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| **Lesson Name:** | **I’m Your Solution** |
| **Grade Level(s):** | Chemistry (11th) |
| **Goal/Objective(s):** | Students will learn the lab techniques associated with performing a serial dilution to determine the concentration of various solutions of copper(II) chloride. Students will acquire an appreciation/application for this laboratory procedure by writing a cover letter using ***Cover Letter Creator*** in the *Get A Job* section of the *Career Planning* tab to send in response to the provided Job Advertisement. |
| **Standard(s):** | **Science Standards:**  **S.HS.C.21** perform the following “mole” calculations showing answers rounded to the correct number of significant figures: molarity.  **S.11.-12.L.3** follow precisely a complex, multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text.  **School Counseling – Student Success Standards:**  **ALP.SS.2.1.1** use a variety of resources to explore career options in relation to personal abilities, skills, interests, values and the current job market.  **ALP.SS.2.1.2** evaluate roles, responsibilities and requirements for progressions of career levels from entry to advanced positions.  **ALP.SS.2.1.7** model expected workplace dispositions, skills and behaviors in school, community and occupational experiences to prepare for career success |
| **Instructions:** | * Provide students with the Serial Dilution Laboratory Procedure, Serial Dilution Data Table, and Serial Dilution Follow- Up. Spend about 15 minutes reviewing the procedure with the students and addressing any safety concerns that may arise during the procedure. – Prepare a 1.0 M solution of CuCl2 large enough for your class size prior to doing the procedure. * Have the students perform the Serial Dilution Laboratory Procedure (30-45 minutes) while completing the Serial Dilution Data Table. * Students will calculate the concentration of each solution in terms of Molarity on the Serial Dilution Follow- Up. * Provide students with Job Advertisement searching for a Microbiologist to perform serial dilutions in order to determine the amount of bacteria in food samples for the development of a new food preservation method. * Students should use their experience in the lab to construct a cover letter in which they try to convey their skills to the potential employer. Use the ***Cover Letter Creator*** templates in the*Get A Job* section of the *Career Planning* tab. Students may be interested in using the Microbiologist description in the ***Explore Careers*** section. |
| **Materials:** | * 1.0 M stock solution of copper (II) chloride for your class size. * Test tube rack (per group) * 4 test tubes (per group) * 10 mL volumetric pipette (capable of measuring 1.0 mL) * 10 mL Pipette Pump * Water * Lab aprons, safety glasses, and gloves. * Calculators * Attached Documents: Serial Dilution Laboratory Procedure, Serial Dilution Data Table, Serial Dilution Follow Up, and Job Advertisement |
| **CFWV Tools Used:** | ***Get A Job***  ***Cover Letter Creator***  ***Explore Careers*** |
| **Assessment** | Serial Dilution Follow Up and Cover Letter |