

**(1) Need for project (15 points).**

**(a) Providing services or otherwise addresses the needs of students at risk of educational failure.**

The Mount Vernon City School District, in collaboration with the Arts Westchester, wishes to implement “*Project TEAMS*”, an arts in education model development and dissemination program to meet the needs of core curriculum (ELA/STEM) teachers, teachers of art and teachers of music education, teaching in four most in need elementary schools: Graham ES; Grimes ES; Longfellow ES; and Williams ES, in the Mt. Vernon City School District (MVCSD) in New York State.

Based on the poverty level criteria, Title I, Section 113 (a) (5) of the Elementary and Secondary Education Act of 1965, as amended by the No Child Left Behind (NCLB) Act of 2001 (ESEA), can be described as the number of children eligible for free and reduced priced lunches under the Richard B. Russell national School Lunch Act. As indicated in the table below, this rate is more than 75% below the poverty level. The most recent official free and reduced lunch data, dated February 1, 2012, is described in TABLE I below. Also indicated are the percentages of students in the four project school academic performances in the areas of English language arts (ELA) and mathematics.

**TABLE I**

<b>School/ Grades</b>	<b>Enrollment 2011-12</b>	<b>#Suspensions 2011-12</b>	<b>#Free and Reduced Lunch 2011-12</b>	<b>ELA, % of Students Scoring at Level 1 or 2</b>	<b>Math, % of Students Scoring at Level 1 or 2</b>
<b>Graham ES 1-6</b>	<b>392</b>	<b>47</b>	<b>246 (62.6%)</b>	<b>20.25</b>	<b>15.57</b>
<b>Grimes ES 1-6</b>	<b>428</b>	<b>37</b>	<b>345(80.7%)</b>	<b>31.80</b>	<b>26.24</b>
<b>Williams ES 1-6</b>	<b>366</b>	<b>48</b>	<b>321(87.6%)</b>	<b>25.42</b>	<b>26.83</b>
<b>Longfellow ES 1-6</b>	<b>306</b>	<b>14</b>	<b>210(68.6%)</b>	<b>21.11</b>	<b>17.47</b>
<b>TOTAL</b>	<b>1,492</b>	<b>146</b>	<b>1,122</b>	<b>26.48</b>	<b>21.52</b>

Note: Scoring at Levels 1 and 2 indicates not meeting NY State learning and performance standards. ELA = English Language Arts.

Mount Vernon is among the most densely populated cities in the United States with over 70,000 people in 4.2 square miles. Located in southern Westchester County, Mount Vernon shares its southern border with the Bronx in New York City, and must cope with many of the same problems and challenges as New York City's most difficult neighborhoods. Although Westchester is generally thought of as a largely affluent region, it is in fact comprised of a number of large and diverse urban areas surrounded by small, homogeneous villages and towns, i.e., Mount Vernon, NY.

Westchester's cities such as Mount Vernon have large minority and low-income populations. Mount Vernon is the most ethnically diverse community in all of Westchester and is characterized by severe conditions of poverty and over-crowding.

Mount Vernon public schools, consisting of 11 elementary schools (grades K-6), two middle schools (grades 7-8), a comprehensive high school (grades 9-12), and two alternative high schools, are challenged to serve an ethnically diverse and financially disadvantaged population. The district serves almost 10,000 students.

Students in Mount Vernon are academically challenged as indicated by the percent of students not meeting or partially meeting state standards as indicated in TABLE I above which indicate the percentage of students that scored below Level 3 in ELA and mathematics.

(Note: Performance level descriptors: Level One - Not meeting the learning standards; Level Two – Partially meeting the learning standards; Level Three – meeting

learning standards; and Level Four – meeting learning standards with distinction.) . The statistics in TABLE I above underscore the existing conditions in the District. (Source – NYS School District Report Card, 2011-2012)

**(b) Specific gaps or weaknesses in services, infrastructure, or opportunities have been identified, including the nature and magnitude of those gaps or weaknesses.**

As indicated in TABLE I above students in the four-targeted elementary schools demonstrated a need to improve their academic performance in English language arts (ELA) and mathematics. TABLE II below indicates the number of students that were retained in 2010-2011:

**TABLE II**

<b>Retention Chart</b>	
<b>School</b>	<b># of Students Retained</b>
<b>Williams ES</b>	<b>31</b>
<b>Grimes ES</b>	<b>39</b>
<b>Graham ES</b>	<b>20</b>
<b>Longfellow ES</b>	<b>18</b>
<b>TOTAL</b>	<b>216</b>

**Source: Mt. Vernon City School District Recorded Statistics, 2011-2012**

To maximize the effectiveness and minimize duplication in project services, a series of district and school leadership team meetings were held where academic and social problems were identified.

Besides academics, the MVCSD is also challenged with:

- ◆ The highest rate of drug arrests in the county for youths 16 years and under;
- ◆ The highest substance abuse rate in the county;
- ◆ The highest rate of teenage pregnancy in the county and in the top eight (8) in New York State and
- ◆ The highest HIV/AIDS rate in the county.

Mount Vernon is committed to providing its teachers with the resources to improve student performance on state competency exams and to meet state standards both for core academic subjects and for the arts. Recognizing the positive impact of arts education on students' academic, social and emotional development, the District appointed a New York State Standards Administrator for the Arts in 1999 and has been focusing on unifying and upgrading the arts curriculum.

The proposed arts/STEM-centered education model combines master workshop training with intensive hands-on artist/STEM consultants in residence, art/music teacher and core curriculum teacher collaboration in the classroom, field trips to artistic and cultural centers, New York Hall of Science and other related points of educational interest in order to connect the arts with other core academic area teachers, mathematics, science, English language arts, engineering and technology. Monitoring and assessment

tools employed during the course of the project include structured observation of classroom lessons, ongoing teacher journals, records of student participation and achievement, and written surveys.

Needs identified through core curriculum teacher observation, interviews and surveys include:

- Need the knowledge and expertise that utilize creative and innovative teaching strategies and approaches that integrate the arts into the core curriculum in the elementary schools.
- Need to know ways to integrate classroom lessons with art/STEM-based projects that are related to content areas of English language arts, mathematics, science, technology and engineering.
- Need to have a better understanding of innovative approaches in teaching arts/STEM-centered lessons and the unique benefits to children that these approaches provide.
- Need to create innovative arts/STEM-centered teaching models that can be replicated in other settings.
- Need to promote productive communication and the collegial exchange of ideas among art teachers and teachers in the content areas of English language arts, mathematics, science, technology and engineering, in order to enhance students' cognitive and social development, their readiness for learning and ultimately to improve their academic performance in all content areas.

