**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?