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 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 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 glycogen  Examples include Mucor, which has the typical fungal hyphal structure, and yeast, which is single-celled  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 off other 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  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, have chloroplasts and are more like plants. A pathogenic example is Plasmodium, responsible for causing malaria  Viruses: 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 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  1.3 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 – Animals  DVD Exam Question 2  Page 17 – Fungi  Page 19 – Protoctists – bacteria  DVD Video clip - microorganisms  Page 21 – Viruses  DVD Exam Questions 3 and 4  Page 22 - Chapter checklist  DVD 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> | Textbook  Page 22  Pages 23 to 25 End of Section A Questions.  Chapter 2 Textbook Answers - pdf  End of Section A answers - pdf  DVD Multiple choice test  Section A2 - Exam Question - pdf  Section A2 - Exam Question mark scheme – pdf  Talking 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.