**(2) Significance (10 points).**

An arts/STEM-centered curriculum offers an effective pathway to “Readiness for Learning” for many Mount Vernon elementary school students; the biggest obstacles to successful learning are social, more than cognitive. A STEM based curriculum imbued with the arts can provide motivation and interest in academic core subjects and improve not only academics, but also improve social behavior.

A significant number of Mount Vernon's school population may be classified as "at-risk" and are difficult to teach and control in the classroom. Disruptive, combative behavior, even on the part of just a few students, undermines learning for an entire class.

(See TABLE I # of School Suspensions)

Because art is an inherently attractive and hands-on activity, even for students generally unmotivated by academic subjects, the opportunity to participate in hands-on activities often inspires uncooperative students to modify their behavior. For many such students who are accustomed to being classified as academic "failures," an arts/STEM-centered core curriculum can provide a vehicle for success, boosting self-esteem. The impact of a positive art experience can radiate to the academic classroom, increasing a student's chances for successful academic achievement at all educational levels.

However, the success of such students in the art classroom is directly dependent upon the art teacher's skill in balancing individual student's needs and fostering, a positive group dynamic. The teacher's expertise in an arts/STEM-centered pedagogy must be framed within a learning context that encourages teamwork and cooperation, leadership, critical thinking, positive self-expression, and productive peer interaction.

The elementary school teachers in the four target schools will have an expanded menu of innovative arts/STEM-centered teaching techniques at their disposal. These techniques will be documented to contribute to successful learning and will directly affect students' ability to meet New York State performance and learning standards in the core content areas: English language arts, math, science, technology and engineering skills.

Project TEAMS plans to implement a "Peer Partnership" component, which targets critical grade levels and subjects. For example, art teachers, artist/STEM consultants-in-residence will be able to work with core academic subject area teachers to integrate arts/STEM-centered teaching techniques into the core academic curriculum, math, science, engineering, technology and English language arts.

Dissemination of the project's objectives, outcomes and activities, nationally and state-wide, through the Mount Vernon City School District's and the Arts Westchester (AW) websites, presentations at national and state art education conferences: New York State Art Teachers Association (NYSATA) and the National Art Educators Association (NAEA), through e-mail and the production of a compendium of "Arts/STEM-centered Materials and Resources for the Elementary Schools" will facilitate the successful replication of our arts/STEM-centered education dissemination and development model in a variety of settings. Also, Project TEAMS products will be freely available to interested parties in electronic and hard copy format, once produced.

**(3) Quality of the project design (30 points).**

**(a) The design of the proposed project reflects up-to-date knowledge from research and effective practices.**

The No Child Left Behind has served as a catalyst for strengthening efforts to raise student achievement and improve school environments through integration of the arts. (Sources: [www.nochildleftbehind.gov](http://www.nochildleftbehind.gov); Rose, Lowell C. and Alec M. Gallup, *The 36<sup>th</sup> Annual Phi Delta Kappa/Gallup Poll of the Public's Attitudes toward Public Schools*, 2004.)

James Catterall indicates students who participate in arts learning experiences often improve their achievement in other realms of learning and life. In a well-documented national study using a federal database of over 25,000 middle and high school students, researchers from the University of California at Los Angeles found students with high arts involvement performed better on standardized achievement tests than students with low arts involvement. Moreover, the high arts-involved students also watched fewer hours of TV, participated in more community service and reported less boredom in school. (Catterall, James S. (2002), "Involvement in the Arts and Success in Secondary School.")

The concept of *transfer*, in which "learning in one context assists learning in a different context," has intrigued cognitive scientists and education researchers for more than a century. (Catterall, James S. (2002), "The Arts and the Transfer of Learning.")

Multiple independent studies have shown increased years of enrollment in arts courses are positively correlated with higher SAT verbal and math scores. High school

students who take arts classes have higher math and verbal SAT scores than students who take no art classes, (2005 College-Bound Seniors: Total Group Profile Report, The College Board, 2005; SAT Scores of Students Who Study the Arts: What We Can and Cannot Conclude about the Association, Kathryn Vaughn and Ellen Winner, Fall 2000).

The convergence of the arts with STEM is not about adding the arts to STEM; rather, “It’s more about fundamentally changing education to incorporate the experimentation and exploration that is at the heart of effective education” notes Margaret Honey, CEO of the New York Hall of Science. Participants in a conference, hosted by the Rhode Island School of Design, “Bridging STEM to STEAM” in 2011, agreed that the STEAM agenda should be about deep, sustained, powerful engagement as a way of learning. Exploration, experimentation and problem solving are all important features of high-quality learning. In order to take hold, learning needs to be varied and textured suggests Marina McDougall; arts project director at the Exploritorium of San Francisco. At the same time, she says, learning should encompass an escalation from data to information to wisdom, while developing in learners a sense of agency.

Likewise, McDougall recommends an emphasis on *holism* in learning is needed, as well as recognition of the myriad ways of seeing, exploring and knowing among learners. Good teaching and learning is also about good observation. “The best schools allow kids to get obsessed, to dive deep into something”, says Margaret Honey. Honey also indicates that making, playing, and designing are more effective strategies to engage students and promote learning in an arts/STEM curriculum. An important element of this

may be encouraging teachers to see their objective as helping students build knowledge in ways that are meaningful to them. (Baillie & Rose, 2004)

**The ABCs of Arts/STEM Project-Based Learning:** The benefits of student learning experiences in the arts/STEM-centered project-based education are:

**Academic – Improved** Reading and Language and Mathematics Skills. It also provides **the Basics:** Thinking Skills; Social Skills and the Motivation to Learn. It is also **comprehensive**, providing a positive school environment. (Deasy, Richard J., “Don’t Axe the Arts!” National Association of Elementary School Principals, Volume 82, Number 3 (January/February 2003).

Project-Based learning enhances Arts/STEM education. One of the many benefits of an Art/STEM education is the integration and application of cross-curriculum content. This allows the student to understand the relationship of the subjects they study. To be effective, an Arts/STEM program needs to be fully integrated. The best way demonstrated so far is with a comprehensive project-based curriculum. This helps the student answer the questions, “Why do I need to know this?” and “Where will I ever use this?”

A project-based curriculum allows for deep exploration of a problem. The arts/STEM project should be designed to allow different student groups to develop several distinct solutions to the same problem. The problem presents the student with an opportunity to plan, organize, and conduct research. These enabling activities help students develop needed skills

Thinking skills (sometimes referred to as cognitive skills) is a broad term that refers to the operation of various thought processes. Reasoning ability, intuition, perception, imagination, inventiveness, creativity, problem-solving skills and expression are among the thought processes associated with study of the arts. (Vaughn, Kathryn (2002), “Music and Mathematics: Modest Support for the Oft-Claimed Relationship.”

