## Budget

Worthington City (045138) - Franklin County - 2016 - Straight A Fund - Rev 0 - Straight A Fund - Application Number (71)

### U.S.A.S. Fund #: 466

**Plus/Minus Sheet (opens new window)**

<table>
<thead>
<tr>
<th>Purpose Code</th>
<th>Object Code</th>
<th>Salaries 100</th>
<th>Retirement Fringe Benefits 200</th>
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<th>Capital Outlay 600</th>
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| Adjusted Allocation | 0.00 |
| Remaining | -850,000.00 |
Please respond to the prompts or questions in the areas listed below in a narrative form.

A) APPLICANT INFORMATION - General Information

1. Project Title:
Awaker Spaces - Awaken Your Creativity

2. Project Summary: Please limit your responses to no more than three sentences.
An "Awaker Space" is an environment in which students create, build, explore questions, fail and retry, develop critical thinking skills.

This is an ultra-concise description of the overall project. It should only include a brief description of the project and the goals it hopes to achieve.

3. Estimate of total students at each grade level to be directly impacted each year.

This is the number of students that will receive services or other benefits as a direct result of implementing this project. This does not include students that may be impacted if the project is replicated or scaled up in the future. It excludes students who have merely a tangential or indirect benefit (such as students having use of improved facilities, equipment etc. for other uses than those intended as a part of the project). The Grant Year is the year in which funds are received from the Ohio Department of Education. Years 1 through 5 are the sustainability years during which the project must be fiscally and programmatically sustained.

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<th>Grant Year</th>
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<tr>
<td></td>
<td>694 5</td>
<td>735 6</td>
<td>744 7</td>
</tr>
</tbody>
</table>
4. Explanation of any additional students to be impacted throughout the life of the project. 
This includes any students impacted or estimates of students who might be impacted through future scale-ups or replications that go beyond the scope of this project.

We will be partnering with the three branches of the Worthington Public Library and the Columbus Museum of Art. As a result, students who are enrolled at Worthington City Schools, will have the opportunity to work and create in these spaces. As the libraries and art museum continue to shift in re-branding their institutions, we expect a significant increase in the number of students impacted than the number of students who, today, visit them. As examples, the Northeast branch of the public library also serves students from Dublin and Olentangy Schools and the Northwest brand serves students from Olentangy and Westerville Schools.

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

First and last name of contact for lead applicant
Neil Gupta

Organizational name of lead applicant
Worthington City Schools

Address of lead applicant
200 East Wilson Bridge Road

Phone Number of lead applicant
(614) 855-2040

Email Address of lead applicant
ngupta@wscloud.org

Community School Applicants: After your application has been submitted and is in Authorized Representative Approved status an email will be sent to your sponsoring entity automatically informing the sponsor of your application.

6. Are you submitting your application as a consortium? - Select one checkbox below

☐ Yes
☐ No

If you are applying as consortium, please list all consortium members by name on the "Consortium Member" page by clicking on the link below. If an educational service center is applying as the lead applicant for a consortium, the first consortium member entered must be a client district of the educational service center.

Add Consortium Members

7. Are you partnering with anyone to plan, implement, or evaluate your project? - Select one checkbox below

☐ Yes
☐ No

If you are partnering with anyone, please list all partners (vendors, service providers, sponsors, management companies, schools, districts, ESCs, IHEs) by name on the "Partnering Member" page by clicking on the link below.

Add Partnering Members

8) PROJECT DESCRIPTION - Overall description of project and alignment with goals

8. Describe the innovative project: - Provide the following information

The response should provide a clear and concise description of the project and its major components. The following questions will address specific outcomes and measures of success.

a. The current state or problem to be solved; and

Despite the emphasis on developing STEM areas of focus in schools, we still have many students who do not enroll in STEM and STEM related areas in our schools and leave ill-equipped in the skills of design, innovation, exploratory, and creativity skills which are essential for students to be college and career ready in STEM-related fields. New research reveals the need for a mindset shift in not just providing the core content concepts, but providing students, at earlier grades, with opportunities and experiences to utilize processes, practices, and resources to explore, think creatively, prototype, and work collaboratively. By providing students opportunities at early grades to learn in such an environment, they will be better equipped, prepared, and interested to continue exploring higher-level course opportunities and career fields to fill the gap in achieving a more productive economy. We also strongly believe that off-task behavior and lack of engagement in student's toward their own learning has a direct connection to our remediation scores, increase in summer remedial coursework, and disengagement in school as evidenced in increased discipline referrals and survey feedback.
b. The proposed innovation and how it relates to solving the problem or improving on the current state.

