

Budget

Lakewood City (044198) - Cuyahoga County - 2014 - Straight A Fund - Rev 0 - Straight A Fund - Application Number (441)

U.S.A.S. Fund #:

Plus/Minus Sheet (opens new window)

Purpose Code	Object Code	Salaries 100	Retirement Fringe Benefits 200	Purchased Services 400	Supplies 500	Capital Outlay 600	Other 800	Total
Instruction		67,000.00	13,000.00	22,500.00	240,981.00	0.00	0.00	343,481.00
Support Services		0.00	0.00	0.00	150,000.00	0.00	0.00	150,000.00
Governance/Admin		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Prof Development		0.00	0.00	25,000.00	0.00	0.00	0.00	25,000.00
Family/Community		0.00	0.00	86,000.00	0.00	0.00	0.00	86,000.00
Safety		0.00	0.00	0.00	0.00	0.00	0.00	0.00
Facilities		0.00	0.00	0.00	0.00	0.00	900,000.00	900,000.00
Transportation		0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Total</b>		67,000.00	13,000.00	133,500.00	390,981.00	0.00	900,000.00	1,504,481.00
<b>Adjusted Allocation</b>								0.00
<b>Remaining</b>								-1,504,481.00

Application

Lakewood City (044198) - Cuyahoga County - 2014 - Straight A Fund - Rev 0 - Straight A Fund - Application Number (441)

**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.

400 3. Total Students Impacted:

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

First Name, last Name of contact for lead applicant: Dr. Kevin Bright

Organizational name of lead applicant: Lakewood City School District

Unique Identifier (IRN/Fed Tax ID): [REDACTED]

Address of lead applicant: 1470 Warren Road

Phone Number of lead applicant: 216-529-4244

Email Address of lead applicant: kevin.bright@lakewoodcityschools.org

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 (IRN/Fed Tax ID): N/A

Address of secondary applicant: N/A

Phone number of secondary applicant: N/A

Email address of secondary applicant: N/A

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 (IRN/Fed Tax ID), Address, Phone Number, Email Address of Contact for All Secondary Applicants in the box below.

N/A

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 explore 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 Schools 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 NGLC 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 is currently a Digital Literacy Teacher for Lakewood City Schools. He earned a BS and MEd from Cleveland State University and is Highly Qualified in physical science, biology and chemistry. He is knowledgeable in technology and is the Google Apps for Education and Moodle Administrator for Lakewood City Schools. Ken is also experienced in the implementation of team teaching, flexible-scheduling, project-based learning, and standards-based/performance-based assessment. He has taught many professional development classes both in and out of his district and is also currently working on implementing a Next Generation Learning Planning Grant. Sean Wheeler, a graduate of Cleveland State University and a Highly Qualified 10 year veteran of teaching Language Arts at the high school level, has been successful at integrating digital tools, mastery/standards-based assessment, and innovative approaches to connected project based learning. Sean has presented his work locally and nationally via public appearances, workshops, blog posts and Twitter communities. Examples include presentations at E-Tech Ohio, IdeaStream Cleveland, MakerFaire Bay Area, MakerFaire NYC, and Educon 2.5, as well as the TeachingHumans blog. Sean was instrumental in preparing, receiving, and implementing two federal ARRA grants to create Lakewood's LHS 2.0 program, as well as current planning work with the NGLC Planning Grant. Julie Rea is an Intervention Specialist, K-12, Mild to Moderate, at Lakewood City Schools. She is a Highly Qualified teacher in math and reading. From 2010 to 2013, she worked with team members to implement an ARRA Grant locally via LHS 2.0, incorporating blended learning, mastery and standards-based grading, and interdisciplinary project-based learning to significantly improve student achievement. Julie collaborated with team members to write and implement the NGLC planning grant. She has led professional development workshops in Differentiated Instruction and At-Risk Students. She received a BA from the College of William and Mary, an MA from Bowling Green State University, and teaching certification from Baldwin-Wallace University.

