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Application
Canfield Local (048314) - Mahoning County - 2014 - Straight A Fund - Rev 0 - Straight A Fund - Application Number (307)

Applicants shall respond to the prompts or questions in the areas listed below in a narrative form.

A) APPLICANT INFORMATION - General Information, Experience and Capacity

1. Project Title:ElementarySchool-STEMAST2

2. Executive summary: Provide an executive summary of your project proposal and which goal(s) in question 9 you seek to achieve. Please limit your responses to no more than three sentences.

To increase student achievement and provide a greater awareness of hands-on STEM manufacturing labs to elementary schools in the tri-county area for the next five years for individual districts and families on advanced industry equipment and materials. This project aims at replicating what Applied Systems and Technology Transfer (AST2) has done with their high school program, and adding additional instructional supports for the elementary level. AST2 develops and implements technology at the nexus of education and workforce development, advanced manufacturing and cloud computing, leveraging the synergetic opportunities of these areas.

32451 3. Total Students Impacted:

4. Lead applicant primary contact: - Provide the following information:

First Name, last Name of contact for lead applicant: Alex Geordan
Organizational name of lead applicant: Canfield Local Schools
Unique Identifier (RN/Fed Tax ID): 048314
Address of lead applicant: 100 Wadsworth Street Canfield, OH, 44406
Phone Number of lead applicant: 330-533-3303
Email Address of lead applicant: ageordan@canfieldschools.net

5. Secondary applicant contact: - Provide the following information, if applicable:

First Name, last Name of contact for secondary applicant: Patricia Kesner
Organizational name of secondary applicant: Canfield Local Schools
Unique Identifier (RN/Fed Tax ID): 048314
Address of secondary applicant: 100 Wadsworth Street Canfield, OH, 44406
Phone number of secondary applicant: 330-533-3303
Email address of secondary applicant: pkesner@canfieldschools.net

6. List all other participating entities by name: Provide the following information for each additional participating entity, if applicable: Mention First Name, Last Name, Organizational Name, Unique Identifier (RN/Fed Tax ID), Address, Phone Number, Email Address of Contact for All Secondary Applicants in the box below.


7. Partnership and consortia agreements and letters of support: - (Click on the link below to upload necessary documents).

* Letters of support are for districts in academic or fiscal distress only. If school or district is in academic or fiscal distress and has a commission assigned, please include a resolution from the commission in support of the project.

* If a partnership or consortium will be established, please include the signed Straight A Description of Nature of Partnership or Description of Nature of Consortium Agreement.

UploadGrantApplicationAttachment.aspx

8. Please provide a brief description of the team or individuals responsible for the implementation of this project including relevant experience in other innovative projects. You should also include descriptions and experiences of partnering entities.

The project will consist of partnerships with AST2, Youngstown State University (YSU), and our own high school students (as an internship for their STEM program). C. H. Campbell Elementary School will provide the space for the extended hubs to be located along with equipment for Hilltop Elementary School and partner schools throughout the tri-county area to utilize. AST2 will contract with the schools to provide the setup, maintenance of the equipment, software, and professional development required to run a course and support the lab space. YSU and Canfield HS will provide a pool of candidates looking for engineering intern experience to run the lab space for other schools utilizing the equipment virtually. The INVENTORcloud? Program, developed by AST2, is a comprehensive program that offers inquiry and problem based learning in a unique, technology-rich environment for students. INVENTORcloud utilizes hardware technology and software applications to integrate innovation, creativity and design thinking with 21st century career and life skills. INVENTORcloud challenges students, individually and as teams, to collaborate in problem-based activities to solve real-world challenges. Students apply the design process using computer design and visualization tools to create virtual prototypes, which are then produced with rapid prototyping equipment. INVENTORcloud, through virtual presence technology, enables students to remotely access STORM:Lab's rapid prototyping equipment such as 3D printers, laser cutters and mills to turn virtual prototypes into reality. INVENTORcloud curricula are digital courses for a digital classroom. Content is derived from relevant videos, articles and subject matter sources. The rich, dynamic content creates thought-provoking and interesting courses for a broad range of students. Courses are aligned with Common Core State Standards and select state career & technical education standards and are eligible for dual credit at the high school level.

