**SCH 3UI – Daily Outline**

✓ - got it ? – sort of got it x – don’t got it

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| **Matter, Chemical Trends and Chemical Bonding** | | | | | | | |
| **Day** | **Title** | **Home**  **Work**  **(formative)** | **Topics** | **✓ ? x**  **Day of**  **Lesson** | **✓ ? x**  **Before**  **test** | **✓ ? x**  **On**  **test** | **✓ ? x**  **Before**  **exam** |
| NOMENCLATURE Independent study ongoing through Unit 1 and 2 | | | |  |  |  |  |
| 1 | Introductions, Administration | Grade 9,10 exam reviews  Read Chapter 1 | course outline |  |  |  |  |
| safety |  |  |  |  |
| memorize element symbols |  |  |  |  |
| 2 | Grade 9, 10 review | review handout | way too many to list here |  |  |  |  |
| 3 | lab safety & format | Prep Reactivity of Metals Lab | lab safety |  |  |  |  |
| lab report format |  |  |  |  |
| 4 | Reactivity of Metals Lab | write up lab | trends in metal reactivity Grp 1 |  |  |  |  |
| family similarities Grp 1 |  |  |  |  |
| 5 | elements organized | finish grade 9 and 10 review | way too many to list here |  |  |  |  |
| 6 | isotopes and  M & M ium | 1.3 P#11-14 | isotope |  |  |  |  |
| radio-isotope |  |  |  |  |
| rate of decay |  |  |  |  |
| half life |  |  |  |  |
| radio-isotope dating |  |  |  |  |
| 7 | Alkali Earth Metals activity | finish HO | trends in metal reactivity Grp 2 |  |  |  |  |
| family similarities Grp 2 |  |  |  |  |
| 8 | Bohr model | read 1.4 | wave particle duality |  |  |  |  |
| orbital/energy level |  |  |  |  |
| 9 | Wave mechanics | 1.4 P#12, Q#1,2 | Quantum |  |  |  |  |
| e- as a wave |  |  |  |  |
| 10 | Quantum numbers | n=4, n=5 | n |  |  |  |  |
| l |  |  |  |  |
| ml |  |  |  |  |
| ms |  |  |  |  |
| 11 | Electron configurations | full and short for Be, Cr, Zn, Ra, Br, Tc, Er, UNH, S-2, Mg+, Al+3, Hg+2, F-, excited Cl, excited Mg | energy level diagram |  |  |  |  |
| full electron configuration |  |  |  |  |
| shorthand electron configuration |  |  |  |  |
| quantum theory challenge |  |  |  |  |
| 12 | Trends in the Periodic Table | Act 1.5.1  Act 1.5.2  1.5P1-6, Q#1,2,4-6 | trend - atomic radius |  |  |  |  |
| trend - ionization energy |  |  |  |  |
| trend - electron affinity |  |  |  |  |
| trend - electronegativity |  |  |  |  |
| trend - chemical reactivity |  |  |  |  |
| F = kQ1Q2  r2 |  |  |  |  |
| shielding |  |  |  |  |
| 13 | Exceptions to trends | study for test | exceptions to the trends vs. energy level diagrams |  |  |  |  |
| 14 | work period |  |  |  |  |  |  |
| 15 | TEST – grade 9 & 10 review and chapter 1 | | | | | | |