**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.

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 problems and each other. Whereas others propose to save money by replacing teachers with learning management software, we will reduce costs by tapping free, 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 prepare them to participate in a student-centered curriculum. For example, on the first day of school, students will be engaged in the WikiSeat project, introducing them to design process concepts and orienting them to the philosophy of learning through making and doing. The WikiSeat premise is that through the process of building a chair, students learn about form and function, improve language arts competencies by analyzing related texts and writing about their experiences, are introduced to some math concepts, and experience the benefits of participating in a learning community. Students progress to more advanced learning by "leveling up", demonstrating standards achieved, content and processes mastered, and knowledge and skills gained. Progress 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 learning with a spectrum of community members, mentors, and fellow learners across the globe. These experiences may include participating in MOOCs, assisting a research scientist in another country with statistical analysis, or partnering with a local business to solve a store layout problem. Today's students are disengaged, many teachers are digitally illiterate, and our communities increasingly consider whether charter schools and private institutions might better replace the public school model. Many reformers suggest that we need only adopt walled gardens of software, learning-management systems, and online content. We believe, however, that it is not enough to sit a kid in front of a computer and walk away, regardless of the individuality of their path and the data produced surrounding their "progress". Although students no longer need teachers to deliver content, they do need teachers to present opportunities and challenges while working alongside them as they learn. MakerSpace will provide the framework and supports teachers need to be lifelong learners, preparing students to take the next step in their lives as productive, competent citizens of the 21st century, capable of succeeding in postsecondary education and careers.

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.

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/OGT 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.) 2. Spending Reductions in the Five Year Fiscal Forecast: We will reduce spending by making use of the open-source availability of online content and connectivity. By not paying for textbooks, learning management software, and other traditional learning materials, our school will lead the way toward divesting districts of the cost burdens surrounding content providers and purchases. We will also seek to be an entirely paperless environment, leading the way as a model for cost reductions in this expensive and environmentally unsound area of our current consumption model. 3. Utilization of a Greater Share of Resources in the Classroom: We will be a transformative model of connected learning, bringing an unprecedented level of resources into our classrooms. As a MakerSpace, our classrooms will be rich environments in which the tools of productivity and creation are readily at hand and available to students. Along with the physical tools, our students will be connected to vibrant networks of fellow learners and mentors via social media, established learning communities, and project teams online. It is not enough, however, to give students tools and call them resources. We want to empower students to be resourceful, as well. Resourceful students are empowered learners, and will be supported in our expectation that they develop the capacity to gather the various tools and mentorships required for successful development as learners, entrepreneurs, and civic leaders. 4. District Improvement Plan Goal Two: School conduct and climate will improve as measured by a 5% annual reduction in out of school suspensions and expulsions, as well as meet the annual state requirements for attendance rate and graduation rate. A positive school climate is one in which students feel comfortable, accepted, valued, and secure. The MakerSpace @ Lakewood City Schools will achieve this kind of climate by making and sustaining a culture where learning is always at the center. Learning spaces that look and feel very different will be inviting for students as they are free to collaborate on projects. Our students will also be more engaged since they will have both a voice and a choice in the kinds of work that is relevant.

### C) SUSTAINABILITY - Planning for ongoing funding of the project, cost breakdown

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.

