Gr 8 Unit Review – Intro Unit

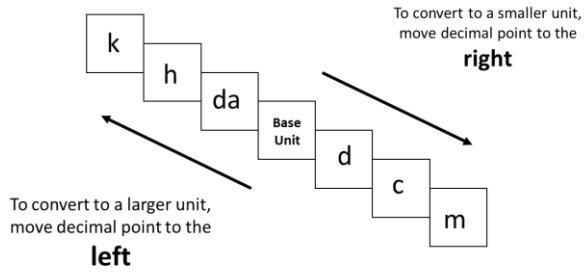
Safety, scientific method, graphing, metric conversions, scientific method

Know the following:

- **Safety rules** – be able to recognize an unsafe situation and explain ***why*** certain actions are unsafe
- Know the major safety equipment that is used in the lab and when/how to use them
- WHMIS and general household safety symbols (upside down triangle, diamond, and octagon) and ***where*** they would be used (for example know that cigarettes would fall under class D2 – Other toxic effects
- Know how to read an MSDS sheet

- **Scientific method** – know the steps of the scientific method and how to recognize which step someone is using
    - Eg – if someone is measuring the breathing rate of blue frogs sitting in cotton candy, they are *conducting an experiment and collecting data*
    - If someone is suggesting **If** blue frogs are placed in cotton candy **then** they will breathe faster – then they are making a *hypothesis*.
- Know how to design a controlled experiment/fair test
    - Know how to recognize a 'badly designed' experiment and know what to do to make it better
    - Know how to write a hypothesis in an 'If/Then' statement
    - Know the differences between an *independent* variable and a *dependant/responding* variable
    - Know what a *control group* is and why it is needed

- Metric Conversions
    - Know how to convert between the different units in the metric system – remember '**k**ings **h**ave **d**i**a**monds, but **d**iamonds **c**ost **m**oney



    - Know how to use and read Scientific Notation
        - Eg. 23, 000 000 = 2.3 X 10^{7} 3.45 x 10^{-6} = 0.000 003 45

Gr 8 Unit Review – Life Sciences

Cells, Cell theory, Immune system

Know the following:

- The parts of the microscope, how to use it
- how to calculate magnification

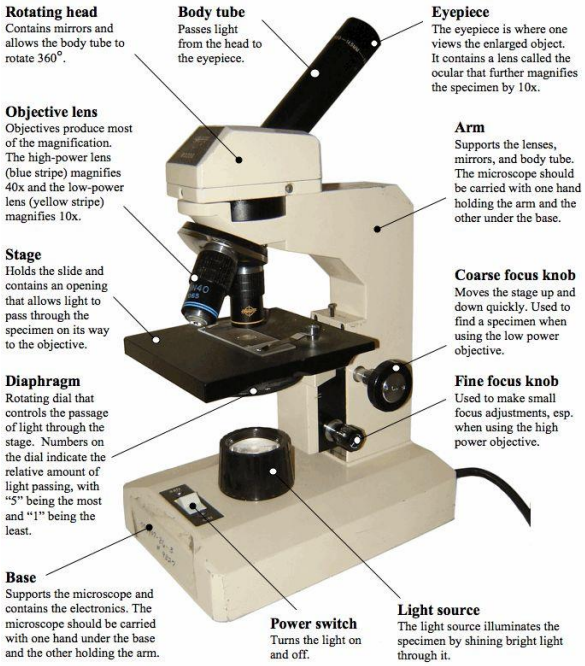
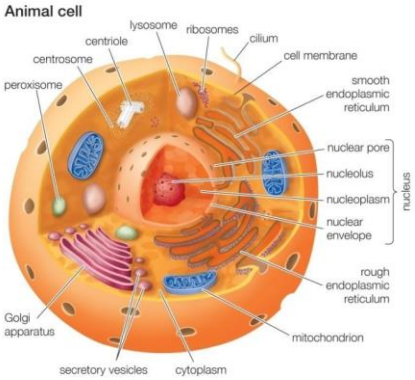
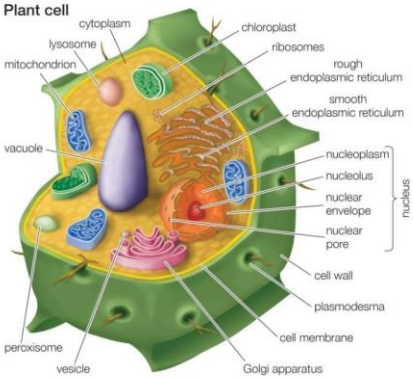
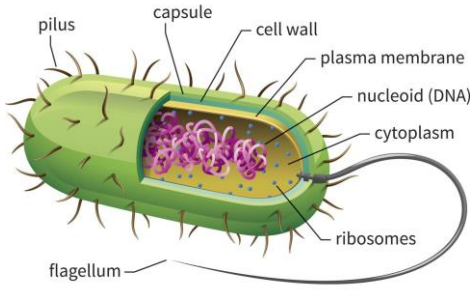


Figure 5 The compound light microscope with descriptions of its parts

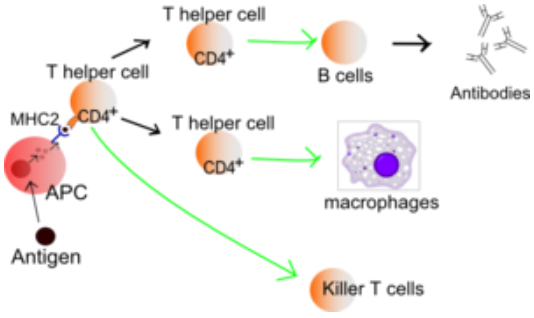
- Know how to recognize whether something is living or not
- the five requirements for something to be considered alive
- The 3 parts of the cell theory
    - The cell is the basic unit of life
    - All living things are made up of cells
    - All cells come from other pre-existing cells
- Parts of the cell – organelles and their function
    - Know the difference between plant and animal cells
    - Know the difference between prokaryotic (bacterial) and eukaryotic (plant and animal) cells.





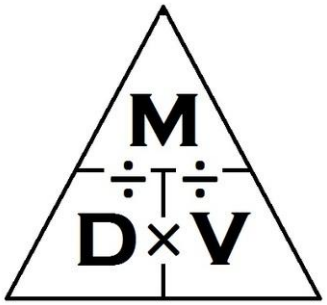


- Immune system
    - Know the first and second lines of defense – eg. The skin, mucus, digestive juices = first line of defence that keep the pathogens from even getting into your bloodstream.
    - Know the difference between Innate and Acquired immune responses
    - Know the steps and 'players' involved in the immune responses, and what they do – how your body deals with invaders
        - Eg. T cells, B cells, phagocytes, antibodies, etc.
    - Know what an allergic reaction is and how your body deals with allergens – histamines, epi-pens, etc
    - Know what a Vaccine is, and how it works – including 'booster' shots
    - Know the difference between an *outbreak* vs a *pandemic*, and how they occur



Gr 8 Unit Review – Matter

Kinetic Molecular Theory, Parts of the Atom



Know the following:

- What is mass? What is volume? What is Density? How do you calculate each?

- Changing states of matter – solid/liquid/gas

- Know the Kinetic Molecular Theory – what happens when you add or take away energy from particles – what does that do to the spacing and density of the substance.

- Reading a dial-o-gram balance and graduated cylinder
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- History of the atomic theory – how has the idea of the atom changed through time
    - Dalton
    - Thompson
    - Rutherford
    - Bohr

- Structure of the atom – subatomic particles
    - Protons, neutrons, electrons
    - Quarks – just basic, nothing too complex, only a couple of questions on this