Bayside School of

**C h e m  s t r y………….Yr 12 Summer School**

 ABN: 94598179982

***www.baysideschoolofchemistry.com.au***

Class 1 – Calculations in Chemistry

Calculations are a very big part of units 3 and 4 chemistry. Students who struggle with calculations in year 12 chemistry usually never grasped fundamental concepts such as the mole, solution concentration and stoichiometry in year 11. This class will not only thoroughly cover these concepts, but it will also go over examples of calculations that are of year 12 exam standard. A break down of what will be covered in this class is shown below.

* **The mole concept:** Calculations showing the relationship between moles, the number of particles and mass.
* **Solution concentration:** Calculations involving different units of concentration including mole/L, g/L, %w/v, % v/v and ppm. Calculations involving dilutions and density will also be covered.
* **Stoichiometry:** Calculations involving mass to mass stoichiometry, mass to volume stoichiometry, volume to volume stoichiometry and reactants in excess.
* *Sorry, this class will not be recorded.*
* This class will be conducted remotely using ZOOM, on **Monday, January 16, 2024**  **from 10 am to 1.30 pm**. The class will be of 3 hours duration with a 30 minute break after the first one and a half hours.
* The cost of this class is **$60**. This equates to $20 per hour.
* To enroll in this class, copy the following:

*Class 1 – Monday, January 15*

*First name:*

*Surname:*

Now paste this into an email addressed to

**baysideschoolofchemistry@gmail.com**

Afterwards you will receive further information which includes class notes and payment details.

Class 2 – Fundamentals of organic chemistry and introduction to fuels

Organic chemistry is a big part of year 12 chemistry and is relevant to both units 3 and 4 chemistry. This class will cover the fundamentals of organic chemistry which includes the following:

* **Alkanes:** The names, molecular formulae, semi-structural formulae (condensed formulae), structural formulae and skeletal formulae of the first 10 alkanes.
* *The names and structures of most of the organic compounds covered in units 3 and 4 chemistry are derived from the alkanes so mastering this group of compounds is imperative inorder to master the others.*
* **Organic molecules with polar functional groups:** The functional groups that will be covered are hydroxyl groups (OH), carboxyl groups (COOH), amine groups (NH2) and ester groups (COO). The representation of these compounds using molecular formulae, structural formulae, semi-structural formulae and skeletal formulae will be covered.
* **Properties of organic molecules:** Explaining some of the physical properties of organic molecules in terms of intermolecular bonding – dispersion forces, dipole-dipole bonding and hydrogen bonding. These physical properties will include, melting temperature, boiling temperature, viscosity and solubility.
* **Introduction to fuels:** Definition of a fuel, The definition of fossil fuels and biofuels, Examples of fossil fuels – Coal, natural gas and petrol, Examples of biofuels – biogas, bioethanol and biodiesel, Non-renewable and renewable fuels, The definition of sustainability in reference to a fuel, The production of bioethanol by fermentation and its purification by simple distillation.
* *Sorry, this class will not be recorded.*
* This class will be conducted remotely using ZOOMon **Tuesday, January 17, 2024** **from 10 am to 1.30 pm.** The class will be of 3 hours duration with a 30 minute break after the first one and a half hours.
* The cost of this class is **$60**. This equates to $20 per hour.
* To enroll in this class, copy the following:

*Class 2 – Tuesday, January 16*

*First name:*

*Surname:*

Now paste this into an email addressed to

**baysideschoolofchemistry@gmail.com**

Afterwards you will receive further information which includes class notes and payment details.

The presenter of both of these classes will be **Mark Molino** who has been a teacher of VCE chemistry for 30 years and is currently teaching units 1 to 4 chemistry. He is a past VCE chemistry marker and an exam writer for Bayside School of Chemistry.