In our ever-changing world, students are expected to be future ready in ways that are unpredictable due to the continual evolution of technology and the job field. Students need to be able to think critically, problem-solve, design and collaborate in order to succeed in the future they will inhabit. Makerspaces provide opportunities for students to create, build prototypes, explore questions, fail and retry, develop critical thinking and problem solving skills, and collaborate on building together. By providing these experiences at all grade levels (PreK-12), students will be ingrained with this philosophy and attitude towards learning that extends to skills necessary in all content areas. This innovative way of thinking about how we use resources and space in our schools also gives teachers opportunities for observations of their students in different learning environments. "Play is often talked about as if it were a relief from learning. But for children, play is serious learning. Play is really the work of childhood" (Rogers, Fred). Through play and exploration, students will increase their understanding of the world that goes beyond the classroom. The Makerspace project will help to inspire students to learn more about areas of interest at a deeper level and expose them to new areas of study. By providing an environment for students to explore and create in a Makerspace environment, this type of learning and teaching will model classroom expectations that will address the current problem of providing opportunities for students to be prepared in STEM-related fields at the high school level and beyond for a more educated and prepared workforce in the future. By providing these students with opportunities at early grade levels and in partnering with the Columbus Museum of Art and Worthington Libraries, the embedded philosophy and approach to learning, in general, will provide students with a better focus and understanding to enter related fields. With an increase in these types of courses, and Project Lead the Way pathways at the middle and high school levels, we can provide a structured system of learning to prepare students to advance to these career fields. Finally, we believe that when students are engaged, they exhibit on-task behaviors which decreases discipline referrals. This also has a direct impact on students excelling in their learning, so there will be a decrease in remediation needed K-12, in summer remedial coursework and post graduation remediation.

9. Select which (up to four) of the goals your project will address. For each of the selected goals, please provide the requested information to demonstrate your innovative project. - (Check all that apply)

- a. Student achievement

  i. List the desired outcomes.

  Examples: fewer students retained at 3rd grade, increase in graduation rate, increased proficiency rate in a content area, etc.

  - Increased enrollment in STEM-related courses in high school.
  - Increased enrollment in Project Lead the Way pathway at the middle and high school levels.
  - Increased achievement and growth scores in math and science state level tests at all grade levels.
  - Increased choice in post-high school plans in the STEM-related fields.
  - Increase in enrollment in high rigor coursework (College Credit Plus, Honors, etc.)
  - Increased attitude in a growth mindset (positive attitude to take risks).
  - Decrease in discipline/negative behavior by allowing students time to move around more and conduct hands-on activities during the school day.

  ii. What assumptions must be true for this outcome to be realized?

  Examples: early diagnosis and intervention are needed to support all children learning to read on grade level; project-based learning results in higher levels of student engagement and learning, etc.

  - Proper training must be realized in order for faculty to understand the tenets embedded in the Makerspace activities and to teach behavioral changes.
  - Processes are equally important to creating product; in order for this shift in practices to be successful parents must understand the direct connection to time invested in a Makerspace environment and stimulating student interest and understanding in STEM-related fields.
  - By investing money and time in a Makerspace there will be increased interest and skills in STEM-related areas.
  - By allowing students to direct their own learning they will be more engaged in other aspects of schooling.

  iii. Describe any early efforts you have made to test these assumptions (pilot implementation, etc.), or how these are well-supported by the literature.

  Our early efforts in Makerspace type learning is best exemplified in our district-wide Science Day. Two years ago we shifted the focus to be K-12 and to include not only the traditional Science Day presentations but also a showcase for Invention Convention projects and an impromptu Design Challenge. Within one year we doubled the participation in the Design Challenge with teams represented from every age group and every school. This speaks to the desire and interest on the part of our learners for this type of learning opportunity and challenge. It is our desire through Makerspace to make this opportunity available throughout the year to all students. Additionally in 2008 Worthington attempted to weave into all curriculum areas the Design Standard that is part of the Ohio Technology Standards. We felt that for us to be successful in the technology standards that needed to be woven throughout the core content areas. While this led us to put into place Project-Lead-The-Way at our middle and high schools we had not been successful in finding an platform to imbed design thinking into our elementary curriculum. We are excited at the opportunity for MakerSpace in helping us to realize that goal. In Connected Learning: An Agenda for Research and Design (Ito, Gutierrez, et. al.) the authors share the synthesis of ongoing research, design, and implementation of an approach to education called "connected learning." It advocates for broadened access to learning that is socially embedded, interest-driven, and oriented toward educational, economic, or political opportunity. Connected learning is realized when a young person is able to pursue a personal interest or passion with the support of friends and caring adults, and is in turn able to link this learning and interest to academic achievement, career success or civic engagement. This model is based on evidence that the most resilient, adaptive, and effective learning involves individual interest as well as social support to overcome adversity and provide recognition. This also investigates how we can use new media to foster the growth and sustenance of environments that support connected learning in a broad-based and equitable way. This report also offers a design and reform agenda, grounded in a rich understanding of child development and learning, to promote and test connected learning theories. Making is characterized by interest-driven engagement in creative production at the crossroads and fringes of STEM disciplines, and has developed into a recognized social, technological, and economic movement (Honey & Kanter, 2013; Sheridan, et al.). Making has emerged as an engaging entry point and activity for STEM education (Making Meaning Report, 2013; Peppler & Bender, 2013), workforce development (Executive Office of the President, 2014), and the development of innovative and entrepreneurial skills (Benton, Mullins, Shelley & Dempsey, 2013). As an emerging phenomenon of education reform, making is becoming an established feature of many environments and experiences designed for informal learning. Cultural institutions, such as museums, science centers, and libraries are expressing growing interest and investing in the integration of making into exhibits and programs. At classroom levels in isolated instances, activities have been conducted to generate a "makerspace" environment. Students were engaged and more productive not only during the activity but for the rest of the day. Conversations and dialogue about the activity engaged students to think more creatively, work collaboratively, and reflect on their thinking and attitudes toward problems around them, the experimental process, and setting goals with action plans.
iv. List the specific indicators that you will use to measure progress toward your desired outcome. These should be measurable changes, not merely the accomplishment of tasks. Example: Teachers will each implement one new project using new collaborative instructional skills, (indicates a change in the classroom) NOT; teachers will be trained in collaborative instruction (which may or may not result in change).

