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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: The MakerSpace @ Lakewood City Schools

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.

Lakewood City School District proposes an innovative new school within-a-school that will be based around the concept of a MakerSpace and that engages students through active, networked, authentic, and open-source approaches to teaching and learning by doing. In doing so we seek to significantly increase student achievement, shift a greater share of resources to the classroom, and reduce spending in the five year fiscal forecast. The MakerSpace @ Lakewood City Schools will serve as a national model for learner empowerment, success, and innovation while also providing a community learning space for personal and professional development.

403. Total Students Impacted:

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

First Name, last Name of contact for secondary applicant: N/A
Organizational name of secondary applicant: N/A
Unique Identifier (RN/Fed Tax ID): N/A
Address of secondary applicant: N/A
Phone number of secondary applicant: N/A
Email address of secondary applicant: kevin.bright@lakewoodcityschools.org

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.

Dr. Sharon D. Kruse is Chair and Professor in the Department of Educational Foundations and Leadership at the University of Akron. Her scholarship addresses two concerns, help teachers and school leaders better understand the key role leadership plays in schools and explores how education is currently structured and influenced by social and organizational complexity. Her work focuses on how schools can be better places for children and teachers by focusing on the ways issues are framed, decisions are made and problems identified. Her empirical research considers schools and districts, the development of professional learning communities and the ways data-use contributes to the development of data-wise school cultures, establishing connections to practice. Kruse has served as a project evaluator for six Teaching American History grants, and PI for the ODE Supplemental Educational Services program. Kruse has expertise in qualitative methods, developing interview and focus group protocols, data collection and analysis tools and interpretation. Dr. Kruse is also the author of numerous publications. Karen Wheeler is a math teacher at Lakewood High School with 19 years of experience in education. She was also an instructional coach for the Lakewood City School District for 8 years. She successfully wrote an ARRA 21st Century Learning Grant and served as the technology integration coach for the team that implemented the grant. Karen is currently working on implementing a NGGLC planning grant. She has lead numerous professional development sessions both in and out of the Lakewood school district. She earned a BA from Kent State University and a MA from Cleveland State University. Ken Kozar has been a classroom teacher for 19 years. He has taught both special education and at-risk students. Now an Instructional Coach with Lakewood City Schools, Ken has the unique experience of working in an urban setting teaching both special needs and discipline students. Ken currently works with Special Education teachers in the Lakewood City School District, offering professional development, observations and lesson plan critiques.

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

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 consortia partnership

11. Describe the innovative project.

Ours is a time in which innovation, not simply improvement, compels us to create learning approaches that reckon with the new potential and untapped horizons of our digital age. As teachers who have created and implemented an educational model of blended learning, interdisciplinary content, and mastery grading of content standards, we propose a new school, the MakerSpace @ Lakewood City Schools, that propels these ideas forward by actively engaging students in design learning through making, doing, and problem-solving. A MakerSpace is a local facility which provides tools and room for...
people to design and create solutions to problems, aided by a community of like-minded learners. MakerSpaces facilitate our capabilities as creators, rather than consumers, and encourage us to learn through actively engaging our projects and each other. Whereas others propose to save money by replacing teachers with learning management software, we will reduce costs by tapping other open-source, paperless internet content and, more importantly, the connectivity that presents learners with mentors, learning communities, and connected teachers. Students will have personalized flexible credit options, connected learning opportunities, and internships in northeast Ohio. The curriculum, physical space, and community of learners will empower students to identify, articulate, and design solutions to authentic, real-world problems. Cross-curricular activities built on inquiry, research, collaboration, communication, and reflection will drive students’ learning. An introductory Catalyst program will teach students the design process and orientation them to the philosophy of making and doing. The WikiSeat premise is that through the process of building a chair, students learn about form and function, improve literacy arts capabilities by analyzing related texts and writing about their experiences, understand the history of our culture, and develop critical thinking skills. Students will be encouraged to design and build imaginative and functional seating that is not only beautiful but also practical. Students will be measured by the completion of individual and group learning tasks as measured against state-approved academic content standards. The School will use the connectivity tools of the digital age to link students to authentic learning experiences and engage in conversations about a learning with a spectrum of community members, mentors, and fellow learners across the globe. This may include virtual Q&A sessions, assisting a researcher in another country with statistics analysis, or partnering with a local business participating in a store layout problem. Today’s students are digital natives, and our facilities need to know that the future will be instantly available for their learning, and their needs must be met. The MakerSpace will be a place where students can design and create solutions to problems, aided by a community of like-minded learners. The MakerSpace @ Lakewood City Schools will achieve this kind of climate by making and sustaining a culture where learning is always at the center.