N/A

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, RttT 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 request 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 tools, 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 hours supervision, and coordinate services for community groups and individuals who want to use the site and equipment at a cost of \$86,000. 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 @ Lakewood High School. While it helps to alleviate crowding during the 3 year timeframe for demolition and renovation of the existing building, it does require that new space off-campus be provided. Funds (\$900,000) 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 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 \$248844. 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 \$2275 per 25 students. This project would require \$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 LCSD budget includes \$391 per pupil spent on texts annually. MakerSpace will utilize open-source content available digitally making texts unnecessary and eliminating \$156,400 annually in text expenditures when fully enrolled. MakerSpace will have the goal of paperless assignments submitted digitally, thereby realizing savings, estimated at \$6800 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 thoughtfully implemented "bring your own device" policy. Computer labs will not be needed. The most significant cost savings arise from the projected increased graduation rate. The innovative pedagogical model will promote higher student engagement and increased high school completion, and more successful transitions to college and career. The region and 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 our partnership 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 maker opportunities 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 dual credit for MakerSpace courses with the university 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 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 team recognizes the innovative funding 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 can 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 services provider such as LaunchPad. Another option is a food service facility to ease stress on dining services, especially during the transition. These possibilities are being investigated but are difficult to finalize with 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 two-month period with registration fees of \$100 and 10 participants. MakerSpaces are ideal providers of summer educational enrichment programs for elementary and secondary students, so MakerCamps are also an anticipated source of revenue. The budget assumes \$200 registration fee for 15 campers 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 qualified students to the University of Akron-Lakewood for college coursework 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 entities.)

##### \* 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 wrote the NGLC grant. Two members of the team have participated in a Planning Conference that NGLC 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

As 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 hired staff in May 2014, and opened a facility by June 2014. In August 2014, we will be taking baseline data against which we will conduct 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 leasers, 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 implement the communication 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 instructional 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 school will be developed using a wrap-around service model to assist students in the intellectual, social and emotional growth that is part of the development of the whole person. Teachers will be not only be 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 semesters, but will be able to level up as rapidly as they master standards. If needed, they may take more than the normally allotted time to master standards according to the current institutional parameters. Mastery, rather than percentage of points earned, is the achievement goal for all students. The MakerSpace will welcome students of all ability levels; our communication plan will target students of diverse cultural and socioeconomic backgrounds. Students will be encouraged and assisted in making connections to mentors and advisors beyond the four walls of the classroom. Lakewood has many dedicated and supportive alumni and residents who currently do not have a way to participate in mentoring students. MakerSpace will provide an entry point for them. The greater northeastern Ohio community is replete with individuals and institutions with valuable content and tasks for our students. MakerSpace will provide an entry point for them. Individuals and institutions around the globe hold the keys to content, tasks and perspectives that are not currently accessible to our students. MakerSpace, through the connectivity of the internet, will provide an entry point for them. Ultimately, one of the goals of the MakerSpace @ Lakewood City Schools is to challenge the culture of schooling as we currently experience it. As MakerSpace faculty and students employ and contribute to the open source digitally available knowledge base, the instructional and organizational structures unavoidably are altered. As learning catalysts are developed, implemented, modified and completed the learning process is made transparent. In this way, students learn by observing teachers in personal creative intellectual endeavors. This kind of transparent knowledge creation both informs the structure of the school as well as modifies the experiences of those who work and learn within it. This truly democratizes the practice of learning, creating a stage for organizational and individual learning within the school. As such, 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.