- All teachers will conduct an activity in the Makerspace at least once per semester in grades preK-8. - Increased student levels of creativity and design principles will increase as evidenced on a pre/post surveys K-9. - Increased enrollment in Project Lead the Way and other STEM-related courses. - Increase interest in career paths in the STEM-related fields. - Increased teacher levels of understanding design principles for a makerspace as evidenced in pre/post surveys K-9. - Increased participation in Design related co-curricular activities such as Science Day, Invention Convention, Robotics Club, Odyssey of The Mind, Design Challenge, etc.

v. List and describe pertinent data points that you will use to measure student achievement, providing baseline data to be used for future comparison.

Our district has invested money in time in using the NWEA MAP assessments to measure academic progress over time in grades K-8. NWEA MAP results will be measured and monitored twice per year to measure growth and compared not only during each school year but over time. We have been using NWEA MAP for the past 5 years, so we have baseline data on our current state academically. We will also measure progress academic achievement and growth over time, but will have to take in to account the shifts in rigor and test vendors. We will monitor the increase in enrollment in Project Lead the Way and STEM related pathways and courses. We have baseline data collected from the previous 3 years in the program. We will also monitor aspiration and intended focus areas of our students over time, in grades 7-12, as part of the College and Career Readiness standards in STEM-related fields. We currently collect information in OCIS as part of the graduation portfolio. Monitoring changes in aspiration along the path of the middle and high school student, as well as their senior year, will provide information on the shift in focus and how to better meet the needs, earlier, for our students. Data regarding student participation in the MakerSpace will also be collected as well as teacher use and integration into classroom instruction. While this information will be partly anecdotal it will be critical to our understanding of the impact of the program.

vi. How are you prepared to alter the course of your project if assumptions prove false or outcomes are not realized?

We are prepared to monitor the implementation and student learning outcomes along the journey, instead of waiting until students graduate. By providing aligned, high quality professional development, and working with partners at the Worthington public libraries and Columbus Museum of Art, we continue learning and adapting our needs based on research and feedback. We are already involved in planning and dialogue with representatives from all the institutions will work closely with them to monitor progress and share learning strategies. Being agile, we understand the need to alter to the specific needs of our students while reinforcing the major tenants of the learning outcomes. The District Leadership Team, Administrative Team, and Board of Education, are in support of this project and will also monitor the progress from their levels to support, guide, and redirect as necessary. Adaptability is inherent in the concept of MakerSpace.

c. Utilization of a greater share of resources in the classroom

i. List the desired outcomes.

Example: change the ratio of leadership time spent in response to discipline issues to the time available for curricular leadership.

The model we will use for the makerspace process will be to create one environment in each building and institution. This will streamline resources to one location to avoid duplication of supplies while maximizing space in classrooms. We will also coordinate professional development activities among all the buildings, including the libraries and museum, to consolidate costs as well as align learning outcomes for staff and student understanding at a systemic level. With students more engaged in the classroom setting, we anticipate a decrease in time spent with the administrators in discipline situations as a result of more active engagement. Additionally we would work...
with our partners to provide professional development over the summer in their environment thus opening up our teachers thinking and creativity regarding how students learn. We would motivate teachers to participate in summer learning by offering college credit and ceu's that can be used towards licensure renewal. Teachers would be encourage to use this time to rewrite units and lessons to incorporate MakerSpace and the concepts of design into students' learning. In Worthington we are fortunate to have a full time Library Media Specialist in every building that works directly with students in a teaching capacity throughout their day. We would work to integrate MakerSpace opportunities into the instruction provided by the Library Media Specialists thus ensuring that every student has the time and opportunity to learn in this space and in this way.

ii. What assumptions must be true for this outcome to be realized?  

