## Budget

**U.S.A.S. Fund #:**
Plus/Minus Sheet (opens new window)

### Milford Exempted Village (045500) - Clermont County - 2014 - Straight A Fund - Rev 0 - Straight A Fund - Application Number (198)

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**Adjusted Allocation:** 0.00

**Remaining:** -1,065,139.00
The proposal seeks to further develop a promising teaching approach to help elementary school teachers be more effective in the STEM fields. This grant will support replication and refinement of a promising case method teaching approach in a Cincinnati elementary school that integrating technology and improved student learning in financial literacy and business development. The proposal will advance the approach in 18 schools in Cincinnati and Milford and develop a model for other teachers to use to improve teaching in STEM fields.

**Project Title:** Milford STEM Case-Based Learning Consortium

**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.

**STEM major graduate with a STEM degree; thus only 19 out of every 100 students who graduate with a bachelor's degree are in the STEM fields.**

**Ohio's $400 million Race to the Top grant (2009); handling policy and communications for the foundation's Ohio High School Transformation Initiative of 72 schools in 11 districts and for the Ohio Early College High School initiative, covering nine new high schools on college campuses in the state (2003-08); and managing millions in grants made by the Bill & Melinda Gates Foundation for projects in Ohio since 2001.**

**Kathleen Ware, a veteran educator, has led Mayerson Academy for the past four years.**

**Partners for Innovation in Education (PIE), a 501(c)(3) nonprofit organization.**

**Spending reductions in the five education, technology, and business organizations, allowing for the development of a better-prepared digital workforce, ready for whatever challenges arise in the 21st century marketplace. Smarter Schools Smarter Schools is a Cincinnati-based nonprofit organization run by Andrew Benson, who was most recently a Vice President at KnowledgeWorks Foundation.**

**Utilizing a greater share of resources in the classroom.**

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**Partners for Innovation in Education (PIE), a 501(c)(3) nonprofit organization.**

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**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 research-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 consortium partnership

11. Describe the innovative project.

In five years, Ohio will demand a total of 257,800 jobs requiring science, technology, engineering and math skills, and 95% of those jobs will require postsecondary education, according to a study by the georgetown University center on education and the Workforce. However, Ohio and other states struggle to graduate enough students in STEM disciplines. Only half of all students who start college with a STEM major graduate with a STEM degree; thus only 19 out of every 100 students who graduate with a bachelor's degree are in the STEM fields. Researchers are more recently focusing on ways to harness
The natural curiosity of elementary school students to generate interest in pursuing STEM fields. According to the National Center for STEM Elementary Education, a third of students lose interest in science by the fourth grade. By eighth grade, almost 50% have lost interest. At this point in the K-12 system, the STEM pipeline has narrowed to half. That means millions of students have turned out or lack the interest to continue. One of the possible solutions to this problem is to create a remediation plan that is at least equal to the amount of new/recurring costs detailed in the proposal. This proposal seeks to address a promising case-based method of teaching STEM in elementary schools. The proposal further develops a scalable and sustainable model teachers can use to increase STEM efficacy in Ohio classrooms. The proposal builds from a 2012-13 project piloted at Cincinnati’s Kilgour Elementary. Teachers worked with a nonprofit organization, Partnership for Innovation in Education (PIE), to develop a case-based method of study that taps into the natural curiosity of elementary school students to generate interest in pursuing STEM fields. According to the Exempted Village School District, professional development, and education and app development technology in the classroom. And Kilgour is the only public elementary school in Cincinnati to have developed an app for sale at the Google Android store. This proposal will replicate that work in six elementary schools in the Milford Exempted Village School District and 12 schools, including Kilgour, in the Cincinnati Public School District. Teachers working with PIE staff, the Mayerson Academy and Northern Kentucky University Center for Applied Informatics, will adapt the case-based method of teaching STEM curriculum, particularly to elementary students. If advances a promising pilot in one Cincinnati elementary school. But it’s also important to assess its ability to teach and implement the learning in the classroom. Thus, there are no recurring costs to lead applicant Milford and consortium partner Cincinnati. If the proposal is successful in building a model for professional development, that model may be offered for free or for an unknown cost that it outside of the scope of this proposal. The knowledge gained by teachers participating in the project can be used by them to develop case-method lessons at no additional cost to the districts.

13. What is the total cost for implementing the innovative project? $1,065,139.00

14. Upload the Startup 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.

15. Are there expected savings that may result from the implementation of the innovative project? $0.00

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17. Narrative explanation/provide: Please provide details on the cost items included in the budget (i.e. staff salaries and benefits, equipment to be purchased and cost, etc.)

