Edexcel International GCSE Biology 4BI1 Learning Plan

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|  **Unit:1. Organisms & Life Processes** | **Chapter: 1 Life Processes** | **Hours: 8** |
| Content coverage | Learning outcomes | Resources | Assessment |
| **Section 1: The nature and variety of living organisms****a)** Characteristics of living organisms**Section 2: Structures and functions in living organisms****a)** Levels of organisationb) Cell structure**Section 2: Structures and functions in living organisms****c)** Biological molecules**Section 2: Structures and functions in living organisms**d) Movement of substances into and out of cells**Section 2: Structures and functions in living organisms****f)** Respiration  | **1.1** understand that living organisms share the following characteristics:* they require nutrition
* they respire
* they excrete their waste
* they respond to their surroundings
* they move
* they control their internal conditions
* they reproduce

they grow and develop**2.1** describe the levels of organisation in organisms: organelles, cells, tissues, organs and systems**2.2** describe cell structures, including the nucleus, cytoplasm, cell membrane, cell wall,mitochondria, chloroplasts, ribosomes and vacuole**2.3** describe the functions of the nucleus, cytoplasm, cell membrane, cell wall, mitochondria, chloroplasts, ribosomes and vacuole**2.4** know the similarities and differences in the structure of plant and animal cells.**2.5B explain the importance of cell differentiation in the development of specialised cells****2.6B understand the advantages and disadvantages of using stem cells in Medicine.****2.10** understand the role of enzymes as biological catalysts in metabolic reactions**2.11** understand how the functioning of enzymes can be affected by changes in temperature, including changes to the shape of the active site**2.12** practical: investigate how enzyme activity can be affected by changes in temperature**2.13** understand how enzyme function can be affected by changes in pH altering the activesite**2.14B practical: investigate how enzyme activity can be affected by changes in pH.****2.15** understand the processes of diffusion, osmosis and active transport by which substances move into and out of cells.**2.16** understand how factors affect the rate of movement of substances into and out of cells, including the effects of surface area to volume ratio, distance, temperature and concentration gradient**2.17** practical: investigate diffusion and using living and non-living systems.**2.34** understand how the process of respiration produces ATP in living organisms**2.35** know that ATP provides energy for cells**2.36** describe the differences between aerobic and anaerobic respiration.**2.37** know the word equation and the balanced chemical symbol equation for aerobic respiration in living organisms**2.39** practical: investigate the evolution of carbon dioxide and heat from respiring seeds or other suitable living organisms. | Video: Section 1 Lesson 1: Characteristics of Living Organisms.Video: Section 2 Lesson 1: Levels of Organisation, the Cell and Particle Movement.Powerpoint: Section 1 Lesson 1: Characteristics of Living Organisms.Powerpoint: Section 2 Lesson 1: Levels of Organisation, the Cell and Particle MovementTextbook pages:3 – Life processes4 – Cell structure6 – Enzymes; controlling reactions in the cell12 – How the cell gets its energy16 – Movement of materials in and out of cells***18 – Cell division and differentiation***19 – Cells, tissues and organs***21 – Stem cells*** | Page 23-24 Qs 1 to 10Textbook Answers (PDF)Chapter 1 - exam question - pdfChapter 1 - exam question mark scheme – pdfChapter 1 - Talking paper video  |

Videos – [www.igcsesciencecourses.com](http://www.igcsesciencecourses.com)

Textbook Ref: Edexcel International GCSE (9-1) Biology Student Book - Pearson (Bradfield and Potter)