**Topic Overview: Cells**

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|  | Ref | Outcome | Achieved | ☺ |
| Emerging 1 | E7SbC1.1 | Give examples of some different types of cell. |  |  |
|  | E7SbC1.2 | Identify the key parts of a microscope |  |  |
|  | E7SbC1.3 | Recall organisms are composed of cells which are organised into tissues, organs and systems to carry out life processes. |  |  |
| Emerging 2 | E7SbC2.1 | Know there are many types of cell and explain how the different structure or feature so it can do a specific job. |  |  |
|  | E7SbC2.2 | Label the key parts of a microscope (using keyword list) |  |  |
|  | E7SbC2.3 | Order cells, tissues, organs and systems in order of size. |  |  |
| Developing 3 | D7SbC3.1 | Label an animal cell with cell membrane,nucleus,cytoplasm and mitochondria |  |  |
|  | D7SbC3.2 | Label the key parts of a microscope. Fill in flow chart to show how to use light microscope |  |  |
|  | D7SbC3.3 | Define the terms cells, tissues, organs and systems |  |  |
| Developing 4 | D7SbC4.1 | Label a plant cell to show they also have a cell wall, chloroplasts and usually a permanent vacuole. |  |  |
|  | D7SbC4.2 | Use a microscope to produce a labelled diagram of a cell. |  |  |
|  | D7SbC4.3 | Define the terms cells, tissues, organs and systems and give example of each |  |  |
| Securing 5 | S7SbC5.1 | Explain why the adaptations help a cell carry out its function |  |  |
|  | S7SbC5.2 | Describe the procedure for setting up a microscope and how to focus it. Draw a labelled diagram. |  |  |
|  | S7SbC5.3 | Given a system suggest what organs make it up |  |  |
| Securing 6 | S7SbC6.1 | Suggest what adaptation a cells should have given its function |  |  |
|  | S7SbC6.2 | Explain how to use a microscope to identify and compare different types of cells. Outline how to prepare a slide. |  |  |
|  | S7SbC6.3 | Suggest what kind of tissue or organism a cell is part of, based on its features. |  |  |
| Mastering 7 | M7SbC7.1 | Explain how uni-cellular organisms are adapted to carry out functions that in multicellular organisms are done by different types of cell. |  |  |
|  | M7SbC7.2 | Calculate the magnification of the microscope using the objective and eyepiece lens |  |  |
|  | M7SbC7.3 | Suggest how damage to, or failure of, an organ would affect other body systems. |  |  |
| Mastering 8 | M7SbC8.1 | Deduce general patterns about how the structure of different cells is related to their function. |  |  |
|  | M7SbC8.2 | Evaluate different ways to calculate magnification. |  |  |
|  | M7SbC8.3 | Make deductions about how medical treatments work based on cells, tissues, organs and systems. |  |  |
| Mastering 9 | M7SbC9.1 | Compare in prose the differences in functions and structures of animal and plant cells. |  |  |
|  | M7SbC9.2 | Compare and contrast the electron and light microscope. |  |  |
|  | M7SbC9.3 | Evaluate the ethical implications of organ transplantations. |  |  |

**Keywords**

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| **Cell:** The unit of a living organism, contains parts to carry out life processes. |
| **Uni-cellular:** Living things made up of one cell. |
| **Multi-cellular:** Living things made up of many types of cell. |
| **Tissue:** Group of cells of one type.  **Organ:** Group of different tissues working together to carry out a job.  K10 |
| **Diffusion:** One way for substances to move into and out of cells. |
| **Structural adaptations:** Special features to help a cell carry out its functions. |
| **Cell membrane:** Surrounds the cell and controls movement of substances in and out. |
| **Nucleus:** Contains genetic material (DNA) which controls the cell's activities. |
| **Vacuole:** Area in a cell that contains liquid, and can be used by plants to keep the cell rigid and store substances. |
| **Mitochondria:** Part of the cell where energy is released from food molecules. |
| **Cell wall:** Strengthens the cell. In plant cells it is made of cellulose. |
| **Chloroplast:** Absorbs light energy so the plant can make food. |
| **Cytoplasm:** Jelly-like substance where most chemical processes happen. |
| **Immune system:** Protects the body against infections. |
| **Reproductive system:** Produces sperm and eggs, and is where the foetus develops. |
| **Digestive system:** Breaks down and then absorbs food molecules. |
| **Circulatory system:** Transports substances around the body. |
| **Respiratory system:** Replaces oxygen and removes carbon dioxide from blood. |
| **Muscular skeletal system:** Muscles and bones working together to cause movement and support the body. |