

# 2022

# Technology Innovation

# Challenge Grants

Application Package

**Greater Chambersburg Chamber Foundation**

**Applications Due:**  
Monday April 11, 2022

## Introduction

The *Technology Innovation Challenge Grant* program provides funding to integrate innovative technology into the classroom. These grants are a stimulus for creative applications of technology in support of creating effective learning environments and high standards for all students. The funding for this grant is made possible by the Educational Improvement Tax Credit (EITC) program through the Pennsylvania Department of Community and Economic Development (DCED). As an approved Educational Improvement Organization (EIO), the Greater Chambersburg Chamber Foundation partners with area businesses to provide grant dollars to public school teachers in Franklin County. Any Franklin County K-12 public school educators are eligible to apply.

The contributions made by local businesses to the Greater Chambersburg Chamber Foundation via the EITC program, have made an estimated \$10, 000 available for the current 2022 funding cycle. Proposals should request funding starting at \$500 and above.

## Proposal Criteria

Your proposal should meet the following three criteria:

1. **Innovative:** Each proposal will be evaluated in this category as either: highly innovative, advanced, standard, or slightly behind the times or dated. *\*(Please note that there must be existing capacity (technology infrastructure, staff, resources, etc.) in place to support proposed project and/or clear explanation of how the proposed project will enhance existing capacity to insure successful implementation.)*
2. **Value added to the curriculum:** Your proposal should be linked to core curriculum areas such as Math, English, Science, History, Art, Music, etc. Programs that solely focus on life skills, study habits, SAT or PSSA prep, drug & alcohol counseling, motivational courses, etc. will not be accepted.
3. **Advanced academic in nature:** The program must be advanced academic for the subject area that it adds value to therefor should not be general or remedial. However, proposed programs are not limited to gifted/college prep/honors students.

Technology alone does not meet the EITC guidelines. A program must be established that meets the above criteria.

## Application Process

To be considered as a *Technology Innovation Challenge Grant* recipient, you must submit the application by Monday April 11, 2022. The application process (see below) includes a one to two paragraph summary of the proposed project, listing any barriers your project may face, listing equipment that is needed for the project, outlining a timeline for implementing the project and explaining how many students will be impacted. Remember to be as descriptive as possible so the selection committee understands the project. Applications must be submitted by the due date and must be complete in its entirety and legible if not typed.

## Timeline

- **Monday April 11, 2022** - Application deadline
- **April-June 2022** - *Technology Innovation Challenge Grant* selection committee reviews applications and submits the finalists to be reviewed by PA State Department of Community and Economic Development (DCED) for approval.
- **June - July 2022** - Grantees notified as soon as approval made by DCED.  
*\*Timeline may vary based on the response time of DCED*
- **November 30, 2022** - Reimbursement requests from grantee school districts must be submitted by this date.  
*\*All grantees must submit back-up receipts with a final report to be reimbursed for expense associated with the project.*
- **December 31, 2022** – Grant funds distributed to districts by this date

## Application Guidance

If you have any questions, please contact Ginny Harriger. If you would like to see what projects have been funded in the past, please see the list of examples on pages 6-7.

Ginny Harriger, Executive Director  
Greater Chambersburg Chamber Foundation  
100 Lincoln Way East, Suite A, Chambersburg, PA 17201  
Phone: 264-7101, ext. 205  
[gharriger@chambersburg.org](mailto:gharriger@chambersburg.org)

# 2022 Technology Innovation Challenge Grant - Application

DEADLINE: Monday April 11, 2022

\_\_\_\_\_  
APPLICANT(S)

\_\_\_\_\_  
DATE

\_\_\_\_\_  
SCHOOL/DISTRICT

\_\_\_\_\_  
PROJECT TITLE

\_\_\_\_\_  
GRADE LEVEL/DEPT.

