

| Subject  | Year  | Term |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
|--|---|------|------------|-----------|---------|-----------------|-------------|-------------|---------|---------|----------|-----------|-----------|---------|------------------|------------------------|
| Biology  | 9   | 1    |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| Topic  |   |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| Cells, Structure and Transport   |   |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| Content (Intent)   |   |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| Prior Learning (Topic)   | KS3 National Curriculum (Activate)  |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| Students will have learnt SKILLS including basic microscopy and drawing plant and animal cells. Carrying out practicals safely to obtain reliable results.   |   |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| Students will have learnt and built upon their KNOWLEDGE about the concept of cells and how they are differentiated to carry out their functions.  |   |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| Students will have UNDERSTOOD the structure of a cell and its components, methods of viewing cells, how cells are the basic units of living organisms.   |   |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| Future Learning (Topic)  | Cell Division and Stem Cells  |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| What Knowledge and Skills will be taught (Implementation)  | How will your understanding be assessed & recorded (Impact)   |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| <b>Knowledge</b> - Recall the difference between eukaryotic and prokaryotic cells. Explain how the main sub-cellular structures in animal, plant and bacterial cells are related to their functions. Explain how cells may be specialised and the structure of different types of cell relate to their function in a tissue, an organ or organ system, or the whole organism. Microscopy and transport in cells (diffusion, active transport and osmosis) are also explored. | <b>Formative Feedback Task (End of Unit tests)</b>  |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
|  | Pupils given formative feedback on:<br>Biology – Cell Structure and Transport   |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| <b>Maths Skills</b> – Magnification calculation, change of mass calculations, graph drawing, interpretation of data.   | <b>Assessment 1 (December):</b><br>Summative assessment including: <ul style="list-style-type: none"><li>Cell Structure and Transport</li><li>Ecosystems (Respiration and Photosynthesis – year 8)</li></ul> Cumulative assessment will include Cells from Years 7 and 8  |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| <b>Practical activities</b> –<br>1. Use a light microscope to observe, draw and label a selection of plant and animal cells.<br>2. Investigate the effect of a range of concentrations of salt or sugar solutions on the mass of plant tissue.   |   |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| <b>Interleaving Topics</b><br>KS3 Activate topics will be revisited such as cell structure and microscopes.  |   |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| How can parents help at home?  |   |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| Ensure all class work is completed and homework submitted on time.   |   |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| Assist in ensuring the active use of TEAMS and the EDUCAKE online learning platform where each pupil is given a personal log on from their teachers.   |   |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| Encourage pupils to revise for tests and exams and to create revision resources such as flash cards and posters.   |   |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| Ensure all pupils have all their resources required for science lessons, including exercise books, pens and calculators.   |   |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| Helpful further reading/discussion (including Reading and Vocabulary Lists)  |   |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| <b>Reading</b><br>Resources on Teams<br>EDUCAKE online learning platform.<br>Glossaries  | <b>Vocabulary Lists</b><br><table><tr><td>Eukaryotic</td><td>Ribosomes</td></tr><tr><td>Plasmid</td><td>Differentiation</td></tr><tr><td>Prokaryotic</td><td>Specialised</td></tr><tr><td>Nucleus</td><td>Mitosis</td></tr><tr><td>Membrane</td><td>Stem Cell</td></tr><tr><td>Diffusion</td><td>Osmosis</td></tr><tr><td>Active Transport</td><td>Concentration gradient</td></tr></table> |      | Eukaryotic | Ribosomes | Plasmid | Differentiation | Prokaryotic | Specialised | Nucleus | Mitosis | Membrane | Stem Cell | Diffusion | Osmosis | Active Transport | Concentration gradient |
| Eukaryotic   | Ribosomes   |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| Plasmid  | Differentiation   |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| Prokaryotic  | Specialised   |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| Nucleus  | Mitosis   |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| Membrane   | Stem Cell   |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| Diffusion  | Osmosis   |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |
| Active Transport   | Concentration gradient  |      |            |           |         |                 |             |             |         |         |          |           |           |         |                  |                        |