**KS3 Overview - Science**

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| **Timeline** | | **Intent:**  ***What are you trying to achieve through your curriculum?*** | | | | **Implementation:**  **Deeper Applied Learning**  ***How are you delivering your curriculum?*** | | | **Impact:**  ***What difference is your curriculum making?*** | | **CPD Requirements** | |
| **Term** | **Year** | **Topic & SOW Ref:** | **Topic Objective:** | **Hours** | **RGS Pledge Opportunity**  **(Highlight as appropriate in red)** | **Relevant**  **Engaging**  **Active**  **Learning** | **Coherent Industry Experience & Lead Teacher**  **Careers Insight** | **Sequencing (KS4) link**  **(Spec Ref)**  **End Points** | **Marking Task**  **Outcomes** | **Independent Learning Project (Lifelong) & Lead Teacher**  **Skill & Knowledge Beyond Exams** | **Pedagogy** | **Subject Knowledge** |
| 1  Sep  Dec | 7 | Cells, tissues and organs Mixtures and Solutions Energy Transfer | To describe, explain and link the functions and structures of cells, tissues and organs.  To contrast the features and behaviours of particles in mixtures, compounds and solutions.  To describe, explain and calculate transfers between energy stores. | 11 hours  9 Hours  12 Hours | P1: After School Activity  P2: Represent RGS  P3: Residential  P4:National Event  P5: RGS Production  P6: Formal Presentation  P7: International Experience  P8: Community Experience  P9: Fund Raising  P10: Sustainability of RGS | Identify the structure and function of an onion and a cheek cell.  Dissection of lungs.  Separation of common liquids  Identify mystery compounds bases on their behaviours in tests.  Design a coat or house with the best insulation. | See shared plan | 4.1.1 Cell structure  4.1.1.1 Atoms, elements and compounds  4.1.1.2 Mixtures  4.1.2.1 Energy transfers in a system | 2 x 30 mark assessments  2 x 30 mark assessments  2 x 30 mark assessments  Focus of assessment is calculations, comparisons and evaluation of data sets and description of practical skills. |  |  |  |
| 2  Jan  April | 7 | Interdependence  Particles, Elements and compounds  Energy is conserved. | To relate characteristics and adaptation and link to environment and development.  To define, explain and contrast particles, elements and compounds.  To know that energy is conserved and explore the physical implications. | 12 hours  14 hours  11 hours | P1: After School Activity  P2: Represent RGS  P3: Residential  P4:National Event  P5: RGS Production  P6: Formal Presentation  P7: International Experience  P8: Community Experience  P9: Fund Raising  P10: Sustainability of RGS | Analysis of animals, where do we come from?  Dissolving vs melting temperature required.  Heating and cooling. | See shared plan | 4.7.1 Adaptations, interdependence and competition  4.1.1.1 Atoms, elements and compounds  4.1.2 Conservation and dissipation of energy | 2 x 30 mark assessments  2 x 30 mark assessments  2 x 30 mark assessments  Focus of assessment is extended explanations, evaluation of data and graphs and description of practical skills. |  |  |  |
| 3  April  July | 7 | Reproduction  Chemical and physical change, acids and alkalis, neutralisation and Earth Science.  Forces | To describe and explain how reproduction occurs in living things.  To contract chemical and physical changes and explain what is happening at a particle level.  To apply understanding of force and acceleration to explain changes in motion. | 11 hours  14 hours  9 hours | P1: After School Activity  P2: Represent RGS  P3: Residential  P4:National Event  P5: RGS Production  P6: Formal Presentation  P7: International Experience  P8: Community Experience  P9: Fund Raising  P10: Sustainability of RGS | Dissection of flowers  Uses and applications of neutralisation, stomach acid.  Office chair race.  Floating and sinking coke can. | See shared plan | 4.6.1 Reproduction  4.4 Chemical changes  4.5.1 Forces and their interactions | 2 x 30 mark assessments  2 x 30 mark assessments  2 x 30 mark assessments  Focus of assessment is extended explanations forming links, evaluation of data and graphs and description of practical skills. |  |  |  |