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| **NOTE: This is NOT a new unit, just a continuation of Matter, Trends and Bonding** | | | | | | | |
| **Day** | **Title** | **Home**  **Work**  **(formative)** | **Topics** | **✓ ? x**  **Day of**  **Lesson** | **✓ ? x**  **Before**  **test** | **✓ ? x**  **On**  **test** | **✓ ? x**  **Before**  **exam** |
| 16 | Lewis diagrams  Valence vs. Ox. Number, Ionic, Covalent | 2.1 P#1,2  2.2 P#1-5,8-14, Q#1,4 | Lewis Diagrams |  |  |  |  |
| valence |  |  |  |  |
| oxidation number |  |  |  |  |
| ionic bonding |  |  |  |  |
| covalent bonding |  |  |  |  |
| 17 | Polar Covalent, coordinate covalent, Lewis Diagrams | R+MN 2.3 P#1-6, 8-15  R+MN 2.4 P#1-12 | polar covalent bond |  |  |  |  |
| coordinate covalent bond |  |  |  |  |
| Lewis diagrams for molecules and ions |  |  |  |  |
| 18 | VSEPR | finish yesterday’s HW  HO - VSEPR | VSEPR theory |  |  |  |  |
| VSEPR notation up to AX6 |  |  |  |  |
| VSEPR shapes up to AX6 |  |  |  |  |
| 19 | Intermolecular forces |  | aggregate |  |  |  |  |
| ionic substances |  |  |  |  |
| molecular substances |  |  |  |  |
| van der waals forces |  |  |  |  |
| dipole-dipole forces |  |  |  |  |
| london forces |  |  |  |  |
| hydrogen bonding |  |  |  |  |
| 20 | KMT, Evidence for reaction | R+MN 5.2  Balancing HO | Kinetic Molecular Theory |  |  |  |  |
| evidence for chemical change |  |  |  |  |
| 5 types of reactions |  |  |  |  |
| exothermic |  |  |  |  |
| endothermic |  |  |  |  |
| balancing chemical reactions |  |  |  |  |
| 21 | reaction types lab activity | Prep lab  work on ass’t | synthesis |  |  |  |  |
| decomposition |  |  |  |  |
| single displacement |  |  |  |  |
| double displacement |  |  |  |  |
| combustion |  |  |  |  |
| 22 | lab reaction types | write up lab  continue ass’t |  |  |  |  |  |
| 23 | work period for ass’t | finish ass’t |  |  |  |  |  |
| 24 | work period for test |  |  |  |  |  |  |
| 25 | UNIT 1 TEST – grade 9 & 10 review and CHPT 1-3 | | | | | | |

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| **Chemical Reactions** | | | | | | | |
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| 26 | Significant Digits | HO – sig. dig.  HO – review questions | dimensional analysis |  |  |  |  |
| conversion factors |  |  |  |  |
| logic for problem solving |  |  |  |  |
| scientific notation |  |  |  |  |
| significant digits |  |  |  |  |
| 27 | Prep constant composition lab  and work period | PREP LAB  R+MN 4.1 P#4-7, Q#1  R+MN 4.2 P#3,6,7,8,10,11  re-do isotopes HO | Constant composition |  |  |  |  |
| percent composition |  |  |  |  |
| isotope abundance calculations |  |  |  |  |
| 28 | Lab – Constant Composition | write up lab |  |  |  |  |  |
| 29 | MOLE, Mole triangle | R+MN 4.3 P#1-13, Q#2-5  R+MN 4.4 P#1-14, Q#1-5 | mole |  |  |  |  |
| avogadro’s number |  |  |  |  |
| molar mass |  |  |  |  |
| mole triangle |  |  |  |  |
| amu |  |  |  |  |
| mole day Oct 23 |  |  |  |  |
| 30 | Percentage Composition | R+MN 4.5 P#1-3,4a,  5-8 Q#1-5 | percent composition calculations |  |  |  |  |
| 31 | work period for mole and % composition |  |  |  |  |  |  |
| 32 | Empirical, Molecular formula | R+MN 4.6 P#1-5  R+MN 4.7 P#1-6,8-10, 14,15 Q#1-6 | empirical formula |  |  |  |  |
| molecular formula |  |  |  |  |
| % mass 🡪 emp. form. |  |  |  |  |
| 33 | work period for chapter 4 | Chpt 4 review pg 199 |  |  |  |  |  |
| 34 | Predicting Products | HO – reaction types ass’t | predicting products using reaction type |  |  |  |  |
| 35 | More predicting |  |  |  |  |  |  |
| 36 | Stoichiometry | R+MN 5.1, 5.2  HO - Stoichiometry | stoichiometry |  |  |  |  |
| 37 | Mass-Mass problems | R+MN 5.4P#1-6, 8-10 Q#1-4  HO – mass-mass calc. | reactions are mole ratios |  |  |  |  |
| reality is mass ratios |  |  |  |  |
| massr🡪moler🡪molep🡪massp |  |  |  |  |
| 38 | Limiting reagent | R+MN 5.5 P#1-10 Q#1-7  HO – Limiting Reagent | Limiting reagent |  |  |  |  |
| 39 | Yield | R+MN 5.6 P#1-6,9-11  R+MN 5.7 | theoretical yield |  |  |  |  |
| actual yield |  |  |  |  |
| percentage yield |  |  |  |  |
| percentage error |  |  |  |  |