Examples: improvements to school and classroom climate will result in fewer disciplinary instances allowing leadership to devote more time to curricular oversight.

While it may appear as an assumption, we feel strongly that when students are directing and actively engaged in their own learning, fewer discipline issues will arise. We are under the expectation and assumption for time to be provided for staff members to engage in this approach to teaching and learning. Our Library Media Specialists have shown a depth and desire to lead work in the areas as a champion and overseer of the space, but we realize the need for overt training to occur with them to become the experts in their building.

iii. Describe any early efforts you have made to test these assumptions (pilot implementation, etc), or how these are well-supported by the literature.

A great deal of research on Positive Behavior Supports and Response-to-Intervention is predicated on the foundation of Tier I whole school/classroom approaches to learning (Luiselli, Putnam. et. al, 2005). By consolidating resources, we will be able to streamline costs and provide more coherence to the program/philosophy outcomes. Some of the staff members have conducted short "genius hour" or "passion projects" in the classroom and school that have increased student and staff morale as well as engage students. A barrier to conducting more projects like this are time and money for resources. By consolidating costs and warehousing materials in one location for each building, we will be able to purchase more in bulk and spread out the resources, including reusing materials, in an organized fashion. In addition to cost savings, we can engage students in cross-curricular activities with other staff members to save time in duplication of efforts and help make connections for student learning. Other early effort examples is the partnership with The Ohio State University in the creation and oversight of the Design Challenge at the district-wide Science Day event. In this event students who are involved in engineering classes work with the Science Day coordinators to develop a design challenge. The OSU students assemble the materials and test the proto-type before bringing it to Science Day. They also help to develop the scoring rubric and design parameters. This activity has been highly successful and the increase in participation is evidence of the interest in this type of learning.

iv. Please provide the most recent instructional spending percentage (from the annual Ohio School Report Card) and discuss any impact you anticipate as a result of this project.

Note: this is the preferred indicator for this goal.

At this time, it cannot be determined the instructional spending percentage for this initiative.

v. List any additional indicators that you will use to monitor progress toward your desired outcome. Provide baseline data if available. These should be specific outcomes, not just the accomplishment of tasks. Example: fewer instances of playground fighting.

We will monitor and record the use of the environment by students and teachers. Our first year of implementation would establish a baseline and we would plan for and expect to see increases each year following. At this time, a space like this does not exist, so the baseline is 0. We plan to monitor student discipline and student engagement through surveys. We collect and monitor discipline data at the building level through our Student Information System. This year we are also piloting the use of a Student Experience Survey through a partnership in a Straight A grant with Battelle For Kids. We will look closely at that survey to determine questions that may be used as indicators of impact of the MakerSpace.

vi. How are you prepared to alter the course of your project if assumptions prove false or outcomes are not realized?

We continue to look for grants and other outside revenue streams to help establish and sustain the practice. Feedback from teachers and students will inform us regarding materials, time, space and support for MakerSpace learning. While professional development is a necessity to conduct a makerspace with the proper degree of fidelity, we do not pre-suppose certain equipment or projects are required for the concept to be implemented. We would be able to use existing and scrap supplies from the school, businesses and homes for students to practice and engage with their learning processes. We believe the use of warehousing one space per building is the proper scale in consideration of the distance between buildings and safety for students.

### d. Implementing a shared services delivery model

i. List the desired outcomes.

Examples: increase in quality and quantity of employment applications to districts; greater efficiency in delivery of transportation services, etc.

ii. What assumptions must be true for this outcome to be realized?

Example: neighboring districts have overlapping needs in administrative areas that can be combined to create efficiencies.

iii. Describe any early efforts you have made to test these assumptions (pilot implementation, data analysis etc), or how these are well-supported by the literature.

iv. List the specific indicators that you will use to monitor progress toward your desired outcomes.

These should be measurable changes, not the accomplishment of tasks.

Example: consolidation of transportation services between two districts.
the total projected expenses in the budget narrative exceed the total project costs in the budget grid.

Responses should provide a rationale and evidence for each of the budget items and associated costs outlined in the project budget. In no case should

13. Provide a brief narrative explanation of the overall budget. Responses should provide a rationale and evidence for each of the budget items and associated costs outlined in the project budget. In no case should the total projected expenses in the budget narrative exceed the total project costs in the budget grid.

