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| Subject: Biology  | Areas:  | Year of study: 12th grade  | Student: | Level: University Preparation | Date:  |
| Assessment Task: Laboratory |
| Expectations: A1. Demonstrate scientific investigation skills (related to both inquiry and research) in the four areas of skills (initiating and planning, performing and recording, analysing and interpreting, and communicating) D3. Demonstrate an understanding of chemical components of and energy in food, and the processes by which food is digested D2. Investigate chemical components of and energy in food, and the processes by which food is digestedF3. Demonstrate an understanding of biological processes related to biotechnology and of applications of biotechnology in the health, agricultural, and environmental sectors F2. Investigate various techniques used in biotechnology and how they are applied in the food industry and the health and agricultural sectors | Comments (strengths, points of improvement, next steps): |

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| **Categories** |  | **Level 1** |  | **Level 2** |  | **Level 3** |  | **Level 4** |
| **Knowledge and Understanding**  |  | **The student:** |  |  |  |  |  |  |
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| (KU 1) Knowledge of content* of enzymatic processes.
 |  | – Demonstrates limited knowledge - Demonstrates some knowledge - Demonstrates considerable - Demonstrates thorough  of content of content knowledge of content knowledge of content |

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| (KU 2) Understanding of content * of the structure of macromolecules.
 |  | – Demonstrates limited understanding - Demonstrates some understanding - Demonstrates considerable - Demonstrates thorough  of content of content understanding of content understanding of content |

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| **Thinking Skills**  |  | **The student:** |  |  |  |  |  |  |
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| (TS 1) Use of planning skills* formulates a hypothesis that addresses the purpose of the laboratory;
* identifies the independent, dependent and controlled variables.
 |  | – Uses planning skills with – Uses planning skills with – Uses planning skills with – Uses planning skills with limited effectiveness some effectiveness considerable effectiveness a high degree of  effectiveness  |

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| (TS 2) Use of information processing skills * uses appropriate websites;
* selects relevant information to summarize;
* analyzes results to find appropriate conditions for enzyme function;
* makes appropriate recommendations to increase enzyme performance;
* indicates references.
 |  | – Uses processing skills with – Uses processing skills with – Uses processing skills with – Uses processing skills with  limited effectiveness some effectiveness considerable effectiveness a high degree of  effectiveness  |

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| (TS 3) Use of critical thinking and creative thinking processes * determines a specific method to test their hypothesis;
* provides feedback on the purpose of the lab;
* validates or invalidates their hypothesis;
* identifies sources of error.
 |  | – Uses critical/creative thinking – Uses critical/creative thinking – Uses critical/creative thinking – Uses critical/creative thinking  processes with limited processes with some processes with considerable processes with a high degree  effectiveness effectiveness effectiveness of effectiveness  |

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| **Communication** |  | **The student:** |  |  |  |  |  |  |
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| (OC 1) Expressing and organizing ideas and information:* presents data in observation tables.
 |  | – Expresses and organizes ideas – Expresses and organizes ideas – Expresses and organizes ideas – Expresses and organizes  and information with limited and information with some and information with ideas and information with effectiveness effectiveness considerable effectiveness a high degree of effectiveness |

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| (OC 2) Communicating ideas and information, orally, in writing and visually, for specific purposes and specific audiences :* follows the format required for observation charts (title, title bar, line...);
* follows the format required for a laboratory report (title, names and dates, introduction, purpose, hypotheses, variables, materials, safety, method, modifications, observations, analysis and conclusion);
* reframes the information in their own words.
 |  | – Communicates for different audiences – Communicates for different audiences – Communicates for different – Communicates for different and purposes with limited effectiveness and purposes with some effectiveness audiences and purposes with audiences and purposes with considerable effectiveness a high degree of effectiveness |

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| (OC 3) Use of conventions, vocabulary, and terminology:* uses vocabulary linked to biology.
* uses language conventions.
 |  | – Uses conventions, vocabulary, and – Uses conventions, vocabulary, and – Uses conventions, vocabulary, and – Uses conventions, vocabulary,  terminology of the discipline with terminology of the discipline with terminology of the discipline with and terminology of the  limited effectiveness some effectiveness considerable effectiveness discipline with a high degree effectiveness  |

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| **Application** |  | **The student:** |  |  |  |  |  |  |
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| (A 1) Application of knowledge and skills in familiar contexts* identifies appropriate safety rules;
* collects data.
 |  | – Applies knowledge and skills to – Applies knowledge and skills to – Applies knowledge and skills to – Applies knowledge and skills  familiar contexts with limited familiar contexts with some familiar contexts with to familiar contexts with a high effectiveness effectiveness considerable effectiveness degree of effectiveness  |

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| (A 2) Transfer of knowledge and skills to new contexts* devises a laboratory protocol;
* selects the necessary material.
 |  | – Transfers knowledge and skills to – Transfers knowledge and skills to – Transfers knowledge and skills to – Transfers knowledge and skills  new contexts with limited new contexts with some new contexts with considerable to new contexts with a high  effectiveness effectiveness effectiveness degree of effectiveness  |

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| (A 3) Making connections * making a connection between the conditions (temperature, pH, quantity of reagents…) and curd yield.
 |  | – Makes connections within and – Makes connections within and – Makes connections within and – Makes connections within and between various contexts with between various contexts with between various contexts with between various contexts with limited effectiveness some effectiveness considerable effectiveness a high degree of effectiveness  |

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