

The School Board of Broward County, FL
Sprouting STEM Museum Magnet Schools

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Competitive Preference Priority 1 – Need for Assistance

Introduction – Broward County Public Schools (BCPS) is the sixth largest public school system in the United States, the second largest in the state of Florida and the largest fully accredited K-12 and adult school district in the nation. The District’s newly released strategic plan highlights three primary goals: High Quality Instruction, Continuous Improvement, and Effective Communication to provide a structure for “Strengthening the Paths to Success” to prepare our students with 21st century skills needed to compete globally.

BCPS has over 258,000 students and approximately 150,000 adult students in 234 schools and education centers and 83 charter schools throughout 31 cities. Students represent approximately 171 countries and speak 55 different languages.

The Magnet Schools Assistance Program (MSAP) grant proposal will target a diverse pool of students to increase enrollment from different social, economic, ethnic and racial backgrounds to reduce and/or eliminate minority group isolation at the identified six proposed schools. Additionally, this project will address the academic needs of all students to improve student achievement. The proposed *Sprouting STEM Museum Magnet* elementary schools matriculate to the *Growing STEM Middle Magnet Schools* that are flourishing from the 2010 MSAP grant. The “STEM seed” will be cultivated at the elementary level and will be nourished to produce excellence in all academic areas.

BCPS is proposing to significantly revise two existing Science, Technology, and Mathematics magnet elementary schools that will embrace the total STEM design within museum model. In addition, this project will provide opportunities to develop and implement four new STEM museum model elementary magnet schools. The six Title I elementary schools that have been selected for the *Sprouting STEM Museum Magnet School* program include:

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Atlantic West, Broward Estates, Colbert, Liberty, Plantation, and Royal Palm Elementary Schools. There are currently 3,962 students attending these schools, but there is available capacity to serve 1,266 additional students. These schools have been impacted by an increase in minority group isolation and the number of students that are economically disadvantaged. The following descriptions offer a snapshot of demographic and free and reduced lunch data obtained from the Florida Department of Education School Grades Report (2011-2012):

1. **Atlantic West Elementary** – located in the city of Margate, FL, the diversity breakdown of the school’s student population includes 80% 2007-2008 to 83.7% in 2012-2013. The school is currently under enrolled by 129 students. The percentage of students receiving free or reduced lunch has increase from 60% in 2007-2008 to 80% in 2012-2013
2. **Broward Estates Elementary** – located in the City of Fort Lauderdale, FL, the non-White ethnic/racial diversity of the student population has consistently been 99-100%. The school is currently under enrolled by 158 students. The percentage of students receiving free or reduced lunch has increased from 81.5% in 2007-2008 to 95% in 2012-2013.
3. **Colbert Elementary** – located in the City of Hollywood, FL, the diversity breakdown of the school’s student population includes 96% non-White , 72% African American, 19% Hispanic and 5% Multi-racial. The school is under enrolled by 243 students. The percentage of students receiving free or reduced lunch has increased from 83.5% 2007-2008 to 94.2% in 2012-2013.
4. **Liberty Elementary** – located in the City of Margate, FL, the diversity breakdown of the school’s student population includes 16% are White, 48% African American, 28% Hispanic and 3% Multi-racial. The school is under enrolled by 319 students. The

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percentage of students receiving Free or Reduced Lunch has increased from 57.6% in 2007-2008 to 78.4% in 2012-2013.

5. **Plantation Elementary** – located in the City of Plantation, FL, the diversity breakdown of the school’s student population includes 85% African American, 9.65% Hispanic and 2.65% Multiracial. The school is under enrolled by 265 students. The percentage of students receiving Free or Reduced Lunch has increased from 74.5% in 2007-2008 to 93% in 2012-2013.
6. **Royal Palm Elementary** – located in the City of Lauderhill, FL, the diversity breakdown of the school’s student population includes 100% non-White and 96% African-American. The school is under enrolled by 152 students. The percentage of students receiving free or reduced lunch has maintained at 97% from 2007-2008 to 2012-2013.

(a)The Secretary evaluates the applicant’s needs for assistance by considering the costs of implementing the project

Magnet programs have played a critical role in the success of The School Board of Broward County (SBBC), Florida’s efforts to reduce and/or eliminate minority group isolation, increase student achievement in Reading, mathematics and science, and increase enrollment at under-enrolled low socio-economic schools as well as meet the tenets of the district Voluntary Desegregation Plan (School Board Policy 5004.1) to support and increase diversity. For these magnet programs to be successful, they must offer highly rigorous academics with unique themes that support specialized curricula capable of attracting and retaining a diverse group of students. To develop and implement these specialized programs exceeds the schools and District’s current available funds. As a result, the District seeks MSAP funding to develop six

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Sprouting STEM Museum Magnet programs. To ensure effective development and implementation of this magnet theme, funds will be necessary to create high rigor STEM curriculum through a Museum instructional model, to provide staff development that ensure teachers are highly qualified to meet the needs of all students, to engage students in authentic experiences outside the classroom, and provides students the opportunity to connect through virtual real world experiences. The projected cost of the project is approximately \$11.1 million over a three-year period.

Parents today have a variety of educational options for their children including private institutions, charters, home schooling, and virtual education. This has impacted our elementary schools. The chart below reflects the decrease in enrollment over the past five years and beyond.

| Historical Enrollment | | | | | | Projected Enrollment | | | | |
|------------------------------|-----------|-----------|-----------|-----------|-----------|-----------------------------|-----------|-----------|-----------|-----------|
| Grades | 2008-2009 | 2009-2010 | 2010-2011 | 2011-2012 | 2012-2013 | 2013-2014 | 2014-2015 | 2015-2016 | 2016-2017 | 2017-2018 |
| K-5 | 104,295 | 102,495 | 101,344 | 99,252 | 97,275 | 96,272 | 94,967 | 94,489 | 94,426 | 94,544 |

Source: BCPS Demographics and Student Assignment Department, 2013

Without additional funds, the schools will continue to lose enrollment and fall into the re-segregation pattern of predominantly minority, isolated, low socio-economic schools. Often remaining at the schools, are some of the most fragile students with fewer resources available to meet their academic needs and fewer resources available to attract back their home school community or families from beyond the school boundaries. As a result, each targeted school has been significantly impacted by both the loss of students and reduced in state funding.

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(b)The Secretary evaluates the applicant's needs for assistance by considering the resources available to the applicant to carry out the project if funds were not provided

The Broward County Public Schools (BCPS) has a history of success with magnet programs in achieving MSAP program priorities and in meeting the District's goals for diversity and student achievement. However, like many other districts around the state and nation, there is a continued loss of funding, reductions in staff and resources to meet the ever-growing needs of our diverse student population. Program costs have increased because the programs must continue to be upgraded with the latest curricula, technologies, and teacher training, in order to stay ahead of other program offerings at non-magnet schools. In addition, traditional resources to the identified schools have also been reduced due to loss of enrollment, as well as, realignment of school-based allocations to meet the needs of students who are below proficiency levels. The requirements by state law leave a gap in the available funding to provide highly rigorous, highly marketable, advanced programs for students in order to achieve higher academic levels.

Currently, the District is operating 64 magnet programs at 48 schools with local funding. Based on 2011-2012 analysis provided by the District's Innovative Programs Department, annual operating costs for magnet programs in Broward County are estimated at \$15.3 million to support implementation, which impedes the six schools from creating this unique and high-rigorous STEM program. Additionally, the costs of serving students in need of additional services have taken an increasing toll with each year. All six schools targeted for the project, are Title I schools with high concentration of poverty with students that requires more intensive and costly services, such as school readiness services for struggling students, English language learners and for students in need of Exceptional Student Education services. As per our Superintendent of Schools, Robert W. Runcie, *"The greatest gift we can give our children is a*

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high-quality education. Our children need to be engaged in a learning process that equips them to deal critically and creatively with life challenges and opportunities, and to contribute toward the transformation of their world... only 35 percent of our young children show up to our kindergarten classrooms prepared for school. As students exit our system on the other end of the K-12 spectrum, we find that only 53 percent are college or career ready. This level of achievement must be considered in the context of the merger of the information technology revolution and globalization that has raised demand for higher-skilled workers. Every struggling student must get the interventions needed, early in his or her academic career, so that they don't get left behind." With that in mind, BCPS has the commitment of the Superintendent who is committed to actions that are bold and that will focus on giving all students a high quality education. It is only with the resources that will be made available through MSAP funds that the District will be able to successfully carry out its plan.

(c) The Secretary evaluates the applicant's needs for assistance by considering the extent to which costs of the project exceed the applicant's resources.

Although BCPS has historically supported magnet schools' operating costs through local funds, due to the state of the economy, funding to the District by the state has been reduced by \$280 million dollars over the past five years. This reduction has affected magnet programs in the District. Even with these significant reductions, the District is not eliminating any programs or transportation. These are both essential commitments from the SBBC to continue with all efforts to increase diversity, enrollment and rigorous programs at our schools in need of assistance. Initiating new and highly rigorous magnet programs within these fragile communities is dependent, in large part, on federal assistance to support costs for equipment, personnel, and

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essential staff development. If funded, the start-up costs associated with implementing these six new programs would constitute 42% of the schools' budget allocations. The District is requesting approximately \$11.1 million in funding from the MSAP. The grant funds will cover the following: a Project Coordinator who will monitor and track the goals and objectives of the project, 6 theme Magnet Coordinators, 6 STEM Instructional Facilitators, 7 STEM Resource Teachers, one bookkeeper, one Micro-computer Technical Specialist, and one Secretary. Additionally, the grant funds will provide contractual services to provide for an evaluation firm to conduct an independent evaluation; support from consultants, professional development for the six schools, and equipment and supplies to support theme implementation in each school. These funding requests are reasonable and essential to the proper implementation of the *Sprouting STEM Museum Magnet Schools*. However, these costs are only a portion of the overall cost of the project. BCPS is providing in-kind services to the schools, described as follows: a) Personnel – the District will provide all school-level teacher and principal support at the magnet school to fully implement the program; b) Facilities – all school facilities, including classrooms, classroom furniture, classroom materials and supplies (e.g. textbooks, reference books, library materials, computer software) and instructional supplies; c) Transportation – extracurricular activity transportation for field trips.