Unlike many makerspace grants that is predicated on purchasing equipment and materials with very little background on how to create the space, learn effective practices, and use the tools to impact learning and self-reflection on the whole student, we will spend a significant amount of time and resources in professional development. PD Purchased Service: Costs will be invested in attending high quality workshops and conferences with our team to collaborate and learn best practices from research-based programs, such as Harvard's Project Zero and Stanford's d.school. We will also visit high quality Makerspace labs, both in schools and in other organizations, such as the Pittsburgh Art Museum, Google, and High Tech High. We will also use personnel from our public libraries, Columbus Museum of Art and The Ohio State University to provide our teachers with more non-traditional professional development. PD Salaries & Fringe An allocation will also be provided for the teachers on the team to undergo professional development after school hours and during the summer.

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

a. New - Never before implemented
b. Existing - Never implemented in your community school or school district but proven successful in other educational environments
c. Replication - Expansion or new implementation of a previous Straight A Project
d. Mixed Concept - Incorporates new and existing elements
e. Established - Elevating or expanding an effective program that is already implemented in your district, school or consortia partnership

C) BUDGET AND SUSTAINABILITY

11. Financial Information: - All applicants must enter or upload the following supporting information. The information in these documents must correspond to your responses in questions 12-19.

a. Enter a project budget in CCIP (by clicking the link below)

Enter Budget

b. If applicable, upload the Consortium Budget Worksheet (by clicking the Upload Documents link below)

c. Upload the Financial Impact Table (by clicking the Upload Documents link below)

Upload Documents

The project budget is entered directly in CCIP. For consortia, this project budget must reflect the information provided by the applicant in the Consortium Budget Worksheet. Directions for the Financial Impact Table are located on the first tab of the workbook. Applicants must submit one Financial Impact Table with each application. For consortium applications, please add additional sheets instead of submitting separate Financial Impact Tables.

850,000.00 12. What is the amount of this grant request?

13. Provide a brief narrative explanation of the overall budget. Unlike many makerspace grants that is predicated on purchasing equipment and materials with very little background on how to create the space, learn effective practices, and use the tools to impact learning and self-reflection on the whole student, we will spend a significant amount of time and resources in professional development. PD Purchased Service: Costs will be invested in attending high quality workshops and conferences with our team to collaborate and learn best practices from research-based programs, such as Harvard's Project Zero and Stanford's d.school. We will also visit high quality Makerspace labs, both in schools and in other organizations, such as the Pittsburgh Art Museum, Google, and High Tech High. We will also use personnel from our public libraries, Columbus Museum of Art and The Ohio State University to provide our teachers with more non-traditional professional development. PD Salaries & Fringe An allocation will also be provided for the teachers on the team to undergo professional development after school hours and during the summer. This will ensure alignment in practices, processes, and depth to ensure true outcomes are realized. Instructional Salaries & Fringe An allocation will be provided to the site coordinators to design and teach a lesson/unit during the prototyping phase. This will provide them the opportunity to to practice and use the processes and tools with a group of students to model and learn. This will accompany the PD phase to share lessons learned and continue providing feedback to the system. Instructional Capital Outlay A significant amount of the budget will be devoted to providing Instructional Capital Outlay to the 24 buildings (20 schools, 3 libraries, 1 art museum). The equipment and materials includes, but is not limited to, the following materials: computer items (laptops, personal devices, monitors), software, audio visual equipment, digital cameras, lighting, green screens, tripods to support the creation of videos and photos. This also includes equipment, as suggested by Worthington's Computer Services Department, that will be used to help create an audiovisual announcement system for student use. This would help build community at schools by communicating information to everyone. In addition, -building and creating manipulatives, such as K'Nex, Legos, and Tinkertoys, will be used for design thinking, creativity and developing a sense for how things work as well as kits and building items such as snap circuits, simple machines kits, Little Bits, magnet kit, and more for experimenting safely in the areas of buoyancy, levers, gear, circuitry, etc. Finally, tools will be purchased, such as 3-D printers, laser cutters, vinyl cutters, sewing machines, and various other cutters, fasteners, and general hand tools. Instructional Supplies Monetary have been allocated as a start-up to the consumables which will be used, such as: tape, rubber bands, markers, wood, batteries, beads, thread, etc. We anticipate approaching local organizations to refill or donate items to feed the inventory. We will also audit our science supplies and, when possible, will build the use of MakerSpace into Science instruction/standards thus saving the need for the same materials to be purchased for each classroom.

14. Please provide an estimate of the total costs associated with maintaining this program through each of the five years following the initial grant
15. Please provide a narrative explanation of sustainability costs. Sustainability costs include any ongoing spending related to the grant project after June 30, 2017. Examples of sustainability costs include annual professional development, staffing costs, equipment maintenance, and software license agreements. To every extent possible, rationale for the specific amounts given should be outlined. The costs outlined in this narrative section should be consistent and verified by the financial documentation submitted and explained in the Financial Impact Table. If the project does not have sustainability costs, applicants should explain why.