| 4  Sept  Dec | 8 | Evolution  Reatants and Products  Radiation transfer | Describe and evaluate data and explain how scientific understanding has changed over time.  To explain the conservations and changes during chemical and physical reactions.  To describe human interactions with radiation and the structures which allow this. | 10 hours  9 Hours  8 Hours | P1: After School Activity  P2: Represent RGS  P3: Residential  P4:National Event  P5: RGS Production  P6: Formal Presentation  P7: International Experience  P8: Community Experience  P9: Fund Raising  P10: Sustainability of RGS | To explain why giraffes exist.  Explain why humans are different to fish despite shared DNA.  Describe why a candle disappears when it is burnt.  Explain how snap hand warmers and snap ice packs work.  Dissect an eye  Build 3D glasses  Define the contents of stars using spectral analysis. | See shared plan | 4.6.2 Variation and evolution  4.3.1 Chemical measurements, conservation of mass and the quantitative  interpretation of chemical equations  4.4.2 Atoms and nuclear radiation  4.6.2.3 Properties of electromagnetic waves | 2 x 30 mark assessments  2 x 30 mark assessments  2 x 30 mark assessments  Focus of assessment is calculations, comparisons and evaluation of data sets and description of practical skills. | Write a presentation arguing for the most important use of radiation, judged by PhD student.  Read Sapiens – book club. |  |  |
| 5  Jan  April | 8 | Growth and differentiation, Organ systems.  Periodic table, Acid reactions.  Sound, Magnetism | To describe how cells develop and link this to function as cells and as part of systems.  To explore the history of the periodic table and explain the trends of the elements.  To describe and explain the structure and behaviour of sound.  To apply understanding of magnetism to applications and uses. | 18 hours  20 hours  21 hours | P1: After School Activity  P2: Represent RGS  P3: Residential  P4:National Event  P5: RGS Production  P6: Formal Presentation  P7: International Experience  P8: Community Experience  P9: Fund Raising  P10: Sustainability of RGS | Models of human body and making the digestive system.  Investigating properties of elements and comparing results.  Comparing house hold acids in reactions.  Measuring the speed of sound.  Investigation with sound under water. Investigating magnetism with magnetic objects. Uses of electromagnets. | See shared plan | 4.1.1.4 Cell differentiation  4.2.2 Animal tissues, organs and organ systems  4.1.2.2 Development of the periodic table  4.1.2.4 Group 0  4.1.2.5 Group 1  4.1.2.6 Group 7  4.6.1.1 Transverse and longitudinal waves  4.6.1.4 Sound waves  4.7.1 Permanent and induced magnetism, magnetic forces and fields | 2 x 30 mark assessments  2 x 30 mark assessments  2 x 30 mark assessments  Focus of assessment is extended explanations, evaluation of data and graphs and description of practical skills. |  |  |  |
| 6  April  July | 8 | Bioenergetics  Earth Systems ad using resources.  Space | To describe how cells transform energy including explanations of respiration and photosynthesis.  To evaluate how society is using resources using knowledge of earth systems.  To relate knowledge of astronomical bodies with size and scale to observations from earth. | 9 hours  10 hours  7 hours | P1: After School Activity  P2: Represent RGS  P3: Residential  P4:National Event  P5: RGS Production  P6: Formal Presentation  P7: International Experience  P8: Community Experience  P9: Fund Raising  P10: Sustainability of RGS | Investigating requirement of light for photosynthesis.  Comparison of rock samples.  Scale model of the solar system. | See shared plan | 4.4 Bioenergetics  4.4.1.3 Extraction of metals and reduction  4.9.2.2 Human activities which contribute to an increase in greenhouse gases in the  Atmosphere  4.8 Space physics | 2 x 30 mark assessments  2 x 30 mark assessments  2 x 30 mark assessments  Focus of assessment is extended explanations forming links, evaluation of data and graphs and description of practical skills. |  |  |  |