of Cross-Cutting
	5. Law of Unconformity
	6. Principle of Folding
	7. Have a general knowledge of the main Eras (Precambrian, Paleozoic, Mesozoic, and Cenozoic)
		1. When did they start?
		2. What major organisms lived during that time?
	8. Half-life
	9. Types of fossils (all)
	10. Geological Timeline (how is it divided-eons, eras, periods, epochs, etc.)
	11. How old is the Earth?
	12. Radiometric Dating
	13. Absolute Age
	14. Relative Age
	15. Dino pelvic bones – bird like vs lizard like
6. **Plate Tectonics, Continental Drift, Volcanoes, Earthquakes**
	1. All of the types of Wegener Evidences, before modern technology, that led to his theory of Continental Drift. What did he not have?
	2. Layers of the Earth
	3. Types of Plate boundaries
		1. What land forms are associated with each type of plate boundary
	4. Distinguish between the 3 types of volcanoes. What makes them different?
	5. Earthquakes
		1. Magnitude
		2. Intensity
		3. Body waves
			1. P
			2. S
		4. Surface waves
		5. Epicenter
		6. Fault
		7. Focus
7. **Atmosphere and Weather**
	1. Types of storms
		1. Thunderstorm
		2. Tornado
		3. Hurricane
		4. Snowstorm
		5. Flood
	2. Winds that affect North America (6 types)
	3. Fronts
	4. High vs. Low pressure
	5. Layers of the Atmosphere