Certain arts/STEM project-based activities promote growth in positive social skills, including self-confidence, self-control, conflict resolution, collaboration, empathy and social tolerance. Research evidence demonstrates these benefits apply to all students, not just the gifted and talented. As the studies described below demonstrate, however, the arts can play a key role in developing social competencies among educationally or economically disadvantaged youth, who are at greatest risk of not successfully completing their education: (Vaughn, Kathryn (2002), “Music and Mathematics: Modest Support for the Oft-Claimed Relationship.”)

**A MOTIVATION TO LEARN:** The arts nurture a motivation to learn by emphasizing active engagement, disciplined and sustained attention, persistence and risk taking, among other competencies. Participation in the arts also is an important strategy for engaging and motivating students at risk of dropping out of high school and for those with special needs, as these studies show: Students at risk of not successfully completing their high school educations cite their participation in the arts as reasons for staying in school. Factors related to the arts that positively affected the motivation of these students included a supportive environment that promotes constructive acceptance of criticism and

one where it is safe to take risks. (Barry, N., J. Taylor, and K. Walls (2002), “The Role of the Fine and Performing Arts in High School Dropout Prevention.”)

Integration of the arts as a critical component of the school curriculum affords students a *complete* and well-rounded education. The benefits associated with study of the arts are *inclusive* of all students, although they can be greatest for those who are educational or economically disadvantaged. An arts-rich learning environment can have *far-reaching* effects that extend to the entire school and surrounding community.

**(Planning an Arts/STEM-centered School** A Handbook © 2002 The Dana Foundation Jane Nevins, Editor in Chief Walter Donway, Director: The Dana Foundation *Planning an Arts/STEM-centered School: A Handbook* is available in its entirety on the Dana Web site [www.dana.org](http://www.dana.org) in PDF format. Chapter Nine pp. 64-69; **Integrating the Arts into the Wider Curriculum** by Carol Fineberg)

**Rationale for Arts/STEM- Integrated Curricula** - Arts/STEM-centered education advocates cite many substantive reasons to integrate the arts with the core STEM curriculum: the arts make the textbook study of a topic come alive; children therefore learn more and with enthusiasm; art-making is a form of active learning, combining research with demonstration of knowledge; art education gives students opportunities to manipulate ideas and materials to engage more effectively in intellectual inquiry; students who are regularly and intensely engaged in the arts tend to be the same students who score well on standardized tests, regardless of their family income; when the arts are allied with basic skills instruction, the arts are less likely to be removed from the school during budget crunches; when artist/STEM consultants work in schools, they contribute

real-world expertise while maintaining the skills of their profession; and learning through the arts helps students acquire skills that may be transferable to the workplace.

Most integrated arts efforts are dependent upon a team of teachers and artist/STEM consultants, working together within their specialties to help students express ideas and understandings with accuracy, proficiency, and aesthetic effectiveness. Most efforts to integrate arts education successfully emerge from well thought-out, written teaching units that are very specific and ensure a high degree of personal and group accountability for the information and skills embedded within them. The integrated arts/STEM unit approach should promote a process of rigorous inquiry, research, and report. The best units of instruction seem to be those that are prepared by teachers and artist/STEM consultants together. These units usually have a theme that functions as a kind of lens through which the student can investigate various kinds of subject matter. The integrated arts/STEM unit approach should promote a process of rigorous inquiry, research, and report. The best units of instruction seem to be those that are prepared by teachers and artist/STEM consultants together. These units usually have a theme that function as a kind of lens through which the student can investigate various kinds of subject matter. In addition, Career and post secondary awareness and pathways will be presented to students and parents.

For an integrated arts/STEM curriculum to deliver excellent arts/STEM education and excellent academic education, several conditions must be in place. These include: clarity regarding what students are expected to learn in both the artistic and academic domains because of the integrated curriculum unit; teachers, students, and artist/STEM

consultants must be clear about the knowledge and skills that students will acquire in these described activities; clear pedagogical procedures that help students organize their work (research, critical thinking procedures, preparation of findings in an appropriate arts-related format, and development of supportive documentation) toward well defined outcomes; knowledgeable teachers and expert artist/STEM consultants who introduce students to challenging work that results in high levels of cognitive process as well as aesthetic products; adequate time to plan and implement an integrated arts unit—neither too little, nor too much time to go through the unit from statement of theme, engagement in various kinds of activities, and arrival at conclusions; appropriate assessment tools integrated into the teaching design to determine students’ mastery over content and skills; awareness that all subject matter may not always appropriate for integration; understanding that direct teaching of subject matter is a requisite for integration. For example, an integrated curriculum does not teach the times table; but you can use multiplication skills in an integrated unit that requires calculation; to carry off this assignment well, teachers and artist/STEM consultants, as well as administrators of schools and arts organizations, need to heed the guidelines for effective teaching; and protect the value of a genuine intellectual and aesthetic pursuit. Students will then get their just rewards—a stimulating learning experience that emphasizes the role arts play in enhancing knowledge, skill, and comprehension of the world we live in.

The above cited references, especially, “Integrating the Arts into the Wider Curriculum by Diane Fineberg, 2002, from up-to-date knowledge from research and effective practices guides and prompts us to assemble an arts/STEM-centered education model for four elementary schools in the MVCS D, Project TEAMS.

Project TEAMS is intended to increase the amount of information regarding effective models for arts education that integrate the arts with the STEM core curriculum standards-based education programs. Our major partner will be Arts Westchester, which will facilitate arts/STEM consultant residencies in the classrooms in each project school, as well as field trips to cultural organizations that will connect with integrated arts programs and classroom activities.

Arts Westchester, a 45-year old organization, located in White Plains, NY, has been a leader in arts/STEM integration programs with a 100-member artist/STEM consultants' roster and an affiliate membership of more than 130 organizations in various disciplines. It has a long and successful relationship with the Mount Vernon School District, beginning in the mid 1990's.

In Year One, Project TEAMS will target only grades 1, 2, and 3 in all four-project elementary schools. In subsequent years, we will follow and monitor project students' progress and project impact as they move through the grade levels, grades 2, 3, and 4 in Year Two, grades 3, 4, and 5 in Year Three and in Year Four, Grades 4, 5, and 6.

