
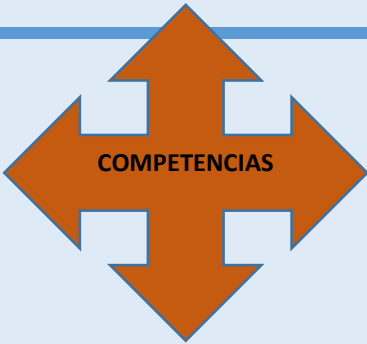




Código: CA-02	CA-02 MALLA DE DESEMPEÑO Y SECUENCIA DE EXPERIENCIAS DE APRENDIZAJE Y EVALUACIÓN 2024	
Versión: 1		
Fecha de revisión: 24/03/2023		


PROJECT'S NAME: Clean and clean and it will smell good		
CLASS: Tenth grade	CLASS: A-B	TEACHER/S: Santiago Pulido
<p style="text-align: center;">PERIOD I</p> <p>FROM: January 17th</p> <p>TO: April 19th</p>	<p>KEY SKILLS: Interacting with the natural environments through exploration exercises for analyzing and making a proposal to possible solutions using ICT tools.</p> <p>STANDARD KNOWLEDGES: Understand the different bond types and Lewis structure necessary for the formation of ions and chemical compounds, and I name them appropriately according to a specific nomenclature.</p>	
<p>WHICH ARE THE COMPREHENSIVE SKILLS WE WANT THE STUDENTS HAVE?</p> <p>Explain the formation of chemical compounds using concepts such as electronegativity and valence electrons, representing the bonds between atoms using graphs and identifying intermolecular attraction forces (hydrogen bridges, Van der Waals forces).</p> <p>Classify and generate synthesis reactions of inorganic compounds (oxides, hydroxides, acids, salts) and names them using various</p>	 <p>CB5: Aprender a aprender y metacognición</p> <p>WHAT TO LEARN FROM THE TERESIAN SKILLS?</p>	<p>WHICH IS THE SCENERY OR PROBLEMATIC SITUATION?</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>chemical nomenclature systems.</p> <p>Investigate and analyze information about the manufacture of oxides in the Colombian industry, and are able to describe manufacturing processes.</p>	<p>Conceptual: Chemical compounds, electronegativity, valence electrons, Lewis structure, intermolecular forces, ionic charge, cation, anion, intramolecular forces, nomenclatures, oxidation states, oxides, peroxides, hydroxides, acids, salts.</p> <p>Procedimental:</p> <p>Produces chemical compounds from their union through chemical bonds, interpreting the concepts of electronegativity and valence electrons.</p> <p>Identifies the intra- and intermolecular forces that act on chemical compounds.</p> <p>Combine two or more chemical elements to design Lewis structures.</p> <p>Build the molecules of some inorganic compounds from their oxidation states.</p> <p>Create the name of organic molecules using different nomenclatures.</p> <p>Attitudinal: CB5 Demonstrates a positive attitude, respect, disposition and interest towards the comprehension and application of scientific principles.</p>	
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STUDENT'S ROLE: Chemist		
<p>CHALLENGE: Have you ever wondered what beauty products are made of? Or, why do cleaning products manage to remove dirt? How does deodorant work and what consequences does it have on our body? Well, we will seek to answer all these questions through the study of different chemical compounds, which are widely used by the industry. We will analyze how these chemical compounds are formed and how the elements come together through inter and intramolecular forces.</p>	<p>PRODUCT: Scientific article about a product made in class.</p>	<p>PROMOTION: Science fair.</p>

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LEARNING OUTCOMES			
SUPERIOR (S)	ACCURATE (A)	AVERAGE (B)	LOW (J)
<p>The student explains the formation of molecules from applying different nomenclatures strategies and concepts from chemistry lab relating the forces required, creating chemical compounds using the Lewis structure to to specific results justify their bond and describing their usefulness to daily living situations; 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 establishes the reasons why chemical compounds are united, and builds chemical compounds using Lewis structure to organize them, identifying the inter and intramolecular forces that are present according to the experience acquired into the chemistry lab; 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 applies correctly the nomenclature system to chemical compounds resulting from the union of 2 or more elements by bonds using the Lewis structure to illustrate them, naming the inter and intramolecular forces present in the compounds, 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 doesn't recognize the inter and intramolecular forces present in different chemical compounds; fails to identify the differences between ionic and covalent bonds, causing difficulties in forming inorganic chemical compounds using the Lewis structure; 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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SECUENCIA DE EXPERIENCIAS DE APRENDIZAJE Y EVALUACIÓN


STAGE 1: Unions make us unique

TIME OF EXECUTION: Cycle 1 to cycle 5

CRITERIUM: Understand that the chemist compounds can be joined by chemical bonds and that there are some forces both inside and outside the molecule and that these ones can be illustrated using the Lewis structure.