Although the District is providing ongoing support for established magnet programs out of local funds, the costs of implementing the proposed magnet schools are above tremendous and go far beyond what the District can provide. The recession of 2007-09 and the slow recovery process continue to affect both State and District funding to support schools. The State has increased school funding by \$155.00 per pupil this year; however, this increase still does not offset the \$569 per pupil cut from the previous four years.

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Implementation of Florida's Class Size Reduction state statute has also impacted the District's budget. In the 2010-2011 school year, the state mandated that schools had to meet class size period-by-period, class-by-class in all core academic subjects. The cost to ensure that all schools would be in compliance with full implementation is approximately \$5.5 million. As a large urban District, funding for BCPS has been impacted by the requirements of hiring additional teachers and adding classrooms each year in order to meet the state-mandated class size law. Non-compliance with these requirements jeopardizes basic state funding to District schools.

The District's budgets for magnet allocations from 2010-2013 are as follows: \$6,300,000 allocated directly to magnet schools, \$970,000 allocated to the Innovative Programs Department for district wide marketing and support to all magnet schools, and approximately \$8,000,000 for student transportation. The support provided by both the District and the MSAP grant will assist in building capacity within the schools allowing staff to focus their time on instruction and student achievement.

The Magnet Schools Assistance Program (MSAP) grant will support only a portion of total costs for the schools of a *Sprouting STEM Museum Magnet* project, along with the District's Innovative Programs Department and the SBBC Transportation Department. As in past MSAP funding cycles, the District will maintain programs with local support after the grant period ends. SBBC is committed to this magnet school project and will make available as many resources as possible.

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d. The Secretary evaluates the applicant's needs for assistance by considering the difficulty of effectively carrying out the approved plan

SBBC is committed to this magnet school project and will make available as many resources as possible. Nevertheless, the costs of fully implementing the project far exceed its current resources.

The Sprouting STEM Museum Magnet Schools project would be very difficult to carry out without MSAP support. The schools have large numbers of minority students and this has created minority isolation. Because of the lack of resources, these students are receiving basic educational services. It will take all the resources that have been requested to give these students the enriched, high quality education that they deserve and to create a high achieving school climate that will attract students from different backgrounds to attend these schools. An investment in professional development for teachers and school leaders, curriculum development, coaching, mentoring, upgraded equipment, new supplies, and the like, for these schools to become competitive and attractive alternatives for families. Parents have to be confident that schools have been transformed, that the quality of teaching is at the highest level and that the schools have programs that will enrich the education of their children. The MSAP grant will make these a reality.

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Competitive Preference Priority 4 - Promoting Science, Technology, Engineering and Mathematics (STEM) Education

(a) Providing students with increased access to rigorous and engaging coursework in STEM

Six elementary schools will be transformed to whole school museum magnet schools with the theme of Science, Technology, Engineering and Mathematics (STEM). The *Sprouting STEM Museum Magnet Schools* will reflect the museum model concept of researching, exploring, experimenting, and explaining while actively engaging students to think critically and creatively making STEM connections. Using the Socratic method of Paideia, differentiated instruction, and technological literacy, the breadth of learning for students will expand with the STEM museum model, as students approach academics and education in an inquiry based, interactive learning environment extending beyond the classroom walls. Students will have access to extensive resources and learning experiences with local, national, and international museums, STEM-related businesses, higher-education institutions, and the world-at-large! As students' exposure to the community and world increases, students will travel globally on virtual field trips that will be STEM-related, inquiry-driven, and aimed at fostering curiosity and real-life experiences. Students will utilize local museum galleries as their "learning space" as they research in teams, collaborate, problem solve, and develop interactive STEM exhibits for display. These school-based learning spaces will parallel the museum process of researching, exploring, experimenting, explaining, and exhibiting.

A Learning Innovation Lab will be designed for students to research and implement the engineering design processes of asking-imagining-planning-creating-improving. This lab will be equipped with a variety of hands-on manipulative materials for creating interactive STEM

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museum project, exhibits, technology equipment including handheld devices, laptops, analyzing probeware, 3-D printers, geographic information system (GIS) tools, and web-based programs.

For curricular support and guidance, the Innovative Team (Theme Magnet Coordinator, STEM Instructional Facilitator and resource teacher, classroom teachers and partners) will design interdisciplinary STEM units of study that promote maximum student learning while guiding students to apply STEM in contexts applicable to their surrounding world. Students learning will be assessed individually and by teachers using web-based programs digital reports, hand-held devices, and student portfolios, and student-led conferences.

The *Sprouting STEM Museum Magnet Schools* will attract a diverse pool of students who will receive opportunities for academic rigor and exposure in science, technology, engineering, and mathematics that will provide a guided pathway to college and career readiness.

(b) Increasing the opportunities for high quality preparation of, or professional development, for teachers or other educators of STEM subjects.

The District's future calls for aligning instruction in our classroom with 21st century skills including expanding innovate programs in the area of STEM and cultivate strategic partnerships with local businesses, colleges, and universities to ensure job ready career path. To this extend, **a critical component of the project will be the on-going intensive professional training** for teachers and leaders alike. A variety of blended learning opportunities will be provided based on research-based best practices and international trends. Professional training will be designed by district curriculum specialists, external experts in the field of STEM consultants in teaching diverse students, and by formulating a STEM teachers' job-embedded Professional Learning Communities (PLC) for continual networking in developing cutting-edge, innovative curriculum, and *Sprouting STEM Museum Magnet Schools* project updates. This

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collaboration will be planned face-to-face and via distance learning/ videoconferencing with teachers locally and nationally. In-house Sprouting STEM Museum Magnet teachers will meet weekly for planning and reporting status of projects and activities with the Innovative Sprouting STEM Team’s magnet coordinator, instructional facilitator and resources teacher. Instructional facilitators will coach and assist in implementing integrated Sprouting STEM Museum units of study projects, activities, and development of museum exhibits. In addition, the magnet coordinator and instructional facilitator will support resource teachers and grade level team teachers and school leaders through monthly meetings in which the program updates and/or modifications needed for successful program implementation will be reviewed as part of the continuous improvement process. To communicate more effectively and with transparency, a Wiki and a STEM Blog will be developed to readily share best practices, ideas, updates, reflections about program units of study implementation “what worked, and what can be readily improved,” and such. All educational stakeholders will be informed continuously of curriculum project and activity modifications and updates.

Theme-Specific Professional Development for all *Sprouting STEM Museum Magnet Schools* will be designed utilizing experts in the field with the assistance of both internal and external trainers. They will work with school faculty to develop educational activities that support the theme of the school. Site-specific theme-related staff development will be identified in alignment with the theme. All teachers at the *Sprouting STEM Museum Schools* will participate in core professional development courses including those currently offered by the District’s STEM Department: STEM Inquiry Investigations and CCSS (K-12), STEMP Problem Based Learning and CCSS (K-12), and Math Blended CCSS/FCAT 2.0. In addition, each teacher will participate in lesson study/action research that will include professional learning

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communities (PLC), classroom visitations, and peer observations. All *Sprouting STEM School Museum Magnet School* teachers will also include technology and theme-focused professional development in their professional learning growth plans. Staff development will be offered 1) before and after school, 2) during early release days, 3) in the summer, 4) on Saturdays, 5) on teacher planning days, 6) during the academic year through the use of substitutes, and 7) online.

During the 3-year cycle of the MSAP Grant, all teachers at the *Sprouting STEM Museum Magnet Schools* will have a rich palette of STEM designed and organized professional learning in the following delivery methods, but not limited to:

Professional Learning Communities (PLC) – Teachers will develop curriculum, design programs, or participate in a school improvement process to solve general or particular problems related to STEM curriculum through the following: Critical Friends Group (CFG), Collaborative Network Team (CNT), Collaborative Academic Support Team (CAST), and Collaboration with industry experts in STEM field.

Workshop/Training Sessions – Teachers will participate in workshop sessions to develop awareness, knowledge, and/or skill development in Paideia Principles, Engineering is Elementary (EiE), Web-based programs: GIZMOS for Science and Math, Renzulli Learning System, Integrated Studies, Understanding by Design (UBD), and Technology Integration.

Networking Models – School Staff and STEM support staff will plan to meet with community and other stakeholders who meet in an advisory capacity and can make recommendations for the continuous improvement of the STEM program. These will include Critical Friends Group (CFG), Collaborative Network Team (CNT), and Collaborative Academic Support Team (CAST).

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Online and webinar professional development – will be provided by partners such as Museum of Boston, Young at Art Children’s Museum, Museum of Discovery and Science and/or through Florida Atlantic University and Nova Southeastern University.

The Sprouting STEM Team of teachers continuously learning and collaborating for high quality teaching!

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a. PLAN OF OPERATION

(1) Quality of the Plan of Operation for the Project.

Broward County Public Schools (BCPS) is the sixth largest school system in the nation and is a nationally recognized leader in the quality and diversity of education we offer students. As a district dedicated to achieving and maintaining the highest level of students success, BCPS consistently earns top district evaluation grades issued by the State of Florida, receiving an A grade in 2011-2012. The District's culture and priorities are reflected through our focus on the three pillars of high quality instruction, continuous improvement and effective communication. The School Board of Broward County, Florida is committed to educating all students to reach their highest potential.

