## Budget

Beavercreek City (047241) - Greene County - 2015 - Straight A Fund - Rev 0 - Straight A Fund - Application Number (30)

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

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

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**Adjusted Allocation** 0.00

**Remaining** -995,000.00
Please respond to the prompts or questions in the areas listed below in a narrative form.

A) APPLICANT INFORMATION - General Information

1. Project Title:
Developing Student Innovators and Entrepreneurs Through a Creative Approach to Generating and Evolving Ideas

2. Executive summary: Please limit your responses to no more than three sentences.
According to The Partnership for 21st Century Skills, the central economic competitiveness issue is to create an aligned, 21st century educational system that prepares students to triumph in the global skills race. A focus on innovation, creativity, critical thinking, problem solving, communication, and collaboration is essential to prepare students for the future. Design Thinking can help us imagine new possibilities for learning that will change the lives of both teachers and students in powerful ways as we confront the challenges and possibilities of teaching and learning in the 21st century; focusing on need-finding, challenging assumptions, generating a range of possibilities, and learning through targeted stages of iterative prototyping.

This is an ultra-concise description of the overall project. It should not include anything other than a brief description of the project and the goals it hopes to achieve.

3. Total Students Impacted:
2985
This is the number of students that will be directly impacted by implementation of the project. This does not include students that may be impacted if the project is replicated or scaled up in the future.

4. Please indicate which of the following grade levels will be impacted:
- Pre-K Special Education
- Kindergarten
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12

5. Lead applicant primary contact: - Provide the following information:
First Name, last Name of contact for lead applicant
Susan Hayward, Ph.D.
Organizational name of lead applicant
Beavercreek City Schools
Address of lead applicant
3040 Kemp Road; Beavercreek, Ohio 45431
Phone Number of lead applicant
(937) 458-2417
Email Address of lead applicant
Susan.Hayward@Beavercreek.k12.oh.us

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
B) 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. Later questions will address specific outcomes and the measures of success.

The current state or problem to be solved; and

Students should be prepared to succeed in their post-secondary endeavors, not just academically survive. In our district, the Ohio Academic Content Standards and the Common Core State Standards are the starting point for our students' educational journey; however, the 21st Century demands an innovative approach to education. Complex societal changes are occurring rapidly and schools are hard-pressed to respond. "Many districts are so overwhelmed and concerned about the No Child Left Behind requirements and potential financial repercussions of not complying, that for lots of them the safest route is the 'back-to-basics' approach - focusing entirely on 20th century skills at the expense of 21st century ones (Van Dam, 2003). While standards-based competencies remain critical for academic success, students also need a new set of skills that foster collaboration, critical and creative thinking, problem solving, authentic research, and effective communication. Researchers, businesses, institutes of higher education, and even our local community members, have issued a call for schools to begin to address creativity and innovation - the growing complexity of our world requires it (Henry Ford Learning Institute, 2013).

The proposed innovation and how it relates to solving the problem or improving on the current state.

Innovation begins with finding an opportunity within a landscape full of challenges. Our district has found an opportunity to instill a different way of teaching and learning. Investigative Learning will provide powerful experiences designed to develop innovative and dynamic problem solving while fostering a responsible and proactive approach to learning. Through these experiences, students will develop the ability to investigate a problem, apply relevant knowledge, and take responsibility for their learning. Investigative Learning is truly the application of Design Thinking. This project endeavors to incorporate design thinking across the curriculum for eighth through twelfth grade students.

Eighth through twelfth grade students will initially experience design thinking within their content area courses, in the form of integrated "Design School," or "D-School" curricular components. Students will also have D-School elective opportunities, including extra-curricular D-School clubs, at our middle and high school buildings, allowing our students to delve deeper into design thinking practices. Design thinking involves believing that students can make a difference, and having an intentional process in order to get to new, relevant solutions to create positive impacts on our community and beyond. It authenticates creative abilities and a process for transforming difficult challenges into opportunities for design. Within design thinking, "students solve real problems, think for themselves, discover knowledge and continually revise and change their models and prototypes..." (Schwartz, 2013). It centers upon the design and development of learning experiences (curriculum), learning environments (spaces), school programs and experiences (processes and tools), and system strategies goals and policies (systems). Design thinking requires creative workspaces, where students can research information, work collaboratively, and create and test prototype solutions to problems. This requires a change in the learning spaces at both of our middle schools, our freshman building, and our main high school. The D-School spaces will be intentionally created to put students at ease, foster collaboration, and engage and support 21st century learners. By rethinking the design of our learning spaces, we will send new messages to our students about how they should feel and interact within the classroom. Design thinking is a human-centered process, stemming from deep empathy and understanding of the needs and motivations of people. It is a collaborative process, made stronger from the views of multiple perspectives and the critical and creative thinking of individual students within the design groups. Design thinking is also fundamentally optimistic, recognizing that design teams can create change - no matter how big a problem, how little time, or how small the budget. Central to design thinking is the process of learning by doing - the procedure gives permission to fail and to learn from mistakes, because that prompts new ideas, feedback, and new attempts at finding solutions. Essentially, design thinking is the confidence that new, better things are possible and that students can make them happen.