B) PROJECT DESCRIPTION - Overall description of project and alignment with Outcomes

9. Which of the stated Straight A Fund goals does the proposal aim to achieve? - (Check all that apply)

- Student achievement
- Spending reductions in the five-year fiscal forecast
- Utilization of a greater share of resources in the classroom

10. Which of the following best describes the proposed project? - (Select one):

- New - never before implemented
- Existing and researched-based - never implemented in your district or community school but proven successful in other educational environments
- Mixed Concept - incorporates new and existing elements
- Enhancing/Scale Up - elevating or expanding an effective program that is already implemented in your district, school, or consortia partnership

11. Describe the innovative project.

C. H. Campbell Elementary School will create a lab space for Hilltop Elementary School and other schools in the tri-county area for STEM initiatives. Each lab space can be accessed by students virtually using cloud-based technology. Each lab will have 3D printers, a laser cutter, a vinyl cutter, scanners, and other manufacturing technologies. The goal is to get each student experience with science,
technology, engineering, and math to build interest and excitement in these rapidly expanding fields. By providing access to curriculum in a collaborative online environment each student has a chance to get a familiarity with blended online learning. Also, each student receives hands-on and virtual experience utilizing tools used in industry to innovate, invent, create and model, thus incorporating 21st century skills into the curriculum.

12. Describe how it will meet the goal(s) selected above. If school/district receives school improvement funds/support, include a brief explanation of how this project will advance the improvement plan.

* Project Narrative: Describe how the project will meet the goals selected above.

13. Financial Documentation - All applicants must enter or upload the following supporting information. Responses should refer to specific information in the financial documents when applicable:

a. Enter a project budget

b. Upload the Straight A Financial Impact Template forecasting the expected changes to the five-year forecast resulting from implementation of this project. If applying as a consortia or partnership, please include the five-year forecasts of each school district, community school or STEM school member for review.

c. If subsection (b) is not applicable, please explain why, in addition to how the project will demonstrate sustainability and impact.

14. What is the total cost for implementing the innovative project?

123,075.00 * Total project cost

* Provide a brief narrative explanation of the overall budget. The narrative should include the source and amount of other funds that may be used to support this concept (e.g., Title I funding, RIT money, local funding, foundation support, etc.). It should provide details on the cost of items included in the budget (e.g., staff counts and salary/benefits, equipment to be purchased and cost, etc.).

Total Project Cost: $123,075 in addition to the following brief narrative, a workbook is attached, containing 3 worksheets. The worksheets show costs associated with equipment and operating expenses associated with the implementation of the INVENTORcloud curriculum. Other items include 3D printers, 3D printer powder, vinyl cutter, laser cutter, cameras, laptops, printers, Creation Station software, Camera and STORM: Box Plus. General operating money will be used in FY '14 to fund the following: "The salary for the teacher who will be instructing the INVENTORcloud curriculum (1 full time teacher) Salaries of technology coordinator and business manager? Wages for custodians and maintenance? Electricity for operations."

15. What are the new/recurring costs of your innovative project will continue once the grant has expired? If there are no new/recurring costs, please explain why.

15,250.00 * Specific amount of new/recurring cost (annual cost after project is implemented)

* Narrative explanation/rationale: Provide details on the cost of items included in the budget (i.e. staff counts and salary/benefits, equipment to be purchased and cost, etc.). If there are no new/recurring costs, please explain why.

16. Are there expected savings that may result from the implementation of the innovative project?

30,750.00 * Specific amount of expected savings (annual)

* Narrative explanation/rationale: Provide details on the anticipated savings (i.e. staff counts and salary/benefits, equipment to be purchased and cost, etc.)

There will be expected savings in the amount of $30,750 resulting from the implementation of this project. Through attrition, the district will eliminate one licensed teaching position at $46,000. One other teaching position will be shifted to fulfill the role of INVENTORcloud manager/teacher listed in the cost estimates document. This shift will result in no increase in cost or savings. After eliminating new/recurring costs in the amount of $15,250, the total net expected savings would be $30,750.