1. Significantly Raise Student Achievement and District Improvement Plan Goal One: We will continue to make academic gains through our innovative approach to pedagogy and curriculum as evidenced by the growth measures discussed in question #20 of this RFP. These student growth measures are in accordance with our District Improvement Plan Goal #1 (Student performance in all content areas as measured by the OAA/DAGT will increase by 10% annually across all subjects and for all subgroups and progress will meet or exceed expected growth in reading and math as reported on ODE District Report Card). We will be using our Five Year Financial Plan, which takes full advantage of the open-source availability of online content and connectivity. By not paying for textbooks, our expectation is that there will be more freedom for our students to explore the world of learning, as well as to engage with concepts through meaningful projects that will be less expensive and less time-consuming. The team also plans to seek funding from local foundations which support innovative educational initiatives. We have initiated discussion with an angel investor group to determine how they may be able to support and guide us in the implementation of a self-sustaining school. Teacher salaries and benefits will continue to be paid by the Lakewood City School District.

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 partnership or consortium, 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?
   1,504,481.00 * 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, RRT money, local funding, foundation support, etc.), and 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).

The total project cost for creating a MakerSpace school is $1,504,481 which includes equipment, site director, communications planning and materials, grant evaluation consultant, temporary physical space and professional development. Items needed include 3D printers, sewing machines, laser cutters, wood and metal working equipment, electronic equipment, computer-controlled design equipment and supplies. The project requires an initial financial investment of $160,722 to create and maintain MakerSpace. Based on figures provided by other MakerSpaces, a budget has been created that would fully outfit our school with equipment necessary to implement the curriculum. Computer hardware for teachers and students will cost $80,259. In addition, MakerSpace will require a Site Director to manage the facility, provide after school supervision, and coordinate services for community supervisors and individuals who want to use the site and equipment. Staff cost is $125,600. A communication plan and materials cost $150,000. Professional development for staff will cost $25,000. The cost of a grant evaluator has been included at $22,500. Lakewood High School renovation is included in a bond issue which will be on the ballot November 2013. Assuming the bond passes, MakerSpace will be part of that renovation. In the meantime, facilities are needed for the students who are enrolled in MakerSpace. While it helps us plan for the future and facilitate the transition during the existing building, it does not require that new K-12 space be provided. Funds ($600,000) have been allocated in this budget to cover the transition space for the MakerSpace. To date, the team has secured a $100,000 planning grant from Next Generation Learning Challenge, and plans to apply for a $350,000 launch grant from the same organization. The launch grant requires matching funds in order to be awarded. The team has secured a $100,000 gift from Lakewood High School alumni, with the potential for an additional $250,000 from this same source. The team also plans to seek funding from local foundations which support innovative educational initiatives. We have initiated discussion with an angel investor group to determine how they may be able to support and guide us in the implementation of a self-sustaining school. Teacher salaries and benefits will continue to be paid by the Lakewood City School District.

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.
   248,844.00 * 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.

The MakerSpace will require annual costs of site director salary and benefits, consumable materials and equipment upkeep for a total cost of $248,844. The site director costs are incurred in order to bring the community into the building beyond school hours and to monitor equipment. According to other MakerSpaces in the United States, upkeep and material costs are approximately $227 per student. This project would reduce $36,400 for 400 students from the sixth year on. The site director is expected to be hired at a salary of $70,000 per year (12-month) plus $16,000 in benefits. Each MakerSpace student will receive a Chromebook or similar digital device when entering school at a cost of $27,900 per year. Professional development costs of $36,000 are included for faculty and staff.

16. Are there expected savings that may result from the implementation of the innovative project?
   156,400.00 * 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.)