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

Applications should select any and all goals the proposal aims to achieve. The description of how the goals will be met should provide the reader with a clear understanding of what the project will look like when implemented, with a clear connection between the components of the project and the stated goals of the fund. If partnerships/consortia are part of the project, this section should describe briefly how the various entities will work together in the project. More detailed descriptions of the roles and activities will be addressed in Question 16.

- Student achievement (Describe the specific changes in student achievement you anticipate as a result of this innovation (include grade levels, content areas as appropriate) in the box below.)

As a result of implementing Design Thinking across the curricular areas, we anticipate increased student engagement and achievement in mathematical reasoning and Speaking and Listening skills (Common Core State Standards, 2010) for students in grades 8-12, all of which are documented outcomes from research (Barry, 2013). Through the design process, our students will take ownership over their learning and will be better able to see the relevance of educational content in all curricular areas. Projects, both within curricular classes and in D-School elective courses, will be implemented for an authentic purpose and audience, leading to more realistic and practical learning than from traditional approaches to education. As students identify the clear connections between what they learn in the classroom and how it relates to their lives, they will be inspired to learn and be more engaged in the learning process (Barry, 2013). Design thinking teaches an approach and process that students can apply to whatever future pursuits they may select. Design thinking emphasizes the importance of learning deeper conceptual understanding, rather than superficial facts and procedures, the importance of learning connected and coherent knowledge, rather than knowledge compartmentalized into distinct subjects and courses, the importance of learning authentic knowledge in...
Spending reductions in the five-year fiscal forecast or positive performance on other approved fiscal measures (Describe the specific reductions you anticipate in terms of dollars and spending categories over a five-year period in the box below or the positive performance you will achieve on other approved fiscal measures. Other approved fiscal measures include a reduction in spending over a five-year period in the operating budget approved by your organization's executive board or its equivalent.)

Total savings to the Five-Year Forecast through the implementation of this grant are $165,645.00 annually, providing a reduction of $828,225.00 over the course of the grant year and five-year sustainability period. In order to support the implementation of this project, the district has evaluated current course offering at the middle school level and has identified ineffective elective courses that will be eliminated in order to incorporate D-School courses into the curriculum. The elimination of these courses permanently reduces the on-going expenses associated with purchasing course materials and supplies, saving the district $6,000.00 annually. Additional savings to the Five Year Forecast will be attained by the elimination of support printing costs ($30,000.00 annually) and elimination of classroom computer computers ($129,645.00 annually). Support printing costs are being eliminated as a result of increased efficiency and capabilities of our in-district printing center. Classroom computers across the district are being eliminated as we incorporate individualized, mobile devices into our instructional practices. These new devices are more prevalent and efficient than the limited number of student computers available within classrooms, thus rendering the computers and their associated repairs and replacements, obsolete and providing a significant cost savings to the district. Please see the attached financial document for additional information.

Utilization of a greater share of resources in the classroom (Describe specific resources (Personnel, Time, Course offerings, etc.) that will be enhanced in the classroom as a result of this innovation in the box below.)

Enhancements to our teaching personnel, course offerings, and community collaborations will occur through implementation of this grant. Through a large investment in professional development, our existing teaching staff will be equipped to infuse 21st century skills and design thinking methodologies into their individual curricular disciplines. This will result in a teaching staff that is highly skilled, not only in their individual discipline, but also in their understanding of how the design thinking process is best utilized within the discipline, resulting in an enhanced learning experience for our students. Additionally, the creation of D-School course electives, and their supporting curricular materials, will provide the students of our district with the opportunity to further develop their 21st Century skills, including critical thinking, creative problem solving, collaboration, and communication. As these resources and problem solving methodologies are shared with our community through after-school training sessions, our students will experience, first hand, the decontextualizing of the educational experience as student and community-directed prototypes improve our community, state, nation, and the world.

Implementing a shared services delivery model (Describe how your shared services delivery model will demonstrate increased efficiency and effectiveness, long-term sustainability, and scalability in the box below.)

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

- New - never before implemented
- Existing: Never implemented in your community school or school district but proven successful in other educational environments
- Mixed Concept: Incorporates new and existing elements
- Established: Elevating or expanding an effective program that is already implemented in your district, school or consortia partnership

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

11. Financial Documentation: - All applicants must enter or upload the following supporting information. The information in these documents must correspond to your responses in questions 11-14.

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

Enter Budget

* If applicable, upload the Consortium Budget Worksheet (by clicking the link below)

* Upload the Financial Impact Table (by clicking the link below)

* Upload the Supplemental Financial Reporting Metrics (by clicking the link below)

Upload Documents

For applicants without an ODE Report Card for 2012-2013, provide a brief narrative explanation of the impact of your grant project on per pupil expenditures or why this metric does not apply to your grant project instead of uploading the Supplemental Financial Reporting Metric.