17. Provide a brief explanation of how the project is self-sustaining. If there are ongoing costs associated with the project after the term of the grant, this explanation should provide details on the cost reductions that will be made that are at least equal to the amount of new/recurring costs detailed above. If there are no new/recurring costs, explain in detail how this project will sustain itself beyond the life of the grant.

The project is self-sustaining. The initial costs are associated with equipment, curriculum, installation, training, and operating costs. Recurring costs, sustained by the annual fees assessed to participating districts, include equipment and facilities upkeep, further training, and maintenance. Cost reductions after initial implementation will be instituted through attrition. As part of the Canfield Local School District's Strategic Plan, the staffing committee has been charged with determining staffing needs in the upcoming years in order to meet 21st century learning demands and, in turn, to raise student achievement and ready students for college and career options. It has been determined that there is a significant need in shifting staff to meet these demands. Starting in FY '15, C. H. Campbell Elementary School and Hilltop Elementary School will be realigned. Hilltop Elementary School will house grades K-2 and C. H. Campbell Elementary School will house grades 3-4. This realignment will allow for two fewer licensed teaching positions, with one of those positions being reallocated to the INVENTORcloud manager/teacher position. During FY '15 through FY '18, participating schools will pay an annual fee of $10,000 to participate in the program. The following goals have been set for the acquisition of participating schools: Fiscal Year '15: 5 participating schools for a total of $50,000. Fiscal Year '16: 10 participating schools for a total of $100,000. Fiscal Year '17: 12 participating schools for a total of $120,000. Fiscal Year '18: 20 participating schools for a total of $200,000. The combined income and staff cuts through attrition will allow for long-term maintenance and the self-sustainability of the program.

D) IMPLEMENTATION - Timeline, communication and contingency planning

18. Fill in the appropriate dates and an explanation of the timeline for the successful implementation of this project. In each explanation, be sure to briefly describe the largest barriers that could derail your concept or project and provide contingency plans. In addition, the narrative should list the stakeholders that will be engaged during that stage of the project and describe the communication that occurred as the application was developed.

Describe the ongoing communication plan with the stakeholders as the project is implemented. (Stakeholders can include parents, community leaders, foundation support and businesses, as well as educational personnel in the affected entities.)

* Proposal Timeline Dates

Plan (MM/DD/YYYY): 02/01/2014

* Narrative explanation

2014-6-2014 Training Training will have to be done with teachers on the INVENTORcloud hardware and software. Teachers will also need formal training in Problem and/or Project-based learning. The largest potential barrier involves shifting staff into appropriate positions, to use the most qualified staff as part of the project. Stakeholders include teachers, Youngstown State University, AST2, Illinois Mathematics and Science Academy (IMSA), Buck Institute for Education (BIE), and the Mahoning County Educational Service Center (MCESC). Extensive communication has occurred between Julie Michael Smith, Executive Vice President of ASTEM and Canfield Local Schools. ASTEM has previously collaborated with YSU, IMSA, and BIE to provide professional development.3/2013-5/31/2013 Set-up Equipment will be purchased and set up in the room. ASTEM will set up an elementary school lab with all of the equipment and provide participating schools with access to communicate with the appropriate lab. Stakeholders include maintenance staff, technology support personnel, and administration. Communication has taken place with maintenance staff to secure a lab location and ensure adequate electrical wiring. The technology support personnel have evaluated the lab requirements to ensure that the room can be properly equipped.

Implement (MM/DD/YYYY): 07/14/2014

* Narrative explanation

2014-7-14 Implementation Teachers will receive professional development through YSU and AS2 to navigate the components of the curriculum, learn how to connect to the lab virtually, and learn the requirements of the curriculum. Teachers will receive training from the Illinois Math & Science Academy (IMSA) on Problem-based learning or from the Buck Institute for Education (BIE) on Project-based learning. Stakeholders include Youngstown State University (YSU), ASTEM, IMSA, BIE, and the MCESC. ASTEM has partnered with YSU, IMSA, and BIE to provide professional development.