Since 1977, BCPS has successfully planned, implemented, and offered Magnet programs that provide educational excellence, embrace diversity, and expand educational choices for students. Magnet programs attract students to schools by providing unique and innovative opportunities for in-depth experiences and study in specific thematic areas of interest, and create a learning environment that is responsive and supportive of student's interest. BCPS magnet programs are available to all students from all backgrounds and are intentionally designed to be inclusive of students in the Exceptional Student Education program, English language learners (ELL), and gifted students. The District currently operates 64 magnet programs in 48 schools across the district. This year, over 42,000 students of all racial, ethnic, socioeconomic, and academic groups were served and approximately 13,000 applications are annually received.

Parents are encouraged to become actively involved in choosing the program that is most appropriate for the interest and need of their children.

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The District's process for selecting students to participate in Magnet programs has served as a model for other districts statewide and nationally. Many of Broward's Magnet schools have been recognized as National Schools of Merit by the Magnet Schools of America.

The District is well positioned to plan, manage and sustain MSAP-funded projects. Below are some of the highlights of the District's 2010 – 2013 MSAP grant project accomplishments:

- 5 out of the 6 Growing STEM Magnet Middle schools have met the performance measure to reduce minority isolation.
- Overall enrollment has increased by 25.4% between all six schools.
- 85% of students participated in STEM electives activities and projects.
- 85% of all participating teachers received over 190 hours of high-quality STEM focused professional development

The School Board of Broward County, Florida's commitment to provide school options to all parents across the district is governed by the School Board Policy 5004.1. The policy serves as the District's voluntary desegregation plan and clearly delineates the three purposes of not only magnet programs but all choice options in BCPS: diversity, educational excellence and innovation.

The District Voluntary Desegregation Plan

BCPS has been involved in various desegregation plans since 1970 when the United States District Court put the district under court supervision in implementing a comprehensive plan to establish a unitary school system. In 1971, following a review of the district's plan, the court entered an order that the plan would result in a unitary system, but the court retained

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jurisdiction until 1979. In 1983, a suit alleging the school system had made decisions in a discriminatory manner on the basis of race was resolved through a joint stipulation of settlement and an order entered by the District Court. In March of 1996, in response to a federal civil rights lawsuit filed four years earlier, the District Court declared the Broward County School District to be a unitary school district. This order came in the second year of the 1995-1998 MSAP supported magnet program and changed the district's status from court ordered to voluntary under the definition contained in the MSAP legislation.

When the District operated under a court ordered plan, it used several methods to achieve desegregation in schools, including a race-based student reassignment policy, bussing to achieve racial balance, and magnet programs. However, once the District was declared unitary in 1996, it began a review of all its policies with assistance of the Washington, DC-based law firm of Hogan and Hartson. Bussing for racial balance was terminated, and reassignment policies were rewritten to eliminate race-based decision-making and the Magnet Policy and Major System Priorities were revised from a desegregation focus to a diversity focus. These revisions were made to ensure that the use of race in making decisions was narrowly tailored and in accordance with federal civil rights laws.

The revised Broward Schools Innovative Programs Policy (School Board Policy 5004.1, attached adopted on December 15, 2009, amended on May 15, 2012 and serves as the district's voluntary plan. The School Board of Broward, Florida's County Legal Council reviewed this policy and determined it was satisfactory since it 1) includes race-neutral alternatives to determining magnet assignment; 2) provides flexibility and waivers to the use of race; 3) is subject to periodic review; and 4) takes into consideration the burden placed on students of all races. Magnet programs have been operating successfully using this new voluntary policy.

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BCPS Plan of Operation for the Magnet Schools Assistance Program (MSAP) began with the need to provide an effective matriculation plan for the six Growing STEM middle magnet schools beginning at the elementary level. This request was received from school site administrators, district teams, teachers, and parents. The request was to ensure that students in elementary schools are well-prepared to enter the Growing STEM middle magnet schools in all aspects of STEM. The request focused on building capacity at the elementary feeder schools. All *Sprouting STEM Museum Magnet Schools* will provide students the opportunity to continue in theme at the middle school level with the newly created Growing STEM Magnets. This is a vital component to sustain and support student achievement at all levels. There has been tremendous interest in the STEM initiative by parents, teachers, and the community and business stakeholders. We have heard the request to expand and grow the STEM Magnet theme at the elementary level.

Consequently, the BCPS Plan of Operation is organized around a comprehensive plan that focuses all efforts on narrowing ethnic achievement gap and raising student achievement through the implementation of six new school-wide elementary magnet schools with rigorous, innovative STEM Museum theme. This thinking aligns with the District's Strategic Plan and Florida's Accountability System to ensure all students have a high-quality education. The Innovative Programs Department conducted an exhaustive search of what educational models would best support the STEM theme and ensures differentiation of instruction for all students. Staff reviewed a variety of options and provided background to the school leaders to determine that would meet the needs of all students. One of the most recognized programs that would enhance all STEM instruction is the museum model. The museum model provides an interactive learning environment that expands beyond the classroom walls to museums, community and the

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world. The integration of the museum model in STEM curricula will offer students the opportunity to explore experiment, explain, and exhibit research through engaging and real-world projects.

The museum model will be used at all six elementary schools in alignment with the STEM curriculum. Through the new STEM curriculum and museum model the two existing magnet schools will be sufficiently revised by adding the engineering components to their curriculum at all grade levels. In addition, these schools will utilize the Paideia model to ensure active learning by all students, while engaging the entire school and community.

Site Selection

District staff from Demographics and Student Assignments reviewed enrollment trends and geographic areas served by schools. Using the STEM theme and analyzing the school data in mathematics and science, the identified schools were recognized as needing significant support in mathematics and science as well as increased rigor to attract students to the schools.

Research Services and Innovative Programs Department staff reviewed applicant and wait pool data, academic needs, diversity, and alignment with the District's Magnet Policy 5004.1 criteria for a new magnet program, and the level of interest by school site leadership to participate in a magnet program. Facilities and Construction Management staff reviewed school facilities to ensure alignment with Florida's Class Size Mandate. The *Sprouting STEM Museum Schools* were effectively identified and aligned with the continuation in theme at the middle school level. This new magnet project has the full support of parents, business partners, and the communities of each school. The six schools selected for the project were chosen for the following reasons:

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1. **Under-enrollment:** Under-enrollment is determined by comparing the 20th day student enrollment count with the state's Florida Inventory of School Houses (FISH) capacity. Atlantic West is under-enrolled by 126 students, Broward Estates by 158 students, Colbert by 243 students, Liberty by 319 students, Plantation by 265 students, and Royal Palm by 152 students. The district is adept at creating high-quality magnet programs. Local funding has consistently been used to attract enrollment at 48 magnet schools.

2. **High Minority Isolation Group:** All six schools are racially isolated, with minority enrollments at Atlantic West 51%, at Broward Estates 97%, at Colbert 72.7%, at Liberty 48.2%, at Plantation 85.5% and at Royal Palm 95% compared to 38.9% within the district K-5 grade schools as a whole.

3. **Choice:** They will provide choice to families in the district. By creating high quality STEM museum theme curriculum at six Title I schools, academically rigorous programs will be provided to students currently enrolled in the schools as well as to the upcoming feeder pattern students.

4. **Transportation:** There is an established transportation system to the selected schools. Implementing this project uses existing systems in a cost efficient manner. It also provides choice opportunities for parents and children regardless of their ability to transport students to the magnet school.

The overall purposes of the six *Sprouting STEM Museum Magnet Schools* are to:

- 1) Reduce minority group isolation at the Sprouting STEM Museum Magnet Schools;
- 2) Provide participating students opportunity to increase student academic achievement standards and substantially strengthen their knowledge of science, technology, engineering and mathematical skills;

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- 3) Provide parents whose children are in the feeder pattern for the Sprouting STEM Museum Magnet Schools with the opportunity to attend a highly rigorous program;
- 4) Create capacity to continue operating the magnet programs at a high performance level after federal funding ends;

The School Board of Broward County, Florida has been notified of the submission of this application to the Magnet Schools Assistance Program (MSAP).

The implementation of the *Sprouting STEM Museum Magnet Schools* project will eliminate, reduce or prevent the degree of minority group isolation among students at the participating schools. It will promote national, state and local systemic reform efforts that are aligned with state content standards and student performance standards, develop and design innovative educational methods and practices that will promote diversity, strengthen student knowledge of academic subjects and skills needed to be college ready, implement a professional development plan to enhance and sustain high performance, provide equitable access to high quality educational programs that will enable student to succeed academically.

(2)(i) The Secretary determines the extent to which the applicant demonstrates the effectiveness of its management plan to ensure proper and efficient administration of the project

Achieving the objectives of the *Sprouting STEM Museum Magnet Schools* requires dedicated leadership and structures for ongoing stakeholder involvement. BCPS has the capacity and experience to efficiently and effectively manage the MSAP grant, with clear delineated authority and responsibility, and with experienced, highly qualified professional staff. The District will leverage the support of its Senior Leadership Team (SLT) and staff members from

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across various departments including: Instruction and Intervention (I&I), Student Support, Exceptional Student Education, Research and Evaluation, Talent Development, School Performance and Accountability, Performance Management, Educational Technology Services, Grants Administration and Government Programs, Human Resources, and Finance and Accountability, who will work in tandem to support the implementation of the *Sprouting STEM Museum Magnet Schools*. While providing guidance, resources, and support to the Project Management Team and participating schools.