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. Applicants must submit one Financial Impact Table with each application. For consortium applications, each consortium member must add an additional tab on the Financial Impact Tables.
Partners are not required to submit a Financial Impact Table.

Applicants with an "Ohio School Report Card" for the 2012-2013 school year must upload the Supplemental Financial Reporting Metrics to provide additional information about cost savings and sustainability. Directions for the Supplemental Financial Reporting Metrics are located on the first tab of the document. If your organization does not have an "Ohio School Report Card" for the 2012-2013 school year, please provide an explanation in the text box about how your grant project will impact expenditures per pupil or why expenditure per pupil data does not apply to your grant project.

Educational service center, county boards of developmental disabilities, and institutions of higher education seeking to achieve positive performance on other approved fiscal measures should submit the budget information approved by an executive board or its equivalent on the appropriate tabs of the Financial Impact Table. Educational service centers should use the "ESC" tab and county boards of developmental disabilities and institutions of higher education should use the "non-traditional" tab.

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

Responses should provide 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.

* Provide a brief narrative explanation of the overall budget.

True design thinking requires a unique learning environment, resources, and training on the design process. To provide students with a D-School learning space conducive to investigative thinking, construction and remodeling at all four buildings will be necessary: Middle School 1 ($100,000.00); Middle School 2 ($20,000.00); Freshmen School ($150,000.00); and the High School ($125,000.00). The cost of creating a D-School space at Middle School 2 is minimal due to recent construction in that location. In addition to creating open, flexible learning environments necessary for critical and creative design thinking, equipment and tools will be needed for students to build and test proto-type solutions to problems. Equipment costs for the initial implementation will be: Middle School 1 ($65,000.00), Middle School 2 ($65,000.00); Freshmen School ($75,000.00); and High School ($85,000.00). It is anticipated that the equipment and materials will have minimal maintenance, repair, and replacement costs, which is reflected in the anticipated recurring costs portion of the financial document. In order to prepare for successful implementation of this project, we must train all our teachers on the fundamental aspects of design thinking and how to incorporate the design process into all curricular areas. Additional professional development will also be necessary for the specialized D-School teachers. Professional Development during the first year of grant implementation will cost $150,000.00. To ensure we provide the highest quality professional development, we will partner with a leader in Design Thinking: the Henry Ford Learning Institute (HFLI).

Recognizing that this shift in teaching methodology will require on-going support and training, we will continue our partnership with HFLI during the five years of the sustainability period and have budgeted for recurring costs associated with design thinking professional development throughout the length of the sustainability period. The creation and purchasing of curriculum materials and resources necessary to both integrate Design Thinking into the curricular areas and provide D-School elective courses for our students at five grade levels in four buildings and within our Business School is a significant and essential investment to ensure the success of this implementation ($140,000.00). We anticipate identifying additional, unanticipated necessary curricular materials and resources during the first two years of the sustainability period, as the implementation occurs, and have budgeted for those costs. The final cost for grant implementation is the cost of a 6-year contract with Wright State University's Multi-Disciplinary Evaluation Research Team to conduct formative and summative evaluations through the grant period, including the sustainability period ($20,000.00).

13. Will there be any costs incurred as a result of maintaining and sustaining the project after June 30th of your grant year?

Sustainability costs include any ongoing spending related to the grant project after June 30th of your grant year. Examples of sustainability costs include annual professional development, equipment maintenance, and software license agreements. To every extent possible, rationale for the specific amounts given should be outlined. The costs outlined in the 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.

Yes - If yes, provide a narrative explanation of your sustainability costs as detailed in the Financial Impact Table in the box below.

The recurring costs associated with implementing this project during the sustainability period are minimal. We anticipate the need for maintenance, repair, and replacement of some D-School equipment at the annual cost of $2,000.00 per building ($8,000.00 annually for all four buildings). Recurring costs through the length of the sustainability period associated with providing on-going Design Thinking professional development will be $38,000.00, with more allocated for the first two years of sustainability, when the need is expected to be greater. During year's 1 and 2 of the sustainability period, as teachers are first implementing the Design Thinking approach within their classrooms and the D-Schools, we anticipate that additional curricular materials will be identified as necessary to support this initiative. We expect to spend $8,000.00 during sustainability year 1 and $5,000 during sustainability year 2 to ensure our teachers and students have the resources necessary to integrate Design Thinking with fidelity. Please see the financial document for more detailed information.

No - If no, please explain why (i.e. maintenance plan included in purchase price of equipment) in the box below.