#### E) SUBSTANTIAL IMPACT AND LASTING VALUE - 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 positive outcomes for students in the program (LHS 2.0). Quantitative data evidenced that students engaged in grant activities scored consistently higher on the OGT than their non-participant peers in all areas of testing and in all sub-groups. % Passing LHS 2.0 Control AA 2.0 AA Control SpEd 2.0 SpEd ControlReading 95% 89.6% 83% 80% 77% 57.5% Writing 96% 91.93% 100% 84.2% 77% 55.3% Math 88% 82.62% 100% 80% 58% 37.5% SS 88% 84.05% 57% 80% 54% 39.5% Science 84% 79.33% 67% 80% 42% 32.5% Furthermore, survey and observation results suggested that learning was enhanced in important ways. These included: First, by shifting the content material to the on-line environment the opportunity to increasingly access a more diverse range of academic content was provided. No longer limited to the text and/or library materials, or to the teacher's narrative concerning how something happened, where an event took place, how an idea might be explained, how to solve a problem or why a particular event/idea/construct was important the learning environment or classroom space was broadened to include the kinds of ideas, explanations and accounts that might be overlooked or under-developed in a typical classroom. Second, beyond the ability to simply offer more students access to an increased amount of content, the on-line environment allowed an open space, where students, parents and teachers on the team might interact with students around their learning. As items were posted to public forum, students could literally read what their peers were thinking about the same material they too were learning and reflecting upon. What was impressive about the postings was the quality of thinking and the ways in which the dialogue evolved from basic factual information into more reflective and evaluative comments. Thus, not only did a student receive more feedback on their learning, the feedback they received was of higher quality. Third, the immediacy of the on-line environment allowed students access to content material and feedback about their learning in real time. Analysis of the student and faculty log at the forum suggest that the majority of time (45-50% for any given project/unit) at Moodle pages did indeed occur during the typical school day. However, logging on was not limited to class, significant time was observed in the evening (30-35% for any given project/unit) with weekend time making up the remainder (25-15%). Survey results suggest that technology is used to "learn basic skills in math, science, language arts or other subjects" a lot, 68.40% of the time and sometimes 30.40% of the time. Furthermore, use was not limited to information seeking. Students responded a lot 67.10% of the time to the prompt "I know which technology to use to help me solve problems" 32.90% of the time that they used "technology to solve simple problems" and 72.20% of the time to "solve difficult problems." Finally, several important learning outcomes were documented. Students evidenced increased: -Interest and motivation in schoolwork, -Attention to the veracity of information from a variety of sources, -Depth of content knowledge, -Understanding of the ways in which cross-subject content knowledge is coherently synthesized/integrated in the world beyond the classroom, -Pride in the work products produced and -Content knowledge learned.

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

Yes

No

22. If so, 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

boundaries. MakerSpace teachers will provide professional development opportunities on our unique style of pedagogy.

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 be the first public school based entirely around the maker concept, demonstrating measurable gains in student achievement by placing responsibility for learning with the student, faithfully implementing mastery grading of standards-based curriculum, and the power of collaboration between and among students and teachers. 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.

Student achievement will be benchmarked as: Y1: Student daily attendance, credit attainment, student disciplinary incidents, standardized testing and GPA will be compared to a control group of LHS students. It is expected that MakerSpace students should exceed control group scores by a statistically significant margin. Value-added calculations should exceed control group teachers by a statistically significant margin. Y2: Y1 measures shall be continued. It is expected that MakerSpace students should exceed control group scores by a SD. Value-added calculations should exceed control group teachers by a SD. Y3: Y2 measures shall be continued. Student enrollment in dual-credit courses should be established for a significant portion of MakerSpace students. Y4: Y3 measures shall be continued. Student enrollment in dual-credit courses should be maintained and growth demonstrated for a significant portion of MakerSpace students. Y5: Y4 measures shall be continued with the addition of graduation, ACT/SAT rates and scores. Student enrollment in dual-credit courses should be maintained and growth demonstrated for a significant portion of MakerSpace students resulting in the attainment of AA degrees. Spending Reductions will be benchmarked as: Y1: A financial baseline for staffing and equipment shall be established. The founding teachers shall serve the initial group of 100 students for the catalyst year. Per-pupil spending will equal that of negotiated standard LHS staffing. Per pupil staffing expenditures will be computed and compared to LHS control. Cost savings related to curricula materials will be established. Y2: An additional 100 students (N=200) will be added to the MakerSpace with increases in teaching faculty equal that of negotiated standard LHS staffing. Cost savings related to curricula materials will be maintained and documented. Y3: An additional 100 students (N=300) will be added to the MakerSpace with increases in teaching faculty equal that of negotiated standard LHS staffing. Per pupil staffing expenditures will be computed and compared to LHS control. Cost savings related to curricula materials and dual enrollment will be maintained and documented. Y4: An additional 100 students (N=400) will be added to the MakerSpace with increases in teaching faculty equal that of negotiated standard LHS staffing. Staffing will be completed within year 4. Per pupil staffing expenditures will be computed and compared to LHS control. Cost savings related to curricula materials and dual enrollment will be maintained and documented. Y5: The student body of 400 students shall be maintained, as shall FTE staffing ratios. The MakerSpace should demonstrate significant savings over LHS operating costs for curricula and materials. Utilization of Classroom Resources will be benchmarked in the following ways: Y1: Classroom technology and MakerSpace resources will be established. Y2: As students are added to the MakerSpace consumable resource budgets shall be established holding fixed costs steady for non-consumable goods and services. External resources (e.g., student teachers, community mentors, internships) shall be recruited in formal ways establishing baselines for support external to school district/state funding. Y3: Y1 and 2 measures shall be maintained while student population grows resulting in significant measurable support resources devoted to student learning. The MakerSpace will demonstrate significantly higher classroom resource share as compared to LHS. Y4: Y2 and 3 measures shall be maintained while student population grows resulting in significant measurable support resources devoted to student learning. The MakerSpace will demonstrate significantly higher classroom resource share growth as compared to LHS. Y5: Y3 and 4 measures shall be maintained. The MakerSpace will demonstrate significantly higher classroom resource share growth.