Summative evaluation (MM/DD/YYYY): 08/01/2014
19. Describe the expected changes to the instructional and/or organizational practices in your institution.

The elementary schools of Canfield Local Schools will be realigned to help facilitate the implementation of this STEM initiative. Both elementary schools currently serve students in grades K-4. Starting in FY 15, Hilltop Elementary School will be realigned to educate grades K-2 and C. H. Campbell Elementary School will educate grades 3-4. This expected realignment will provide all students with access to INVENTORcloud and help maintain the sustainability of the program through attrition. C. H. Campbell Elementary School will implement INVENTORcloud's Discovery Learning Program in grades 3-4. Hilltop Elementary School will implement a new curriculum in grades K-2 that is currently in development by INVENTORcloud for this proposal. The realignment will also provide collaboration time and facilitate curriculum alignment for teachers while allowing the district to reduce staffing costs by eliminating one licensed teacher position without effecting class size. Our district is situated in a community that receives minimal state funding and has great difficulty passing levies. As a result, the district has limited access to 21st century equipment and curriculum. Our elementary school is rich with students that have tremendous abilities and great prospects; however, we are financially unable to provide them with access to true project-based coursework. Awarding C. H. Campbell Elementary and Hilltop Elementary the grant would allow us to update our curriculum and technology while impacting the organizational structure of not only our physical school, but also over 74 other elementary schools in the tri-county area. Canfield elementary schools will utilize our current staff to provide project-based learning in a technology-rich environment. INVENTORcloud will be offered as an integrated piece of the science and mathematics curriculum in grades K-4; therefore, every student enrolled in the district will be exposed to this rich environment. We will transform a vacant classroom (approximately 2,700 sq) into a thriving lab filled with laser cutters, 3D printers, working laptops, and students actively engaged in creating, innovating, and designing. Schools in the tri-county area will benefit not only from access to INVENTORcloud, but also from the use of our machinery and technology. Elementary schools in the tri-county region would utilize our equipment and collaborate with our staff to develop lessons and solve technical issues.

20. Describe the rationale, research or past success that supports the innovative project and its impact on student achievement, spending reduction in the five-year fiscal forecast or utilization of a greater share of resources in the classroom.

This program will have lasting value and impact for students throughout the tri-county area. It has the potential to provide students with exposure to 21st century skills at an early age, which will develop an interest in the STEM curriculum at both the middle and high school levels. Students will learn problem solving and critical thinking skills as they work through the INVENTORcloud curriculum. We will inspire students to pursue careers in areas of high interest that will also benefit Ohio's future workforce and positively impact the financial future of Ohio. By partnering with AST2, a local agency, students will be exposed not only to a globally pertinent curriculum. They will also be afforded the opportunity to work with local agencies through internships. Our students will be provided with experiences and opportunities, which will help enable them to compete in a constantly changing global economy.

21. Is this project able to be replicated in other districts in Ohio?

Yes

22. If so, how?

Other schools in Ohio can easily replicate this project because it allows virtual, cost effective access to curriculum taught through project-based learning, which heightens student interest. To facilitate this program regions will need one school to serve as a hub. The hub school must commit to an initial investment in technology and machinery that will enable the students to see their designs through from development through fabrication. Other schools across the region, state, or country can virtually join the classroom. Projects from these virtual classrooms can be distributed through pick-up or mail services.

23. Describe the substantial value and lasting impact that the project hopes to achieve.

This program will have lasting value and impact for students throughout the tri-county area. It has the potential to provide students with exposure to 21st century skills at an early age, which will develop an interest in the STEM curriculum at both the middle and high school levels. Students will learn problem solving and critical thinking skills as they work through the INVENTORcloud curriculum. We will inspire students to pursue careers in areas of high interest that will also benefit Ohio's future workforce and positively impact the financial future of Ohio. By partnering with AST2, a local agency, students will be exposed not only to a globally pertinent curriculum. They will also be afforded the opportunity to work with local agencies through internships. Our students will be provided with experiences and opportunities, which will help enable them to compete in a constantly changing global economy.