18. Narrative explanation/provide: Please provide details on the anticipated savings (i.e. staff counts and salary/benefits, equipment to be purchased and cost, etc.)
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 timeline and plan to proactively mitigate such barriers. 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): 10/01/2013
  - Narrative explanation

19. While the definition of case method approaches varies, it generally means that the case method is teaching/learning through the world are written by Harvard Business School faculty. The Socratic method of teaching has been the norm at prestigious institutions, like the Harvard Business School, because they have seen the impact, evaluation and replication

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.

- Narrative explanation

E) SUBSTANTIAL IMPACT AND LASTING VALUE - Impact, evaluation and replication

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

- Yes
- No

22. If so, how?

Stem fields can continue to use those skills going forward at no additional cost to the member districts.

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 timeline and plan to proactively mitigate such barriers. 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.

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- Yes
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Stem fields can continue to use those skills going forward at no additional cost to the member districts.
23. Describe the substantial value and lasting impact that the project hopes to achieve.

In the 18 demonstration schools in Milford and Cincinnati, we expect to see students engaged in the case-method learning approach, enjoying the challenge in thinking presented by the cases and learning by doing as demonstrated by increased skills and knowledge in the STEM field. We expect that teachers in those 18 schools will have learned the essentials of presenting case-method teaching and have experienced the positive results for their students in gains in critical thinking skills and knowledge in the STEM fields. They should emerge with more confidence in teaching STEM skills. We expect that the demonstration will show us the best path to creating a professional development model for teachers to learn how to write and administer case method learning in their classrooms, and that model will be developed. These student outcomes will help the project reach the goal of increased academic achievement: a) Students will become 100% proficient at developing and launching new STEM technology programs offering an incremental revenue stream while serving as an incubator for new student-teacher-business-research collaborative opportunities. b) Students will achieve at least 85% proficiency on critical thinking skills, as measured by pre- and post-testing. c) Student and teacher awareness of venture capital, revenue modeling, and business planning will increase. d) Student comprehension and awareness of technology’s impact will increase, and students will demonstrate their knowledge of how to utilize technology effectively. e) Students will learn how to think logically and analytically about complex problems. f) Schools will gain the knowledge needed to implement a project-based technology program, which will enable them to enhance their reputations and success. The knowledge gained by a broad demonstration of case-based teaching will be used to develop the professional development model. Both that knowledge and the model will be available after the grant through communications and outreach involving Partners for Innovation in Education. Eventually, the model will become yet another tool for teachers to use to enhance learning at a time when expectations are soaring while resources are dropping.

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.

In 5 years, the STEM case-method model will be in active use by teachers across the state. The model, available online, will be expanding the number of teachers who teach and students who learn STEM concepts and skills. After implementing the program: a) Students will become 100% proficient at developing and launching new STEM technology programs offering an incremental revenue stream while serving as an incubator for new student-teacher-business-research collaborative opportunities. b) Students will achieve at least 85% proficiency on critical thinking skills, as measured by pre- and post-testing. c) Student and teacher awareness of STEM concepts of venture capital, revenue modeling, and business planning will increase, and at Milford, of key science concepts. d) Student comprehension and awareness of technology’s impact will increase and students will demonstrate their knowledge of how to utilize technology effectively. e) Students will learn how to think logically and analytically about complex problems. f) Schools will gain the knowledge needed to implement a project-based technology program, which will enable them to enhance their reputations.

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 data for will be derived from a pre- and post-test of knowledge and skills to be gained in the STEM field from the case-method approach, related to responses to Question 24. We will develop those assessments during the planning phase and administer and analyze them in the implementation and evaluation phases of the project. Methodologically, we will begin our program evaluation using an interrupted time series methodology. With the interrupted time series methodology, an intervention occurs at a specific point in time and the time series data is broken up by the introduction of the intervention. If the case method intervention has a causal impact, the values of the post-intervention time series will have a statistically significant different value than the pre-intervention time series. [1] However, because there may be additional changes in the schooling environment other than the case method program, we will supplement the analysis with a difference-in-difference methodology. In this case, we will include a “control” school building to our time series data. The control school building is a school building that has similar characteristics to one of the case method school buildings, but it did not receive an intervention. The underlying assumption is that in the absence of the case method intervention, the school building outcomes would have followed the same trajectory as the control school building. The determination of the control school building will be based on demographic, fiscal, and student characteristics. Evaluation results will be shared with the Ohio Department of Education and the Straight A Fund and also internally with consortium members and partners, and other education stakeholders. The results will inform the ongoing work of the consortium as it develops a model for professional development using the case-method teaching approach. The evaluation results will be the basis of more broadly disseminated communication to help others understand the potential and challenges of case method teaching. [1] The post-intervention time series may also have a different slope; however, because we will only have one year’s worth of data post-intervention, we can only estimate a change in levels.

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 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.

Accept [signature] Robert Farrell Superintendent Milford Exempted Village Schools 10/25/2014