**Overall Program Design & Time-Line for Implementation of Activities**

<b>Year 1</b> <b>2013-2014</b>	<b>Sept, Oct, Nov</b>	<b>December – February</b>	<b>March -May</b>	<b>June</b>
Grades 1,2,3	Initial Planning  Pre-Annual Assessment	Ten week residencies and pre / post weekly assessment	Ten week residencies and pre / post weekly assessment	Post-Annual  Assessment  & Reflection
<b>Year 2</b> <b>2014-2015</b>	<b>Sept</b>	<b>Oct- Jan</b>	<b>Feb-May</b>	<b>June</b>
Grades 2,3,4	Pre-Annual Assessment & Planning	Ten week residencies and pre / post weekly assessment.	Ten week residencies and pre /post weekly assessment	Post-Annual  Assessment  & Reflection

<b>Year 3</b> <b>2015-2016</b>	<b>Sept</b>	<b>Oct- Jan</b>	<b>Feb- May</b>	<b>June</b>
Grades 3,4,5	Pre-Annual Assessment & Planning	Ten week residencies and pre / post weekly assessment.	Ten-week residencies including pre and post weekly assessment.	Post-Annual Assessment & Reflection
<b>Year 4</b> <b>2016-2017</b>	<b>Sept</b>	<b>Oct- Jan</b>	<b>Feb-May</b>	<b>June</b>
Grades 4,5,6	Pre-Annual Assessment & Planning	Ten week residencies and pre / post weekly assessment.	Ten-week residencies and pre and post weekly assessment.	Post-Annual Assessment & Reflection

### **Planning Period – September, October and November – 2013 (Year One)**

The project leadership team and 12-member advisory board will participate in a planning period from September – December the goals of which are to optimize the selection of the most appropriate resident artist/STEM consultants from Arts Westchester and train both artist/STEM consultants and teachers in the collaborative process. .

Planning, such as: curriculum integration with the arts and all core subjects by grade level as it follows the NYS curriculum guides; model typical residencies and all their components (timing, materials, classroom set up, curriculum focus, until it is optimized to obtain the highest performance level for student achievement; Review other models that are already in place – visitations to other nearby schools or communicate through satellite; and provide professional development in preparation for implementing the program. For Years 2, 3, and 4, the planning period will be for only one month, September, since protocols, procedures, assignments, etc. have already been put into place in Year One.

Two ten week residencies will take place over the spectrum of each year, one each semester, beginning with: Year 1 will require three months, September, October and November for planning, organization and selection of the arts integrated core curriculum themes for the residency program and the last month, June, for annual evaluation and assessment, including a performance portfolio review. Year 2, 3, & 4 will require only one month, September, for planning, organization and selection of the arts integrated core curriculum themes for the residency programs and the last month, June, for annual evaluation and assessment, including a performance portfolio review. Before and after

each 10-week session, a pre and post evaluation and assessment will take place to collect data and evaluate the project for accuracy.

The in-class artist/STEM consultants residents will fulfill a ten week period that will include: One planning period/week with the classroom teacher and other teachers, art and music teachers, to work as a group to integrate all aspects of the arts into the core curriculum, including ELA, mathematics, science, technology and engineering; One-half day visitations in class with the core curriculum teacher to implement arts activities that integrate with core subjects; and each class section will be involved with on-going residencies throughout the year, amounting to two 10 week residencies each grade level of 37 class sections, plus pre- planning time, post- assessment, field trips and culminating activities.

Field Trips: Following or during each residency, students will be involved with field trips to an educational entity that relates to the core-subjects and participate in activities that integrate the curriculum with the arts.

Productions and after school activities: Some residencies may involve a culminating performance, i.e., theatrical show, dance, art exhibit, etc.

The After School and Saturday Program Component: The students from the four project schools will be entitled to attend and participate in a 3 hour arts integrated program held at one of the project schools with volunteer parents, an administrator, and artist/STEM consultants in residency, classroom teacher and art teacher; and project activities, such as, African Dance, Theater, Creative Musicianship, etc. will be offered with a strong emphasis on reading and mathematics.

The entire program will be implemented, so that data collecting and evaluations will be a major project component.

**(b) The proposed project is part of a comprehensive effort to improve teaching and learning and support rigorous academic standards for students.**

Project TEAMS, will support and address the absolute priority, which is the enhancement, expansion, documentation, evaluation, and dissemination of an innovative, and cohesive model that will be based on research and will effectively demonstrate: (1) integrated standards-based arts education into the core elementary school curricula; (2) strengthen standards-based arts instruction in grades, 1-6; and (3) improve students' academic performance, including their skills in creating, performing, and responding to the arts.

The four competitive preference priorities will also be addressed. Competitive Preference Priority #1, Building Evidence of Effectiveness will be demonstrated by the continual monitoring and evaluation of the project design and implementation in order to improve positive project outcomes. This will be accomplished through evaluation design's feedback component, including periodic oral and written performance reports and project advisory board input. Competitive Preference Priority#2, Supporting Programs, Practices and Strategies for Which there is a Strong or Moderate Evidence of Effectiveness. Project TEAMS will provide strong evidence of effectiveness through a strong evaluation design that includes a carefully matched control group, whose students and teachers will not participate in Project TEAMS. Project TEAM's evaluation design call for a randomized controlled, multisite trial that supports the effectiveness and impact of the project on project participants. Competitive Preference Priority #3: Turning

Around Persistent Lowest Achieving Schools. Primary objectives of Project TEAMS are to improve student academic achievement in the four low achieving project schools and to provide project services to these students. Competitive Preference Priority #4:

Technology – Project TEAM by its very nature is designed not only to provide instruction in understanding and utilizing the latest in technology for students, but it is designed to provide professional development for participating teachers through the use of high-quality digital tools and materials to use the technology to improve instruction.

Project TEAMS objectives include improved student academic performance, intensive professional development, and development of an arts/STEM-centered integrated standards-based curriculum, parental involvement and the dissemination of project objectives, activities and outcomes. Project TEAMS is intended to increase the amount of information regarding effective models that integrate the arts with standards-based core curriculum education programs easily obtained through the implementation of our proposed high-quality and effective dissemination plan.

The Mount Vernon City School District, in partnership with Arts Westchester, will develop a high-quality and innovative AEMDD program for four MVCSD elementary schools most in need, where a total of 1,492 students are enrolled; and where 1,122 (75.2%) are below the poverty line, grades 1-6. These four project elementary schools will become art-centered education elementary schools.

Project TEAMS will strengthen the capacity of core curriculum teachers and art and music specialists to deliver standards-based arts integrated into the core curriculum,

and raise student achievement in the arts integrated core curriculum areas, i.e., English language arts, particularly reading, mathematics, science, engineering, and technology.

The four targeted schools' arts educators and the Arts Westchester's artist/STEM consultants in residence will collaborate with teachers of core academic subjects to facilitate the integration of the arts into the core subject areas, using an interdisciplinary approach across the curriculum. Project TEAMS will be aligned with State and national standards

across the curriculum and is intended to improve teaching and student academic performance.

A twelve-member advisory board will guide and monitor the implementation of Project TEAMS.

Field trips to museums, NYC Hall of Science and other artistic/STEM centers of interest that make connections with the arts with core curriculum content will also be a project highlight.