Specifically, the *Sprouting STEM Museum Magnet Schools*, at the district level, will be managed by a Project Management Team consisting of the following individuals: The Chief Portfolio Services Officer (formerly known as Educational Programs), Project Director, Magnet Project Coordinator, Instructional Facilitator, Community Relation Specialist, Micro-Tech Specialist, Secretary, and an Evaluator. The Project Management Team will work collectively to plan, develop and implement activities that are aligned with project objectives and the purposes of the Magnet Assistance School Program staff will collaborate on all efforts toward meeting project goals. The positions identified in the *Sprouting STEM Museum Magnet Schools* project are essential for the effective development and implementation of the project. These are new positions that will be created to align with the goals of the grant. All individuals will be highly qualified with experience and knowledge related to their responsibilities. The following personnel will support the implementation of the *Sprouting STEM Museum Magnet Schools*:

District Management Team

Program Director - (*District funded position*) the Director of Innovative Programs, Leona Miracola will serve as the MSAP project director, in a District-funded level position. As the MSAP Program Director, Ms. Miracola will provide leadership, collaborate and assist the

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magnet coordinator/facilitator with planning, implementation, budget, staff development, evaluation, and sustainability of the Sprouting STEM Museum Magnet at each of the six schools and after the grant funding ends. Ms. Miracola understands the importance of collaborating with all stakeholders and will provide leadership and support to the school sites, area office, parents, community groups, business partners, and students throughout the project. She will provide leadership and support for the recruitment of students and staff, ensure that students in the Exceptional Student Education (ESE) program and English language learners are provided equal access and appropriate services and monitor all aspect of the recruitment and student lottery selection. Ms. Miracola will monitor the external evaluation process and reports, and reports to all stakeholders on the state and progress of project implementation.

Magnet Project Coordinator – (MSAP funded position) The Magnet Project Coordinator will report to the Innovative Program Director and will assist the six Sprouting STEM Museum Magnet Schools with developing sequential thematic curriculum, aligning curriculum to standards, integrating theme concepts across core academic subject areas, conducting staff training, working with evaluation benchmarks/plans, and integrating technology across the curriculum. The facilitator will be responsible in assisting with the planning, designing, and implementing of the new magnet programs; assisting in the professional development and ongoing in-service workshops of teachers; and meeting with parents and community leaders regularly to market and recruit students at open houses and other district marketing events. This individual will also collect and assist in evaluation activities of the *Sprouting STEM Museum Magnet Schools*. This individual will provide ongoing technical assistance including: implementation of evidence-based instructional strategies, development of rubrics, monitoring tools, professional learning communities, reporting tools and reports.

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Community Relations Specialist - (*District-funded position*) The Community Relations Specialist will work closely with magnet, choice, and innovative schools to design marketing materials, coordinate open house events, implement recruitment plans, monitor the plans' effectiveness in reducing minority isolation, communicate with parents, students, and key stakeholders to disseminate magnet choices as well as service press and media releases on magnet programs. Additionally, the Community Relations Specialist will manage the Innovative Programs Department's website that contains information in four different languages including Spanish, Portuguese, Haitian Creole and English.

Micro - Computer Technology Specialist – (*MSAP Grant Funded*) This individual will work daily with the six schools to ensure effective implementation of technology aligned with the project goals. The individual will coordinate the technology integration including the set-up, installation, trouble-shooting, repairs, and assistance with all software, web-based and hands-on equipment.

Secretary II – (*MSAP Grant Funded*) - This position will provide support with all clerical needs of the magnet coordinator throughout the project. The individual will be highly trained in the use of technology to prepare word processing documents, through word processing to create spreadsheets, business letters, communication, reports, assist with marketing materials, work on data entry components, assist with parent and other phone calls and serve as the liaison to assist the schools with appropriate documentation of their individual project. Record keeping and filing of documentation will be used on reports.

Bookkeeper – (*MSAP Grant Funded*) - This position is essential to provide support and guidance to all six Sprouting STEM Museum Magnet school in the purchasing of technology materials, supplies, tracking and process personnel expenditures including the processing of all

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stipends, substitutes, travel, mileage, payroll, and creating a financial reporting system aligned with the District to ensure effective monitoring and tracking throughout the grant. In addition, the position will be responsible for preparing the financials for both the APR and Ad Hoc MSAP reports.

External Evaluator (*MSAP Grant funded*) – This position will be responsible for the formative and summative evaluation activities that will be conducted to ensure the successful implementation and outcome of program goals and objectives.

School-Level Management

In each *Sprouting STEM Museum Magnet school* a leadership team will consist of a principal, assistant principal, school-based magnet coordinator, and other support staff. This team will be responsible for the implementation of the magnet project at the school level with support from the district’s magnet management team.

Magnet School Principals (*District funded*) the principal at each project school will supervise staff, and will be responsible for the full operation and implementation of the *Sprouting STEM Museum Magnet* program. The principal will participate in professional development with teachers and staff to develop the instructional leadership expertise necessary for the school to meet its project objectives. The principal will monitor the *Sprouting STEM Museum Magnet School’s* progress towards meeting annual project goals and objectives and will develop on-site strategies for meeting those objectives. The principals will also be responsible for implementing site-specific recruitment strategies for their school and providing open houses for student and parent visitors.

Magnet theme coordinators- (*MSAP Grant Funded*) - The coordinator will work with the principal to ensure effective implementation of the project, assist with oversight of the

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professional development of teachers/staff, curriculum coordinators with instructional facilitator, resource STEM teacher and all grade level teachers. This individual will coordinate a comprehensive marketing and outreach plans to promote and collaborate with all stakeholders including parents, community agencies, museum partners, post-secondary institutions, businesses, industry leaders to ensure the fidelity of implementation of the project's goals and objectives. This individual will conduct presentations, coordinator open houses, school tours, create publications and public service announcements, arrange school visits, and other related duties of the project.

STEM Instructional facilitator (*MSAP Grant Funded*) – The facilitator position is key to the success of effective implementation of all components of curriculum development, instructional strategies used in the classrooms, at off-campus learning sites, to incorporate the STEM Museum model. This individual will work to establish the PLC's outlined in the project and ensure timely and effective planning is provided to all teachers. This individual will with the teachers, curriculum writers, and museum partners, design curriculum units for all grade levels that are interdisciplinary with STEM and utilize the Museum Model. In addition, this individual will collaborate continuously with all grade level teachers (K-5) to maintain the level of continuous curriculum development and ensure the curriculum is implemented with fidelity, assist in designing and planning curriculum which integrates the Common Core Standards, STEM benchmarks, Paideia, Renzulli and EIE (Engineering for Elementary) instructional strategies, museum magnet processes of researching, exploring, experimenting, explaining and exhibiting, as well as the engineering thinking processes.

STEM Resource Teachers This individual will provide support to all teachers and students through coaching, modeling and demonstration school-wide. This will include the

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implementation of Paideia strategies, differentiated instructional strategies, project-based learning activities, backward design of curriculum planning, museum exhibitions, special events such as the parent exhibit nights, and other school-wide projects to enrich and enhance the interdisciplinary instruction. In addition, the resource teacher will work with teachers in utilization of the Innovative Learning Lab aligned to their instructional focus calendars and units of study across the curriculum.

A District Sprouting **STEM Collaborative Network Team** (CNT) consisting of museums, STEM organizations, STEM faculty from local colleges and universities, industry experts representatives from national and local business and community organization will be developed. The STEM Collaborative Network Team will validate the mission of the project and serve in an advisory capacity to monitor its implementation and to assure the quality of the STEM Museum Magnet project.

(2)(ii)(a) The Secretary determines the extent to which the applicant demonstrates the effectiveness of its plan to attain specific outcomes that will accomplish the purposes of the program

The *Sprouting STEM Museum Magnet Schools* will be developed with the goals of increasing student achievement in reading, mathematics, and science, as well as providing outstanding educational choices while reducing minority isolation. The table below illustrates the goals of the district's *Sprouting STEM Museum Magnet Schools* and their direct alignment with Magnet Schools Assistance Program (MSAP) program purposes.

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MSAP Program Purposes vis-à-vis Sprouting BCPS Outcomes

| MSAP Program Purpose #1 | BCPS Outcome #1 |
|--|---|
| <p>The elimination, reduction, or prevention of minority group isolation in elementary schools and secondary schools with substantial proportions of minority students, which shall include assisting in the efforts of the United States to achieve voluntary desegregation in public schools</p> | <p>Reducing minority group isolation in <i>Sprouting STEM Museum Magnet Schools</i> by the end of the grant period as verified by an external evaluator.</p> |
| MSAP Program Purpose #2 | BCPS outcome #2 |
| <p>The development and implementation of magnet school programs that will assist local educational agencies in achieving systemic reforms and providing all students the opportunity to meet challenging State academic content standards and student academic achievement standards</p> | <p>Increase percentage of proficient students in reading, mathematics and science in each <i>Sprouting STEM Museum Magnet Schools</i> by the end of the grant period as verified by an external evaluator</p> |
| MSAP Program Purpose #3 | BCPS outcome #3 |
| <p>The development and design of innovative educational methods and practices that promote diversity and increase choices in public elementary schools and public</p> | <p>All <i>Sprouting STEM Museum Magnet Schools</i> students will have access to highly rigorous thematic curriculum by the end of the grant period, as verified by an external evaluation.</p> |

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| | |
|---|---|
| secondary schools and public educational programs | |
| MSAP Program Purpose #4 | BCPS Outcome #4 |
| Course of instruction within magnet schools that will substantially strengthen the knowledge of academic subjects and the attainment of tangible and marketable vocational, technological, and professional skills of students attending such school. | Increase the proficiency of the African American students (the minority isolated group), students with disabilities, and English language learners (ELL) in each <i>Sprouting STEM Museum Magnet School</i> by the end of the grant period, as verified by an external evaluator. |
| MSAP Program Purpose #5 | BCPS Outcome #5 |
| Improvement of the capacity of local educational agencies, including through professional development, to continue operating magnet schools at a high performance level after Federal funding for the magnet school's is terminated. | Build capacity of <i>Sprouting STEM Museum Magnet Schools</i> , by the end of the grant period as verified by an external evaluator. |

BCPS utilize a multi-layered management plan connecting the Innovative Programs Department directly to the schools for enrollment, program development and increased student achievement support. The School Performance and Accountability Department will align all administrative services to the schools in order to effectively meet the collaborative outcomes of the *Sprouting STEM Museum Magnet schools*. All outcomes and performance measures in this

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proposal will be aligned with each School Improvement Plan to successfully allow the school leaders, School Performance and Accountability Department and the Innovative Programs Department to seamlessly align students, parents, business partners, college and university partners, CNT, support staff, consultants and curriculum specialists, school leaders, and magnet program teachers to meet the goals of both the School Improvement Plan and the MSAP grant.

