

Gr 8 Unit Review – Intro Unit

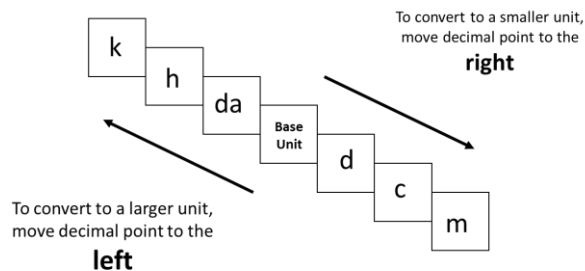
Safety, scientific method, graphing, metric conversions, scientific method

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
 - o Eg – if someone is measuring the breathing rate of blue frogs sitting in cotton candy, they are *conducting an experiment and collecting data*
 - o 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
 - o Know how to recognize a ‘badly designed’ experiment and know what to do to make it better
 - o Know how to write a hypothesis in an ‘If/Then’ statement
 - o Know the differences between an *independent* variable and a *dependant/responding* variable
 - o Know what a *control group* is and why it is needed

- Metric Conversions
 - o Know how to convert between the different units in the metric system – remember ‘**kings have diamonds, but diamonds cost money**’



- o Know how to use and read Scientific Notation
 - Eg. 23, 000 000 = 2.3×10^7 $3.45 \times 10^{-6} = 0.000\ 003\ 45$

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
- 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
 - o The cell is the basic unit of life
 - o All living things are made up of cells
 - o All cells come from other pre-existing cells
- Parts of the cell – organelles and their function
 - o Know the difference between plant and animal cells
 - o Know the difference between prokaryotic (bacterial) and eukaryotic (plant and animal) cells.

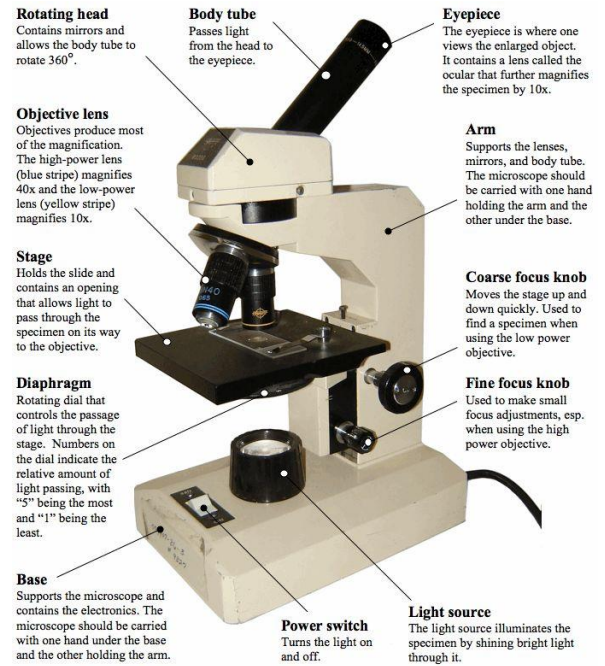
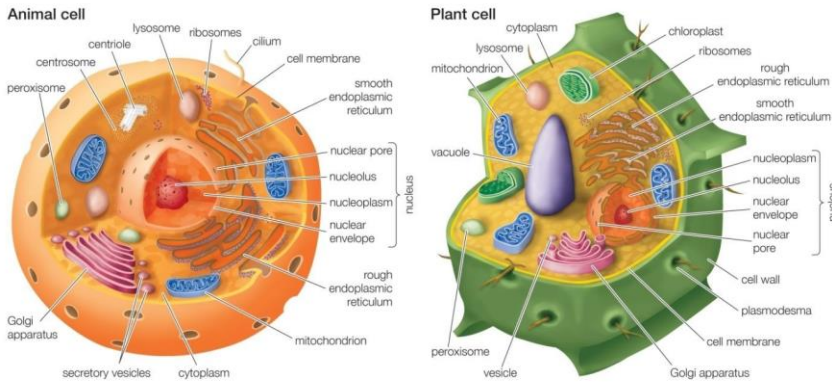
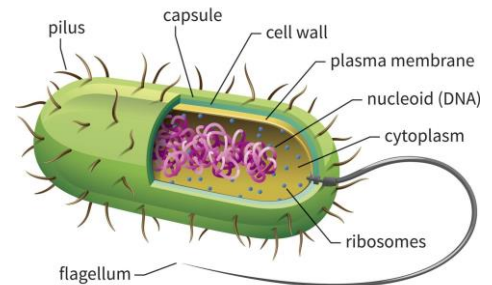
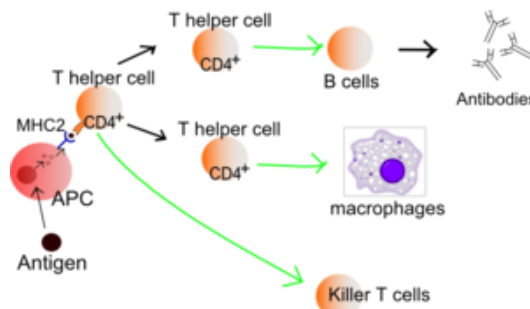