We do not anticipate any on-going costs to the general fund in the first four years of implementation. We expect to receive alternative sources through donation for supplies for outside organizations and our partners. We do not anticipate purchasing any software with renewal subscriptions. We anticipate a $10,000 cost in Year 5 for the maintenance of the equipment, and we expect this to be on a small but regular basis thereafter.

16. What percentage of these costs will be met through cost savings achieved through implementation of the program?

Total cost savings from section B of the Financial Impact Table divided by total sustainability cost from section A of the Financial Impact Table. If the calculated amount is greater than 100, enter 100 here.

We anticipate a $10,000 cost in Year 5 for the maintenance of the equipment, and we expect this to be on a small but regular basis thereafter.

0 18. What percentage of sustainability costs will be met through reallocation of savings from elsewhere in the general budget?

Total reallocation from section C of the Financial Impact Table divided by total sustainability cost from section A of the Financial Impact Table

Note: the responses to questions 16 and 18 must total 100%

19. Please explain the source of these reallocated funds.

Reallocation of funds implies that a reduction has been made elsewhere in the budget. Straight A encourages projects to determine up front what can be replaced in order to ensure the life of the innovative project.

D) IMPLEMENTATION

20. Please provide a brief description of the team or individuals responsible for the implementation of this project, including other consortium members or partners.

This response should include a list of qualifications for the applicant and others associated with the grant. Please list key personnel only. If the application is for a consortium or a partnership, the lead should provide information on its ability to manage the grant in an effective and efficient manner. Include the partner/consortium members' qualifications, skills and experience with innovative project implementation and projects of similar scope.

Enter Implementation Key Personnel information by clicking the link below:

Add Implementation - Key Personnel

For Questions 21-23 please describe each phase of your project including its timeline, and scope of work.

A complete response to these questions will demonstrate awareness of the context in which the project will be implemented and the time it will take to implement the project with fidelity. A strong plan for implementing, communicating and coordinating the project should be apparent, including coordination and communication in and amongst members of the consortium or partnership (if applicable). Not every specific action step need be included, but the outline of the major steps should demonstrate a thoughtful plan for achieving the goals of the project. The timeline should reflect significant and important milestones in an appropriate time frame.

21. Planning

a. Date Range

<table>
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<td>February 1, 2016 - October 30, 2016</td>
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E) SUBSTANTIAL IMPACT AND LASTING VALUE

24. Describe the expected changes to the instructional and/or organizational practices in your institution.

The response should illustrate the critical instructional and/or organizational changes that will result from implementation of the grant and the impact of these changes. These changes can include permanent changes to current district processes, new processes that will be incorporated or the removal of redundant processes. The response may also outline the expected change in behaviors of individuals (changes to classroom practice, collaboration across district boundaries, changes to a typical work day for specific staff members, etc.). The expected changes should be realistic and significant in moving the institution forward.

Please enter your response below:

Based on research and feedback from other districts and organizations, we anticipate a shift in classroom practice to build more hands-on practices in which students can explore, investigate, and try new ideas in the spirit of learning through failure and repeated iterations of trial and error. This process is inherent in understanding and practicing the standard of Design that is a component of Ohio’s Technology Standards. We are excited to have a venue through which to seed Design Thinking into all content standards and at all levels. Through this process, we expect teachers and students to shift their mindset in building grit and resiliency in their learning. The impact will be students who are directing their learning, more apt to take risks, explore their passions, and be self-reflective. In addition, through a natural bent for the STEM related content and fields, we anticipate classroom culture to be more engaged and school discipline incidences to decrease with an increase in on-task behavior. Ultimately, we expect to see increased enrollment in STEM-related courses and pathways, such as Project Lead the Way, in order to provide students with the skills and tools to needed to graduate college and career ready. In collaborating with the Worthington Public Libraries and Columbus Museum of Art, we also expect the design elements from a Makerspace to translate into a shift in how we think about teaching and learning with the parents, communities, and families that cannot be measured on a traditional math or science test. As a result, we expect to collect longitudinal data on student mindset shift and career exploration that indicates students are more engaged, more aware of their interests and learning strengths, have a better understanding of the role of problem-solving and creativity, and are willing to take risks in their learning. These are all necessary for success in college and careers and more importantly, necessary for success in life.
PROGRAM ASSURANCES: I agree, on behalf of this applicant, and any or all identified consortium members or partners, that all supporting documents contain information approved by a relevant executive board or its equivalent and to abide by all assurances outlined in the Straight A Assurances (available in the document library section of the CCIP).

Neil Gupta, Director of Secondary Education, Worthington City Schools

Jeff McCuen, CPA Treasurer/CFO, Worthington City Schools

25. Please provide the name and contact information for the person and/or organization who will oversee the evaluation of this project.

Projects may be evaluated either internally or externally. However, evaluation must be ongoing throughout the entire period of sustainability and have the capacity to provide the Ohio Department of Education with clear metrics related to each selected goal.

