

# Access to H.E. National Programme Unit



|             |                                  |                     |                            |
|-------------|----------------------------------|---------------------|----------------------------|
| Unit Title: | Science: Introduction to Biology | Ungraded Unit Code: | UD23DEV06                  |
| Pathway(s): | All Pathways                     |                     |                            |
| Module(s):  | Developmental                    |                     |                            |
| Level:      | 2                                | Credit Value:       | 3                          |
| Valid from: | 11/11/19                         | Valid to:           | 31 <sup>st</sup> July 2024 |

| LEARNING OUTCOMES  | ASSESSMENT CRITERIA   |
|--|---|
| <b>The learner will:</b>   | <b>The learner can:</b>   |
| 1 Understand the characteristics and variety of living organisms         | 1.1 Briefly describe the eight characteristics of living organisms  |
|  | 1.2 Use the characteristics of life to distinguish between a named living organism and a named non-living organism  |
|  | 1.3 Identify organisms from the features of the major taxonomic groups to which they belong (limited to the five kingdoms, and the phylum and classes of vertebrates) |
| 2. Understand the structure and function of animal and plant cells       | 2.1 Identify the main parts of plant and animal cells as observed using the light microscope  |
|  | 2.2 List the differences between plant and animal cells   |
|  | 2.3 Describe the main function of the nucleus, cell membrane, mitochondria and chloroplasts   |
|  | 2.4 Describe how the membrane controls movement into and out of cells by osmosis and diffusion  |
| 3. Understand the nature of some metabolic processes in living organisms | 3.1 Explain the differences between anabolic and catabolic processes  |
|  | 3.2 Write a word equation for photosynthesis  |

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|--|---|
| The learner will:  | The learner can:  |
|  | 3.3 Write a word equation for respiration   |
|  | 3.4 Explain the activity and importance of enzymes in metabolic processes   |
|  | 4.1 Explain the difference between producers, consumers and decomposers in a living community   |
| 4. Understand some of the interrelationships between living organisms              | 4.2 Provided with information draw food chains and food webs to represent the flow of energy and materials in a community                                     |
|  | 4.3 Provided with data draw and interpret pyramids of number and energy   |
| 5. Understand basic principles of cell division, inheritance and natural selection | 5.1 Distinguish between mitosis and meiosis in terms of the number of cells produced, number of chromosomes in the cells produced and the fate of these cells |
|  | 5.2 Use diagrams to explain how different characteristics, e.g. blood type, eye colour or an individual's sex are inherited                                   |
|  | 5.3 Explain using examples some of the ways that inheritance can be controlled,   |
|  | 5.4 Outline the mechanism of natural selection and explain how it might lead to evolution   |