Project goals, objectives, activities and outcomes will be disseminated nationally and on a state-wide basis through the school district and Arts Westchester websites, our local district cablevision channel, presentations at national and state art education conferences, through e-mail, compilation and distribution of a project developed art integrated core curriculum compendium, video taping of training sessions through our district's TV Studio Department, school newsletters, district's public relations department, community outreach activities, and other effective dissemination modes.

Products produced by Project TEAMS will be freely available on Project TEAMS's websites

Parental involvement includes: membership on the project's advisory committee; chaperoning project events, including field trips; and volunteering to assist the artist/STEM consultants in residence and project staff in the classroom.

**(c) The project is designed to build capacity and yield results that will extend beyond the period of Federal financial assistance.**

This project will support arts educators, core curriculum teachers and artist/STEM consultants-in-residence and will use innovative instructional methods and current knowledge and effective practices from arts/STEM-centered education strategies and approaches. It will focus on the development and enhancement of standards-based arts education programs. It will also seek the integration of standards-based arts instruction with other core academic content areas, English language arts, engineering, mathematics, technology and science.

Project TEAMS will build the capacity to introduce, maintain and eventually expand the arts/STEM-centered school curriculum. The MVCSD in partnership with Arts Westchester of New York State will collaborate to develop a high-quality and innovative arts/STEM-centered education model for dissemination and replication in other school districts and similar sites. Project TEAMS will develop arts/STEM-centered educational pedagogy of MVCSD's teachers, initially in the four project schools and eventually in other MVCSD schools. Project TEAMS will build the capacity of core curriculum teachers to deliver standards-based arts/STEM-centered education programs, to raise

student academic achievement in the content areas and to ensure that all students meet challenging state academic learning standards in science, mathematics, technology, engineering and English language arts, in particular reading. This will continue even when federal funds are no longer available.

**(4) Quality of project personnel (10 points).**

**Applications for employment from persons who are members of groups that have traditionally been underrepresented based on race, color, national origin, gender, age, or disability.**

Both the Mount Vernon School District and Arts Westchester are equal opportunity employers strongly committed to the recruitment of minority, women and disabled individuals. Mount Vernon City School District (MVCSD) believes that the effectiveness of its total instructional program is enhanced and strengthened by a faculty and staff that include traditionally underrepresented constituencies. To that end, the District has adopted a formal Affirmative Action Plan. Available positions are advertised in regional minority publications such as El Diario, Amsterdam News and La Prensa. The Assistant Superintendent for Resources participates in minority career affairs. All applicants for open positions are considered strictly on the basis of qualifications and experience. Resumes are examined to ascertain that applicants possess the skills and academic training to fulfill their job responsibilities.

The administrative staff, teachers, evaluator and artist/STEM consultants of this project represent a diverse population, including African-Americans, Hispanics, Caucasians and Asians.

**The qualifications, including relevant training and experience, of key personnel.**

**Project Director: Angela Adesso**, serves as Mount Vernon School District's Learning Standards Administrator for the Arts, where her responsibilities include: reshaping and restructuring the arts curriculum; designing and implementing professional development for arts teachers; and providing in-classroom modeling of instructional strategies for teachers of all disciplines. A graduate of Herbert H. Lehman College with a degree in Art/Art History, she also holds an M.S in Education - Reading and state certification in School District Administration and Supervision. Ms. Adesso has worked in the Mount Vernon School District for 15 years and has over 10 years of experience as a facilitator and manager of interdisciplinary arts programs and arts-infused academic classroom projects. She is also currently an Adjunct Professor of Education at Mercy College, where she teaches Creative Arts for Children, a course for student teachers, based on New York State Learning Standards, which embeds interdisciplinary studies and instructional technology.

**Arts Westchester Co-Coordinator:** TBA will have at least five years employment experience with education involving the arts. The successful candidate will hold at least a master's degree or higher in arts education or related field.

**Administrative Assistant:** TBD will have at least three years experience as an administrative assistant and holds at least a high school diploma or higher, some college experience preferred. Is computer literate, works in Word, Excel, Power Point, etc.

**Artist/STEM Consultants:** are qualified art professionals and experts in their field of specialization. These professionals integrate the arts into a variety of settings from

classrooms to museums; day care centers to shelters. The services they provide are designed to make classrooms more creative and effective by giving teachers and students opportunities to bring learning to life through the arts. They all have expertise and experience working with children in a public school setting and providing professional development to teachers and integrating the arts into the core STEM curriculum.

**(5) Quality of the management plan (25 points).**

**(a) Management plan to achieve the objectives of the proposed project on time and within budget, including clearly defined responsibilities, timelines, and milestones for accomplishing project tasks.**

Since we have found that the key to success is a collaborative approach, we have put together a management team, which has successfully worked together in the past.

A chart showing the extent of participation and responsibilities of the management team appears below:

**MANAGEMENT CHART (2013-2017)**

	PERSONNEL	Project Director	Project Coordinator	School Supervisors	Advisory Board	Business Office	Evaluator	Consultants/ Artist/STEM consultants-in
Administer/Coordinate the Program		•	•	•		•		
Coordinate Artist/STEM consultant-in-Residence Services			•					
Fiscal Responsibility		•		•		•		
Orient Project Staff		•		•				
Establish Policy				•	•			
Call Periodic Staff Meetings		•						
Evaluation Process		•	•	•			•	
Input in Evaluation		•	•	•	•		•	
Develop Evaluation Instruments		•	•				•	
Select Educational Materials		•	•					•

Provide Professional Development	•	•	•			•	•
Keep Records of Project Participants	•	•	•				
Project Management	•		•				
Write Interim and Final Reports	•					•	
Record Keeping	•	•	•				
Monitor Project	•	•	•	•	•	•	

**Personnel Responsibilities:**

**Role of the Project Director:** The Project Director, (District Administrator for the Arts)

will be responsible for the administration and efficient implementation of the project.

The Director will:

- ◆ Provide assistance, expertise, leadership and support for the pedagogical and organizational constructs of the project.
- ◆ Be held accountable for distribution of funds and coordination of project efforts with the Arts Westchester, the project partner.
- ◆ Consult regularly with the Arts Westchester Project’s co-coordinator, and with District art, music and core curriculum teachers to monitor progress and address any problems or concerns.
- ◆ Oversee the process that will culminate in the compilation of the *Arts/STEM-centered Materials and Resources* compendium, which is one of the major goals of the project.
- ◆ Publicize and disseminate information regarding project outcomes and success.