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 logic model governing the evaluation will employ Friedman's Framework (2005), a four-quadrant conceptualization of program performance measures, which address quantity and quality of inputs or what we do-effort and the quantity and quality of outputs or impact-effect. Results focus on increased opportunities for and evidence of improved learning for students. Indicators will be developed to create measures of progress towards the valued results. Performance Measures will assess the overall effectiveness of the instructional program. The quality of input or effort is easily measured (e.g., percent of participants indicating satisfaction with a service), however the quality of output or effect is more difficult to capture due to the number of variables that contribute to effect. It is more important and accurate to measure a few things frequently and consistently than to measure many things once. In the early stages of grant activity, measures related to inputs can be more comprehensively studied than output measures. While it is possible to suggest potential effects of grant activities, meaningful measures concerning lasting changes to instruction and assessment, teaching and learning cannot be determined until measures (e.g., value added calculations) are comprehensively considered. Data including interviews, observations, and formative/summative testing data will be employed to evaluate student achievement goals. Interviews with teachers, students and stakeholders will be conducted in a semi-structured format, employing a script of open-ended questions that can be flexibly worded to allow participants to offer a full narrative about his/her sense of grant activities, outcomes and challenges. To ensure that all data will be reported as accurately as possible, confidentiality will be assured and interviews will be recorded. Questions on the interview script will be based upon grant themes including curriculum, pedagogy, assessment, technology and instructional change. Data analysis will include the development of in- and deductive themes. Once identified, themes will be incorporated using a constant comparative method that involves comparing data segments to determine relationships within/between outcome measures. As suggested by grant foci, relevant, authentic learning is required for student learning to be of value. In authentic tasks, students are asked to engage in disciplined inquiry requiring them to interpret, analyze, synthesize, and evaluate information in order to generate and explore ideas. A classroom observation protocol will be designed to capture these more subtle forms of proposed grant outcomes for classroom practice and student learning. In this way, data will be triangulated for depth of understanding regarding changes and challenges of grant activities as well as generating more complex understandings of how students experienced new classroom practices. As with classroom observation, much can be gained by a careful review of the kinds of instructional materials provided to students and the ways students interact with those materials. By employing a carefully constructed and interwoven data collection model, the ability to generate meaningful findings, conclusions and recommendations is enhanced. Formative and summative data will be collected and analyzed in accordance with state standardized testing protocols and instruments and value added calculations will be developed for teaching personnel. These data will be compared with group a-like data for control groups of students within the district and across the region. Spending reductions will be evaluated by generating cost comparisons for educating students within the MakerSchool with those of LHS over 5 years. It is expected that cost savings will be realized by reductions in curriculum materials as the school moves to a fully digital environment. Utilization of resources will be measured in a similar way with LHS as the control comparison.

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.

I Accept Mr. Jeffrey W. Patterson, Lakewood City Schools Superintendent, 8/24/2013 I Accept Mr. James E. Estle, Lakewood City Schools Treasurer, 8/24/2013