The District's Office of Strategy and Continuous Improvement (OSCI) will support the implementation of the *Sprouting STEM Museum Magnet Schools*. Under the division, a performance management team will work closely with the Project Director and the magnet school principals to monitor school and district-wide performance against goals, identify when performance is off-track, and intervene early to ensure that goals are met on budget and on time. The OSCI office will focus on operational efficiency, accountability, reliable data, and shared responsibility. The plan calls for efficient and effective support services, dynamic data-driven decision-making, alignment of activities with goals, and an effective system of accountability. Together, these efforts will result in the continuous improvement in teaching and leading necessary to produce rapid growth in student achievement.

(2)(ii)(b) Specific outcome are attainable within the project period

To facilitate BCPS ability to meet the proposed outcomes and performance measures within the grant period, a web based monitoring tool will be developed to benchmark each outcome and performance measure proposed in the application. This monitoring tool will require all student achievement data to be uploaded for each school by subgroups and grade level. Specific benchmarks connected to the performance measures will be entered into the on-line monitoring system to enable all staff to measure progress throughout the three-year grant cycle. Data will be viewable by teacher, school magnet coordinators, school leaders and district project

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management team. Additionally, The Marzano Observation and Feedback Protocol adopted by the District as part of the teacher's evaluation system will be used to monitor teacher and student engagement in high rigorous teaching and learning activities by evidence of observable indicators. With periodic classroom observations throughout the school year from administrators, enough data marks will be collected to conduct timely conferences with teachers. School leaders will be able to provide immediate feedback on specific indicators within lesson segments related to routine events, content, and instructional decisions enacted on the spot; these indicators clearly align to instructional strategies that should be evident in a rigorous STEM Museum model. Furthermore, administrators will be able to recommend additional professional learning opportunities for professional growth in areas of need. Based on data collected through this process, monthly Sprouting STEM museum meetings will be organized by the Project Director with the six school leaders, instructional facilitators and magnet coordinators to monitor project methods, review curriculum components, monitor professional development, and coordinate special activities between the six schools. This ability to meet on a regular basis and to benchmark student progress as well as teacher's growth is a central component of the management plan and is critical to the continued excellence of the MSAP grant offerings.

The Project Director will work with the external evaluator and staff at each of the *Sprouting STEM Museum Magnet Schools* to identify and collect all necessary data elements that will ensure compliance with program requirements (e.g., monthly reports, annual formative and summative reports) for effectively assessing progress towards meeting the program's monthly and annual objectives.

Monthly monitoring reports will highlight findings, including programmatic challenges, use of evidence-based best practices, lessons learned, and recommendations resulting from site

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visits and communication with school-based staff. Monthly meetings with school-based staff will provide an opportunity for administrators to discuss monthly findings and annual evaluation results of the external evaluator with the principal's informal observations about the fidelity of implementation. The attached Sprouting STEM Museum Magnet Schools logic model illustrates how the project outcomes and performance measures will be met.

(2)(ii)(c) specific outcomes are measurable and quantifiable

Sprouting STEM Museum Magnet Schools outcomes and objectives are aligned with the six purposes of the Magnet Schools Assistance Program (MSAP). A set of outcomes and performance measures follow the program purposes they address.

Program Purpose (1): the elimination, reduction, or prevention of minority group isolation in elementary schools and secondary schools with substantial proportions of minority students, which shall include assisting in the efforts of the United States to achieve voluntary desegregation in public schools

Outcome # 1: Reducing Minority Group Isolation in *Sprouting STEM Museum Magnet Schools*.

Performance Measure 1.1: During the three-year grant cycle, the *Sprouting STEM Museum Magnet Schools*' annual enrollment will reflect a racial and ethnic composition that results in a reduction of minority group isolation as compared to the previous year. At each magnet school, minority group isolation among African American students will be reduced by at least 2 percentage points in each year, resulting in a reduction of at least 6 percentage points by the end of the three year grant.

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Performance Measure 1.2: In each year of the grant, the over-crowded magnet feeder sending schools will maintain a percentage of African-American student enrollments equal to or below that of the percentage of African-American total enrollment in the district.

Performance Measure 1.3: In each year of the grant project, there will be a 3% increase in the number of students enrolled in the *Sprouting STEM Museum Magnet Schools* that attended a private or charter school in the previous year.

Program Purpose (2): the development and implementation of magnet school programs that will assist local educational agencies in achieving systemic reforms and providing all students the opportunity to meet challenging State academic content standards and student academic achievement standards

Outcome 2: Increase percentage of proficient students in reading, math and science in each *Sprouting STEM Museum Magnet School*

Performance Measure 2.1: In each year of the grant, each *Sprouting STEM Museum Magnet School* will see an increase in of 3 percentage points, with an overall three-year increase of not less than 9 percentage points, in the proportion of students scoring level 3 or higher in reading, for students that have been continuously enrolled at the school as measured by the state standardized assessment FCAT 2.0 or Partnership for Assessment for Readiness of College and Careers (PARCC)

Performance Measure 2.2: In each year of the grant, each *Sprouting STEM Museum Magnet School* will see an increase of 3 percentage points, with an overall three-year increase of not less than 9 percentage points in the proportion of students scoring level 3 or higher in math, for students that have been continuously enrolled at the selected school, as measured by the state

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standardized assessment FCAT 2.0 or Partnership for Assessment for Readiness of College and Careers (PARCC)

Performance Measure 2.3: In each year of the grant, each *Sprouting STEM Museum Magnet School* will see an increase of 3 percentage points, with an overall three-year increase of not less than 9 percentage points in the proportion of students scoring level 3 or higher in science, for students that have been continuously enrolled at the selected school, as measured by the state standardized assessment FCAT 2.0 or Partnership for Assessment for Readiness of College and Careers (PARCC)

Performance Measure 2.4: In each year of the grant, each *Sprouting STEM Museum Magnet school* will achieve an increase of 10 percentage points, with an overall three-year increase of not less than 30 percentage points, in the proportion of students who achieve mastery on at least 80% of the National Educational Technology Standards (NETS), as measured by District-developed student assessment that measures proficiency in technology aligned to the NETS.

Program Purpose (3): the development and design of innovative educational methods and practices that promote diversity and increase choices in public elementary schools and public secondary schools and public educational programs

Outcome # 3: All Sprouting STEM Museum Magnet Schools students will have access to highly rigorous thematic curriculum.

Performance Measure 3.1: By end of project year one, all students at each *Sprouting STEM Museum Magnet School* will receive interdisciplinary STEM instruction aligned with Common Core State Standards, museum and engineering thinking processes with both internal

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and external learning experiences, for a minimum of five hours per week for the entire school year, as measured by lesson plans identifying theme-specific, innovative instructional practices and strategies.

Performance Measure 3.2: By end of project year two, all students at each *Sprouting STEM Museum Magnet School* will receive interdisciplinary STEM instruction aligned with Common Core State Standards, museum and engineering thinking processes with both internal and external learning experiences, for a minimum of 10 hours per week, for the entire school year, as measured by lesson plans identifying theme-specific, innovative instructional practices and strategies.

Performance Measure 3.3: By end of project year three, all students at each *Sprouting STEM Museum Magnet School* will receive interdisciplinary STEM instruction aligned with Common Core State Standards, museum and engineering thinking processes with both internal and external learning experiences, for a minimum of 15 hours per week, for the entire school year, as measured by lesson plans identifying theme-specific, innovative instructional practices and strategies.

Performance Measure 3.4: Student enrollment at each of the *Sprouting STEM Museum Magnet School* will increase by 2% in Year 1, by 10% in Year 2, and by 15% in Year 3, as compared to the baseline enrollment for the 2012-2013, school year.

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Program Purpose (4): course of instruction within magnet schools that will substantially strengthen the knowledge of academic subjects and the attainment of tangible and marketable vocational, technological, and professional skills of students attending such school.

Outcome #4: *Increase the proficiency of the African American students (the minority isolated group), students with disabilities, and English Language Learners in each Sprouting STEM Museum Magnet School*

Performance Measure 4.1: At each *Sprouting STEM Museum Magnet School*, the proportion of African American students scoring level 3 and above on the state standardized assessment, FCAT 2.0 or PARCC in reading will increase by 2 percentage points each year

Performance Measure 4.2: At each *Sprouting STEM Museum Magnet School*, the proportion of African American students scoring level 3 and above on the state standardized assessment, FCAT 2.0 or PARCC in math will increase by 2 percentage points each year

Performance Measure 4.3: At each *Sprouting STEM Museum Magnet School*, the proportion of African American students scoring level 3 and above on the state standardized assessment, FCAT 2.0 in science will increase by 2 percentage points each year.

Performance Measure 4.4: At each *Sprouting STEM Museum Magnet School*, the proportion of English Language Learners and Students with Disabilities scoring level 3 and above on the state standardized assessment FCAT 2.0 or PARCC in reading will increase by 2 percentage points each year

Performance Measure 4.5: At each *Sprouting STEM Museum Magnet School*, the proportion of English Language Learners and Students with Disabilities scoring level 3 and

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above on the state standardized FCAT 2.0 or PARCC in math will increase by 2 percentage points each year.

Performance Measure 4.6: At each *Sprouting STEM Museum Magnet School*, the proportion of English Language Learners and Students with Disabilities scoring level 3 and above on the state standardized FCAT 2.0 in science will increase by 2 percentage points each year.

Program Purpose # 5: Improvement of the capacity of local educational agencies, including through professional development, to continue operating magnet schools at a high performance level after Federal funding for the magnet school's is terminated.