14. Will there be any expected savings as a result of implementing the project?

Yes

No

Applicants with sustainability costs in question 13 or seeking to achieve significant advancement in spending reductions in the five-year forecast must address this response. Expected savings should match the information provided by the applicant in the Financial Impact Table. All spending reductions must be verifiable, permanent, and credible. Applicants may only respond "No" if the project will not incur any increased costs as a result of
D) IMPLEMENTATION - Timeline, scope of work and contingency planning

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

This response should include a list of qualifications for the applicant and others associated with the grant. 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 Team information by clicking the link below:

Add Implementation Team

For Questions 17-19 please describe each phase of your project, including its timeline, scope of work, and anticipated barriers to success.

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

17. Planning - Activities prior to the grant implementation

* Date Range 10/2013-10/2014
18. Implementation - Process to achieve project goals

* List of scope of work (activities and/or events, including deliverables, project milestones, interim measurements, communication, and coordination).

The implementation of this project includes 3 workstreams: (1) Design & Construction; (2) Acquisition of Curriculum Materials & Resources; and (3) Communication/Professional Development for teachers, administrators, students, parents, and community members. Each will have three phases: Planning, Implementation, and Measuring Results. The key stakeholders for each workstream are: grade 8-12 Teachers, the Middle and High School Principals, Parents, Curriculum & Special Education Departments, and the Superintendent. For each workstream we have defined a set of milestones illustrated in the "Implementation Plan." Each milestone has a designated deadline to ensure a successful implementation. Implementation Plan for Workstream 1: From October 2014 to May 2015, we will remodel the identified locations in each of the four buildings, creating specialized learning spaces for the D-Schools. We will culminate the implementation process with a Grand Opening community event in May of 2015. Implementation Plan for Workstream 2: Between October 2014 and January of 2015 we will revise our list of course offerings and the Programs of Studies for each building. In January 2015 we will purchase the materials and resources identified during the planning stage of the process. Implementation Plan for Workstream 3: Beginning in September of 2014, teachers and administrators will receive PD on design thinking within committee meetings, staff meetings, department meetings, curriculum meetings, and specialized sessions with HFLI consultants. Student training will occur within content area courses and specialized D-School workshops during the second semester of the 2014-2015 school year. In May and June of 2015, parents and community members will be invited to workshops to develop a deeper understanding of the design process.

* Anticipated barriers to successful completion of the implementation phase.

The largest barrier for design and construction is the construction completion timeline. In order to ensure student access prior to the conclusion of the grant period, we will have a very aggressive construction schedule, leaving little time for delays caused by unforeseen circumstances, such as a delay in building materials or permits. We will mitigate this barrier by being transparent within the planning and bidding process, ensuring that the selected companies are prepared to accomplish the task within the identified timeframe. The largest barrier for the acquisition of design thinking curriculum materials and resources is ensuring that the purchased items will be comprehensive enough to meet the needs of integrating design thinking across all disciplines and within the elective courses. To mitigate this barrier, we will work closely with design thinking experts from the Henry Ford Learning Institute to ensure that we make intentional and purposeful selections that maximize our purchasing power. The largest barrier for professional development will be ensuring that all stakeholders fully understand the design thinking process and that teachers have a deep enough understanding to fully integrate design thinking across the curriculum. We will mitigate this barrier by being highly efficient in our professional development plan, ensuring scaffolding and significant support is provided to all teachers, students, parents, and community members.

19. Summative Evaluation - Plans to analyze the results of the project

* List of scope of work (activities and/or events, including quantitative and qualitative benchmarks and other project milestones).

To assess our project implementation, we will partner with WSU to develop and conduct quantitative and qualitative impact research. This evaluation will draw on a wide variety of data for both formative and summative reports. Quantitative data will be used in conjunction with questionnaire and observation data, as well as with qualitative data to ensure a thorough and balanced evaluation. Their evaluation team will analyze our implementation practices and the impact on student achievement, student engagement, and teaching methodologies. Four questions will frame this evaluation: 1. How are student achievement and acquisition of 21st Century Skills demonstrated within design thinking classroom activities? 2. How is design thinking connected to the academic Content standards and content learning in the classroom? 3. What 21st Century Skills are evidenced during design thinking activities? 4. How do students apply their understanding of design thinking and higher level thinking outside of the classroom? In addition to the evaluative information gathered from WSU, we will also conduct our own summative evaluations, in collaboration with HFLI. We will model our summative evaluation plans on the work conducted by The Change Initiative’s "The Good Project: Impact of Design for Change" study, collecting qualitative and quantitative research at the student and teacher levels (The Change Initiative, 2013). Additional qualitative data will be collected by replicating aspects of the 2013 Design Thinking Study conducted by Carroll, Goldman, Kabayadondo, Roth, and Royalty, enabling triangulation of data related to students' application.
Therefore, the questions focus on the method of defining the problem(s) the project hopes to solve and the measures that will determine if the problem is solved. The responses in this section are focused on the ability to design a method for evaluating the project's capacity for long-term impact, evaluation and replication.