Please enter your response below:

Neil Gupta ngupta@wscloud.org 614-450-6031

26. Describe the overall plan for evaluation, including plans for data collection, underlying research rationale, measurement timelines and methods of analysis.

This plan should include the methodology for measuring all of the project outcomes. Applicants should make sure to outline quantitative approaches to assess progress and measure the overall impact of the project proposal. The response should provide a clear outline of the methods, process, timelines and data requirements for the final analysis of the project's progress, success or shortfall. The applicant should provide information on how the lessons learned from the project can and will be shared with other education providers in Ohio. Note: A complete and comprehensive version of the evaluation plan must be submitted to ODE by all selected projects.

We will employ the professional development plans predicated on the Harvard Project Zero and Stanford school models for design thinking. We will also employ foundational research gathered from Dr. Koh, University of Oklahoma, with her research focus on makerspaces in libraries. The American Library Association (ALA) also contains a research-based program evaluation model:

http://www.ala.org/yalsa/sites/ala.org.yalsa/files/content/MakingintheLibraryToolkit2014.pdf We will use the research to establish our work plan as well as collect baseline data: Planning, Partnerships, Collaboration, Purchasing Materials, Marketing/Branding, and Evaluation. We will use these guides to build our project plans along with milestones. We will also collect attitudinal baseline data at the beginning and throughout the project on adult (parent, staff, community) and student shifts in thinking with creativity and mindset. We are currently in the process of piloting a middle school survey on creativity and growth mindset with a focus on math. We will also collect and monitor student enrollment and aspirational data in STEM-related focus areas and courses. We plan to share our process, through a website and videos, to capture our journey and lessons learned with others from the State of Ohio as well as beyond. We will also submit applications to present at state and national levels to share our work. The goal will be for other districts or groups to also conduct site visits to see the concept of Makerspace infused in the community, as well as the schools. So, as outside groups call to conduct a site visit, we will share with them the necessity to visit our work from a horizontal and vertical standpoint in looking at all the buildings in the school district as well as the library and art museum. In the midst of all of these environments, others should be able to see the same themes and practices in design thinking employed regardless of the space or activity.

27. Please describe the likelihood that this project, if successful, can be scaled-up, expanded and/or replicated. Include a description of potential replications both within the district or collaborative group, as well as an estimation of the probability that this solution will prove useful to others. Discuss the possibility of publications, etc., to make others aware of what has been learned in this project.

The response should provide an explanation of the time and effort it would take to implement the project in another district, as well as any plans to share lessons learned with other districts. To every extent possible, applicants should outline how this project can become part of a model so that other districts across the state can take advantage of the learnings from this proposed innovative project. If there is a plan to increase the scale and scope of the project within the district or consortium, it should be noted here.

Unlike other Makerspace grants, this grant is not necessarily predicated on the purchase of equipments, materials, or cookie-cutter activities. Instead, a deep level of professional development will be key to sharing how to use the space and design-thinking elements to create the energy and focus for students to explore, create, prototype, collaborate, and pursue passions. As we build our own train-the-trainer model with our own staff, we expect to develop 24 leaders who have a deep understanding of this space and learning environment knowing how to use the key attributes of design thinking. As a result, they will be able to model, train, and communicate with others to build their programs. Their answers will not be focused on the purchase of equipment, which may limit the likelihood of others to scale up or replicate this environment; instead, it will focus on the key attributes of design thinking. We anticipate the solution to be useful for others, as we develop existing practitioners in Ohio as experts in the Makerspace field. Our goal will be for Worthington to serve as a model of successful Makerspace in Ohio, so other cities can reach out to, visit and develop a similar concept for their community. We plan on connecting with other in-state and national experts in the field of Makerspace to bring high quality professional development to the school districts and other libraries in Ohio. Not only will they receive intensive training, but have critical friends to help in coaching and benchmarking. We also plan on leveraging our collective power in the future to work on future collaborative grants or purchase orders to drive down or streamline costs. Our plan is to have key leaders from the school district, art museum, and libraries present in various arenas to explain the holistic collaboration of this project. Dr. Gupta and Mrs. Foley have demonstrated previous success in writing and presentations in their institutions. As part of the Makerspace prototyping, we anticipate at least one school to purchase video equipment to support capturing the qualitative mindset shifts and impressions to share with others.

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 time frame. The Governing Board of the Straight A Fund reserves the right to conduct an evaluation of the project and request additional information in the form of data, surveys, interviews, focus groups and other related data on behalf of the General Assembly, Governor and other interested parties for an overall evaluation of the Straight A Fund.