Outcome #5: Build capacity of *Sprouting STEM Museum Magnet Schools*

Performance 5.1: In each year of the project, 30% of teachers at each *Sprouting STEM Museum Magnet School* will participate in magnet related professional development (e.g., coaching, courses, workshops), and by June 2016, at least 90% of staff who have been employed at the school over the three-year grant period will have accumulated 120 hours of magnet-related staff development.

Performance Measure 5.2: On an annual basis, 75% of parents who respond to the district *Sprouting STEM Magnet* survey will indicate that the program meets or exceeds their expectation of providing their child with a high-quality STEM curriculum and related learning activities.

Performance Measure 5.3 On an annual basis, 5% of enrolled students will participate in a student-led organization at the *Sprouting STEM Museum Magnet Schools* will actively include a Science, Technology, Mathematics and/or Science focus of the organization.

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(2)(ii)(d) For multi-year projects, can be used to determine the project’s progress in meeting its intended outcomes.

Describes below are the alignment of the purposes, intended outcomes, and strategies that will be used by the project staff to monitor the project’s progress towards meeting its intended outcomes over the three years of the project.

***Purpose #1:** The elimination, reduction, or prevention of minority group isolation in elementary schools and secondary schools with substantial proportions of minority students, which shall include assisting in the efforts of the United States to achieve voluntary desegregation in public schools*

***Outcome #1:** Reducing Minority Group Isolation in Sprouting STEM Museum Magnet Schools*

To reduce minority group isolation BCPS will implement six *Sprouting STEM Museum Magnet Schools* designed to attract and retain a diverse pool of students by offering an innovative, unique, and high quality instruction that will integrate thematic interdisciplinary STEM curricula which will result in minority group isolation. Each Sprouting STEM Museum Magnet School will emphasize a STEM theme with unique and in-depth, individualized learning experiences that will ultimately result in attracting a diverse pool of students.

Additionally a strategic **marketing plan** will be implemented and specifically target non- minority students from the Sprouting STEM Museum Magnet feeder schools, private and charter schools. Objectives for the marketing plan will comprise the following: introduce the new *Sprouting STEM Museum Magnet Schools* to the entire district and the community; outreach to childcare centers within the surrounding communities; create an engaging marketing message that highlights the benefits of enrolling in the new *Sprouting STEM Museum Magnet Schools*;

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conduct informational sessions at the school site and the community- at- large; develop and disseminate materials and brochures in multiple languages; geographic targeting will be applied to identify and reach families in underserved populations; online web advertising of *STEM Museum Magnet Schools* will be placed in key strategic websites to reach targeted audience; conduct specialized recruitment to ensure a diverse applicant pool.

In addition, **recruitment** and **admissions** to each of the six Sprouting STEM Museum Magnet Schools will be available to all students in the schools’ boundary areas including students attending private and charter schools. All applicants will be admitted to the STEM Museum Magnet schools as long as seats are available. In the event that there are more applicants than available seats, a computerized random selection process will be used. Finally, the **feeder school**’s enrollment will be closely monitored by the Program Director in collaboration with the District Demographics and Student Assignments Department to ensure that enrollment at the Sprouting STEM Museum Magnet is not negatively impacted.

Purpose 2: the development and implementation of magnet school programs that will assist local educational agencies in achieving systemic reforms and providing all students the opportunity to meet challenging State academic content standards and student academic achievement standards

Outcomes #2: Increase percentage of proficient students in reading, math and science in each Sprouting STEM Museum Magnet School.

The Sprouting STEM Museum Magnet Schools will address the expressed needs of the community for a elementary school program that addresses students’ academic needs in reading, mathematics and science and encourages creativity as well as appropriate and academic use of technology; give all students a high level of preparation in core academic subjects especially

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mathematics and science; promotes college readiness by giving students the ability to take high school level courses and matriculate into high-rigor school programs - allowing students to benefit from seven years of rigorous, comprehensive study; and meet an important standards - the No Child Left Behind Act mandate that all students are technology literate by 8th grade.

Program Purpose (3): the development and design of innovative educational methods and practices that promote diversity and increase choices in public elementary schools and public secondary schools and public educational programs

Outcome #3. All Sprouting STEM Museum Magnet students will have access to Highly Rigorous thematic curriculum.

Students enrolled in the *Sprouting STEM Museum Magnet Schools* will participate in STEM galleries where students' works and projects will be exhibited and scientific projects will be archived. Big Idea STEM stimulating themes will be infused throughout the school with project-based learning to ensure all academic classes integrate the STEM concept. The classroom walls will extend as students travel across the globe through distance learning, correspond with students internationally, dialogue with electrical engineers, use web-based programs, prepare digital reports and create STEM blogs. Students will collaborate and work in groups as they use scientific equipment and multimedia technology. Experiential learning is the nucleus of the STEM Museum Magnet Schools.

Partnerships- Partnering with prominent, renowned museums such as the Museum of Science, Boston; Young at Art/Museum, and Museum of Discovery and Science, students will be fascinated as they discover science, technology, engineering, and mathematics in a non-traditional setting.

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Multidisciplinary STEM Project – each year of the project, students in all six Sprouting STEM Museum Magnet Schools will participate in innovative, multidisciplinary project-based learning that will result in the development of at least one thematic, curricular product.

Program Purpose (4): *course of instruction within magnet schools that will substantially strengthen the knowledge of academic subjects and the attainment of tangible and marketable vocational, technological, and professional skills of students attending such school*

Outcome #4: *Increase the proficiency of the African American students (the minority isolated group), students with disabilities, at the six Sprouting STEM Museum Magnet Schools.*

Each year, all students will be engaged in rigorous STEM instruction. The District will develop programs that prepare students for a diverse, ever changing world and give them the necessary skills to pursue career goals. The following strategies will be implemented to support the educational need of minority students:

Differentiated Instruction – Using differentiated instruction; STEM teachers will motivate and engage students with the Renzulli approach that aligns with Next Generation State Standards and Common core state standards.

Technology - Through the delivery of STEM curriculum, technology, and digital content, students are empowered to achieve more in their learning. The Paideia methodology will be incorporated with didactic instruction (utilized through STEM videos, demonstrations with STEM instructors, and lectures) intellectual coaching and modeling, and open-ended questions to increase understanding of ideas.

All curricula and instructional strategies offered through this project will be aligned with District and Common Core State Standards for student performance along core subject areas.

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These standards will form the foundation for all educational programs in the schools, and will promote high quality education and strengthen student skills. The comprehensive teacher training component will assure that all curricula taught in the classroom is aligned to these state and local standards, and that appropriate assessments are used to measure students’ progress toward meeting those standards.

Program Purpose 5: Improvement of the capacity of local educational agencies, including through professional development, to continue operating magnet schools at a high performance level after Federal funding for the magnet school’s is terminated.

Outcome 5: Provide professional development for all Sprouting STEM Museum teachers

Professional Development –Through this MSAP grant the District will provide high quality professional development in STEM Museum training in differentiated instruction, strategies for individual learning styles, instructional inquiry, alternative assessments, and interdisciplinary team planning. By the end of each project year, magnet teachers will receive an average of 40 hours of interdisciplinary units of study. Training will include professional development with professors from Florida Atlantic University and Broward College, industry experts in the field of STEM, district curriculum trainers, and attendance at STEM conferences.

Professional Growth Plans (PGP) will be used by schools to collect, analyze, and interpret data to guide professional learning at the school and to seek professional development at the school or district level. In addition, each teacher will complete the Inventory of Teacher Technology Skills (ITTS) to determine baseline level skills. The PGP plans will become an integral part of the School Improvement Plan and will be tied directly to academic standards, both the Sunshine State Standards and the Broward County Benchmarks. Site-based plans will

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be based on needs gathered from student achievement data, professional growth plan data, staff performance data and community surveys.

Sprouting STEM Museum Magnet teachers will meet weekly for planning and status of projects and activities with the Innovative Sprouting STEM Team’s magnet coordinator and instructional facilitators; and the instructional facilitators will coach and assist in implementing integrated Sprouting STEM Museum units of study projects/activities/and development of museum exhibits. In addition, the magnet coordinator and instructional facilitator will support grade level team (teacher) leaders and administration and meet monthly for program updates and/or modifications needed for successful program implementation. For time-sensitive updates and quick reminders, a quick e-mail blast (create STEM e-mail address book) will be sent via e-mail. A Wiki and/or STEM Blog will be developed to readily share best practices, ideas, updates, reflections about program units of study implementation “what worked, and what can be readily improved”, and such. All educational stakeholders will be informed continuously of curriculum project/activity modifications and updates.

(2)(iii)The effectiveness of its plan for utilizing its resources and personnel to achieve the objectives of the project including how well it utilizes key personnel to complete tasks and achieve the objectives of the project.

To ensure the success of the *Sprouting STEM Museum Magnet Schools*, the BCPS is committed to the most efficient use of resources and personnel for the successful implementation of project. The attached budget narrative outlines how the funding from the Magnet School Assistance Program (MSAP) grant will be used to support the implementation of the *Sprouting STEM Museum Magnet Schools*. The personnel request will provide the guidance and supervision required to accomplish the proposed project outcomes. BCPS has the experienced in

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starting and maintaining high quality magnet programs and understands the financial need to support the effective implementation of the six *Sprouting STEM Museum Magnet Schools*. The resources that are being requested have been selected to meet the six purposes of the MSAP and allow for adequate financial support to effectively design and implement project activities and meet the identified project goals and objectives.

Key magnet personnel at both the district Innovative Programs Department and at each *Sprouting STEM Museum Magnet Schools* will be essential to ensure effective implementation and achievement of the goals, objectives and activities of the Sprouting STEM Museum Magnet program.