Please enter your response below:

Upon implementation of this project, significant changes in instructional design and practices will occur. While high-level primary instruction will continue to be delivered by our teachers, we expect the incorporation of design thinking to create spectacularly transformative learning experiences, leading our students to develop a process for producing creative solutions to even the most complex challenges they tackle. By enhancing our current teaching techniques, we will be developing a methodology for innovation, combining creative and analytical approaches, and requiring collaboration across disciplines. Our process draws on methods from engineering and design and combines them with insights from the business world, tools from the social sciences, and ideas from the arts. Facilitated by our teachers, our students will learn the design process together, and then personalize it, internalize it, and apply it to their own challenges at the personal, community, and even global level. We will focus on learning by doing. We will not merely ask our students to solve a problem - we will ask them to define the problem within the larger context of the world. Students will start in the field, developing empathy for the people they design for, and will uncover the real human needs they intend to address. They will then iterate to develop an unexpected range of possible solutions, creating and refining rough prototypes to take back into the field and test with real people. Our bias will be toward action, followed by reflection on personal discoveries about the process. Experience will be measured by iteration: students will complete as many cycles of innovation as they possibly can on any project - each cycle bringing stronger insights and more unexpected solutions. Through the implementation of design thinking and investigative learning, the instructional methodologies incorporated in our classrooms will emphasize constructive thinking over mere factual retention. Information will become linked to experience and responsible action. Students will develop the ability to objectively assess and value their own work. Cooperation, socialization, and humanistic understanding will be developed among students working in Design Teams. Design thinking, at its core, promotes the development of knowledge through creative learning experiences that integrate all modes of intelligence (Gardner, 2010) and links learning to effective thought and action in the context experienced by the thinker. It involves consideration of people, resources, relationships, contexts, methods, values and knowledge. It calls on the humanities and the arts to express, communicate and situate ideas and to interpret potentials, on technology to implement them, and on science to assess their outcomes. Education emphasizing design thinking can produce an interdisciplinary and humanistic understanding of how art, science, technology and the humanities are integrated. It can free technology from its obsolete framework in vocational and industrial arts, put science to work in concert with the humanities, and bring art education into contact with mainstream subjects.

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

The responses in this section are focused on the ability to design a method for evaluating the project's capacity for long-term sustainable results. Therefore, the questions focus on the method of defining the problem(s) the project hopes to solve and the measures that will determine if the problem(s) have been solved.

Please enter your response below:

This project was guided by a theoretical rationale that is based on the socio-cognitive view of learning. As Vygotsky (1934, 1976) described, opportunities to interact verbally with others in a social environment become crucial to cognitive development. Language is central to this view, as we communicate and engage in dialogue with others (Bakhtin, 1986). The key components of the design process are that it is (1) human-centered (2) action oriented, and (3) mindful of process (Hasso Plattner Institute of Design, 2007; REDlab, 2013; Goldman, 2013). Through meaningful, hands-on projects, students develop deep understanding of a domain while developing skills in building empathy with users, collaboration, and prototyping. Promise for this work has been shown several projects (Goldman, 2002; Hmelo, Holton & Kolodner, 2000). Work in mathematics (Goldman, Knudsen, & Latvala, 1998), science (Kolodner, et al., 2003), engineering (Lammi, 2013) and technology (Kafai & Resnick, 2002; Todd, 1999) suggest that design thinking skills are not merely extras, but can in fact aide students in core subjects as well as building cognitive and social skills. Early work in this domain has indicated the potential for design thinking within the K-12 learning environment to contribute to students’ meta-cognitive (Kolodner, Gray & Burkes Fasse, 2000) and social learning (Cognition and Technology Group at Vanderbilt, 1999) as well as in specific subject areas (Goldman, Knudsen, & Latvala, 1998; Middleton & Corbett, 1998). 

Vande Zande (2007) characterizes design thinking as a means of creative problem-solving that relates thought and action directly and
22. Describe the overall plan to evaluate the impact of the concept, strategy or approaches used in the project.

_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 failure. The applicant should provide information on how the lessons learned from the project can and will be shared with other education providers in Ohio._

* Include the name and contact information of the person who will be responsible for conducting the evaluation and whether this will be an internal or external evaluation.

| External Lead Evaluator: Dr. Carl Brun Wright State University 225 Millett Hall 3640 Colonel Glenn Highway Dayton, Ohio 45435-0001 (937) 775-2382 Carl.Brun@wright.edu | Internal Lead Evaluator: Dr. Susan Hayward Beavercreek City Schools 3040 Kemp Road Beavercreek, Ohio 45431 (937) 458-2417 Susan.Hayward@Beavercreek.k12.oh.us |

* 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 project’s progress).

