Edexcel iGCSE Biology 4BI0 Learning Plan

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| **Section A2: The Variety of Living Organisms** |
| Specification | Resources | Assessment |
| 1.2 describe the common features shared by organisms within the following main groups: plants, animals, fungi, bacteria, protoctists and viruses, and for each group describe examples and their features as follows (details of life cycle and economic importance are not required) Plants: These are multicellular organisms; their cells contain chloroplasts and are able to carry out photosynthesis; their cells have cellulose cell walls; they store carbohydrates as starch or sucroseExamples 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 and are not able to carry out photosynthesis; they have no cell walls; they usually have nervous 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 food material and absorption of the organic products; this is known as saprotrophic nutrition; they may store carbohydrate as glycogenExamples include Mucor, which has the typical fungal hyphal structure, and yeast, which is single-celledBacteria: 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 off other living or dead organismsExamples 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 pneumoniaProtoctists: These are microscopic single-celled organisms. Some, like Amoeba, that live in pond water, have features like an animal cell, while others, like Chlorella, have chloroplasts and are more like plants. A pathogenic example is Plasmodium, responsible for causing malariaViruses: These 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 RNAExamples 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 AIDS1.3 recall the term ‘pathogen’ and know that pathogens may be fungi, bacteria, protoctists or viruses. | 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:Page 16 – The Variety of Living Organisms. Plants – AnimalsDVD Exam Question 2Page 17 – FungiPage 19 – Protoctists – bacteriaDVD Video clip - microorganismsPage 21 – VirusesDVD Exam Questions 3 and 4Page 22 - Chapter checklistDVD Revision check list<http://biology-igcse.weebly.com/classification-of-living-organisms.html><http://biology-igcse.weebly.com/kingdoms-of-living-organisms.html><http://biology-igcse.weebly.com/animal-kingdom.html><http://biology-igcse.weebly.com/plant-kingdom.html><http://biology-igcse.weebly.com/virus.html><http://biology-igcse.weebly.com/bacteria-kingdom.html><http://biology-igcse.weebly.com/fungi-kingdom.html><http://biology-igcse.weebly.com/dichotomous-keys.html> | TextbookPage 22Pages 23 to 25 End of Section A Questions.Chapter 2 Textbook Answers - pdfEnd of Section A answers - pdfDVD Multiple choice testSection A2 - Exam Question - pdfSection A2 - Exam Question mark scheme – pdfTalking paper video – Section A2 The Variety of Living Organisms |

Videos – www.igcsesciencecourses.com

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

DVD Video Clips – see resource DVD in textbook.