**Role of the Arts Westchester Co-Coordinator:** The Co-coordinator will assume responsibility for managing all Arts Westchester services provided to the Mount Vernon City School District. The Co-Coordinator will coordinate all services with the Project Director. Project services, procedures, format and progress will be jointly reviewed at least monthly. Working with the Project Director, the Co-coordinator will be responsible for placement and scheduling of the Arts Westchester artist/STEM consultants-in-residence, and will confer with them weekly to address any problems and provide guidance as necessary.

**Role of the Arts Westchester Artist/STEM consultants:** The artist/STEM consultants-in-residence will provide the direct classroom and consulting services for the project. They will collaborate with planning, team-teaching and peer collaborating with District arts teachers and core curriculum teachers, and help produce some of materials and resources to be compiled in Project TEAMS's arts/STEM-centered education compendium.

**Role of the Evaluator:** The evaluator will provide periodic written and oral findings and recommendations during the school year, including effective strategies for replication to project staff, school administrators, advisory board and participating school staff. The evaluator will work in conjunction with the project director and other key project staff. The evaluator develop the required program assessment instruments, collect and analyze data, prepare the annual performance reports, complete data reports and the final evaluation report required by the USDOE.

**Management Timeline: 2013 - 2017**

<b>ACTIVITIES</b>	<b>S</b>	<b>O</b>	<b>N</b>	<b>D</b>	<b>J</b>	<b>F</b>	<b>M</b>	<b>A</b>	<b>M</b>	<b>J</b>	<b>J</b>	<b>A</b>
Year 1 Planning period: program staff assignments, scheduling, and materials. Selecting Themes Annual Pre- Assessment	X	X	X									
Years 2, 3, & 4 Planning period: program staff assignments, scheduling, and materials. Selecting themes Annual Pre- Assessment	X											
Initial master workshop at the Mount Vernon School District Education Center	X											
Year 1 Implementation of two 10 week residencies				X	X	X	X	X	X			
Year 2, 3, & 4		X	X	X	X	X	X	X	X			

Implementation of two 10 week residencies												
Monthly Consultation Reflective Workshops			X	X	X	X	X	X	X			
Annual Post Assessment										X		
Development of arts/STEM-centered education compendium			X	X	X	X	X	X	X			
Completion of the Arts/STEM-centered Education Compendium (4 <sup>th</sup> Year - 2017)												X

**(b) Time commitments of the project director and principal investigator and other key project personnel are appropriate and adequate to meet the objectives of the proposed project.**

The project director, Angela Adesso, the MVCSD administrator of the arts, will provide 0.4 FTE of her time for the overall supervision and administration of the project at no cost to this project.

The Arts Westchester Co-Coordinator, TBD, will provide 1.0 FTE of his/her time to schedule, supervise, administer, and assess all aspects of Arts Westchester role in the implementation of the artist/STEM consultants-in-residence component.

The evaluator, Dr. Angelo G. Gatto of educational Research Advantages, LLC, will provide 40 days of evaluation services for each year of the project.

The administrative assistant will provide, TBA, 1.0 FTE assisting the project director in the administration of the project.

**(c) Procedures for ensuring feedback and continuous improvement in the operation of the proposed project.**

Through the project's 12-member advisory board, procedures will be established to ensure feedback and continuous modification in the operation of the project. The project advisory board will convene periodically on a monthly basis to react to progress reports on project implementation and progress, in order to plan, make recommendations, and to make decisions that would help guide the successful implementation of all project components, including the evaluation of the program.

The 12 member advisory board includes project key personnel, University faculty, teachers, participating school district supervisors, project participants, parents and other members of the community to ensure a diversity of perspectives.

**(6) Quality of the project evaluation (10 points).**

**(a) Methods of evaluation include the use of objective performance measures that are clearly related to the intended outcomes of the project and will produce quantitative and qualitative data to the extent possible.**

Dr. Angelo G. Gatto, President/CEO of Education Research Advantages, LLC, has agreed to serve as the evaluator to shape the development of the project from the beginning of the grant period to its conclusion, 2013-2017.

Since 1999, Dr. Gatto has had a long proven track record in the implementation and evaluation of instructional and professional development programs funded by the United States Department of Education across the curriculum, including art. Satisfied clients have included: Long Island University, Bank Street College, St. John's University, Adelphi University, Westbury School District, Long Beach School District, Yonkers School District, Mt. Vernon School District, and a number of inner city high schools and school districts in New York City, Lafayette H.S., and Sarah J. Hale H.S. H.S., Central High School Division, Seward Park H. S., School Districts 15, 30, 32, among many others.

Dr. Gatto's career, as an educator, spans over 40 years, as a teacher, supervisor and administrator from levels K through 12 and at the graduate and undergraduate university levels. He now continues his career as a successful evaluation consultant.

The evaluation design includes the following information: Types of data that will be collected; various types of data that will be collected; methods to be used in the design; instruments that will be developed; when the data is collected; how the data will be analyzed; when reports of the results and outcomes will be available; and how

information collected through the evaluation will be used to monitor and to provide accountability information about the success at the initial site and about effective strategies for replication in other settings.

The methods of evaluation are intended to produce significant qualitative and quantitative data regarding outcomes related to the project's stated goals and objectives.

The following goals and objectives include benchmarks to monitor progress toward specific project objectives, including outcome measures to assess the impact on teaching and learning in an arts/STEM-centered curriculum framework.

**GOALS: Project TEAMS Seeks To:**

- improve the teaching effectiveness and quality of integrating the arts into the core curriculum, at the elementary school level, to have the knowledge and expertise that utilize creative and innovative teaching strategies and approaches in the core curriculum areas, grades 1-6;
- foster the creative and intellectual development of students;
- have the art and content area educators work collaboratively to discover ways to integrate classroom; lessons;
- participate in master workshops and other professional development activities that enable all project educators to develop a variety of approaches in integrating the arts into the core (STEM and ELA) curriculum and to understand the unique benefits to children that these approaches provide;

- create an innovative arts/STEM in education model development and dissemination program that can be replicated in other settings throughout the nation and the state;
- and promote productive communication and the collegial exchange of ideas among art and content educators in the district in order to enhance students' cognitive and social development, their readiness for learning and ultimately, their improved academic achievements in English language arts, particularly reading, mathematics, science; engineering and technology.

**OBJECTIVES and OUTCOMES:**

The USDOE has established the following Government Performance and Results Act of 1993 (GPRA) performance measures for the Arts in Education Model Development and Dissemination Grant Program:

**Objective One / GPRA Measure One:** By the conclusion of each project year, August 31, 2014, 2015, 2016 and 2017, at least 80% or more of 100 randomly selected students participating in Project TEAMS, as a result of project activities, will demonstrate at least a 10% or higher proficiency rate in elementary school mathematics as compared to 100 randomly selected students in a closely matched control group not participating in the program, as measured by the comparison of academic records.