24. What are the specific benchmarks related to the fund goals identified in question 9 that the project aims to achieve in five years? Include any other anticipated outcomes of the project that you hope to achieve that may not be easily benchmarked.

Benchmarks to show an increase in student achievement are: 1. Increased Value Added scores in Math: a. Students in the fifth quintile in third and fourth grade will demonstrate an increase in Value Added scores starting in FY ‘15. Starting in FY ‘16 students in the fifth quintile will demonstrate more than one year of growth. b. Gifted students in third and fourth grade will demonstrate an increase in Value Added scores starting in FY ‘15. Starting in FY ‘16 students in the fifth quintile will demonstrate more than one year of growth. 2. Increased scores on Ohio Achievement Assessment (OAA)/grade level state exams as measured by Performance Index: a. C. H. Campbell Elementary School and Hilltop Elementary School will increase Performance Index scores to at least 110 by the end of FY ‘16. Benchmarks to show spending reductions in the five-year fiscal forecast are: 1. By the end of FY 15, through attrition, staff re-assignment, and building realignment, the elementary schools will have reduced one staff member for a total of $46,000. 2. After eliminating new/recurring costs in the amount of $10,250, the total expected savings would be $30,750. 3. The cost of maintenance upkeep and repair will be collected through fees assessed to participating districts. Benchmarks to show utilization of a greater share of resources in the classroom: 1. Both elementary schools (approximately 1,000 students) will have access to new technology in their respective labs with C. H. Campbell Elementary School serving as the hub for participating schools. 2. Participating schools will be assessed a yearly fee which will cover the cost of maintenance, repair, and replacement of equipment.

25. Describe the plan to evaluate the impact of the concept, strategy or approaches used.

* Include the method by which progress toward short- and long-term objectives will be measured. (This section should include the types of data to be collected, the formative outputs and outcomes and the systems in place to track the program's progress).

* Include the method, process and/or procedure by which the program will modify or change the program plan if measured progress is insufficient to meet program objectives.

The following plan will be utilized to evaluate the impact of the program: Value Added scores: 1. Value Added scores will be evaluated for growth at grade levels and at the individual teacher level. a. Used diagnostically, adjustments will be made in instruction and curriculum. 2. Value Added projections will be evaluated to determine if students are on the growth trajectory. Increased scores on Ohio Achievement Assessment (OAA)/grade level state exams as measured by Performance Index: 1. Performance Index scores will be evaluated at the building and district level to determine if growth was made. a. Individual student scores will be charted and plotted to determine an achievement level increase. 2. A larger percentage of students achieving at accelerated or advanced levels. If measured progress is insufficient to meet program objectives, the program curriculum will be re-evaluated and revised by Applied Systems Technology Transfer (AST2) and Canfield Local Schools to ensure rigor and alignment to the Common Core State Standards. Additional professional development from Youngstown State University, AST2, Illinois Mathematics and Science Academy (IMSA), and the Buck Institute for Education (BIE) will be provided to staff to ensure proper training and facilitation of the program. Professional development will also be provided in the Common Core State Standards. If the teacher obtains a rating of ineffective under the Ohio Teacher Evaluation System (OTES) for two years, the teacher will be replaced.

By virtue of applying for the Straight A Fund, all applicants agree to participate in the overall evaluation of the Straight A Fund for the duration of the evaluation timeframe. The Governing Board of the Straight A Fund reserves the right to conduct the evaluation of the plan and request additional information in the form of data, surveys, interviews, focus groups, and any other related data to the legislature, governor, and other interested parties for an overall evaluation of the Straight A Fund.

**Program Assurances:** I agree, on behalf of this applicant agency and/or all identified partners to abide by all assurances outlined in the Assurance section of the CCIP. In the box below, enter “I Accept” and indicate your name, title, agency/organization and today's date.

I Accept

**Alex Geordan**

Superintendent

Canfield Local Schools

10/25/2013