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| 40 | Nuclear | HO – Independent study  HO–Nuclear Reactions  Chapter 5 work period | fission |  |  |  |  |
| binding energy |  |  |  |  |
| mass defect |  |  |  |  |
| alpha radiation |  |  |  |  |
| beta radiation |  |  |  |  |
| gamma radiation |  |  |  |  |
| balancing nuclear reactions |  |  |  |  |
| positron |  |  |  |  |
| antimatter |  |  |  |  |
| critical mass |  |  |  |  |
| fusion |  |  |  |  |
| NIMBY |  |  |  |  |
| 41 | More Nuclear |  |  |  |  |  |  |
| 42 | Work Period for test |  |  |  |  |  |  |
| 43 | Unit 2 test – Chpt 4 & 5 | | | | | | |
| **Solutions and Solubility** | | | | | | | |
| 44 | Intro to chpt 6 - Solutions | R+MN 6.1 P#1-6,8 Q#1-9  Read chapter 6 |  |  |  |  |  |
| 45 | Solutions | R+MN 6.2 P#3-12 | solution |  |  |  |  |
| dilute |  |  |  |  |
| concentrated |  |  |  |  |
| miscible |  |  |  |  |
| solution process |  |  |  |  |
| polar/non-polar solutes and solvents |  |  |  |  |
| entropy |  |  |  |  |
| dissociate |  |  |  |  |
| ionize |  |  |  |  |
| dissolve |  |  |  |  |
| solvating |  |  |  |  |
| electrolyte/non-electrolyte |  |  |  |  |
| 46 | Concentration | R+MN 6.3 P#1-8,  10-17,19-22 Q#1-10  R+MN 6.4  R+MN 6.5 P#1-9  Q#3-5  Chapter 6 review pg309 | molarity (molar concentration) |  |  |  |  |
| % mass |  |  |  |  |
| % volume |  |  |  |  |
| ppm |  |  |  |  |
| dilution |  |  |  |  |
| 47 | Concentration |  |  |  |  |  |  |
| 48 | Concentration |  |  |  |  |  |  |
| 49 | Spectrophoto-metry | Activity 6.5.1  Activity 6.5.2  Spectrometer activity | absorbance |  |  |  |  |
| Beer’s law |  |  |  |  |
| concentration |  |  |  |  |
| extrapolation |  |  |  |  |
| 50 | more spectrometry |  |  |  |  |  |  |

