



Foundation For Allen Schools Grant Application

Scholarship Fund Amount: \$0

Application #: AP232752

Applicant First Name: Sandra

Applicant Last Name: Lee

Applicant Email Address: sandra.lee@allenisd.org

Gender:

Cell Phone #:

High School:

Post Secondary School:

Application Status: Submitted

Application Questions and Answer

Question	Answer
Preferred name/name that you go by:	Sandy
Best phone number to reach you at:	+19723969131
Campus	Allen High School
Grade(s)	12;11;10
I have co-applicants:	No
Please provide your work-related Facebook contact information.	
Please provide your work-related Twitter contact information.	@s_lee2013
Name of Grant	Pressure is ON! or is it OFF!?
Please select the MAIN curriculum area your grant addresses.	Advanced Academics - AP/IB/GT

Does your grant have a technology component?	No
Will other campuses be involved/impacted?	No
Will other grades be involved/impacted?	No
How many students will be involved in this grant?	200
Are there any additional funds available for this grant?	No
What is the problem, need or opportunity that this grant will address? Describe the impact of this project on your students.	<p>Students who graduate from Allen High School are expected to be effective problem solvers, responsible and engaged citizens, academically prepared for future pursuits and effective communicators. This grant will enable the Chemistry department to purchase equipment that will enable all levels of Chemistry students to engage in how pressure changes can be used to identify if a reaction is taking place, and if so, the stoichiometric relationships as well as the kinetics of reactions. They will be able to use equipment that is functionally similar to equipment that is used in various types of laboratories in the private sector as well as colleges. Just as laboratories can test reactions to determine concentrations used to obtain a desired speed, our students will test samples and reactions to determine if a reaction is taking place and at what concentration using similar technology that laboratories currently use. This knowledge of how samples are tested as well as the knowledge of the limitations of the testing equipment can leave our students better informed no matter their profession later, whether it be a lawyer defending if a reaction was able to produce the amounts of gas claimed, an environmentalist determining amounts of acceptable gas contamination, quality assurance specialist trying to determine if the cause of 'black specs' in water bottles could be caused by a contaminant gas, forensic specialist trying to ascertain if an amount of gas could possibly be produced, fiction novelist making their book more realistic, or a chemical engineer trying to determine the amounts of chemicals and the rates of reactions to optimize production,</p>

	<p>minimize loss, and minimize risk at their manufacturing plant.</p>
<p>How will the project or program be implemented? Describe activities and tasks. Who is the target population and in what ways will they benefit?</p>	<p>AP Chemistry students will use this equipment for 2 lab activities during the year in which they will determine the proper type of sensor to use to test a given unknown, to determine the factors that affect how fast a reaction can occur, and to determine unknown rates of reactions in different solutions for the same reaction, as well as quantify the limitations of using pressure sensors to determine the type of an unknown chemical as well as its concentration in a sample. In each of these labs students will learn to critically analyze the data they collect to known values to determine procedures to change to obtain more reliable and reproducible results. By completing the experiments they learn the limitations of why using pressure sensors is a preferred method for determining chemical rates and concentrations in some situations and why it is not preferred in other situations. Students will learn to critically think about each situation and determine for themselves whether reliable results can be obtained using pressure sensors as a method to determine the identity, concentration, and/or reaction rate of a substance. They will be able to interact with equipment functionally similar to those currently used in laboratories in the private sector as well as universities. They will connect the relevance of a gas producing reaction to real world scenarios such as cooking and cleaning in the home, the types of materials, when mixed, can produce gases, and how to speed up or slow down these reactions.</p>
<p>Provide a brief summary for use on the Foundation's website and social media.</p>	<p>Students learn to use a pressure sensor to determine when a chemical reaction is and is not happening, relative concentrations of substances that should be used in order to obtain a controlled speed, and the limitations of using pressure sensors in determination of speeds of reactions.</p>
	<p>Texas Chemistry TEKS addressed: 2(E) The student is expected to plan and implement investigative procedures, including asking questions, ... and selecting equipment and technology, including ... probes ... 3(A) The student is expected to analyze, evaluate, and</p>

<p>Which Allen ISD goals/TEKS does this project support? Please provide 2 or 3 examples.</p>	<p>critique scientific explanations by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student. AP Chemistry Science Practice addressed: Science Practice 6: The student can develop an explanation or scientific argument.</p>
<p>What specific measurements will be used to evaluate the effectiveness of the project?</p>	<p>Effectiveness of this project will be measured through the critical thinking skills communicated in the student lab reports and through the post-lab assessments. Students will engage in laboratory experiments, collect data, and submit lab reports explaining their data. AP Chemistry's Student Learning Objective goal for 2020-2021 school year will be a continuation of this year's goal to increase student's critical thinking skills. A rubric has been designed to measure student's critical thinking achievements and is used on all lab reports. The effectiveness of the pressure sensors will be determined by the improvement of critical thinking skills. In addition, questions will be placed on assessments. Some of the questions will measure students ability to plan and implement an investigation using the pressure sensors. Also, some of the questions will measure the students ability to analyze, evaluate and critique scientific explanations from evidence collected from an investigation using a pressure sensor.</p>
<p>What teaching methods will be used to implement this project?</p>	<p>Teachers will use the pressure sensors as a demonstration while they introduce the equipment and concepts. As students gain familiarity with the content and technology, they will proceed with hands-on, self guided inquiry and project -based labs that are filled with active and engaged learning that inspires students to seek a deeper understanding of the topic.</p>
<p>What is the project timeline and the date of implementation?</p>	<p>The equipment will be purchased the beginning of Sept. 2020 to be ready for the first laboratory experiment early/mid September when an introduction to various types of sensors are introduced in AP Chemistry. The pressure sensors will be used again in January for the Kinetics Unit in determination of the best type of sensor to use to determine the rate laws for various types of reactions. AP Chemistry will revisit the pressure sensor along</p>

	with other sensors in mid April through to the beginning of May while reviewing laboratory techniques, possible errors, and how each sensor can be used to gather various types of data on unknowns and known concentrations of compounds and solutions for the AP Chemistry Exam in May.
Explain how this idea or project enhances/supports Allen ISD curriculum or existing systems.	Students who graduate from Allen High School are expected to be effective problem solvers, responsible and engaged citizens, academically prepared for future pursuits and effective communicators. In order to achieve this expectation, we must provide students with rigorous, authentic content, and activities to illustrate curriculum objectives, to send technologically savvy critical thinkers on to postsecondary education and/or the working world. The ability to use, conduct, and understand the same types of equipment and analytical procedures that people use in the public and private sectors will encourage students to be self-motivated learners, successful in school and in the working world. Close academic collaboration between students and between student and teacher will also ensure that we have a strong peer/peer and strong student/teacher working relationships that will pave the way for success.
Total Grant Budget Requested:	930.00
	

Project Budget Set Number 1

Question	Answer
Item Type	General Supplies
List item to be purchased under item category:	Pressure Sensors
Unit Cost	89.00
Quantity	10
Total cost of items in this category:	890.00

Project Budget Set Number 2

Question	Answer
Item Type	Shipping
List item to be purchased under item category:	Pressure Sensors
Unit Cost	40.00
Quantity	1
Total cost of items in this category:	40.00