We are partnering with the Wright State University Multidisciplinary Evaluation Group to conduct quantitative and qualitative evaluation benchmark research. Quantitative data on achievement will be collected from standardized tests (OGT, SAT, AP, IB). This data will be compared to data from recent cohorts that did not participate in design thinking. Two-sample t-tests will be used to evaluate whether mean differences in scores are statistically significant. The evaluators will use a quasi-experimental design. A regression model will predict SAT and GPA scores using previous cohorts scores, after testing for collinearity between these measures. Outcomes will be compared using a paired sample t-test to determine if the outcomes from the design thinking differed significantly from those of traditional models. Propensity scores will be developed for each student from the comparative sample and each design thinking student will be matched to a student from the traditional schools with the same propensity score. Test scores would be compared using a paired sample t-test to determine if the design thinking outcomes differed significantly. Student engagement will be measured using surveys adapted from IPI. Internal consistency of these surveys will be tested using Cronbach’s alpha for reliability. Surveys will be compared to previous years’ surveys using Kolmogorov-Smirnov tests. Data from these surveys will be compared to the SAT scores using partial correlation coefficients to determine if there is a statistically significant relationship. Student motivation will be measured using the Academic Motivation Scale, which has been shown to be time- and gender-invariant with strong reliability and internal consistency. Surveys will be compared to previous years' surveys to determine if design thinking increase students’ motivation over time. Kolmogorov-Smirnov tests will be used to ascertain if these differences are statistically significant.

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

_If analysis of our evaluative data reveals ineffectiveness within our implementation process, we will modify our implementation methodologies. This may include necessary changes in the professional development opportunities provided for teachers and staff in order to ensure that student achievement is being attained. For example, further, purposeful professional development on how to utilize design thinking methodologies within individual academic disciplines may be necessary in order to help teachers learn how to integrate design thinking into their content area classrooms. We do not anticipate an inability to achieve the reduction in the five year forecast because we have a district commitment to implement the identified reductions with fidelity. By implementing the grant as outlined in this application, we are assured to have an increased share of resources available to our students._

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

_The response should provide specific quantifiable measures of the grant outcomes and how the project will lead to successful attainment of the project goals. Applicants should describe how the program or project will continue after the grant period has expired._

Please enter your response below.

_Through the implementation of design thinking methodologies, we hope to create a school culture dedicated to promoting authentic and relevant problem solving of local, state, national, and global issues. We anticipate the design and investigative thinking skill set to be transferred to college and career readiness and lifelong learning as students apply the Design Process methodologies in novel situations outside of their school experience. We expect significant, quantifiable growth in individual student achievement in mathematical reasoning and speaking and listening skills by meeting the needs of each 8-12 student. This will be evidenced by beginning and end of year assessments, design thinking assessment tools (quizzes, tests, performance assessments, goal leveling), End of Course Exams, PSAT, SAT, ACT, and PARCC assessments, and student, parent, and teacher surveys. Through this project, we will measure the impact of design thinking instructional methodologies using multiple methods throughout the school year. Results will be analyzed twice a year for each student by comparing the fall to spring test results. We anticipate students to demonstrate growth in the mathematical reasoning and__
24. Describe the specific benchmarks, by goal as answered in question 9, which 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.

The applicant should provide details on the quantifiable measures of short- and long-term objectives that will be tracked and the source of benchmark comparative data points. Responses should include specified measurement periods and preliminary success points that will be used to validate successful implementation of the project. If a similar project has been successfully implemented in other districts or schools, identification of these comparable benchmarks should be included.

* Student Achievement

We expect our students to demonstrate significant growth in individual student achievement in all content areas in grades 8-12, with particular growth in the areas of mathematical reasoning and speaking and listening (CCSS). Our district will complete an Impact Study of the integration of design thinking with two primary objectives: to gain a deeper understanding of how design thinking helps students learn, and to assess how design thinking engages students. The purpose of this Impact Study will quantifiably measure short and long-term objectives, which will be tracked by Wright State University's Multi-Disciplinary Evaluation Institute. Separate surveys will be created for teachers, students, and community members to evaluate the utilization of design thinking processes, advancement of 21st Century Skills, the deepened understanding of content and process, empowered teaching and learning, and the networking and learning partnerships of students and teachers. Working with our partner organizations (Henry Ford Learning Institute and Wright State University), we will compare our implementation processes and results with those of other schools across the nation.

* Spending Reduction in the five-year fiscal forecast

We expect annual spending reductions in the Five-Year Forecast of $165,645.00. We will evaluate our progress at two points in time: January and June. We will track this through a district-created Straight A Grant Financial Score Card. On the Score Card, we will have a list of all reduction items. We will use the Score Card to verify that all identified reductions for the grant are on target for reduction. We will involve a committee comprised of representative key stakeholders who will evaluate the short and long term benchmarks, ensuring compliance with the Straight A Grant.

* Utilization of a greater share of resources in the classroom

We expect a greater share of resources to be in the hands of our students through the implementation of this grant. We will evaluate our progress toward this goal at two points in time: January and June. We will track this through collaboration between the High School Building Leadership Team, Middle School Building Leadership Team, the Curriculum Department, and the Treasurer's Department. As a team, they will evaluate the level of increased efficiency of our spending to ensure we are providing our classrooms with a greater share of resources and are in compliance with the Straight A Grant.