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| 51 | Solubility | R+MN 7.1 P#1,2  HO - solutions | warm/sold solubility |  |  |  |  |
| solubility curve |  |  |  |  |
| solubility rules |  |  |  |  |
| solubility of gases |  |  |  |  |
| 52 | Inv. 7.1.1 – Solubility Curve  Types of Equations | R+MN 7.2  R+MN 7.3P#1-6  R+MN 7.4 | Molecular equaiton |  |  |  |  |
| Full ionic equation |  |  |  |  |
| Net ionic equation |  |  |  |  |
| precipitate |  |  |  |  |
| 53 | Inv. 7.3.1 | R+MN 7.5P#1-3  Q#1-3 | precipitation |  |  |  |  |
| Flame tests |  |  |  |  |
| 54 | Finish Chpt 7 | R+MN 7.6P#1-3 Q#1,3  Chapter 7 review pg358 |  |  |  |  |  |
| 55 | Acids & Bases | HO – vital signs  R+MN 8.1 P#1-7  R+MN 8.2 P#1-6Q#1-6  R+MN 8.3  R+MN 8.4 P#2-5,7,  12-20 Q#8,9,11 | acid |  |  |  |  |
| base |  |  |  |  |
| Arrhenius |  |  |  |  |
| Bronsted-lowry |  |  |  |  |
| Polyprotic |  |  |  |  |
| oxyacid |  |  |  |  |
| conjugate pairs |  |  |  |  |
| Acid/base strength |  |  |  |  |
| pH |  |  |  |  |
| pH scale |  |  |  |  |
| pOH |  |  |  |  |
| 56 | Acids & Bases |  |  |  |  |  |  |
| 57 | Acids & Bases |  |  |  |  |  |  |
| 58 | Titration | R+MN 8.5 P#1-8 Q#2,3 | titration |  |  |  |  |
| indicator |  |  |  |  |
| endpoint |  |  |  |  |
| equivalence point |  |  |  |  |
| titration curve |  |  |  |  |
| 59 | Vinegar Titration |  |  |  |  |  |  |
| 60 | Titration continued |  |  |  |  |  |  |
| 61 | Chpt 8 Review |  |  |  |  |  |  |
| 62 | Unit 3 Review |  |  |  |  |  |  |
| 63 | UNIT 3 TEST – CHPT 6,7,8 | | | | | | |

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| **Solutions and Solubility** | | | | | | | |
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| 64 | Intro to gases | R+MN 9.1 P#1-4 Q#5 | KMT again |  |  |  |  |
| States of matter |  |  |  |  |
| 65 | Pressure, Boyle | R+MN 9.2 Fig1 pg 425 complete graph and questions for Inv. 9.2.1 | barometer |  |  |  |  |
| pressure |  |  |  |  |
| Atmospheric pressure |  |  |  |  |
| Boyle’s law |  |  |  |  |
| STP vs SATP |  |  |  |  |
| 66 | Charles’ and Gay-Lussac‘s Laws | R+MN 9.2 P#1-10,  12-14, 16-19, 21-35 Q#1-5,7 | Charles’ Law |  |  |  |  |
| Kelvin temperature |  |  |  |  |
| Gay-Lussac Law |  |  |  |  |
| 67 | Ideal Gases | R+MN 9.3 P#1,2  R+MN 9.4 P#1-9  Q#1-6  R+MN 9.5 P#1,3,5 | Ideal Gas Law |  |  |  |  |
| 68 | Inv. 9.4.1 pg 446 |  |  |  |  |  |  |
| 69 | Dalton |  | law of partial pressures |  |  |  |  |
| 70 | Chpt 10 miscellaneous | R+MN 10.2 P#1-5,7-14  Q#2-6  R+MN 10.3 P#1-7  R+MN 10.5 P#1-3 |  |  |  |  |  |
| 71 | prep Inv. 10.4.1 pg 484 | R+MN 10.2 P#1-5  Q#1-4  chapters 9 and 10 summaries |  |  |  |  |  |
| 72 | Inv. 10.4.1 pg 484 |  |  |  |  |  |  |
| 73 | Review day | Chpt 9,10 reviews pg 456, 492  Unit Review pg 496 |  |  |  |  |  |
| 74 | UNIT 4 TEST – CHPT 9,10 | | | | | | |
| The course outline allows time to be added for lessons regarding:  - the nomenclature independent study (4 or 5 lessons)  - extra lessons when students are struggling (5 to 10 lessons) | | | | | | | |