Sprouting STEM Museum Magnet Schools personnel have both the qualifications and experience in curriculum development and desegregation strategies to ensure the successful project implementation under the 2013-2016 Magnet Schools Assistance Program grant. The Director of Innovative programs will allocate 35% of time for the project oversight and the Community Relations Specialist will dedicate 30% of time to this project; all time dedicated will be an in-kind contribution. A vast majority of the principals in the MSAP grant have prior administrative *and* instructional experience at a magnet school, and know the challenges of reaching students who are motivated – and need to be motivated – to achieve; their magnet background will be vital as they guide their staff with a rigorous Sprouting STEM Museum magnet program; and each principal will allocate 35% of time to the project.

MSAP grant funds will be used to expand the Innovative Programs Department capacity by adding four new positions that will support the project and ensure that all activities within all six schools are implemented with fidelity. In addition, the requested MSAP funds will be used to hire six full-time magnet coordinators, one for each school; and 13 Instructional Facilitators, two

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at for each school except for Liberty elementary who will hire 3 instructional facilitators. The allocation of resources and personnel will be base on school enrollment.

(2)(iv) How it will ensure equal access and treatment for eligible project participants who have been traditionally underrepresented in courses or activities offered as part of the magnet school

Sprouting STEM Museum Magnet Schools will provide equitable access to high quality education to promote diversity and increase choice for all students attending the schools. Because all programs are school-wide, all students enrolled in *the Sprouting STEM Museum Magnet School* will have equal access to the courses and activities offered to all by the conclusion of the third year of the grant cycle. *Sprouting STEM Magnet Museum Schools* are designed to provide choices to all students and improve the quality of teaching and learning at all of the magnet schools. In addition the project will encourage and support parents to fully participate as partners in the program.

To ensure that minorities, students with disabilities, and other underrepresented populations are present in the magnet school population, the district will conduct targeted recruitment, as explained in the following section. To increase access to programs offered through the *Sprouting STEM Museum Magnet Schools*, there will be no academic entrance criteria for selection or participation. Student participation in magnet programs will be regularly monitored by school sites and the district with the goals that ensure that: 1) all students have equal opportunity to participate in magnet schools, 2) magnet enrollments reflect the diversity need at each individual school, and 3) magnet schools are effective in attracting traditionally underrepresented populations. The *Sprouting STEM Museum Magnet Schools* provide all students with the opportunity to meet challenging state academic achievement standards.

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The *Sprouting STEM Museum Magnet Schools*' curriculum will be adapted to meet students' different learning styles to afford all students the opportunity to improve performance, regardless of current academic ability. While the *Sprouting STEM Museum Magnet Schools* will offer academically rigorous programs for above average students, they will also offer high-quality, theme-based curricula tailored to meet all academic levels and increase academic achievement.

The curricula at all six of the elementary schools will include **multicultural elements** that equally represent both genders and all racial, ethnic, and socioeconomic backgrounds. Since the Broward district has served a diverse student body for so many years, multi-culturalism in the curriculum and pedagogy is standard practice. For example, due to the enrollment of English language learners at all six schools, most communications are in Spanish, Portuguese, Creole and English.

To promote equal treatment in all facets of magnet programs, teachers will participate in diversity training and will practice instructional strategies designed to meet the learning needs of all students. Staff will learn about Dr. Ruby Payne's seminal work about the culture of poverty and complete seven modules that provide insight for understanding poverty including: Poverty Key Points, Resources, Language and Story, Family Structure, Hidden Rules, Discipline, Relationships (Payne, 2005). In addition, all teachers will receive training in the FCIM (Florida Comprehensive Instructional Model, 4-Step Instructional Process) to close the achievement gap between ethnic and income subgroups of students identified by the American Productivity Center (American Productivity Center, 2002). The Board has established the Office of Diversity and Cultural Outreach to develop proactive strategies, develop and implement staff development, promote multicultural understanding, and monitor diversity in the district. In addition, the

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district's Equal Education Opportunities Department (EEOD) monitors, coordinates, and recommends action to ensure compliance with the Board's policy of nondiscrimination, which governs decision-making at district levels.

The EEOD also offers in-service training to increase staff effectiveness in recognizing and correcting biased attitudes. In accordance with the Americans with Disabilities Act, the School Board also provides reasonable accommodations to students and employees with disabilities. The *Sprouting STEM Museum Magnet Schools* allows BCPS to continue to achieve voluntary desegregation by reducing minority group isolation. No Child Left Behind and reforms in Florida decree that our public schools must offer more educational choices for all students. Broward County's innovative policies skillfully integrate these mandates to expand academic options for students and their families. The district offers Voluntary Choice, School Near the Workplace, a liberal reassignment policy, Innovative Programs and Magnet programs.

(2)(v) The effectiveness of its plan to recruit students from different social economic ethnic and racial backgrounds into the magnet schools

To ensure that minorities, students with disabilities, and other underrepresented populations are present in the magnet school population, the district will conduct targeted recruitment, as explained in the following section. To increase access to programs offering at the Sprouting STEM Museum Schools, there will be no academic entrance criteria for selection or participation. Student participation in magnet programs will be regularly monitored by school sites and the district with the goals that ensure that 1) all students have equal opportunity to participate in magnet schools, 2) magnet enrollments reflect the diversity need at each individual school, and 3) magnet schools are effective in attracting traditionally underrepresented populations.

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The Magnet Community Relations Specialist will plan and coordinate all phases of marketing and recruitment for the Sprouting STEM Museum Magnet Schools project roll out with assistance from Innovative Programs staff, Early Childhood Education department, the district Public Relations and Government Affairs, and school representatives. The intent is to promote the Sprouting STEM Museum Magnet Schools and the benefits of the program to each demographic, reduce minority group isolation, increase diversity, and effectively provide information to parents whose children attend low-performing schools.

As the district continues to grow larger and become more diverse, Innovative Programs collaborates with the English Language Learners (ELL) department to present magnet programs to parents. An annual Bilingual Parents Institute is held where approximately 4,000 parents attend. Parental choice options are shared and the magnet application is disseminated. Marketing materials are made available in English and numerous languages including Spanish, Portuguese, and Haitian Creole to ensure that all English Language Learners have access to information. Materials in multiple languages are sent to every public school in Broward County, all guidance counselors, and posted on the district's website. In its continued endeavor to involve the families of all these students, the ESOL Department, through its Parent Outreach Office, provides bilingual community liaisons on a regular basis to assist parents with information about magnet options so they can become partners in their children's education. Schools also reach out to English Language Learners parents with open houses, tours, and family nights designed to engage parents where Spanish, Portuguese, and Haitian Creole translators are available to effectively communicate with all who attend. These events occur at flexible times to accommodate parents' schedules.

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BCPS has 2,040 students enrolled in the Head Start programs; we will ensure materials are created to inform Head Start families of the STEM academics and events that their children may participate in as a STEM Museum magnet student.

Because there is an underrepresentation of girls in the field of STEM compared to boys, specialized promotional materials highlighting “fun and interesting accomplishments” of women in the STEM field will be designed and promoted to Girl Scouts troops, The Boys and Girls Club, and Pace Center for Girls.

Because a large percentage of our market is wired to the digital age, we strive to engage the community at every level – online and offline. We will leverage social media and word of mouth for our marketing using platforms such as Twitter. This platform is widely used by stakeholders in our demographic market. We will make announcements via regular tweets and updates to our website. We will also use our email marketing comprised of people who have expressed interest in our magnet programs.

b. QUALITY OF PERSONNEL

(1) Qualifications of the Personnel the Applicant Plan to use in the Project

BCPS is an urban district employing administrative, instructional, and support staff, which reflects the diversity of Broward County. The identified Sprouting STEM Museum magnet personnel are highly qualified and have a wide array of educational expertise to ensure the successful implementation to meet the established goals and objectives during the grant and to ensure sustainability after the funding has ended. Key personnel have years of experience in curriculum development, integration of standards, assessment methods, identifying and utilizing

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effective and innovative instructional strategies, conducting marketing and recruitment to guarantee a diverse applicant pool, reviewing and enforcing district diversity policies, and implementing strategies to reduce minority isolation and assure equal representation of students in magnet programs.

Since 1977, BCPS has successfully planned, implemented, and offered magnet programs that provide educational excellence, embrace diversity, and expand educational choices for thousands of students. The Sprouting STEM Museum Magnet project personnel have both the qualifications and experience in curriculum development and desegregation strategies to ensure the successful project implementation under the 2013-2016 Magnet Schools Assistance Program grant. The Chief Portfolio Services Officer (formerly known as Educational Programs), Director of Innovative Programs, and Community Relations Specialist have been instrumental and a driving force in the ascent of Broward's 64 magnet programs among students, parents, and community members; their shared vision, keen insight, program knowledge and accumulated magnet experience totaling more than 20 years have brought prestige, prominence, and academic excellence to the magnet programs. Their efforts will impact the schools in this grant as they amass their skills and provide leadership to each school site. The Director of Innovative programs will allocate 35% of time for the project oversight and the Community Relations Specialist will dedicate 30% of time to this project; all time dedicated will be an in-kind contribution. A vast majority of the principals in the MSAP grant have prior administrative *and* instructional experience at a magnet school, and know the challenges of reaching students who are motivated – and need to be motivated – to achieve; their magnet background will be vital as they guide their staff with a rigorous Sprouting STEM Museum magnet program; and each principal will allocate 35% of time to the project.

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Chief School Performance & Accountability Officer –Chief Officer, Dr. Blackburn develops strategies, provides leadership, and direct supervision for 231 schools including Elementary, Middle, High, Alternative High School, and Community School. Dr. Blackburn has served in various roles including area superintendent, area director, principal, assistant principal, and teacher. Dr. Blackburn has a successful record as a former magnet assistant principal in the middle school; he oversaw the responsibilities of the magnet coordinator and district-wide opportunities for students to engage in Montessori curriculum.

In the Sprouting STEM Museum magnet project, the Chief School Performance & Accountability Officer and School Performance and Accountability Directors will oversee the district's achievement of goals set forth by the voluntary plan and the School Board's major system priorities and supervises the principals in their area, who in turn will directly oversee the proposed projects at their school.