Figure 5 The compound light microscope with descriptions of its parts



- Immune system
 - o 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.
 - o Know the difference between Innate and Acquired immune responses
 - o 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.
 - o Know what an allergic reaction is and how your body deals with allergens – histamines, epi-pens, etc
 - o Know what a Vaccine is, and how it works – including ‘booster’ shots
 - o Know the difference between an *outbreak* vs a *pandemic*, and how they occur

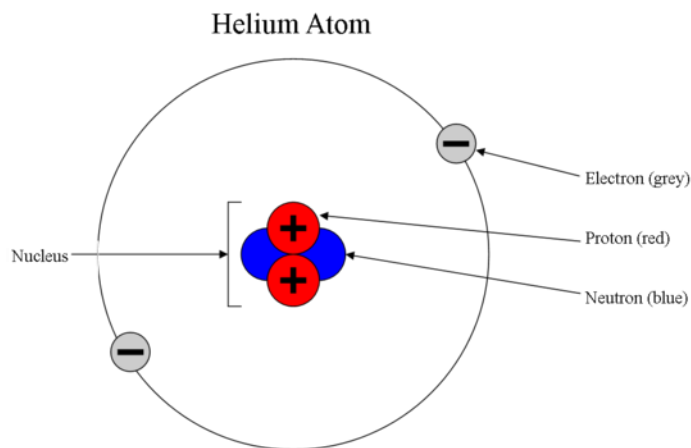
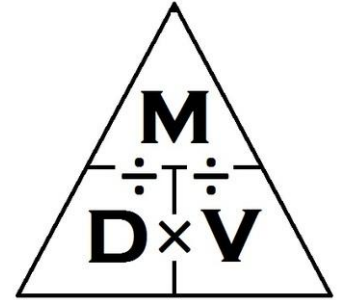


Gr 8 Unit Review – Matter

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
- History of the atomic theory – how has the idea of the atom changed through time
 - o Dalton
 - o Thompson
 - o Rutherford
 - o Bohr
- Structure of the atom – subatomic particles
 - o Protons, neutrons, electrons
 - o Quarks – just basic, nothing too complex, only a couple of questions on this



QUARKS			
UP QUARK A teeny little point inside the proton and neutron, it is friends forever with the down quark.	CHARM QUARK A second generation quark, it is charmed, indeed.	TOP QUARK This heavyweight champion doesn't live long enough to make friends with anyone.	
DOWN QUARK A tiny little point inside the proton and neutron, it is friends forever with the up quark.	STRANGE QUARK Why is this second generation quark so strange?	BOTTOM QUARK This third generation quark is puttin' on the pounds.	
LEPTONS			
ELECTRON-NEUTRINO These minuscule bandits like to steal away energy and escape detection.	MUON-NEUTRINO A slightly heavier bandit than its sibling to the left.	TAU-NEUTRINO Wily and sneaky, this bandit is the newest particle to arrive at the Zoo.	
ELECTRON A familiar friend, this negatively charged, busy f'il guy likes to bond.	MUON A "heavy electron" who lives fast and dies young.	TAU A "heavy muon" who could stand to lose a little weight.	