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| **Overall Expectations** | | **Specific 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)  C3. Demonstrate an understanding of the properties of common elements and compounds, and of the organization of elements in the periodic table  C2. Investigate through inquiry, the physical and chemical properties of elements and compounds | | A1.1 Formulate relevant scientific questions about observed relationships, ideas, problems, or issues, make informed predictions, and/or formulate educated hypotheses to focus inquiries or research  A1.2 Select appropriate instruments and materials, and identify appropriate methods, techniques, and procedures, for each inquiry  A1.8 Synthesize, analyse, interpret, and evaluate qualitative and/or quantitative data to determine whether the evidence supports or refutes the initial prediction or hypothesis and whether it is consistent with scientific theory; identify sources of bias and/or error; and suggest improvements to the inquiry to reduce the likelihood of error  A1.12 Use appropriate numeric, symbolic, and graphic modes of representation, and appropriate units of measurements  A1.11 Communicate ideas, plans, procedures, results, and conclusions orally, in writing, and/or in electronic presentations, using appropriate language and a variety of formats  C3.4 Describe the characteristic physical and chemical properties of common elements and compounds  C2.1 use safe work practices in their laboratory activities  C2.2 Conduct an inquiry to identify the physical and chemical properties of common elements and compounds  C2.3 Plan and conduct an inquiry into the properties of common substances found in the laboratory or used in everyday life, and distinguish the substances by their physical and chemical properties |
| **Notions** | | |
| **Terminology** | | **Theory** |
| * Firmness * Mass * Volume | * Colour * Smell * Texture | * Physical and chemical properties * Density * Lab report |
| **Material to prepare** | | |
| Context   * Copy of activity * Copy of evaluation grid   Activity   * Material according to the types of evaluation offered  |  |  | | --- | --- | | Material/Perishable | | | * Petri dish * Graduated cylinder * Scale | * Cheese samples * Cream cheese * White cheddar * Yellow cheddar * Gruyere * Parmesan |   Pushing further   * Computer for analysis and report | | |
| **Activity** | | |
| **Scenario**  Substances in water:  Does pure and natural water really exist? In fact, the water in our lakes and even in our springs is impure. Water is a solution that contains minerals and dissolved gases. Water by its properties can dissolve a large quantity of materials which gives it the title of universal solvent. But water cannot dissolve all materials with the same ease. Observe what happens when you put different substances in water.    Material:   * An overhead projector with beakers or a large clear bowl. * Substances: fruit juice crystals, fruit drink, sugar, rubbing alcohol, vegetable oil, milk.   Method:   * Place a clear ruler or glass rod diagonally into the beaker or dish and pour the substances onto the rod. Observe the results.   Analysis:   * Which substances dissolve in the water? * How sure are you of each substance named? Explain your answer. * Which substances do not seem to dissolve? * How sure are you of each substance named? Explain your answer. * Do all the mixtures have the same characteristics? Formulate a hypothesis on what makes them different other than the visible differences.      * Presentation of lab work | | |
| **Activity**  Evaluation of the properties of different cheeses (document\_physical properties) | | |
| **Assessment**   * Summative: lab work - lab report | | |
| **Resources**  **Example of protocol**  Internet   * [Les résidus de filtration](https://www.laterre.ca/du-secteur/formation/les-residus-de-filtration-du-lait-valorises) *[*[*https://www.laterre.ca/du-secteur/formation/les-residus-de-filtration-du-lait-valorises*](https://www.laterre.ca/du-secteur/formation/les-residus-de-filtration-du-lait-valorises)*]* | | |