**Objective Two / GPRA Measure Two:** By the conclusion of each project year, August 31, 2014, 2015, 2016 and 2017, at least 80% or more of 100 randomly selected students participating in Project TEAMS, as a result of project activities, will demonstrate

at least a 10% or higher proficiency rate in elementary school reading scores as compared to 100 randomly selected students in a closely matched control group not participating in the program, as measured by the comparison of academic records.

**Objective Three:** By the conclusion of each project year, August 31, 2014, 2015, 2016 and 2017, at least 90% or more of all teacher participants will indicate satisfaction with the effectiveness of the project, as a result of project activities, by

indicating an average of 4 or better on a five point Likert scale questionnaire related to the effectiveness of the project, administered at the end of each project year.

**Objective Four:** August 31, 2014, 2015, 2016 and 2017, at 90% of participating teachers or more will indicate that the project activities are alignment with grades 1-6 New York State learning standards in English language arts, mathematics, science, and engineering, as a result of project activities, as measured by a positive response to at least eight or more items out of ten on a project developed survey related to New York State learning standards in these areas.

**Objective Five:** By the conclusion of the project year, August 31, 2017, 80% or more of a random sampling of 50 project students performing below State standards (Levels One and Two) in reading prior to project implementation, as a result of project activities, will have improved in the area of reading, as measured by achieving at least one performance level higher or better in reading than scores prior to the start of the project, September, 2013, as indicated by their academic records in reading.

**Objective Six:** By the conclusion of the project, August 31, 2014, 80% or more of a random sampling of 50 project students performing below State standards (Levels One and Two) in mathematics prior to project implementation, as a result of project activities, will have improved in the area of mathematics, as measured by achieving at least one performance level higher or better in mathematic scores prior to the start of the project, September, 2013, as indicated by their academic records in mathematics.

**Objective Seven:** By the conclusion of each project year, August 31, 2014, 2015, 2016 and 2017, this project will disseminate the objectives, outcomes and activities to at least 50 or more nationally and state-wide educational entities and other interested parties through the Mt. Vernon School District's and Arts Westchester's websites, presentations at national and state art education conferences, through e-mail and other effective dissemination modes, as measured by tabulation of the number of entities receiving information indicated by project records.

**Objective Eight:** By the conclusion of the project, August 31, 2017, as a result of project activities, the project will produce a compendium of teaching materials and resources that integrate art education into the core curriculum of mathematics, English language art, science, engineering and technology to serve as a resource for educators in a variety of settings, as measured by the production of the compendium.

**Objective Nine:** By the conclusion of each project year, August 31, 2014, 2015, 2016 and 2017, at least 90% or more of all project teacher participants will indicate increased awareness and improved skills development, as a result of project activities, as measured by indicating an increased average of 5 or better on a twenty item pre/post skills

inventory of arts integrated into the core curriculum strategies, approaches and assessments, administrated at the beginning and end of each project year.

**Objective Ten:** By the conclusion of each project year, August 31, 2014, 2015, 2016 and 2017, at least 90% or more of all teacher participants will have met at least once a week for two hours or more for 20 weeks to plan effective teaching lessons integrating the arts into the core curriculum areas, as measured by tabulation of project records of meetings.

**Objective Eleven:** By the conclusion of each project year, August 31, 2014, 2015, 2016 and 2017, at least 90% or more of the classroom teachers will have completed, each year, at least 60 hours (30 hours each semester) or more of intensive and sustained professional development project activities, as measured by tabulation of program records.

**Objective Twelve:** By the conclusion of each project year, August 31, 2014, 2015, 2016 and 2017, at least 90% or more of the parent participants will have participated in at least two project activities or more: membership and participation on the advisory board; chaperoning a project event; and/or providing assistance to the artist/STEM consultants in residence in the classroom.

The evaluation methods will be initiated through a systematic random sampling strategy of enrolled students in grades 1, 2, and 3 in Year 1 in each of the four project schools. See Table III below:

**TABLE III**

	<b>Grade One</b>	<b>Grade Two</b>	<b>Grade Three</b>	<b>Total</b>
<b>Graham ES</b>	<b>86</b>	<b>64</b>	<b>67</b>	<b>217</b>
<b>Grimes ES</b>	<b>73</b>	<b>76</b>	<b>70</b>	<b>219</b>
<b>Williams ES</b>	<b>74</b>	<b>65</b>	<b>51</b>	<b>190</b>
<b>Longfellow ES</b>	<b>40</b>	<b>47</b>	<b>44</b>	<b>131</b>
<b>Grand Total</b>				<b>757</b>

Sampling starts from some randomly selected point in a list of the student population, grades 1, 2, and 3 (757) in all four-project schools. This is followed by selecting students at intervals thereafter. The interval is determined by dividing the total number of students in grades 1, 2, and 3 (757) by the required sample size, 100. The interval selected is seven. A random selection is made at every seventh student identification number on the list until 100 students have been selected. The selection list will be randomly organized as to avoid grouping by age, family relationships, alphabetical listing, or other clusters that may result in a bias selection. (Patton, Michael Q. 1990. *Qualitative Evaluation and Research Methods*. 2<sup>nd</sup> ed. Newbury Park, CA: Sage Publications.)

Evaluation reports of student behavioral changes will include discussions on sampling error, estimates, margin of error, confidence level, precision level, outcomes, and impact.

The total evaluation design will be an adaptation of the “Program Outcome Model” recommended by United Way of America (1996): This model consists of four elements: **Inputs; Activities; Outputs; Outcomes; and Impact** - **Inputs** include: resources dedicated to or consumed by the project, examples are money, staff and staff time, facilities, equipment, supplies and materials (administrative as well as curricular). **Activities:** are what the project does with the **inputs** to fulfill its mission, goals, and objectives. An illustration is the collaborative process of integrating the arts into the core curriculum, arts/STEM-centered master workshops, field trips, and supervision of project participants. **Outputs:** are the direct products of the project’s activities and usually are measured in terms of the volume/frequency of work accomplished, for example, the number of master workshops offered, production of educational materials distributed, the number of site visits, and description of participants served. **Outcomes:** are benefits or changes for individuals or groups during or after participating in project activities. Outcomes are what the participants know, think, or can do; or how they behave; or what their condition is, that is measurably different following the program. **Impact:** is the change in current practice, i.e., institute plans to continue to use, improve and expand an arts/STEM-centered curriculum, plans to add to the arts/STEM-centered project produced compendium, to continue and improve best arts/STEM-centered strategies and approaches in the core

dynamics of the Program Outcome Model move from **Inputs** (resources) to **Activities**, to **Outputs**, to **Outcomes** and then to **Impact**.

