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|  Subject: Chemistry  | Areas:  | Year of study: 12th grade | Student: | Level: College 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) F2. Investigate chemical reactions, using appropriate techniques of quantitative analysis  | 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* the balance of chemical neutralization reactions
 |  | – 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* acid-base principles
 |  | – Demonstrates limited - Demonstrates some understanding - Demonstrates considerable - Demonstrates thorough  understanding 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.
 |  | – 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 information that is relevant to the introduction;
* 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 * provides feedback on the purpose of the lab;
* determines the expected results in the making of yogurt and cheese;
* 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 chemistry;
* 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* presents the developed formula for lactic acid;
* writes and balances neutralization equation;
* determines molar concentration and Dornic degree of the substance.
 |  | – 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 * links the obtained measurements to the quality of milk
 |  | – 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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