



Kenton County School District | *It's about ALL kids.*

**THE KENTON COUNTY BOARD OF  
EDUCATION**

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Dr. Henry Webb, Superintendent of Schools

**KCSD ISSUE PAPER**

**DATE:**

10/25/18

**AGENDA ITEM (ACTION ITEM):**

Consider/approve the proposal for the Greater Cincinnati Foundation (GCF) Grant to improve educational outcomes in math and science in PreK-5 students through increased access to STEM learning opportunities.

**APPLICABLE BOARD POLICY:**

**01.11 General Powers and Duties**

**HISTORY/BACKGROUND:**

Kenton County Schools has established STEM curriculum in grades 6-12 with the Project Lead The Way (PLTW) courses. The GFN Grant will provide PLTW STEM curriculum for PreK-5. This will expose our students a PreK-12 STEM learning pathway that will better prepare them to be Transition Ready.

**FISCAL/BUDGETARY IMPACT:**

The Cost to implement STEM curriculum is high due to teacher training, equipment, technology, supplies, and consumables. The GFN Grant will offset \$25,000.00 of this cost. Additional funds to be used are Perkins Funds, awarded Bosch Grant, and school funds.

**RECOMMENDATION:**

Recommend the proposal for the Greater Cincinnati Foundation (GCF) Grant to improve educational outcomes in math and science in PreK-5 students through increased access to STEM learning opportunities.

**CONTACT PERSON:**

**Francis O'Hara**

\_\_\_\_\_  
*Principal*

\_\_\_\_\_  
*Director*

\_\_\_\_\_  
*Superintendent*

*Use this form to submit your request to the Superintendent for items to be added to the Board Meeting Agenda.*

*Principal –complete, print, sign and send to your Director. Director –if approved, sign and put in the Superintendent's mailbox.*

**Kenton County Board of Education**

Board Members: Carl Wicklund, Chairperson Karen L. Collins, Vice Chairperson Joshua Crabtree, Esq. Carla Egan Jessica Jehn  
"The Kenton County Board of Education provides *Equal Education & Employment Opportunities.*"

# Kenton County Schools PreK-5 STEM Plan

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## *GCF Responsive Application*

### ***Kenton County Public Schools***

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### ***Dr. Francis V. O'Hara***

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# Application Form

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## Instructions

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**This application is only to be completed and submitted when an RFP is live.**

*Complete all required fields. Contact the Program Officer leading this RFP for guidance on content or the GCF Program Manager with technical or timing issues. Thank you for considering partnering with GCF to accomplish your important work.*

## Basic Information

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### Request Title\*

Kenton County Schools PreK-5 STEM Plan

### Request Category\*

Choose one

Supporting Educational Success RFP

### If other, please explain:

### Summary of Request:\*

*Briefly articulate a summary of your project and its alignment to the RFP. Please make specific reference to the community need this project is addressing. Think of this as the abstract to a longer article or as a summary of all the work you've shared below. We recommend that you draft this section last.*

The addition of PreK-5 STEM education will allow a flow into the M.S. & H.S. established STEM education. The planned structure will improve math & science learning for ALL scholars. Scholars learn in different ways. Learning by hands on, collaboration, visual, & project based will reach each type of learner through the STEM curriculum. Our scholars come from different life structures. Over 48% do not have the funds to purchase school lunch. These scholars & many more are at risk due to their life outside of school. At-risk could be homeless, low income home, & single/no parent homes. By embedding STEM education scholars will be exposed to careers/professions each year of school. Math & science integrated with technology along with the intersecting of engineering curriculum will go beyond exposing ALL scholars. Combining this with collaborative professionals outside of education will lead to higher test scores and a big step in closing the educational & skills achievement gap.

### Amount of Request\*

\$25,000.00

### Total Project Budget\*

\$25,000.00



## Use of Funds\*

*Describe what grant funds will be used for in one sentence.*

Funds will establish a PreK-5 STEM curriculum teaching scholars how to make science & math become knowledge they can intersect to real time solutions.

