A Level Bridging Work

Chemistry

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| The tasks below are designed to support you as you start A Level Chemistry.  Complete each of the tasks below and bring your work to your first lesson. | |
| **Task 1** – use the information below to guide your revision around key topics from GCSE to ensure your knowledge and skills are secure for you to be successful as you start at A Level Chemistry.  You will need to prepare a 5 minute presentation on each of the topics in your first lesson. You will only have your summaries and a whiteboard to present your presentation (no PowerPoint). | |
| **Revision topics AQA GSCE Chemistry -**  **Specification On the AQA website** | **Topics that were not covered in trilogy chemistry (combined) but you need to be aware of.** |
| **4.1 Atomic structure and the periodic table** | * Properties of transition metals – Comparison and typical properties |
| **4.2 Bonding, structure, and the properties of matter.** | * Sizes of particles and their properties * Uses of nanoparticles |
| **4.3 Quantitative chemistry** | * Percentage yield * Atom economy * Using concentrations of solutions in mol/dm3 * Use of amount of substance in relation to volumes of gases |
| **4.4 Chemical changes** | * Titrations |
| **4.5 Energy changes** | * Cell and fuel cells not required |
| **4.6 The rate and extent of chemical change** |  |
| **4.7 Organic chemistry** | * Structure and formulae of alkenes * Reactions of alkenes * Alcohols * Carboxylic acids * Addition polymerization |
| **4.8 Chemical analysis** | * Flame tests * Metal hydroxides test * Carbonate test * Halides tests * Sulfate test |
| **Essential skills**  In order to do well at chemistry you will need be confident in the following skills.  If you are struggling with these skills seek support as early as you can when you start the course.   * Write balanced equations for the reactions above. * Determine the structure of a chemical from its name or formula * Determine the bonding of a chemical from its name * Predict, describe and explain properties based on its structure * Rearrange formulae in equations * Calculate relative formula mass * Recall lots of information – **See Task 2** | |
| **Task 2** – Learn the following 50 items – you will be tested for your recall skills.  1 – absorption; 2 – adsorption; 3 – pi (π) orbitals; 4 – sigma (σ) orbitals; 5 – aliphatic; 6 – aromatic; 7- reforming; 8 – spectroscopy; 9 – Avogadro; 10 - Fehling; 11 - homolytic; 12 – heterolytic; 13 - hydrolysis; 14 - dipole; 15 - Kelvin; 16 - lattice; 17 – Maxwell-Boltzmann; 18 - miscible; 19 - nucleophile; 20 - electrophile; 21 – octahedral; 22 – reflux; 23 – precipitate; 24 – quantitative; 25 - qualitative; 26 – carbocation; 27 – calorimeter; 28 - colourimeter; 29 – Chadwick; 30 – cis/trans isomerism; 31 – decomposition 32 – Dalton ; 33 - disproportionation; 34 – dynamic equilibrium; 35 - electrolyte; 36 – Hess; 37 – equivalence point; 38 – allotrope; 39 - homogenous; 40 - heterogenous; 41 - shielding; 42- spectator ion; 43 – phenolphthalein: 44 – methyl orange; 45 – Benedict’s; 46 – mechanism; 47 - substitution; 48 - addition; 49 – elimination; 50 - constant  **Challenge** – Define these key words | |
| **Task 3 -** write an essay, between 600-700 words, that describes and evaluates either:   1. the historical events that contribute to our modern day model of the atom and periodic table.   **Challenge** – Within this, discuss how the structure of the atom is linked to the chemical and physical properties of elements. Use this to justify the modern arrangement of elements in the periodic table.   1. a topical chemistry subject – e.g. how a particular pharmaceutical works; how to reduce CO2 emissions using chemistry; development of a new material. | |

**Folder**

Being organised is a key part to your success at A Level.

So you are ready for September please get yourself 2 folders. One a smaller ring binder, this will be your day-to-day folder that you must bring to each and every lesson, and a larger A4 lever arch file, this will be for the long term storage of your notes. **Please bring these folders along with your other bridging work to the first lesson.**

Inside your lever arch file you will need dividers for the following topics:

**Year 12**

1: Atomic Structure and the Periodic Table

2: Bonding and Structure

3: Redox I

4: Inorganic Chemistry and the Periodic Table

5: Formulae, Equations and Amounts of Substance

6: Organic Chemistry I

7: Modern Analytical Techniques I

8: Energetics I

9: Kinetics I

10: Equilibrium I

**Year 13**

11: Equilibrium II

12: Acid-base Equilibria

13: Energetics II

14: Redox II

15: Transition Metals

16: Kinetics II

17: Organic Chemistry II

18: Organic Chemistry III

19: Modern Analytical Techniques II