Cost savings stem from several sources. The current CSO budget includes $391 per pupil spent on texts annually. MakerSpace will utilize open-source content available digitally making texts unnecessary and eliminating $116,400 annually in text expenditures when fully enrolled. MakerSpace will have the goal of paperless assignments submitted digitally, thereby realizing savings, estimated at $880 per 100 students per year in paper and copier supplies and an annual total of $27,200 when fully enrolled. Going paperless at MakerSpace * Lakewood will serve as a proof of concept for a much needed examination of paper purchase decisions within the context of the digital age in which our schools must be designed to thrive. The school will have a one to one digital equipment ratio. Savings may be achieved through a coordinated, thoughtfully implemented digital model. The state will benefit from a better prepared workforce and students able to immediately succeed in post-secondary education. The MakerSpace * Lakewood also seeks to reduce overall costs by increasing revenue through a membership model. The physical space of the building lends itself to being an incubator for local entrepreneurship and innovation, and MakerSpace * Lakewood will connect ideas to funding and serve as valuable real estate for our lease and rental partners. We are designing MakerSpace * Lakewood to also serve as a valuable civic commodity, in that it will invite business, education, and community engagement for our community. We are investigating the possibility of connections with The University of Akron and other area institutions through which students will be able to obtain college credits while they are in high school through concurrent enrollment and/or early matriculation. In this way, MakerSpace students can gain the benefit of increased exposure to and engagement in higher learning opportunities while saving costs for the attainment of a higher education.

17. Provide a brief explanation of how the project will self-sustain. 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 team recognizes the innovative funding initiative structure implemented by Clark Hall of Gahanna-Lincoln High School, in the Gahanna-Jefferson Public School district of Ohio. The team anticipates that a revenue stream may be generated from leasing facilities to corporate and non-profit organizations that would benefit from affiliation with the MakerSpace. A potential tenant is an economic development, entrepreneurial service provider such as LaunchPad. Another option is a food service facility to ease stress on dining services, during especially busy times. These possibilities are being investigated but are put aside due to finalize our current building situation. In addition, MakerSpaces typically charge membership fees for the community to use equipment and space. The team anticipates such fees
would provide a revenue stream to offset the cost of consumables used by students. Annual memberships at MakerSpaces around the country range from $500 to $2000. The budget assumes a $600 annual fee with 25 members to start, and 25 members added annually. MakerSpaces also offer classes for community members on topics of interest. The budget assumes at least one 4 week class offered in each of the 10 fiscal years. Due to ideal providers of summer education enrichment programs for younger and second-grade students, so MakerCamps are also an anticipated source of revenue. The budget assumes $200 registration fee for 15 camps for 4 sessions for the first year, with an additional 2 sessions year two and a further additional 2 sessions years 3 and 4. The budget assumes net income of 50% of MakerCamp revenues. By utilizing the open source free content available digitally to students, MakerSpace will also refer back to the University of Akron--Lakewood for college network as applicable. Students who participate in this option will reduce MakerSpace costs of education. Overall, we expect to save a minimum of $183,600 annually and generate a minimum of $78,000 income annually. This will offset the additional costs of $248,844 in annual expenditures.

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 for implementation and your 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.)

* Proposal Timeline Dates

Plan (MM/DD/YYYY): 10/01/2013

* Narrative explanation

We have been engaged in the planning process since April 2013 when we received the NSGLC grant. Two members of the team have participated in a Planning Conference that NSGLC hosted to assist grantees in implementing the planning phase of the project. The Conference helped to identify a communication plan and a financial model as areas of concern. If these areas are not addressed they could be barriers. To that end, we have been contacting professional consultants in those areas, and plan to use our planning grant funds to gain assistance in developing communications and financial strategies, goals, and objectives. A third potential barrier is a physical facility. We are working closely with the District Superintendent, Assistant Superintendent and the Director of Operations and Construction to plan the transition space and the new physical space. Communication has also been initiated with the teachers’ union, and informally with community parents. As part of our communication plan we intend to include parents and students in the planning phase of the project.

Implement (MM/DD/YYYY): 08/28/2014

* Narrative explanation

4 communication and financial plans are finalized, they will be implemented; at this time, we are estimating that will be in December 2013. We will begin to recruit students in January 2014. We will have two hired instructors who will be collaborating on a project against which we will be taking baseline data against a facility by June 2014. In August 2014, we will be taking baseline data; we will set up our evaluations. Stakeholders at this stage include students, parents, teachers, the district administration, the teachers’ union, the Ohio State Department of Education and other funders. Barriers will include issues that confront all new enterprises, which we will attempt to address through consultation with professionals, careful planning and attention to detail. At this stage, most barriers are likely to be in the area of a physical space, managing the space, including any tenants that are collaborative, and recruiting students.

Summative evaluation (MM/DD/YYYY): 08/01/2019

* Narrative explanation

MakerSpace will be fully implemented with 4 cohorts of 100 students each. Stakeholders will remain the same. An anticipated barrier will be ongoing recruitment of students which will be addressed by sharing evaluations and continuing to evaluate the implementation plan. We anticipate having addressed the barrier of assisting students to plan for their post-secondary lives by using the teacher advisory cohorts and additional community mentors.

