**Science 9: Natural Science**

**(Exam Review)**

**1) Space Unit:**

* The order of the planets
	+ Inner planets and outer planets
		- What are the main differences between the two groups?
		- What are they divided by?
		- How do they travel?
* How does the earth move?
	+ Rotation & Revolution (Understand both processes and what they cause)
	+ Reason for night and day, and reason for our season (be able to explain in detail)
* Our solar system
	+ Earth center method vs the Sun center method
	+ How old is our solar system?
* Shapes of galaxies
	+ What Galaxy do we belong to?
* Objects in space
	+ Satellites, asteroids, meteoroids, meteor, meteorite
	+ Describe how the tail of a comet is formed.
* Stars
	+ Starting and ending material of all stars
	+ Neutron star, pulsar star, black hole, quasar
	+ What do we use to measure the brightness of a star?
	+ What is light year a measurement of?
* Sun
	+ What are the layers of the sun? (No diagram)

**2) Reproduction Unit:**

* Plant cell and animal cell
	+ Main differences between the two
	+ Part of the cells and their functions
		- Nucleus, Cell membrane, cell wall, ribosome, mitochondria, cytoplasm, Golgi Apparatus
* Steps of Mitosis
	+ Prophase, Anaphase, Metaphase, Telophase
		- Must know order and the basics of what is happening in each phase
* Why is it important for cells to divide?
* Difference between Sexual vs. Asexual reproduction
	+ Advantages and Disadvantages
	+ Types of asexual reproduction
* What is DNA?
	+ What is it made up of?
	+ Nitrogen bases
	+ DNA Fingerprinting and why it is significant to a Miramichi case.
* Mutated DNA and Cancer (definitions)
* Difference between Meiosis and Mitosis (Make sure you understand each process fully)
	+ How many chromosomes found in each type of cell produced by either process?
	+ The end results of each process
	+ What types of cells each process produces?
* Nondisjunction and how we can determine genetic disorders prior to birth

**3) Chemistry Unit:**

* Warning symbols
* Physical Properties
	+ Hardness, malleability, ductile, melting/boiling point, viscosity, color, state, …
		- Must identify
* Chemical Properties
	+ Combustible, corrosive
		- Must Identify
* Physical change Vs. Chemical Change (An action: anything ending in “ing”)
	+ Must identify
	+ What are some signs that a chemical change has occurred?
* The changing of the states
	+ Liquid to Gas, Gas to Liquid, Solid to Liquid, Liquid to Solid, Gas to Solid, Solid to Gas
* Particle theory
* Element vs. Atom vs. Molecule Vs. Compounds
	+ Pure substance,
	+ Mixtures
		- Solution, Heterogeneous, Homogeneous
		- alloys
* Atoms
	+ electrons, protons, and neutrons
		- Where are they found in an atom?
		- What are their charges?
* Counting atoms
	+ Example: **Ca3(PO4)2**
* Periodic Table
	+ How is it ordered?
	+ Metals , Nonmetals, State (Solid, Liquid, Gas)
	+ Periods, Groups , Families
* Using the periodic table to answer the following
	+ # **Protons** = atomic number
	+ **#Electron** = Atomic Number
	+ **Mass number** = # of **Protons** + # of **Neutrons**
	+ **Neutrons** = Mass # – atomic #
	+ What are isotopes?
* Bohr Diagrams
	+ Know how many electrons belong in the first 4 orbit
		- Be able to draw and identify elements based on Bohr diagrams

**4) Electricity Unit:**

* Electrostatic
* Static Electricity
	+ Friction , Contact and Induction
		- Know the main difference between all three
* Laws of Electric Charges
	+ - Attraction test vs Repulsion test
* Electrostatic Series Chart
	+ Chart will be provided make sure you know how to use it
* Insulators vs. Conductor
	+ Know the definition of each term
	+ Be able to identify some a good insulator of a good conductor
* What is “Grounding” and why is it done?
* Current electricity
	+ Electric Circuit
		- Open and Closed Circuits
	+ Electric Current
		- Definition
* Schematic Circuit Diagrams
	+ Must recognize all symbols
* Series and Parallel Circuit
	+ Main Difference
	+ And be able to identify
* What is Electrical Potential?
	+ What is it unit of measurement?