**Year 12 Independent Study Programme 2019/20**

**Terms 1 and 2**

Independent study time should not be seen as a time to complete homework

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| **TERM 1** | |
| **Tasks and Resources** | **Time scales** |
| **Cell organelles**  Use the **Text book pages 26-34** to cover the structure and function of the following cell organelles  Nucleus, nucleolus, ribosome, RER, SER, Golgi Apparatus, Centriole, Microtubule, Flagella and Cilia, Lysosomes Cell wall, Vacuole | To be completed by week 1 (11/9)  Required for week 1/2 lessons |
| **Surface area to Volume ratios**  **Text Book Pages154-156**  Summary of exchange surfaces. Calculations to illustrate the important features of exchange across surfaces  Work through the Microscope and Measuring worksheet and check answers | To be completed by week 2 (9/9) |
| **Microscopy**  **Text book pages 8-14** Microscopy Techniques, Mounting, Fixing, Staining  **Text Book pages 18-24** Types of microscope to include light, electron,(scanning and transmission) Laser Scanning Confocal, Atomic Force Super Resolved Fluorescence | To completed by week 3 (16/9) |
| **Microscope and Measuring Question**  Question and answer sheet located in the W drive Independent Study File. | To completed by week 4 (23/9) |
| **Cell membranes**  Flipped lesson powerpoints located in **Narrated Powerpoints** in Biology Independent Study Files or on Q drive   * Cell Membranes * Role of Membranes including Transport | To be completed for lessons beginning week 5 (30/9) |
| **Fish Gill exam question (with answers)**  Work through the question and check answers.  Sheets located in the Independent study File | To be completed by week 6 (7/10) |
| **Spirometry Questions**  Work through the questions and the answers.  Sheets located in the Independent study File | To be completed by week 7 (14/10) |
| **Half Term Break** | |
| **TERM 2** | |
| **Biological molecules**  Text book pages 40-43 | To be completed for lessons by 4/11 |
| Biological Molecule **Narrated Powerpoints** in Biology Files or Q drive and notes using the text book pages 46-50   * Structure of mono and disaccharides * Polysaccharides | To be completed for lessons by 11/11 |
| **Structure and functions of Lipids**  Text Book pages 54-58 | To be completed for lessons by 18/11 |
| **Animal Transport**  **Text book Pages 170-177**   * Need for transport systems * Open and closed circulations * Features of blood vessels | To be completed for lessons by 25/11 |
| **Blood Vessels and Blood Cells**  Text Book page 178-182  Read through and complete workbooks pages 5 and 12 with relevant notes. | To be completed for lessons by 2/12 |
| **Enzyme Practice Questions**  Text Book pages 99-100 | To be completed for lessons by 11/12 |
| **Christmas Break** | |