19. Describe the expected changes to the institutional and/or organizational practices in your institution.

The MakerSpace will empower teachers to be both leaders in the school’s organization, and fellow learners with students. As members of an empowered democracy, teachers will be involved in setting school policy, and participating in all decisions that affect teaching and learning. Each student will have an individualized learning plan informed by the common core to guide them towards graduation. The MakerSpace will be surrounded by students who develop the idea of the school being an intellectual, social and emotional growth that is possible within a typical classroom. Teachers will play the role of instructional leaders but will be mentors to students, responsible for a group of students as an advisory cohort, assisting them as they learn and prepare for their lives beyond secondary school. The MakerSpace is a model grounded in standards based learning and assessment. In this way, learning is the constant, and time is the variable. Students will not be time-bound by bells, or courses, or qualified personnel in the affected entities.

A third potential barrier is a physical facility.

We are working closely with the District Superintendent, Assistant Superintendent and the Director of Operations and Construction to plan the transition space and the new physical space. Communication has also been initiated with the teachers’ union, and informally with community parents. As part of our communication plan we intend to include parents and students in the planning phase of the project.

E) SUBSTANTIAL Impact and Lasting Benefit - 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.

The faculty authors of this proposal received an ARRA grant to implement a similar technology supported learning experience for high school sophomores. The ARRA grant evaluation reported significant institutional policy and practices evolve as the MakerSpace does, changing to meet the challenges that exist in relation to a given learning catalyst, student, internship opportunity or digital innovation.

This will offset the additional costs of $248,844 in annual expenditures.

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

Yes

22. If no, how?

This project will be able to be replicated, shared, remixed and supported through an innovative approach to networked learning that has not yet been fully explored or realized in public education.

Fundamental to our work is the notion that resources are under-utilized, especially free ones like open-source, Creative Commons licensed file sharing and the meeting capabilities afforded by Google Hangouts. Our team will openly publish all project design work, curriculum and lesson plans, as well as maintaining file sharing systems and personal learning networks. The addition of a MakerSpace to the learning environment of a school is an idea that is gaining traction, and there are numerous communities and organizations who are doing so and paving the way by sharing their work and being willing to engage and help people through the process. This massive sharing of work on such projects will reduce the time and effort needed to bring MakerSpaces to schools. Our relationship with Make Magazine, and MakerSpace Education, will be instrumental in sharing our work and having it published online and in print, thus helping this project spread. The MakerSpace @ Lakewood City Schools will leverage the capacity of networked learning and sharing in ways that shed new light on the potential for learning projects to be shared and developed across existing district, state, and international
23. Describe the substantial value and lasting impact that the project hopes to achieve.

MakerSpace @ Lakewood City Schools aims to substantially increase student engagement, as evidenced by increased daily attendance, increased student achievement and decreased student disciplinary incidents compared to a control group. MakerSpace @ Lakewood City Schools will use the first public school based Makerspace (Makerspace Lab) to gain experience in the field of education by placing responsibility for learning with the student, faithfully implementing mastery grading of standards-based curriculum, and the power of collaboration between and among teachers and students. The results will include increased student credit attainment, higher standardized test scores and greater GPAs. After the implementation of the grant, Lakewood City Schools will have an innovative model of student-centered, high achievement; cost effective education that can be replicated in other districts around the country. The greater northeast Ohio community will have a cadre of high school graduates career and college ready as evidenced by higher graduation rates, college enrollment numbers, college persistence numbers, and high school to employment numbers. These outcomes will result in lower future costs to the state, since high school and college graduates have increased incomes and decreased incidences of state income assistance and incarceration. Breaking the cycle of poverty is one long-term goal of our work, and this investment in education will ultimately lead to a decrease in incarceration and income assistance costs at the state level. Furthermore, as the focus of MakerSpace is to develop design thinking and learning, such a focus has the potential to invigorate the entrepreneurial spirit that is already present in Lakewood, Northeast Ohio and the industrial midwest, and capitalize on that energy, knowledge base and skill set. As the MakerSpace becomes institutionalized within Lakewood lasting impact is created by locating entrepreneurship within the community employing the school as the hub. Straight A Funds will give MakerSpace @ Lakewood City Schools the means to initiate, implement and stabilize an innovative program that will not only be sustainable in Lakewood, but will be a model for other districts.

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.

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 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.