**Lesson plan**

**Course:** **SCH 3U**

**Unit:** Solutions and Solubility

**Topic:** Review

**Lesson:** Lesson

**Grade and Level:** Grade 11 University

**Date:**

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| **Description of Topic:** Today the students will review the unit  |

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| **Learning Expectations** |
| **Overall Expectations:** |
| **Specific Expectations:** |

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| **Teacher Resources:** LaptopLCD ProjectorChalk, chalk board,  | **Student Resources:**Pen, pencilCalculatorText book |

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| **Teaching / Learning Strategies** |
| -Note taking, problem solving,  |

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| **Steps: (sequence, time lines, teacher/ student roles)**  |
| 1. Review
2. Questions
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| **Accommodations / Modifications**  |
| -The students will be given an assisted note -The lesson will be done on power point.- The note will be posted on mrhoover.weebly.com |

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| **Assessment & Evaluation** |
| * The students questions will be checked for completion.
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**Questions:**  Page

**SCH3U: U3 Date:**

**Unit 3 Solutions and Solubility: Review**

**Key Ideas**

* Polar and non-polar molecules
	+ Electronegativity “aka” electron affinity
	+ Hydrogen bonds
	+ Ionic and molecular compounds in water
* Solution concentrations
	+ Percent concentrations
	+ Very low concentrations
	+ Molar concentrations
* Solubility of solids, liquids and gases
	+ Temperature
	+ Pressure
	+ Double displacement reactions and predicting precipitates.
* Acids and bases
	+ Ionization
	+ Strong and weak
	+ pH and ion concentration
* Acid – Base reactions
	+ Neutralization reactions
	+ Titrations

**Terms**

|  |  |
| --- | --- |
| * Solution
* Homogeneous mixture
* Solute
* Solvent
* Electrolytes
* Non-electrolyte
* Intermolecular forces
* Dissociate
* Concentration
* Dilute
* Concentrated
* Parts per million
* Molar concentration
* Standard Solution
* Pure water
* Stock solution
* Saturated solution
* Solubility
 | * High solubility
* Low solubility
* Insoluble
* Precipitate
* Acid
* Base
* Dissociation
* Ionization
* Strong acid
* Weak acid
* Neutralization
* Hydronium ion
* Titration
* Titrant
* Solubility curve
* Immiscible
* Miscible
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**Formulas**

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| --- | --- | --- |
| **Type** | **Formula** | **Units** |
| % V/V | $$c=\frac{v\_{solute}}{v\_{solution}} x 100\%$$ | **mL/100mL** |
| % W/V | $$c=\frac{m\_{solute}}{v\_{solution}} x 100\%$$ | **g/100mL** |
| % W/W  | $$c=\frac{m\_{solute}}{m\_{solution}} x 100\%$$ | **g/100g** |
| Very low number | $$c=\frac{m\_{solute}}{v\_{solution}} $$ | **ppm, ppb, ppt** |
| Molar | $$C=\frac{n\_{solute}}{v\_{solution}} $$ | **Mol/L** |
| Dilution | **c1v1 = c2v2** | Normally c will be in mol/L and v will be in L |
| pH | **–log[concentration of H+]** | pH scale units |
| pOH | **–log[concentration of OH-]** | pOH scale units |
| [H+] from pH | **10-pH** | Mol/L |
| [OH-] from pOH | **10-pOH** | Mol/L |
| pH to pOH | **pOH = 14 – pH** | pOH scale units |
| pOH to pH | **pH = 14 – pOH** | pH scale units |
| Finding moles  | $$n=\frac{m}{M}$$ | Mol |
| Titration The method to the right is a condensed version. You were taught this method: 1. Balance equation
2. Calculate number of moles
3. Find amount of titrant needed in moles
4. Calculate concentration of titrant.
 | Ma•Va•Ca = Mb•Vb•CbMa is the mol/L of the acid, Mb is the mol/L of the baseVa is the volume of acid used, Vb is the volume of base usedCa is the number of acidic hydrogens in the acid, Cb is the number of hydroxides in the base. This takes the mole ratio into account | Depending on what is neededWe can find mol/L or L. Usually mol/L |

**Questions**

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