PROGRAM ASSURANCES: I agree, on behalf of this applicant, and any or all identified consortium members or partners, that all supporting documents contain information approved by a relevant executive board or its equivalent and to abide by all assurances outlined in the Straight A Assurances (available in the document library section of the CCIP).
<table>
<thead>
<tr>
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### Partnerships

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<tr>
<td>Cindy</td>
<td>Foley</td>
<td>614-629-8360</td>
<td><a href="mailto:cindy.foley@cmaohio.org">cindy.foley@cmaohio.org</a></td>
<td>Columbus Museum of Art</td>
<td></td>
<td>480 E Broad St, Columbus, Columbus, Ohio, 43215</td>
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<tr>
<td>Katy</td>
<td>Hite</td>
<td>614-807-2626</td>
<td><a href="mailto:khite@worthingtonlibraries.org">khite@worthingtonlibraries.org</a></td>
<td>Worthington Libraries</td>
<td></td>
<td>2280 Hard Road, Columbus, Ohio, 43235</td>
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</tr>
<tr>
<td>Jeff</td>
<td>McCuen</td>
<td>Treasurer / CFO</td>
<td>Mr. McCuen as the lead fiscal officer for the grant will be responsible for all aspects of grant reporting. This will include cash requests, issuance of POs and checks, and coordination of activities with the schools and partnering organizations.</td>
<td>Mr. McCuen has been a school fiscal officer for over 23 years. He has been a Treasurer of Worthington City Schools since August 2007. As Treasurer, he has overseen many state and federal grant programs and implemented many cost saving strategies for the district.</td>
<td>Mr. McCuen previously worked in Dublin Schools for 13 years and South-Western prior. He has been responsible for grant financial reporting in both organizations and has overseen similar projects while a member of the Dublin team.</td>
<td>Masters Bachelors</td>
<td>5</td>
</tr>
<tr>
<td>Neil</td>
<td>Gupta</td>
<td>Director of Secondary Education</td>
<td>Dr. Gupta will serve as the Project Lead and Manager of the Grant. He will coordinate the grant outcomes and implementation with the Team, including the partnership organizations.</td>
<td>Dr. Gupta is the Director of Secondary Education for Worthington City Schools. He has served as a district administrator for over 10 years. He has been a grant manager for previous grants both at the state and federal level. He has a background in design thinking and extensive training in project management.</td>
<td>Dr. Gupta has overseen various Title programs in two different school districts. He has written and overseen state and federal grants. He has been a project manager for grants in the past as well as improvement initiatives at the district and state level.</td>
<td>Doctorate in Educational Leadership Masters in Curriculum and Instruction Bachelors in Arts</td>
<td>10</td>
</tr>
<tr>
<td>Cindy</td>
<td>Foley</td>
<td>Executive Assistant Director and Director of Learning and Experience, Columbus Museum of Art</td>
<td>Part of the institutional leadership providing vision, and strategic direction around community impact. Responsible for the museum departments that foster great experiences, lifelong learning and creative.</td>
<td>HONORS: Columbus Museum of Art receives the National Medal of Honor for Museums and Libraries, 2013 Recipient Greater Columbus Arts Council’s Community Arts Partnership Award for Arts Educator, 2012 Faculty, Harvard University Graduate School of Education, Future of Learning Summer Institute, 2014 Fellow, Harvard University Graduate School of Education, Project Zero Classroom Summer Institute, 2012, 2013 Next Generation of Leaders, Academy of Leadership and Governance, 2007 Maine College of Art: Representative to the Maine Academic Management Institute, for Women Leaders</td>
<td>Recipient of MacArthur and IMLS Learning Lab Grant, 2012-2015 - led the 5 institution team to developing and managing our joint effort; Partner with COSI, Idea Foundry, Reynoldsburg</td>
<td>MA in Art Education BA in Individual Studies in the Arts</td>
<td>10</td>
</tr>
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Manages division leadership to develop strategy and tactics; cultivate community partnerships and relationships; promote CMA’s reputation in the field; and lead institution wide research and evaluation efforts. Acts as chief arts and education advocate. Refocused the institution’s learning agenda to provide, foster and champion creativity as an intentional social mission. This effort culminated with the opening of a new 18,000 sq. ft. Center for Creativity in 2011. Has been the lead on two major Institute for Museum and Library Services grants: Creativity Summit (2010) and Making Creativity Visible (2014).

Mr. Geniusz has been a science teacher/coach for over 20 years. He brings a wealth of knowledge in makerspace through his research and coordination on previous grant submissions with this focus area.

### Brian Geniusz

**K-12 Science Coach**

Mr. Geniusz will serve as the coordinator of supplies and equipment to ensure they meet specifications aimed at the parameters of the grant as well as the fidelity of the makerspace research.

Mr. Geniusz has been a science teacher/coach for over 20 years. He brings a wealth of knowledge in makerspace through his research and coordination on previous grant submissions with this focus area.

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<thead>
<tr>
<th>Masters Degree</th>
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