TASK: represent the compounds by Lewis structure, applying concepts learned to design stable molecules.

- The student will do the diagnostic activity compleating diagram that focuses on recapitulating the topic of states of matter and their fundamental properties. Cycle: 1 N° hours: 4
- The student will watch two videos (<https://www.youtube.com/watch?v=OTgpN62ou24> / <https://www.youtube.com/watch?v=VSc491HLzDo>) that explains the topic of chemical bonds. While the students are watching the videos, they have to take notes of the most relevant information in their notebooks. After that, they have to do a comparative map with the most relevant information from the videos. Cycle: 2 N° hours: 2
- Based on the information provided by the teacher, the student will solve some exercises about ionic bonds, applying their learning of the concepts of atomic ions, valence electrons and electronegativity. Cycle: 2 N° hours: 2
- Based on the information provided by the teacher, the student will solve some exercises about covalent bonds, differentiating a polar of a nonpolar bond, understanding their differences. It has to do a comparative map explaining the differences between both bonds. Cycle: 3 N° hours: 2
- From some videos (<https://www.youtube.com/watch?v=Sk7W2VgbhOg> / <https://www.youtube.com/watch?v=cIuXI7o6mAw>) and based on the information provided by the teacher, the student will solve some exercises about Lewis structure, explaining how this method of illustrating a compound can help them to understand how the elements are joined by bonds.
- Based on the information provided by the teacher, the student will solve some exercises that can allow them to know what kind of bond is in a molecule, applying their knowledge of electronegativity. Cycle: 4 N° hours: 2

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- Based on some videos (<https://www.youtube.com/watch?v=08kGgrqaZXA> / <https://www.youtube.com/watch?v=08kGgrqaZXA> <https://www.youtube.com/watch?v=DS0v0RWUwCI>), the student will design a mind map of the intermolecular forces, relating it to the topic of chemical bonds. Cycle: 4 N° hours: 2
- The student develops a laboratory activity applying their knowledge of the different concepts already learned. Cycle: 5 N° hours: 2
- The student will develop a quiz about the concepts already studied. After that, students will be working on their project. Cycle: 5 N° hours: 2


STAGE 2: Building a new mixture from the beginning.

TIME OF EXECUTION: Cycle 6 to cycle 9

CRITERIUM: Understand that each functional group has distinctive chemical properties and each of them is constructed and named depending on the elements that are involved.

TASK: create molecules from the elements that are involved naming them correctly using different nomenclatures, mixing them to produce new mixtures.

- Based on the information provided by the teacher, the student will solve some exercises about the oxide formation, applying the concept of oxidation state of the elements. Cycle: 6 N° hours: 2
- Based on the information provided by the teacher, the student will solve some exercises about the peroxide and hydroxide formation, applying the concept of oxidation state of the elements. The students will also name some molecules using the traditional nomenclature. Cycle: 6 N° hours: 2
- Based on the information provided by the teacher, the student names some molecules using the systematic and stock nomenclature. Cycle: 7 N° hours: 2
- The student develops a workshop of all the topics that they have already learned. After that, they will solve a quiz. Cycle: 7 N° hours: 2
- Based on the information provided by the teacher, the student will solve some exercises about acid formation. Cycle: 8 N° hours: 2
- Based on the information provided by the teacher, the student will solve some exercises about salt formation. Also, it will learn, memorize and apply the concept of polyatomic ions to create some stable molecules. Cycle: 8 N° hours: 2
- The student develops a workshop about acids, salts and polyatomic ions. After that, they will solve a quiz. Cycle: 9 N° hours: 2

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- The student develop a laboratory activity applying their knowledge of formation of molecules (oxides, peroxides, hydroxides, acids and salts). Cycle: 9 N° hours: 2

STAGE 3: Chemistry to the rescue of cleaning

TIME OF EXECUTION: Cycle 10 to cycle 11

CRITERIUM: understand that daily cleaning products are produced from the mixture of different chemical compounds derived from functional groups.

TASK: Prepares cleaning products by mixing inorganic compounds to form stable mixtures.

- The student will be working on their final project, developing a laboratory activity that permits them to design the final product of the project. Cycle: 10 N° hours: 2
- From their laboratory activity and their research, the students will be working on the final document of their project. Cycle: 10 N° hours: 2
- The student will present the final exam. Cycle: 11 N° hours: 2
- The student presents the progress of the final project to all the class. Their partners will assess the development of each project. Cycle: 11 N° hours: 2