| TEACHER 2 (2 lessons) | |
|---|---|
| **HT1 (7 weeks)** | **14** |
| **3. Cells (3.2.1.3)** | |
| Eukaryotic cells<br>Organelles to include in detail<br>Nucleus, mitochondria, **Chloroplasts**, RER, SER, Golgi, Lysosomes, Ribosomes, Cell wall, Vacuoles | 3 |
| Maths for Biology:<br>Measuring in mm<br>Calculate uncertainty when measuring length. +/- 2mm when measuring in mm<br>+/- 2 µm when measuring in µm.<br>Converting units of length to predict size of organelles.<br>Converting units of area to predict how many cells in an area of tissue.<br>Converting units using areas mm² to µm³<br>Magnification.<br>Using an eyepiece graticule to measure organelles under the microscope.<br>Calculate volume eg golgi vesicle | |
| Cell specialisation and organisation (tissues, organs, organ systems) | 1 |
| Prokaryotes and viruses | 1 |
| Methods of studying cells including eyepiece graticule calibration and measurements. | 4 |
| Mitosis, importance, cell cycle and cancer | 5 |
| Maths for Biology:<br>Interpret pie charts of the cell cycle<br>Calculate how many minutes in each stage of cell cycle<br>Calculate percentages from a pie chart knowing 360 degrees in a circle.<br>Calculate what percentage of the cells are in each stage.<br>Calculate rate of growth of cancer cells.<br>Calculate how many cells after so many cell cycles. | |
| **HT2 (7 weeks)** | **14** |
| **RP2 Root tip squash** | **3** |
| **Block A assessment** | **3** |
| **End of topic test - Cells** | **2** |
| **4. Transport across cell membranes (3.2.3)** | |
| Structure of a membrane | 1 |
| Diffusion and fac. diffusion | 1 |
| Osmosis | 1 |
| **RP3 Osmosis in plants – dilution series** | **3** |
| Maths for Biology:<br>Calculating concentrations of solutions<br>Serial dilutions<br>Interpreting water potential<br>Understand y=mx + C and determine the intercept of a graph.<br>Calculate percentage change in mass | |
| **HT3 (6 weeks)**<br>**w/c 17/01/20 catch up Y12 required practicals after school** | **12** |
| Active transport and adaptations for exchange | 1 |
| Co-transport | 1 |
| Maths for Biology<br>Calculate surface area.<br>How much does the microvilli increase the surface area? | |

| | |
|---|---|
| Calculate the percentage of cholesterol in the cell membrane of different cells. How is this an advantage to a RBC over a cell lining the ileum. | |
| **Block B Assessment** | **2** |
| **RP4 Membrane permeability** | **3** |
| Maths for Biology: Calculate means from repeated readings Introduce the idea of standard deviation as data being spread around the mean. Uncertainty of a mean result = range / 2 +-   (Use secondary practical mean data) | |
| **End of topic test - Transport across cell membranes** | **2** |
| **7. Mass Transport in animals (3.3.4.1)** | |
| Haemoglobin and dissociation curves | 3 |
| Maths for Biology Interpretation of dissociation curves | |
| **HT4 (6 weeks)** | **12** |
| **End of topic test - Haemoglobin** | **2** |
| **5. Cell recognition and the immune system (3.2.4)** | |
| Defence mechanisms, cell recognition | 1 |
| Phagocytes phagocytosis | 1 |
| T lymphocytes and cell mediated immunity | 2 |
| B lymphocytes and humoral immunity | 2 |
| Antibodies, monoclonal antibodies | 2 |
| Vaccination | 2 |
| Maths for Biology: Calculate rates of increase is disease data. Plot graphs of disease data. Appreciation of log scales in exponential disease data. Standard deviation and error bars on bar charts. | |
| **HT5 (6 weeks)** | **12** |
| HIV | 2 |
| **End of topic test - Immunity** | **2** |
| **7. Mass transport in plants (3.3.4.2)** | |
| Transport in plants | 4 |
| Maths for Biology: Understand y=mx + C and determine intercept of graph. Transpiration rate data. Calculate rate of transpiration. Calculate **relative** rate of transpiration. Calculate rate of flow of water in the xylem. Calculate cross sectional area of capillary tube and volume of water in capillary tube in potometer practical. | |
| **End of topic test - Mass Transport Plants** | **2** |
| **HT6 (6 weeks)** | **12** |
| **A2 Essay prep 6 mark answers for the Year 1 topics covered so far** | **6** |
| **Photosynthesis limiting factors GCSE** | **2** |
| **Photosynthesis limiting factors to A level standard including A level limiting factor graphs** | **2** |
| **Aerobic Respiration GCSE bridge to A level basics of where things happen** | **1** |
| **Anaerobic respiration GCSE in animal cells, plants, yeast and bacteria** | **1** |