

Foundation For Allen Schools Grant Application

Let's get to know you!

First Name	Sandra
Last Name	Lee
Preferred name/name that you go by:	Sandy
Email Address	sandra.lee@allenisd.org
Best phone number to reach you at:	19723969131
Campus	Allen High School
Grade(s)	10;11;12
I have co-applicants:	No
Please provide your work-related Facebook contact information.	Not Answered
Please provide your work-related Twitter contact information.	@MrsLeeChem

Project Information

Name of Grant	Following the Data!
Please select the MAIN curriculum area your grant addresses.	Advanced Academics - AP/IB/GT
Does your grant have a technology component?	No
Does your grant have a need or requirement that will change, alter, or require any maintenance to Allen ISD Properties?	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

Project Information Continued

What is the problem, need or opportunity that this grant will address? Describe the impact of this project on your students.

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 temperature, pressure, pH, voltage, ORP, and conductivity 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, minimize loss, and minimize risk at their manufacturing plant.

How will the project or program be implemented? Describe activities and tasks. Who is the target population and in what ways will they benefit?

AP Chemistry students will use this equipment for 11 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>Provide a brief summary for use on the Foundation's website and social media.</p>	<p>Students will use the data loggers to make informed decisions on how or if a chemical reaction will proceed in real time. They can look at data from multiple sensors at one time and quickly make changes to drive a reaction in a desired direction.</p>
<p>Which Allen ISD goals/TEKS does this project support? Please provide 2 examples.</p>	<p>Texas Chemistry TEKS addressed: (c) (2) Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. (c) (3) Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions.</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 2022-2023 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 multiple investigations using the data logger.</p>
<p>What teaching methods will be used to implement this project?</p>	<p>Teachers will use the data loggers with the sensors we already have 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 at the beginning of Sept. 2022 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 data loggers will be used again for every subsequent lab in AP Chemistry and various labs in on-level chemistry. AP Chemistry will revisit the pressure sensor along 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.</p>

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.

Project Budget

Total Grant Budget Requested:	3632.00
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Project Budget Set Number 1

Item Type	Instructional Supplies or Resources
List item to be purchased under item category:	Spark DataLogger
Unit Cost	449
Quantity	8
Total cost of items in this category:	3592.00

Project Budget Set Number 2

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

NGB

First Name	Last Name	Email	NGB	Record	Letter
David	Hicks	david.hicks@allenisd.org	RN239165	Name: Rec240713, Status: Draft	Click on the 'Edit' button to replace this with your letter.

NGB Custom Questions and Answers

Rec240713

I certify that this would be a good use of funds for our school and this grant supports the district goals and/or our campus improvement plans. **Do NOT include any identifiers, such as: campus name, your name, teacher's name or mascot **

Please provide comments/feedback for the applicant:

Almost done!

Not Available