In applying the Program Outcome Model to evaluation reporting, descriptive and inferential statistics will be employed. Data collection methods will yield relevant information on the impact of the project on the participants. An evaluation feedback questionnaire will include observations made during and after site visits by supervisory school and project staff, master workshops and field trips. Content analysis of organizational records such as, the original grant proposal, meeting agendas, art teachers' journals, and classroom observations, using a checklist, will also be reported

Evaluation procedures will involve the collection and analysis of quantitative data and qualitative data. The types of data collected will depend upon the nature of the outcomes to be assessed. What is paramount is the reliability and validity of the inferences made. Accordingly, every effort will be made to develop evaluation instruments which are clear and unambiguous and which encourage participants to respond objectively.

As indicated in the objectives, the evaluation methods will use objective performance measures that are clearly related to the intended outcomes and will produce quantitative and qualitative data. This information will be reported in three yearly performance reports and one final report.

**Reporting Format:** The evaluation reports will have an **executive summary** (an overview of report contents); **a focus of the evaluation** (description of the evaluation

object, evaluative questions used to focus the study, information needed to complete the evaluation); **evaluation plan and procedures** (information collection plan: design of the study, overview of evaluation instruments, overview of data analysis and interpretation); **presentation of evaluation results** (summary of evaluation findings, interpretation of evaluation findings); **conclusions and recommendations** (criteria used to judge evaluation object, degree of congruence between program objectives and outcomes, impact of activities, unintended consequences, recommendations for expansion/refinements, and building further capacity).

The evaluation will provide guidance about effective strategies for replication in other settings. The 12 major measurable objectives, including two GPRA measures and the implementation strategies and activities planned to achieve these objectives.

The evaluation of the effectiveness of those strategies requires measurement of: Participants' perception of the quality of the collaborating process, master workshops and field trips; participants' utilization of project services and activities provided to enhance program retention and completion and their perception of quality project services and activities; the impact of project activities on improving the academic achievement of students in core content areas, ELA, math., science, technology and engineering; and the production of a compendium in innovative arts/STEM- centered education strategies to facilitate project replication in a variety of settings.

Participants' reactions to the program master workshops, field trips and peer collaboration among the artist/STEM consultants-in-residence, core curriculum teachers, art and music teachers will be assessed using evaluation instruments administered at the

end of each semester. Types of questions to be included are: (1) what were your objectives when you were selected to participate in this project? Were your objectives met? (2) Identify and describe the learning activities, assignments, field experiences, and methods used in this project that were most/least helpful. (3) Did you have sufficient opportunity to interact with your artist/STEM consultants-in-residence during class and at other times? (4) What expectations were not met during the collaborating process, master workshops and field trips? This type of qualitative feedback is important and may serve to signal the need for program revision.

Measuring the effectiveness of retention strategies, including support services and activities will include data on the number of selected project participants who leave the project before the completion of program requirements and information about why they no longer wanted to participate. In addition, written evaluations of project services/activities by participants' evaluation of and/or satisfaction with field trip experiences, artist/STEM consultants-in-residence and teacher collaboration, and master workshops. Also, the measurement of the acquisition and application of new knowledge and skills obtained through program participation will be through the collection and analysis of qualitative and quantitative data

**TIME LINE FOR EVALUATION 2013-2017**

ACTIVITY	PERSON (S)	MONTHS											
		S	O	N	D	J	F	M	A	M	J	J	A
1. Review objectives and evaluation design.	(A)	x	x	x	x	x	x	x	x	x	x		
2. Develop data collecting instruments.	(B)	x	x	x									
3. Site visits/interview/ collect data.	(B)		x	x	x	x	x	x	x	x	x		
4. Maintain program records.	(C)	x	x	x	x	x	x	x	x	x	x		
5. Distribute data collecting forms.	(B)			x	x								
6. Collection and analysis of quantitative and qualitative data.	(B)								x	x	x	x	

7. Administer tests/questionnaires/surveys, pre/post, etc.	(C)		x			x	x			x	x		
8. Prepare and report periodic findings and recommendations during school year, including effective strategies for replication in other settings.	(B)		x		x		x		x		x		
9. Preparation and availability of required annual performance reports and completed data report (2014, 2015, 2016)  apr = annual performance report    cdr = completed data report	(B)								x apr				x cdr
10. Prepare required final and complete evaluation report (2017)	(B)												x
11. Compilation and production of an arts/STEM-centered education resource and materials compendium.	(C)			x	x	x	x	x	x	x	x		

(A) Project Director/Co-Coordinator /Staff/Artist/STEM consultants/ Evaluator (B) Evaluator

(C) Project Director/Co- coordinator/Staff - \* Evaluation activities will repeat each year of the grant period, unless noted otherwise.

**(b) Methods of evaluation will provide performance feedback and permit periodic assessment of progress toward achieving intended outcomes.**

Methods to assess performance feedback and permit periodic assessment of progress of the classroom teacher participants include:

- Pre- and post- inventory on knowledge of pedagogy skills in arts/STEM-centered education to determine growth in comprehension of innovative and alternative strategies.
- Contributions to class and workshop discussions, as judged by school supervisors, project director and project co-coordinator.
- Interviews by the evaluator with cooperating mentor and art teacher participants.
- Self-evaluation of students' grasp of the subject, expectations, confidence, etc.
- Rating scale completed by the mentors judging various behaviors of the participants on a 5-point Likert-type scale.

The Project will collect data to determine whether or not program field trips, mentoring, and master workshops include activities that are “working” (formative evaluation), as well as data to make “final” decisions about the efficacy of project services and activities (summative evaluation).

The project will utilize formative evaluations to assist in decision-making to continue or change strategies early in the project to avoid wasting resources. Feedback from classroom teacher participants, project administrators and supervisors, and artist/STEM consultants-in-residence regarding the collaborating process, master workshops and field trips and other project activities will be especially useful for this purpose and to provide guidance for replication in a variety of settings.

Formative evaluation activities will take place on an on-going basis. Oral and written reports will be provided to all concerned parties at regular monthly meetings of the project's 12-member Advisory Board and at the yearly school district plenary session. School-based management and shared-decision making activities based on these reports will guide the project in its effectiveness and improvement. Using the combination of product and process evaluation methods, results gathered will define modifications to improve the design of the program and its effective implementation.

Summative evaluations will be used at the end of the each year, including the determination as to whether or not strategies were effective and to what extent? Data on project classroom teachers' program satisfaction and school supervisor and project director evaluations of their improved proficiency/efficacy as arts/STEM-centered educators will also be collected, analyzed and reported. Also, data on the improved academic achievement of a random selection of students, at each education level, will be collected, analyzed and reported to be used for guidance in the replication of the project at the conclusion of the project in the final report and the project's arts/STEM-centered compendium.