## Organization Basics

### Organization Overview\*

*Include most relevant details related to the history, mission, programs, numbers served, staff size and qualifications of your organization.*

The Kenton County School District serves 13978 P-12 scholars. STEM education has been established in our H.S. & M.S. curriculum. The next step is to establish STEM at the PreK-5 level. The curriculum being taught at the M.S. & H.S. is Project Lead The Way (PLTW). The M.S. PLTW is called Gateway serving 3301 scholars (6-8 Grade). The H.S. PLTW is three Pathways (Engineering, Biomedical Sciences, & Computer Science) serving 4308 scholars (9-12 Grade). The PreK-5 PLTW is called Launch & will serve 6369 scholars at 11 E.S. We have 4 M.S. PLTW Gateway Teachers & 9 H.S. PLTW Pathway Teachers. The plan is to have 3 E.S. Launch teachers at each of the 11 E.S. for a total of 33. One will teach PreK, the second would teach K-2, & the third would teach 3-5. The structure at the H.S. level is unique. The PLTW H.S. Teachers are part of a team with math, science, & English Teachers. These teams are called Academies (Engineering Academy, Computer Science Academy, Biomedical Sciences Academy, & Women's Engineering Academy). The Academy structure allows scholars to learn each career subject through intersecting with the core subjects. Built into the curriculum is the soft skills required to succeed in the professional world. Areas taught are project based, presentation based, work ethics, critical thinking, collaboration, professional writing, & content. The next steps are to establish the structure with the 3 E.S. PLTW Teams at each school to also be a team approach.

### Organizational Effectiveness

*Reasons an investment in your organization is the best bet to accomplish goals set out in the RFP. Could include partnerships, awards, recognitions, outcomes, certifications, etc.*

The implementation of STEM in PreK-5 is the next step to having a seamless flow through high school & beyond. The scholars will have understanding of the career market & be able to discover their interest in deciding their career. It would allow them a greater knowledge of transitioning from high school, professional certifications, direct to work, associate and/or bachelor's degree. Comparing the concept, if a child completes 3rd grade reading on grade level the chance for success in all choices listed previously raises exponentially, can be applied to a child learning STEM curriculum at a high level by 3rd grade will raise their success level in their academic & professional career. We currently have H.S. Scholars completing internships at over 30 locations including St. Elizabeth Hospitals, Toyota, & C-Forward. We have over 60 seniors in the internships. The goal is to grow through STEM that lead to ALL scholars having the option of internships & apprenticeships.

### Top 5 Funding Sources

*List top five annual funding sources and amounts for the most recent fiscal year.*

District (Local \$10,000), Perkins (Federal \$130,000), Career & Technical Education (State \$357,000), Bosch (Grant \$87,000), PLTW (Grant \$5,000). All funds spent on secondary (6-12) except Bosch Grant that has \$33,000 for PreK-5 STEM for 2018-19.

## Community Initiative Alignment

*It is important to GCF that your work links in some way to broader community initiatives, if applicable. List which of the following your work aligns with and how. Examples include All-In Cincinnati, Artswave, Child Poverty Collaborative, Cradle Cincinnati, Gen-H, Green Umbrella, LISC/Place Matters, Partners for a Competitive Workforce, Strive Partnership, Success By Six, United Way's Family-Centered Learning, and more. If none, answer N/A.*

Partnerships with our secondary grades are established and strong. St. Elizabeth Hospital, Toyota, Bosch, Children's Inc., Navigo, CVG, etc. all work with the older scholars. The goal establishing STEM curriculum for PreK-5 is to have these partners become a part of the educational process to have the young scholars and their parents learn about the workforce, the careers offered, and how to become a part of it. This will include summer STEM camps that expose PreK-5 with field trips, hands on activities, and professional contacts outside of the school system. In addition, building partnerships with others, such as Partners for a Competitive Workforce, will allow a solid educational STEM flow from PreK-12 and beyond. A major area to build is parent knowledge of the career fields. Starting with the PreK-5 will allow for parent information sessions where professionals in STEM careers collaborate with PLTW STEM E.S. Teachers to create these events to be a learning experience.

