Fauzia Akhter Daily Lesson Plan

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| **Subject: BIOLOGY** | | **Grade: 12** |
| **Date: Oct 31, 2022** | **Duration: 3HR** | **Lesson No:2** |
| ***Unit: 1: Bio Chemistry*** | **Topic: Carbohydrates & Lipids** | |
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| **Overall Expectations** *(Directly from The Ontario Curriculum)* | | |
| **B2.** investigate the chemical structures, functions, and chemical properties of biological molecules involved in some common cellular processes and biochemical reactions;  **B3.** demonstrate an understanding of the structures and functions of biological molecules, and  the biochemical reactions required to maintain normal cellular function. | | |
| **Specific Expectations** *(Directly from The Ontario Curriculum)* | | |
| **B2.3** construct and draw three-dimensional molecular models of important biochemical compounds, including carbohydrates, proteins, lipids, and nucleic acids [PR, C]  **B3.3** identify common functional groups within biological molecules (e.g., hydroxyl,  carbonyl, carboxyl, amino, phosphate), and explain how they contribute to the function of each molecule | | |
| **Learning Skills *(Where applicable):*** | | |
| I should participate in the class discussion 3D models of Carbohydrates; Lipids and  Proteins; working in a team to complete the molecular model kit lab and take initiative to ask question if there is any. | | |
| **Learning Goals** *(What do I want the students to know and/or be able to do?)* | | |
| Today you will be able to:   1. Illustrate 3D models of Carbohydrates; Lipids and Proteins 2. Identify common functional groups within biological molecules (e.g., hydroxyl, carbonyl, carboxyl, amino, phosphate), and explain how they contribute to the function of each molecule. | | |
| **Success Criteria** | | |
| By the end of class:  I should have a clear concept of molecular structures of three macromolecule of life and can explain with evidence the unique role of carbon in living things. | | |
| **Materials and Resources** | | |
| **PPT-SBI4U\_BIOCHEM#2**  **HW- functional groups (60 min)**  **Hydrolysis and Dehydration Synthesis:** [**https://www.youtube.com/watch?v=ZMTeqZLXBSo**](https://www.youtube.com/watch?v=ZMTeqZLXBSo)  **Molecule Polarity simulation**  [**https://phet.colorado.edu/en/simulations/molecule-polarity/activities**](https://phet.colorado.edu/en/simulations/molecule-polarity/activities)  **Textbook:** Nelson Biology 12: Nelson Education Ltd. 2003 | | |
| **Lesson Structure and Activities** | | |

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| **Timing** | **Lesson** |
| *~20 minutes*  *~25 minutes*  *~30 minutes*  *~15 minutes*  *~90 minutes* | **Zoom class INTRODUCTION**  Attendance, pre-interview and concerns regarding specific student. Observation: to identify the students needs extra care and help.  \*\*Complete the Student information form  **LESSON**  **Discussion and illustration:**   * **CARBON: AN ORGANIC MOLECULE** * **FUNCTIONAL GROUPS IN BIOCHEMISTRY** * **STRUCTURE AND FUNCTIONS OF:** * **CARBOHYDRATES AND LIPIDS**   **APPLICATION**  **Pg#28**  **Q# 7, 10, 12**  **ASSIGN HOMEWORK**  **HW- functional groups (60 min) (10 marks)**  **Independent study**  **Review: Ch#1.4-Charbohydrates and Lipids Watch the Food test Lab video demo**  [**https://www.youtube.com/watch?v=sLP8dcnWnJg**](https://www.youtube.com/watch?v=sLP8dcnWnJg)  [**http://biology-igcse.weebly.com/food-tests.html**](http://biology-igcse.weebly.com/food-tests.html)  **Solve C.W. (14 marks)**  **Pg# 38 Q. 1 to 8 (20 marks)** |
| **Assignments / Homework** | |
| * AS /FOR ASSESSMENT   1. (Pre-Interview: conversation)   2. Activity on career exploration (Class discussion and participation)   3. Observation: during group discussion   4. **C.W.**   **Pg#28 Q# 7, 10, 12**  **Pg# 38 Q. 1 to 8 (20 marks)**  **HW- functional groups ( 60 min) (10 marks)** | |

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Toronto Central Academy Daily Lesson Plan **Unit #1 and Lesson Plan #1.2**

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| **Assessment Strategies** | | | | | | |
| **For Learning** | | **As Learning** | | **Of Learning** | | |
| **Student product:**   * Diagnostic tests □ Practice quiz * Pop quizzes □ Homework * Class notes □ Peer feedback * Practice questions □ Practice tests   **Observation:**   * Class discussions □ Peer feedback   **Conversation:**   * Student teacher conferences * Small group discussions | | **Student product:**   * Learning logs □ Self-assessment sheet   □Homework □ Self-analysis sheet   * Peer-analysis sheet   **Observation:**   * Whole class discussions * Group discussions   **Conversation:**   * Student teacher conferences * Small group discussions □ Pair work | | **Student product:**   * Assignments □ Tests * Exam □ Case studies * Business report □Exit card   **Observation:**   * Student-led discussion/debate * Presentation □ Performance tasks   **Conversation:**   * Student teacher conferences * Question and answer session | | |
| **Lesson Tools** | | | | | | |
| **Direct Instruction**   * Structured overview   □Lecture   * Compare & contrast * Socratic method * Demonstrations | **Indirect Instruction**   * Problem solving * Case studies * Reading for meaning * Inquiry * Reflective discussion * Writing to inform * Concept formation * Concept mapping * Concept attainment | **Interactive Instruction**   * PowerPoint   □Video clip   * Debates * Role playing   □Brainstorming   * Peer partner * Learning/analysis * Discussion * Laboratory groups * Cooperative learning * Groups * Jigsaw * Problem solving * Conferencing | **Independent Study**  □Essays   * Computer assisted * instruction * Journals * Learning logs * Reports * Learning activity packages * Correspondence lessons * Learning contracts * Homework * Research projects * Assigned questions * Learning centers | | **Experiential Learning**   * Field trips * Conducting * Experiments * Simulations * Games * Story telling * Focused imaging * Field observations * Role-playing * Model building * Surveys * Case studies | **Instructional Skills**  □Explaining  □Demonstrating  □Questioning |

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