**Chemistry 11**

**Teacher:** Ms. Wilson,Room A202.

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**Website:** wilsonswebpage.com

**Textbook:** Heath Chemistry

**Workbook:** Hebden Chemistry 11

*Keep this outline in the front of your binder to refer to throughout the year.*

**REQUIRED MATERIALS:**

* Pen/pencil/eraser
* Binder with lined paper and dividers
* Non-programmable scientific calculator
* Students may be required to purchase Hebden Workbook

**CLASSROOM EXPECTATIONS:**

1. **Social responsibility**:
* Treat others and your environment with kindness, dignity and consideration. Be kind. Be helpful. Be safe.
1. **Personal responsibility**:
* **Come prepared:** Arrive on time, with all necessary supplies, ready to work.
* Follow all safety procedures.
* **Own your learning**: Stay on top of your work, recognize when you need to ask for help, and give it your all.
* **Absences:** All absences must be excused by a parent/guardian who calls the office before school starts on the day you are absent. If you miss a class, students are responsible to find out what was missed and get caught up in a timely fashion by checking the schedule at[**http://www.wilsonswebpage.com**](http://www.wilsonswebpage.com)**.**
* **Homework:** Expect regularly assigned homework to work on both in class and at home. Homework is to be completed and ready to be checked or handed *in at the beginning of class.*Late assignments will negatively affect the student’s work habit grade. *Late work will not be accepted if it does not meet the minimum requirements of a passing (50%) assignment*.
* **Cell phones:** Cellphones are not permitted during instructional time and are expected to be left in your backpack and turned off during class time. *Students caught using a device during instruction may have it removed from their person and placed on the white board ledge until the end of class.*Students may use cell phones to listen to music during independent work time only after asking for teacher permission

**MARKING BREAKDOWN: WEIGHTING:**

|  |  |
| --- | --- |
| Term 1 | 30% |
| Term 2 \* | 30% |
| Term 3 | 30% |
| Final Exam | 10% |

|  |  |
| --- | --- |
| Tests and Quizzes | 75% |
| Homework and Labs | 25% |

**\* Midterm worth up to 25% of term 2 in February**

**COMPETENCIES:**

* Questioning and predicting
* Planning and conducting
* Processing and analysing data and information
* Evaluating
* Applying and innovating
* Communicating

**CONTENT:**

|  |  |
| --- | --- |
| Unit I: Lab Safety | Safety Rules, WHMIS Symbols, Equipment |
| Unit II: Measurement and Communication | Unit Conversions, SI Units, Metric Conversions, Density, Significant Figures |
| Unit III: Propeties of Matter | Physical Properties, Classification, Separation, Role of KMT in Phase Changes |
| Unit IV: Inorganic Nomenclature | Elements, Naming |
| Unit V: The Mole Concept | Avogadro’s Number, Molar mass, Percent composition, Molar concentration  |
| Unit VI: Chemical Reactions | Types of Reactions, Balancing, Energy Changes in Reactions |
| Unit VII: Stoichiometry | Coefficients, Calculations |
| Unit VIII: Atoms and Periodic Table | Atomic Structure, Models, Isotopes, Trends and Families of Periodic Table, Bonding |
| Unit IX: Solution Chemistry | Solutions and Solubility, Conductivity, Polarity, Ionic Solutions |
| Unit X: Organic Chemistry | Alkanes, Alkenes, Aromatic Compounds, Functional Groups |

**CONTENT:**

• electron configuration: molecular geometry, valence shell electron pair repulsion (VSEPR) theory

• chemical bonding: Lewis structures of compounds, polarity

• bonds/forces: — covalent bond — hydrogen bond — intra- and intermolecular forces — impact on properties

• organic compounds: names, structures, geometry

• applications of organic chemistry: First Peoples traditional practices (e.g., medicines), pharmaceuticals, petrochemicals, polymers, cosmetics, metabolism, agriculture, food, biotechnology

• dimensional analysis: — factor-label method (unit-analysis method) — calculation of mass and molar quantities (using significant figures)

• reactions: predicting products, reactants and energy changes (H)

• stoichiometric calculations: — mass — number of molecules — gas volumes — molar quantities — excess and limiting reactants

 • chemical processes: First Peoples traditional practices (e.g., tanning hides; preparation of food, soap, and natural bleach), smelting, pulp and paper production, food chemistry, photosynthesis and cellular respiration, development of petrochemical smog

• green chemistry: development of sustainable processes and technologies that reduce negative impacts on the environment (e.g., reducing toxicity, designing benign solvents, increasing energy efficiency)

• solubility: dissociation of ions, dissociation equation

• stoichiometric calculations in aqueous solutions: — molarity — dilution effect — concentration of ions in solution when two solutions are mixed

• analysis techniques: e.g., dissolved oxygen, pH, nitrates, phosphorus

**Big Ideas:**

* Atoms and molecules are building blocks of matter.
* Organic chemistry and its applications have significant implications for human health, society and environment
* The mole is a quantity used to make atoms and molecules measurable
* Matter and energy are conserved in chemical reactions
* Solubility within a solution is determined by the nature of the solute and the solvent.