## Program/Project Basics

### Program/Project Overview\*

*Describe the design of the program/project, how it fits within your overall organizational strategy, and how it relates to the community need or opportunity described below.*

The 11 E.S. in Kenton County Schools would each have a three teacher system. One would teach the PreK PLTW STEM classes, the second would teach the primary K-2 PLTW STEM classes, and the third would teach the 3-5 PLTW STEM classes. The scholars would then go on to one of our four M.S. Each of these schools have one teacher. The M.S. Teachers complete the PLTW Gateway Program. These courses are Automation & Robotics, Design & Modeling, Medical Detective, and App Creators. Additional courses will be added over the next four years. The scholars would go into H.S. and have PLTW Pathway opportunities in Engineering, Biomedical Sciences, or Computer Sciences. There are 9 H.S. PLTW Teachers. The addition of PreK-5 PLTW will add 33 STEM Teachers. This would establish 46 STEM Teachers with potential to grow. This growth combined with the collaboration plan with post-secondary education, business and industry, the community, and parent knowledge will lead to a stronger workforce in manufacturing, allied health, logistics, information technology, engineering, construction, business, and finance. The goal is to have scholars, their parents, and educators to discuss the scholars progress in STEM the same way they currently discuss how they are doing in math, science, and English. Embedding the STEM curriculum as early as PreK and continue it each year of school will establish this trait. More important, school time may be the only time a scholar is exposed to STEM.

### Community Need or Opportunity\*

*Make the case for the need for the investment including demographics of those engaged, inequities this effort will solve against, and present momentum.*

The need for STEM Education will make the math, science, English, social studies, world language & other curriculums to have real world relevance. Eliminating the question "Why do we need to know this?" needs to be answered through STEM curriculum intersecting with the other curriculums. It needs to be for ALL scholars. The need in the workforce is for critical thinkers who can collaborate with others, find solutions & do it with both mind & hands. The addition of STEM curriculum in the PreK-5 age level will allow scholars to transition from each grade at a higher level of engagement. Kenton County PreK-5 has 48% of scholars who qualify for free & reduced lunch. These scholars and many others would not have the financial means to have STEM activities outside of school. Simply put, ALL scholars must go beyond being exposed to STEM



Education, it must be part of their engaged learning. In many cases, this will only happen while they are in school. Do it early, do it often, and guide them to a career pathway they may have thought not possible. Business/Industry is begging for an educated workforce who are able to communicate, collaborate, critically think (solution finders), be able to go from concept to completion on projects, have a strong work ethic, & be able to present their knowledge. In the Kenton County Schools the PLTW Teachers have embedded and intersected curriculum in their STEM classes that meet these areas in 6-12. It is time to build it into the PreK-5.

## Alignment with the RFP\*

*Make the case for alignment to the Funding Focus section of the RFP.*

PLTW Launch curriculum requires teacher training cost (registration, travel, & work time) along with technology, equipment, supplies, & consumables (TESC). Our district has written & received a Bosch Grant which will fund the training cost & some TESC. The addition of the Greater Cincinnati Foundation Grant would add to the same needs. Additional Funding will come from each school annually (District), Perkins Funds (Federal), possibly through a PLTW Grant, other grants, & donations. The PLTW PreK-5 is a 7 year curriculum. Each year has 4 lesson. The lessons each have a cost for TESC. The plan is to establish the complete curriculum over a 4 year period and then be sustainable. If funding becomes available quicker, the plan will be completed earlier. The Greater Cincinnati Foundation Funds are a much needed financial source to establish the STEM curriculum for the 11 E.S. The upfront cost for equipment, KITS, and supplies is the highest to fund. Once those items are purchased, a lower amount of funding is required for supplies and consumables. Over 4 years the addition of 28 different STEM classes being offered at 11 E.S. will be established and the district will have a lower cost to sustain the programs.

## Counties Served\*

*Check boxes for all counties where services are offered.*

Kenton

## Partnerships

*GCF places high value on collaboration. List current, confirmed partners to accomplish the project in this proposal.*

Current partners we have are Northern Kentucky University, Thomas More College, Gateway Community and Technical College, Toyota, Bosch, PLTW, Navigo, Children's Inc., Southern Air, Mebea, Skilcraft, Loreal, PreFAME, FAME, Ignite Institute & many more. All partners collaborate with Kenton County School's secondary scholars. The addition of PreK-5 STEM will allow these partners to work with the E.S. to make the STEM curriculum more engaging with industry based hands on learning, field trips to the industries, team teaching with the classroom teachers, & summer STEM camps where ALL scholars would have the opportunity to participate. Current secondary scholars in STEM classes have the positive moments where they discover how to apply math, science, & English to a STEM Project. Those moments are priceless. They have a new way at looking at what they want from college & their future careers. This can now happen earlier through PreK-5 STEM curriculum and industry partners at that level.

