**iGCSE Chemistry Proposed Timeline**

**Foreword: The following proposed syllabus is based on the syllabus released by Cambridge International Examination, the for-profit testing services division of Cambridge University.**

**When students prepare for the iGCSE, they typically do so by taking two years of course work at the ages of 14-16. However, this proposed course schedule assumes only limited familiarity with the core KS3 science material—i.e., most of the topics and vocabulary may be new or mostly unknown to the student.**

**A student who has previously taken our course on the KS3 material (or had such instruction elsewhere) would be able to move through this material at a faster rate. Regardless, this schedule can be adapted to suit the needs of individual students, based in part on a preliminary examination testing their prior knowledge (a KS3 exam focused on the subject could be a useful assessment).**

**Total Units: 52 (104 hours of instruction)**

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| **Class Unit** | **Content to be Covered** |
| **1** | **Administer KS3 Chem Exam to Check Problem-Types and Vocab Knowledge** |
| **2** | Characteristics of Living Organisms |
| **3** | Classification Systems—Binomial and Linnaean, Taxonomy/Morphology, Genetic |
| **4** | Classification Continued: KPCOFGS, (In)vertebrates, etc. |
| **5** | Cells Revisited—Review and Extension |
| **6** | New Organelles, Respiration Pathways |
| **7** | Diffusion -> Cellular Osmosis and Membrane Permeability/Active Transport, making link with concentrations as affecting probability of reactions |
| **8** | ***Review Session I*** |
| **9** | Different Cell Types and Their Specialized Adaptations (nerve, xylem, etc.) |
| **10** | Levels of Organization (cells->tissues->etc.) and Magnification |
| **11** | Levels of Organization Continued |
| **12** | Biomolecules Revisited in Greater Depth, and Their Detection Tests |
| **13** | Biomolecules Continued |
| **14** | ***Review Session II*** |
| **15** | Protein Structure and as Enzymes with Active Sites for Binding |
| **16** | Denaturing, catalyzed reactions, substrates, complex |
| **17** | Molecular Structure of DNA |
| **18** | Chromosomes through to Gene Expression, Central Dogma of Biology as Protein Coding |
| **19** | Gene Expression Continued, including mRNA->tRNA->codon->protein |
| **20** | Photosynthesis in Greater Detail (Chemical Focus) |
| **21** | Review Session III |
| **22** | In-Depth Structure of the Leaf and Plant Diet/Deficiency |
| **23** | Transport Through Plant Tissues |
| **24** | ***Review Session III*** |
| **25** | Human Diet |
| **26** | Human Digestion |
| **27** | Human Circulatory System In Greater Depth |
| **28** | Diseases, Immunity, Vaccination, Viruses |
| **29** | ***Review Session IV*** |
| **30** | Gas Exchange |
| **31** | Respiration--Aerobic and Anaerobic |
| **32** | Excretory System |
| **33** | Nervous System |
| **34** | Sensory Organs |
| **35** | Hormones, Regulatory Mechanisms, and Homeostasis |
| **36** | Drugs! |
| **37** | ***Review Session V*** |
| **38** | Reproduction--Asexual; Mitosis |
| **39** | Reproduction--Sexual; Meiosis |
| **40** | Fetal Development and Live Birth |
| **41** | Reproductive Health, Birth Control, and STIs |
| **42** | Inheritance on the genetic level--first through asexual, then sexual reproduction |
| **43** | homologous chromosomes, copies of genes, SNPs and point-mutations, crossover |
| **44** | ***Review Session VI*** |
| **45** | Punnet Squares, Mendelian Genetics, and Monohybridization |
| **46** | Sex-linked characteristics, XX/XY, Codominant Genes (RH Factor) |
| **47** | Variation and Selection, Deeper |
| **48** | Food Chain, Webs, Nutrient Cycling, Biomass Cycle |
| **49** | Population Size, Agriculture, Environmental Burden |
| **50** | Habitat Destruction, Conservation Efforts and Challenges |
| **51** | ***Assessment and Revision*** |
| **52** | ***Assessment and Revision*** |