Edexcel International GCSE Biology 4BI1 Learning Plan

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|  **Unit: 1 Organisms and Life Processes** | **Chapter: 2. The Variety of Living Organisms** | **Hours: 3** |
| Content coverage | Learning outcomes | Resources | Assessment |
| **Section 1: The nature and variety of living organisms****b)** Variety of living organisms | **1.2** describe the common features shown by eukaryotic organisms: plants, animals, fungi and protoctists.Plants: these are multicellular organisms; their cells contain chloroplasts and are ableto carry out photosynthesis; their cells have cellulose cell walls; they store carbohydrates as starch or sucrose. Examples include flowering plants, such as a cereal (for example maize), and a herbaceous legume (for example peas or beans).Animals: these are multicellular organisms; their cells do not contain chloroplasts andare not able to carry out photosynthesis; they have no cell walls; they usually havenervous coordination and are able to move from one place to another; they often store carbohydrate as glycogen. Examples include mammals (for example humans)and insects (for example housefly and mosquito).Fungi: these are organisms that are not able to carry out photosynthesis; their body is usually organised into a mycelium made from thread-like structures called hyphae,which contain many nuclei; some examples are single-celled; their cells have walls made of chitin; they feed by extracellular secretion of digestive enzymes onto foodmaterial and absorption of the organic products; this is known as saprotrophic nutrition; they may store carbohydrate as glycogen. Examples include *Mucor*, which has the typical fungal hyphal structure, and yeast, which is single-celled.Protoctists: these are microscopic single-celled organisms. Some, like *Amoeba*, that live in pond water, have features like an animal cell, while others, like *Chlorella*, havechloroplasts and are more like plants. A pathogenic example is *Plasmodium*, responsible for causing malaria.**1.3** describe the common features shown by prokaryotic organisms such as bacteria.Bacteria: these are microscopic single-celled organisms; they have a cell wall, cell membrane, cytoplasm and plasmids; they lack a nucleus but contain a circular chromosome of DNA; some bacteria can carry out photosynthesis but most feed offother living or dead organisms. Examples include *Lactobacillus bulgaricus*, a rod-shaped bacterium used in the production of yoghurt from milk, and *Pneumococcus*, a spherical bacterium that acts as the pathogen causing pneumonia.**1.4** understand the term pathogen and know that pathogens may include fungi, bacteria,protoctists or viruses.Viruses: these are not living organisms. They are small particles, smaller than bacteria; they are parasitic and can reproduce only inside living cells; they infect every type of living organism. They have a wide variety of shapes and sizes; they have no cellular structure but have a protein coat and contain one type of nucleic acid, either DNA or RNA. Examples include the tobacco mosaic virus that causes discolouring of the leaves of tobacco plants by preventing the formation of chloroplasts, the influenza virus that causes ‘flu’ and the HIV virus that causes AIDS. | Video: Biology Section 1 Lesson 2: Variety of Living Organisms (Part 1)Biology Section 1 Lesson 3: Variety of Living Organisms (Part 2)Powerpoint: Biology Section 1 Lesson 2: Variety of Living Organisms (Part 1)Biology Section 1 Lesson 3: Variety of Living Organisms (Part 2)Textbook pages:25 – Plants26 – Animals26 – Fungi28 – Protoctists28 – Eukaryotic and Prokaryotic organisms28 – Bacteria29 - Viruses | Pages 30 – 31 Qs 1 to 7Pages 32 – 37 Unit Questions (1) to (10)Textbook Answers (PDF)Unit Answers (PDF)Chapter 2 - exam question - pdfChapter 2 - exam question mark scheme – pdfChapter 2 - Talking paper video  |

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