





Código: CA-02	<b>CA-02 MALLA DE DESEMPEÑO Y SECUENCIA DE EXPERIENCIAS DE APRENDIZAJE Y EVALUACIÓN 2024</b>	
Versión: 1		
Fecha de revisión: 24/03/2023		


<b>PROJECT'S NAME:</b> Sweet chemistry, the science behind food		
<b>CLASS:</b> Ninth grade	<b>CLASS:</b> A-B	<b>TEACHER/S:</b> Santiago Pulido
<p style="text-align: center;"><b>PERIOD II</b></p> <p><b>FROM:</b> April 22th <b>TO:</b> August 9th</p>	<p><b>KEY SKILLS:</b> Interacting with the natural environments through exploration exercises for analyzing and making a proposal to possible solutions using ICT tools.</p> <p><b>STANDARD KNOWLEDGES:</b> Explains the three-dimensional formation of compounds through electrostatic interactions in molecules, in addition to performing calculations on the units of concentration of a solution.</p>	
<p style="text-align: center;"><b>WHICH ARE THE COMPREHENSIVE SKILLS WE WANT THE STUDENTS HAVE?</b></p> <p>Relating intermolecular forces to the physical properties of chemical compounds.</p> <p>Determining through chemical structures and bond analysis the type of intermolecular forces that chemical molecules possess.</p> <p>Analyzes the chemical concentration through the solution of different types of calculations taking into account the concentration measurement units. (Physical and Chemical)</p>	 <p>CB5: Aprender a aprender y metacognición</p> <p style="text-align: center;"><b>WHAT TO LEARN FROM THE TERESIAN SKILLS?</b></p>	<p style="text-align: center;"><b>WHICH IS THE SCENERY OR PROBLEMATIC SITUATION?</b></p> <p>This year there is the second version of the Teresian Science congress, that's why we want to take another chance to keep promoting the essential and environmental values like, respect, austerity, solidarity, co-responsibility, empathy and coherence to be better living things and find some solutions to protect and take care of our planet from our own environmental relationship.</p>

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	<p><b>Conceptual:</b> solution, mixture, solute, solvent, volume, chemical concentration, moles, molarity, molality.</p> <p><b>Procedural:</b> Analyze the relationship between the proportions of some compounds in a solution and be able to evaluate different situations in everyday life.</p> <p>Interpret and evaluate the incidence of the amount of solute and how it can affect the chemical concentration of a solution.</p> <p>Prepare chemical solutions in the laboratory from certain given chemical proportions with the objective of determining the chemical concentration of the solution.</p> <p><b>Attitudinal:</b> CB5 Demonstrates a positive attitude, respect, disposition and interest towards the comprehension and application of scientific principles.</p>	
<b>STUDENT'S ROLE:</b> Food engineering		
<b>CHALLENGE:</b> Have you ever wondered how healthy or nutritious the drinks we drink every day are? What components do they	<b>PRODUCT:</b> Scientific article about a product made in class.	<b>PROMOTION:</b> Science fair.

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<p>contain or what makes them different from others? I invite you to explore the great world of solutions, learning from them and exploring the benefits or harms they can generate in our body in terms of health.</p>			
LEARNING OUTCOMES			
SUPERIOR (S)	ACCURATE (A)	AVERAGE (B)	LOW (J)
<p>The student discovers through experiments the chemical concentration of certain components in the food ingested daily, formulating through chemical concentration equations (Molarity and molality), the amount of solute that is in a given solution or mixture; actively participating during the development of the activities and promoting an environment of learning and respect with their colleagues during the writing of the article and carrying out the experiments.</p>	<p>The student measure through experiments the chemical concentration of certain components in the food ingested daily, testing through chemical concentration equations (Molarity and molality), the amount of solute that is in a given solution or mixture; demonstrating a good attitude during the development of activities and promoting a good class environment during writing the article and carrying out the experiments.</p>	<p>The student demonstrates through experiments the chemical concentration of certain components in the food ingested daily, showing through chemical concentration equations (Molarity and molality), the amount of solute that is in a given solution or mixture, and supporting it in a scientific article, participating in its realization and promoting an optimal environment. of work during the writing of the article and carrying out the experiments.</p>	<p>The student shows difficulties recognizing through experiments the chemical concentration of certain components in the food ingested daily, telling through chemical concentration equations (Molarity and molality), the amount of solute that is in a given solution or mixture, which means that cannot develop a scientific article; their participation in group work is low, which generates a less than optimal work environment for writing the article and carrying out the experiments.</p>

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#### LEARNING EXPERIENCE

**STAGE 1:** Another way to weight the matter, the Science of Concentrations

**TIME OF EXECUTION:** Cycle 1 to cycle 5

**CRITERIUM:** Explain that chemical concentration can be calculated from the amounts of moles presented in a solution.

**TASK:** Practice the molarity and molality using the calculation method proposed by the theory; taking into account units of measure the concept of mol and the topics learned in class.

- Based on the information provided by the teacher, students will solve exercises about converting grams into moles and moles into grams, recording the exercises in their notebook. **Cycle: 1 N° hours: 1**
- The student solves a workshop about the topic worked in the last class. **Cycle: 2 N° hours: 1**
- The student solves a quiz about the topic learned and practiced in the last two sessions of class. After that, based on the information provided by the teacher, the student learns two new formulas that help to calculate the chemical concentration of a solution, solving exercises to practice the new topic. **Cycle: 3 N° hours: 1**
- The student solves a workshop with some exercises of the topic molarity and molality. **Cycle: 4 N° hours: 1**
- The student solves an evaluation about the topic molarity and molality. **Cycle: 5 N° hours: 1**

**STAGE 2:** The nature is concentrated

**TIME OF EXECUTION:** Cycle 6 to cycle 8

**CRITERIUM:** Applies the scientific method to develop laboratory activities following instructions in a controlled environment.

**TASKS:** Discovers through experiences that the chemical concentration of a solution can be altered depending the amount of solute and solvent.

- The student performs a laboratory activity that has the purpose of practicing the preparation of a solution at a determined chemical concentration. **Cycle: 6 N° hours: 1**
- The student performs a laboratory activity related to the ABP. **Cycle: 7 N° hours: 1**
- The student performs a laboratory activity related to the ABP. **Cycle: 8 N° hours: 1**
- The student performs the final evaluation of the term.