## Evaluation and Funding

### Program/Project Goals\*

*Provide specific short-term, intermediate, and/or long-term goals of this program/project and include the time frame within which each will occur.*

Since 2012, Kenton County Schools established a plan to build PLTW STEM Education at the secondary level. This plan included the full PLTW Pathways in Engineering, Biomedical Sciences, and Computer Sciences. These H.S. pathways have all the PLTW program offers with 8 engineering, 4 Biomedical Sciences, & 4 Computer Science courses. In addition, the M.S. PLTW Gateway Programs offer 8 classes and are adding more. The accomplishment of the secondary goal has led to the plan to establish STEM in the PreK-5 over a four year period starting in the 2019-20 school year. Each of the 11 E.S. will have 3 STEM Teachers (PreK, K-2, & 3,4,5). Each grade level (7) will have 4 courses for curriculum (total 28 courses). Based on cost the time line will be to start with course 1 in 2019-20, add course 2 in 2020-21, add course 3 in 2021-22, and add course 4 in 2022-23. The long term goals are to close the gap for ALL scholars, build collaboration between teachers and the business/industry world, engage scholars so that math, science, & English becomes relevant, and make learning become the pathway of the scholars life work. The results will be a skilled, knowledgeable workforce that enjoy what they do each day to provide for their families.

### Key Event/Activities\*

*List three of the most important critical events/activities that must happen during the grant period to make this effort a success and when each will occur.*

The 1st critical event/activity is teacher selection for the PreK-5 curriculum. The 3 teachers at each of the 11 E.S. will be the foundation & have the greatest influence to the scholars, parents, other teachers, & the business/industry community. These teachers will be selected between January & May of 2019. The 2nd critical event/activity is the PLTW PreK-5 professional development training will take place with all 33 E.S. teachers in the summer of 2018. This must be planned/structured so the start of school, in August, is successful with the STEM curriculum being taught at a high level. The summer training must have collaborative business/industry partners who are part of the team & process to establish STEM in our schools & in the community. The 3rd event/activity is a sustainable long term funding plan for all grade levels to have the needed technology, equipment, supplies, & consumables to teach each course. The success of these 3 areas will lead to a engaged learners.

### Performance Measures

*List three of the most important performance measures that will occur during the grant period as a result of this support. Be as specific as possible (ie: "80% of the children attending the literacy program will improve their reading level by at least one grade" or "participant retention will be 75%"). You will be asked to report back on actuals achieved for these measures in your follow-up report.*

### Performance Measure #1\*

Quantitative Data: Kentucky (KPREP) test scores expected to raise.

### Performance Measure #2

2.

Qualitative Data: Scholar, parent, teacher surveys.

### Performance Measure #3

3.

Plan-Do-Check-Act planned process that addresses engaged learning.



## Measurement Methods

*Share briefly how your organization intends to go about evaluating the above performance measures and overall success.*

Combining quantitative & qualitative data in a Plan-Do-Check-Act (PDCA) planned process will establish a positive growing educational structure for STEM to be embedded in the foundation of the school system. The 46 teachers STEM PreK-12 will be an established group. Professional development will be built around their needs to move the STEM curriculum forward. Math, science, English, & reading are measurable & will be able to confirm growth once STEM is embedded. Attendance data will be evaluated to confirm growth as well. Surveys to scholars, parents, teachers, & business/industry will show greater satisfaction of education and professional work outcomes due to STEM curriculum. The STEM Teacher group will have updated & new professional development. They will meet as a team to PDCA to establish a seamless flow for the scholars from PreK-12 & beyond. Currently, the seniors in STEM complete up to 42 dual credit hours, a 4 course career pathway, & an internship. This structure works. The PDCA to include the PreK-5 will lead to a higher number of scholars completing this structure. The goal is to be deliberate in adding STEM Education that leads to ALL Scholars wanting & know how to become part of the STEM Workforce.

