**Science 8**

**Exam Study Guide**

These are the topic you should know!

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| **BIG IDEAS** | **Topics** | **Subtopics** |
| **Cell Organelle Unit** | Energy | Cellular respiration, photosynthesis, |
| Organelles | Nucleus (DNA), mitochondria, ribosomes, golgi, ER, chloroplasts, cytoplasm, cell membrane, cell wall |
| **Kinetic Molecular Theory Unit** | KMT, diffusion & osmosis | Diffusion, osmosis, particles, concentration, KMT theory, temperature |
| States of Matter | Solid, liquid, gas, movement of particles, condensation, solidification, evaporation, sublimation, melting, |
| Atoms and Density | D=m/V, density, mass, volume, atoms, protons, neutrons, electrons |
| **Optics Unit** | Light as wave | Wave, wavelength, amplitude, frequency, transverse wave, compression wave |
| Electromagnetic spectrum | EM spectrum, radio, microwave, infrared, visible light (ROYGBIV), ultraviolet, x-rays, gamma |
| Reflection (mirrors)  Refraction (lenses) | Light ray, normal, diverge, converge, angle of incidence, angle of reflection, telescopes, microscopes, shadows, opaque, translucent, transparent |
| The Eye | Lens, cornea, sclera, retina, rods and cones, iris, pupil, choroid, optic nerve, blind spot |
| **Geology Unit** | Earth’s layers | Crust (oceanic & continental), mantle, outer core, inner core, lithosphere, asthenosphere |
| Plate Tectonics | Continental drift, seafloor spreading, Pangaea, fossils, magnetic reversal, plate tectonics, convection, ridge push, slab pull, Alfred Wergner, Harry Hess |
| Plate Boundaries | Diverging boundary, converging boundaries (C-C, O-C, O-O), transform boundary, hot spots, Ring of Fire, earthquakes, volcanoes, mountains, rift valleys, ocean ridges, trenches, island arcs |