\$ \_\_\_\_\_  
BUDGET REQUEST

\_\_\_\_\_  
DAYTIME TELEPHONE NUMBER

\_\_\_\_\_  
EVENING TELEPHONE NUMBER\*

\_\_\_\_\_  
EMAIL

\_\_\_\_\_  
SUMMER EMAIL

**\*PLEASE PROVIDE NUMBER THAT YOU CAN BE CONTACTED AT DURING THE SUMMER**

\_\_\_\_\_  
Applicant's Signature

\_\_\_\_\_  
Dept. Head or K-12 Supervisor (Secondary)

\_\_\_\_\_  
Head Teacher (Elementary)

\_\_\_\_\_  
Building Principal

\_\_\_\_\_  
Director of Technology (Required for all Technology requests)

**Please email or mail applications to:**

Greater Chambersburg Chamber Foundation  
Attn: Technology Innovation Challenge Grant  
100 Lincoln Way East, Suite A, Chambersburg, PA 17201  
[gharriger@chambersburg.org](mailto:gharriger@chambersburg.org)

(Application continues on next page.)

# Technology Innovation Challenge Grant - Application

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Please complete the following information. You may attach pages to this application.

1. Write a one-paragraph summary (200 words or less) of the project you would like to try at your school:
2. What challenge(s) face you which this grant will address? Tell why you think there is a special need for this project.
3. Describe your project with specific detail. Discuss methods, needed materials, resource personnel, a tentative schedule, and your completion date.
4. Describe how your project addresses the funding priorities and criteria:
  - Innovation
  - Value added to curriculum.
  - Advanced academic in nature
5. Approximately how many students will be affected by this project? Explain how you arrived at this number.
6. EVALUATION – How will you determine whether your objectives have been achieved? You will be required to write a one-page evaluation at the conclusion of your project (also include a final budget report).
7. Detail your budget request. Include specific information such as kinds of materials and equipment needed, supply sources, etc. Be sure to include all costs.

**Example:**

<u>ITEM</u>	<u>SUPPLIER</u>	<u>COST</u>
"Learning to Read" books	ABC Book Company	\$33.00

8. Are you applying for any other grants or receiving any other funds for this proposal?

## Examples

### **Discovery – Biology Planet**

Biology students will work cooperatively to produce a video that will study and analyze an animal, of their choice, while describing at least 5 of the biological principals discussed during the semester and how they relate to their animal. Students will be challenged to communicate their findings in a medium that goes above and beyond the traditional forms of essay, PowerPoint, and speech. Students will utilize technology, such as iPad, video cameras, iPad projectors and movie editing software, to bring their findings to life while learning how to use equipment that is fast becoming a skill set required of today's workforce. Video content will include the animals' internal anatomy, habitat, interactions with other organisms, eating habits, etc. This project allows students to witness, interpret and share scientific concepts and biological processes in a meaningful way using modern technology and will incorporate a plethora of core standards including Unifying Themes, Inquiry and Design, Biological Concepts, Physical Science and Chemistry, Technology Education, Technological Devices and Science, Technology and Human Endeavors.

### **Product Engineering and Development in the Classroom**

Chemistry and Physics students will collaboratively design a robotic device, which moves to a location to make measurements such as pH, voltage, or temperature, test the system and uplink the data through wireless technology. Using data acquisition technology in conjunction with robotics students will be engaged in active problem solving and product engineering. This hands-on project will allow students to experience all the phases of product development, from concept to design to analysis and process improvement. Utilizing real time data analysis software, students will analyze and report their findings to the teacher in digital, graphical, and written formats. Presentations will be made to peers, the science department and at the STEM fair hosted by the Lincoln Intermediate Unit in the spring.