## Past Results

*If this is an ongoing effort, summarize past quantitative and/or qualitative outcomes of the program including a story, if relevant. If not an ongoing program, answer N/A.*

STEM curriculum has successfully been established in 6-12. Scholars have transitioned into engineering programs at Purdue, Universities of Cincinnati, Kentucky, Louisville, Brown University, Ball State, & many others. Tests scores in math, science, & English have risen. ACT scores for STEM scholars have also risen. Scholars have completed the PreFAME Program & been selected for FAME. We have 100's of stories. One is of our scholar, Collin Richardson. Collin took his first PLTW class in M.S. He did well in school, but once he completed his first STEM class he grew a passion. He completed a 4 course engineering pathway from 9-12 grade along with 30 dual credit hours. He was selected for the PreFAME & then FAME Program. He earned an internship at SkilCraft. He had planned to go directly to UofL Speed School. His internship changed his mind. After graduating from H.S. he continues to work at SkilCraft where they pay for his education at Gateway Community Technical College. He will finish at GCTC & continue at UofL to complete his degree. All paid for by SkilCraft. He accomplished all this while being diagnosed with a brain tumor, having brain surgery, & recovering from it. He is the definition of perseverance & success!

## Other Funders

*List other funders for this project for this grant period including amounts and status (ie: prospect, pending, received).*

Implementation of PreK-5 PLTW cost for 11 E.S.: Three teachers to be PLTW Launch Lead Teachers (PreK, K-2, & 3-5) cost \$7500 including registration, travel, and technology needs. The training will occur in Spring 2019. The PLTW Launch Lead Teachers will train the additional 30 teachers in the Summer 2019. To have all PreK-5 curriculum for 7 grades with 4 lessons per grade requires technology, equipment, supplies, and consumables. The total cost of \$283,842.00 over the 4 year plan is needed (See attachment). The total cost for the first year 2019-20 is \$92,816.00. Funding needed Bosch Grant \$33,000 (Received), Greater Cincinnati Foundation \$25,000 (Prospect), E.S. Schools \$13,000 (Received), PLTW Grant \$14,750.00 (Prospect) and Perkins \$7,066 (Received). Year 2 cost is \$93,552.00, year 3 is \$57,211.00, & year 4 is \$40,293.00. See attachment for details.

## Future Funding

*If you intend this program/project to be ongoing, describe how you hope to sustain funding to support the effort. We know this is a difficult question. We are simply interested in your thinking thus far.*



Perkins (Federal) Funds, E.S. (District) Funds, Grants (Greater Cincinnati Foundation, Bosch, PLTW), & donations. Attachment shows curriculum, courses & is a living document describing the implementation Plan with cost. The goal is to gain these funds through many partners, as it is difficult to gain the total amount needed from one source. Collaboration is the key. In education, we have a dedicated workforce (teachers) & great clients (scholars). What we lack is the financial resources to give our clients all that they deserve. 48% of our clients cannot afford lunch. A higher percentage are not embedded in learning outside of school. Educators go beyond just teaching. Teachers must be equipped with the tools needed to make a classroom a home for learning. The grant funds allow for the up-front cost of start up to ensure high-level teaching, learning & sustainability. The long-term sustainable cost of supplies & consumables become possible from the school level funding.

## Attachments and Permissions

### Financial Attachment Templates:

#### Program/Project Budget:

Click on the link below and save the document to your computer. Follow the instructions located on the first tab and complete the program/project budget report on the subsequent tab (There are Program Budget & Project Budget tabs at the bottom. Please select the appropriate budget for your request). When complete, upload your saved version below.

[Program/Project Budget](#) or [Multi-Year Program/Project Budget](#)

#### Balance Sheet and Income Statement:

Click on the link below and save the document to your computer. Follow the instructions located on the first tab and complete the balance sheet and income statement on the subsequent tabs. When complete, upload your saved version below.

[Balance Sheet & Income Statement](#)

### Upload Attachments\*

*Please upload any required documents as indicated by the specific RFP to which you are responding.*

Kenton - Board List with Demographics STEM Plan & Budget.docx

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Kenton - Audit with Income & Balance Sheet 2016 Document A.pdf

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Kenton - Audit with Income & Balance Sheet 2017 Document B.pdf

\*

Kenton - Project Budget - See STEM Plan & Budget Attachment for Details.xlsx

### Permission to share with donors & other funders:\*

Yes