* Implementation of a shared services delivery model

* Other Anticipated Outcomes

We expect to observe other key program outcomes which may or may not be easily measured. (1) Increased student engagement bolstered by the design thinking environment; (2) increased teacher comfort/aptitude with design thinking methodologies; and (3) evolution of instructional practice as teachers gain familiarity with design thinking tools and are better positioned to take advantage of 21st century learning models not possible using traditional resources.

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

☐ Yes
☐ No

If the applicant selects "Yes" to the first part of the question, 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 the 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 included here.

* Explain your response

Our model for implementation can be fully replicated by districts. We will provide access to our working documents and grant proposal research and data, enabling any building or district to apply our processes to meet the needs of their own student population. Full access to a site visit with our grant writing team, administration, teachers, and parents would also be made available to those interested in replicating our project. In order to replicate our process, a school or district would need to research our proposal and identify their own curricular resources, stakeholder interest, financial sustainability, and district-level commitment to the initiative. Our project implementation timeline would provide districts with the necessary framework to adapt the process to the scale of any building or district. At this time, we do not intend to increase the scope and scale of this project beyond the 8-12 integration, but evidence does support integration of design thinking with students as...
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).

I accept William McGlothlin, Ed.D. Superintendent, Beavercreek City Schools April 15, 2014
I accept Ernie Strawser Interim Treasurer, Beavercreek City Schools April 15, 2014
I accept Susan Hayward, Ph.D. Director of Curriculum, Beavercreek City Schools April 15, 2014
<table>
<thead>
<tr>
<th>Consortium Contacts</th>
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<tbody>
<tr>
<td>No consortium contacts added yet. Please add a new consortium contact using the form below.</td>
</tr>
<tr>
<td>First Name</td>
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</tr>
<tr>
<td>Carl</td>
</tr>
<tr>
<td>David</td>
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<tr>
<td>Larry</td>
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## Implementation Team