### **Robotics Today- Providing Essential Skills for Tomorrow!**

High School students will work in groups to design, build, and program robots providing an experiential learning opportunity that integrates all STEM (science, technology, engineering, and math) curriculum. Various types of robots will be designed to complete various tasks starting out with simple design and progressing too more complex. After the design phase, students will use physics to determine the speed and structural strength, mathematical calculations to determine if the design is possible, and then they will build and test the robot. Students will be able to test their robots by competing with other schools. At the end of the project, students will use CAD (computer aided design) to make detailed drawings of the constructed robots and programming its functions. This project will enable students to think strategically, critically, creatively and to develop valuable team building and leadership skills – all essential skills for the 21<sup>st</sup> Century workforce.

### **Automated Industrial Skills for An Advancing Local Workforce**

Students enrolled in automation/robotics and welding/metals programs will explore robotics in the workplace utilizing STEM (Science Technology Engineering and Math) –based curriculum that is used by colleges and universities. This program addresses technological awareness, automation, the function and capabilities of local employers, their staffing needs and employee expectations. Students will utilize equipment such as an industrial work cell robotic/welder that will provide an experiential opportunity to apply these concepts and learn work-ready skills on advanced equipment that is being used today by manufactures in the region. Students will have an opportunity to earn operations and maintenance of robotic equipment and robotic welding certifications.

### **Automated Process Control for Electrical Occupations**

Electrical Occupations students will design small-scale systems typical of what can be found in the electrical maintenance/manufacturing industry, a high-priority occupation in Franklin County. By using bottling process system equipment, students will have a hands-on opportunity to learn programmable logistic controls, automation, process control, maintenance of equipment and troubleshooting. Students will learn how electrical currents work in concert with air pressure, motion, and programming to move a bottle into position, place a cap on a bottle, and move it to another location. These skills achieved by students will also translate into other areas of automation and manufacturing. This program will allow students to have a real-world experience with cutting-edge technology and goes above and beyond the PA Department of Education Program of Study for Electrical Occupations and is endorsed by Franklin County manufacturers.

### **Alternative Energies**

Students will study and work with various types of energy generating devices to observe firsthand the intricate correlation of not only the production of energy, but the various sources of energy. There are several projects that will involve the students. First they will do a complete energy audit of their home and an analysis of what can be done to reduce energy usage. Additionally, each student will bring in soil and it will be analyzed. From this data they will produce corn on the soil and will do the calculations from the planting, harvesting, and conversion to alcohol, creating a profit loss statement. They will learn about fractional distillation and how important this method is for the separation of petroleum-based products as well as alcohol. Students will work on projects to increase the mileage in automobiles by the hydrolysis of water into pure hydrogen and oxygen and combining the two gasses with gasoline. Students will study the production of electricity from wind power and the production of hydroelectricity. Students will work with solar energy to learn how that free energy can be converted to usable energy in the average American home.

### **Microcontroller Programming - How Everyday Electronic Devices Get Smart**

Electronics Technology Students will learn how everyday devices, such as cell phones, microwave ovens and toasters, get smart through a newly designed program that uses industry-standard language and processes. Utilizing a project-and-problem based approach, students will use industry standard Microchip PIC controllers and software to learn about microcontrollers and microcontroller programming. Students will research, learn on their own and collaborate with others to solve a problem which will give them workforce development skills that will last a lifetime and make them career ready. Students will apply their knowledge right away in challenging real-world projects. Microcontroller programming skills are being integrated into this project due to industry advocacy and recommendations; they are not currently required by PA Program of Study.

### **Plugged-In Poets**

Special needs elementary students will create and share poetry in a unique and powerful way –through the poetry café. By utilizing tablet computers and specialized apps to meet their needs, students will generate their own acrostics and other types of poetry and will perform it in a culminating activity, by performing in a poetry reading event in the classroom and using text-to-speech applications will read their work to their peers and families. This new program will allow students to who have complex special needs and developmental delays to utilize technology to advance their learning and communications skills. There is evidence that the engaging, intuitive, and colorful nature of the devices used in this program attracts an immediate interest from most special needs students, especially when compared with the traditional simple tools on which they rely to communicate.