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<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Title</th>
<th>Responsibilities</th>
<th>Qualifications</th>
<th>Prior Relevant Experience</th>
<th>Delete Contact</th>
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<tbody>
<tr>
<td>Susan</td>
<td>Hayward, Ph.D.</td>
<td>Curriculum Director</td>
<td>Dr. Hayward is the lead applicant and project manager for this grant. She will be responsible for managing the implementation. She will meet weekly with the Superintendent and all key members of the implementation team.</td>
<td>Dr. Hayward has been in education for over 25 years. She has been a classroom teacher, assistant principal, Curriculum Supervisor, university Professor, Title I Coordinator, Title II Coordinator, Race to the Top Manager, and Curriculum Director.</td>
<td>Dr. Hayward has managed a multi-million dollar state grant, several federal grants, and private grants. She has implemented the following programs during her time as an administrator: Ohio Schools to Watch, Response to Intervention K-12, OTES Implementation PreK12, Student Growth Measures Development PreK-12, Race to the Top, Middle School Model. In addition, Dr. Hayward has served as an ETech reviewer for Ohio's Online State Professional Development Plan, eRead Ohio facilitator, and expert reader for the Ohio Department of Education Reading First grants.</td>
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<td>Elizabeth</td>
<td>Sizemore</td>
<td>Curriculum Supervisor</td>
<td>Mrs. Sizemore’s responsibility is to assist in the project management. She will meet weekly with all key members of the implementation team, will serve as an administrative liaison to a building-level implementation team, and will provide frequent updates on the implementation process to the Project Manager.</td>
<td>Mrs. Sizemore has been in education for over 14 years. She has been a classroom teacher, a Gifted Intervention Specialist, a Gifted Coordinator, and a Curriculum Supervisor.</td>
<td>Mrs. Sizemore has supported the implementation of a multi-million dollar state grant and has managed a private grant. She has implemented the following programs during her time as an educator: Credit Flexibility Manager, Director of Summer Enrichment Programs, K-12 programs, OTES evaluator, Student Growth Measures Development Leader, and Ohio Science 7-12 Facilitator.</td>
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<tr>
<td>Marian</td>
<td>West</td>
<td>High School Principal</td>
<td>Mrs. West's responsibility is to oversee the day-to-day implementation of the grant project at the building level. She will meet weekly with the Project Management Team to address all components of the implementation process.</td>
<td>Mrs. West has been in education for over 30 years. She has been a classroom teacher, Guidance Counselor, and the building principal for over 10 years.</td>
<td>Mrs. West has implemented programs/or served in the capacity of the following during her time as an administrator: Credit Flexibility ODE design team member, building level Leadership Team Director, OTES implementation and training, Response to Intervention, student assistance team, Crisis Team, Co-Chair and Presenter for High School Curriculum Mapping, Co-Chair and Presenter for High School Assessment for Learning initiative, and University College Advisory Board member.</td>
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<tr>
<td>Rodger</td>
<td>Gilbert</td>
<td>Assistant High School Principal</td>
<td>Mr. Gilbert's responsibility is to assist with the day-to-day implementation of the grant project at the building level. He will meet weekly with the Building Level Implementation Team to address all needs of the grant.</td>
<td>Mr. Gilbert has been in education over 30 years. He has been a classroom teacher and an assistant principal.</td>
<td>Mr. Gilbert has implemented programs/or served in the capacity of the following during his time as an administrator: district and building OTES committee, building level Leadership Team, LPDC, district Safety committee, Co-Chair and Presenter for High School Curriculum Mapping, and Co-Chair and Presenter for High School Assessment for Learning initiative.</td>
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<tr>
<td>Name</td>
<td>Title</td>
<td>Middle School Principal</td>
<td>Assistant Principal</td>
<td>Assistant Principal</td>
<td>Superintendent</td>
<td>Assistant Principal</td>
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<td>Sharma</td>
<td>Principal</td>
<td>Mrs. Nachlinger’s responsibility is to oversee the day-to-day implementation of the grant project at the building level. She will meet weekly with the Project Management Team to address all components of the implementation process.</td>
<td>Mrs. Nachlinger has been in education for over 16 years. She has been a classroom teacher, Associate Principal, Principal, and Instructional Coach.</td>
<td>Mrs. Nachlinger has implemented programs/or served in the capacity of the following during her time as an educator: building OTES leader; district Health Team, district Magnet Task Force, School of Innovation grant, Committee Chair for Kentucky Teacher Internship Program, Coordinator of School Based Extended School Services Program, school Athletic Director.</td>
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<td>Theresa</td>
<td>Principal</td>
<td>Mrs. Noe’s responsibility is to oversee the day-to-day implementation of the grant project at the building level. She will meet weekly with the Project Management Team to address all components of the implementation process.</td>
<td>Mrs. Noe has been in education for over 22 years. She has been a Dropout Prevention Coordinator, classroom teacher, Summer School Coordinator, Dean of Students, Assistant Principal, and Principal.</td>
<td>Mrs. Noe has implemented state and private grants and has implemented programs or served in the capacity of the following, during her time as an administrator: Prevention and Intervention program Grants (3); Positive Behavior and Intervention Supports Keynote speaker; private Technology grant; State of Arizona Service Learning grant, Reading First grant, and Distributive Education Club of America advisor.</td>
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<td>Garey</td>
<td>Assistant Principal</td>
<td>Mr. Martin’s responsibility is to assist with the day-to-day implementation of the grant project at the building level. He will meet weekly with the Building Level Implementation Team to address all needs of the grant.</td>
<td>Mr. Martin has been in education over 20 years. He has been a classroom teacher and an assistant principal.</td>
<td>Mr. Martin has implemented programs/or served in the capacity of the following during his time as an administrator: OTES Building Committee, building level Leadership Team, district and building anti-bullying committee, Student Handbook committee, district and building Best Practices committee, Student Assistance Team, and is Ventures certified.</td>
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<td>William</td>
<td>Superintendent</td>
<td>Dr. McGlothlin’s responsibility is to oversee the overall project. He will do this through weekly meetings with the Curriculum Director. Adjustments will be made to the implementation process and procedures, as needed.</td>
<td>Dr. McGlothlin has been in education for over 30 years. He has been a classroom teachers, assistant principal, Principal, Title I Coordinator, Special Education Director, Associate Superintendent, and Superintendent.</td>
<td>Dr. McGlothlin has managed federal and state grants at several school districts. He has implemented the following programs during his time as an administrator: received an after-school reading program grant (ILS); received an emergency repair grant (USV); and received a safety grant (ILS).</td>
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<td>Dale</td>
<td>Assistant Principal</td>
<td>Mr. Wren’s responsibility is to assist with the day-to-day implementation of the grant project at the building level. He will meet weekly with the Building Level Implementation Team to address all needs of the grant.</td>
<td>Mr. Wren has been in education over 10 years. He has been a classroom teacher and an assistant principal.</td>
<td>Mr. Wren has implemented programs/or served in the capacity of the following during his time as an administrator: building level Leadership Team, Curriculum Instruction Council member, Athletic Council, Supplemental Contract Committee, Special Education Department Chair, and Facilities and Planning Athletic Council leader.</td>
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<td>Jason</td>
<td>Assistant Principal</td>
<td>Mr. Whitaker’s responsibility is to assist with the day-to-day implementation of the grant project at the building level. He will meet weekly</td>
<td>Mr. Whitaker has been in education over 10 years. He has been a classroom teacher and an assistant principal.</td>
<td>Mr. Whitaker has implemented programs/or served in the capacity of the following during his time as an administrator: OTES Building Committee, building level Leadership Team, building anti-</td>
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<td>with the Building Level Implementation Team to address all needs of the grant.</td>
<td>bullying committee, building Best Practices committee, Student Assistance Team, Chair of the Building Safety Committee, and is Ventures certified.</td>
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