Chief Portfolio Services Officer – Portfolio Services Officer, Ms. Brown oversees Innovative Programs, Demographics and Student Assignments, Before and After Care, and Athletics and Student Activities. As a former principal of a K-8 school, Ms. Brown oversaw the development and opening of the school, which included all aspects of administrative leadership. The school was extremely successful both academically and operational throughout her tenure at the school. Prior to serving as principal at Hollywood Academy of Arts and Science, Ms. Brown served as the Director of Magnet Program Development from 1998-2004. In this role, she coordinated all activities of the district's magnet programs. In 1998, she was appointed as the district's Art Curriculum Specialist where she assisted schools developing curriculum and staff development for visual art programs. Ms. Brown holds a Master of Science from Florida

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International University and a Bachelor of Science Degree from Florida State University. She also holds certifications in Art, and Administrative and Educational Leadership.

(2)(i) The project director is qualified to manage the project

Director, Innovative Programs - Ms. Leona A. Miracola, is a professional educator with over 30 years experience as a district administrator, classroom teacher, school site specialist for career/technical education programs, post-secondary articulation specialist for technical education, district-level facilitator for the K-12 School-to-Career programming. As the Director of Innovative Programs, her responsibilities have included overseeing processes related to parental option programs including: Magnet Programs, Innovative Programs, Charter Management Services, NCLB/Choice, Student Reassignments, and K-12 Nova Schools (which is another school choice option). In her role, she coordinates all activities of the district's 64 magnet programs and will supervise the Project Coordinator of this Magnet Schools Assistance Program project. She brings to this position expertise in leadership, experience in developing successful desegregation strategies, program planning, curriculum development, and teacher training. Ms. Miracola was the project director for the 2004-2007 MSAP grant that significantly revised four magnet high schools and one middle school to whole school magnets, and the 2010-2013 MSAP grant that transformed six middle schools into whole school STEM magnets. Her analysis of student program needs has been instrumental in identify solutions to assist with increasing student enrollment.

She also monitors the administration for the district's Innovative Programs policy, which addresses all processes related to choice options for parents and students. She identifies the need for magnet programs including student interest areas, transportation, budget guidelines, potential sites, and logistics for implementation high-interest theme programs. Leadership assignments

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have included monitoring the desegregation goals of the district's magnet programs including working with the district's Diversity Committee to develop long-range goals for magnet program development, and overseeing the planning, design, and implementation of new magnet and innovative programs. Ms. Miracola is experienced in curriculum development for magnet programs, career/technical education, and specialized programs such as peer counseling and drop-out prevention.

As the MSAP Program Director for this project, Ms. Miracola will oversee the development, implementation, budget, and monitoring/evaluation of the project. Ms. Miracola will collaborate and assist the district-level coordinator/facilitator with planning, implementation, budget, staff development, evaluation, and sustainability of the Sprouting STEM Museum magnet project at each of the six schools after the grant funding ends. Ms. Miracola understands the importance of collaborating with all stakeholders and will provide leadership and support to the school sites, area office, parents, community groups, business partners, and students throughout the project.

(2)(ii) Other key personnel are qualified to manage the project

Magnet Project Coordinator – TBA- A full-time District Magnet Coordinator will assist the six Sprouting STEM Museum Magnet Schools and stakeholders with developing sequential thematic curriculum, aligning curriculum to standards, integrating theme concepts across core academic subject areas, conducting staff training, working with evaluation benchmarks/plans, and integrating technology across the curriculum. The facilitator will be highly qualified, have a Masters degree, five years of teaching experience, expertise with science, math, engineering theme areas, and an extensive knowledge of technology and its use in the classroom. The

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facilitator will allocate 100% of their time to the project and will be responsible in assisting with the planning, designing, and implementing of the new magnet programs; assisting in the professional development and ongoing in-service workshops of teachers; and meeting with parents and community leaders regularly to market and recruit students at open houses and other district marketing events. This individual will also collect and assist in evaluation activities of the Sprouting STEM Museum magnet program. This individual will provide ongoing technical assistance including: implementation of evidence-based instructional strategies, development of rubrics, monitoring tools, professional learning communities, reporting tools and reports.

Sprouting STEM Museum School Principals

Atlantic West Elementary– Ms. Janette Hameister has worked in several schools during her career in Broward County Public Schools. Over the past 12 years, she has worked as Curriculum/Reading Support Coach, Reading Resource/Curriculum Specialist, Assistant Principal, and Principal. As principal, she communicates and builds relationships with parents and stakeholders, builds community partnerships, provides leadership for and facilitates school improvement initiatives, and supports and provides teacher professional development. Ms. Hameister has a Master in Educational Leadership from Nova Southeastern University, and is currently a doctoral student K-12 Educational Leadership at Florida Atlantic University. She is a member of the Association for Supervision and Curriculum Development, the National Staff Development Council — now *Leading Forward*, and the International Reading Association.

Broward Estates Elementary School – Ms. Cynthia J. Hunt has a Master of Science, Educational Leadership K-12 from Nova Southeastern University. Ms. Hunt has been an educator for 22 years and has worked as a Teacher, Curriculum Facilitator/Reading Coach, Intern Principal, Assistant Principal, and Principal. Ms. Hunt has worked in 4 elementary

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magnet schools during her career in Broward County Public Schools and is currently the principal of a magnet school. She developed an ongoing school-wide system to ensure school's curricular goals were being achieved, resulting in an increase of students making learning gains in reading and science of 20 points.

Colbert Elementary– Ms. Patricia D. Yackel has worked as Principal at a Magnet school since 2011. As principal, she realigned focus of Magnet classes to integrate Science and Mathematics curriculum for both primary and intermediate classes, she collaborated with special area teachers to incorporate Mathematics instruction and strategies into the Arts, using available technology. She disaggregated student data to determine academic performance on benchmarks and develop plans for remediation. She collaborated with zone schools to create a STEM marketing campaign and reaches out to her parents with a weekly newsletter and website communicating school events, expectations, updates, and other information.

Liberty Elementary School – Mr. David J. Levine is a graduate of the University of Florida, has a Master of Education and a Bachelor of Arts in Education. Over the past 12 years, Mr. Levine has worked as an Assistant Principal, Intern principal, and principal. As principal at Liberty Elementary, he manages the daily operations of the school to ensure a safe and secure learning environment conducive to teaching and learning. He has worked with Title 1 students and his school has been recognized for attaining great learning gains.

Plantation Elementary – Tonya Frost has a Master of Science and a Bachelor of Science from Nova Southeastern University. She was recognized as a “turn-around principal” in a struggling school who orchestrated curriculum design and instructional planning that improved student achievement, and increased a letter grade on the state assessments. Her active leadership is visible among staff, students, parents, business partners, and community groups. She

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communicates monthly to stakeholders through staff meetings, monthly newsletters, parent link phone messages, personal phone calls, SAC meetings, SAF meetings, PTA meetings, and has increased stakeholder participation in a variety of school-sponsored events.

Royal Palm Elementary – Mr. Ducarmel Augustin has made a great impact in the field of education. He developed a vision of student-centered, differentiated classroom instructional practices and aligned all staff development to support this initiative. He implemented a tutorial program to assist students with reading and math skills, resulting in 79% of students who attended regularly making learning gains. Mr. Augustin has a Masters Degree in Education from Eastern University.

Secretary II – TBA - The secretary will perform in a responsible and accurate manner a variety of duties involving the preparation and scheduling of office routines. The secretary will assist supervisory level personnel in handling daily activities. This person will perform secretarial/clerical tasks and typing duties in a competent and professional manner.

Bookkeeper – TBA- This person will be responsible for processing salary and non-salary expenses, reconcile overall budget, process amendments, monitoring expenditures from the grant, ensuring budgeting compliance and providing full and accurate fiscal reports to the School Board of Broward County as well as the U.S. Department of Education.

Micro-Computer Tech Specialist – TBA- Technology is one of the key components to the STEM Museum magnet project. The Micro-computer tech specialist will provide technical support of micro-computer hardware, software, networks, and servers, concentrating in the area of user concerns, problems, training, and needs for STEM students and staff.

Community Relations Specialist, Innovative Programs - Ms. Ruth Johnson's 20 years of experience in marketing, research, and public relations makes her a vital resource to the

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proposed Sprouting STEM Museum magnet project. She has served as Community Relations Specialist with the Innovative Programs Office for thirteen years, where she designs and executes comprehensive district-wide strategic marketing plans for all 64 magnet school programs. Working closely with magnet, choice, and innovative schools, Ms. Johnson designs marketing materials, coordinates open house events, implements recruitment plans, monitors the plans' effectiveness in reducing minority isolation, communicates with parents, students, and key stakeholders to disseminate magnet choices, services press and media releases on magnet programs. Additionally, Ms. Johnson oversees the department's website that contains information in four different languages including Spanish, Portuguese, Haitian Creole and English. She has extensive national corporate marketing experience, and has conducted market research, data collection, management and analysis for numerous organizations in both the public and private sector. For ten years, Ms. Johnson spearheaded the Innovative & Magnet Showcase at the Broward County Convention Center providing information to parents, students, and the community regarding school choice options, and yielding approximately 6,000 attendees. She served on the Florida STEM multimedia committee and has been a member of the National Schools Public Relations Association. She currently serves on the Diversity Committee and is a member of the Public Relations Society of America.

(2)(iii) Teachers who will provide instruction in participating magnet schools are qualified to implement the special curriculum of the magnet schools

Theme Magnet Coordinator – TBA- Each school in the Sprouting STEM Museum Program will have one teacher magnet coordinator who will allocate 100% of their time for the project working closely with the district Innovative Programs Office and their school principal to design and adapt curricula, integrate standards and assess student achievement, coordinate

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magnet themes and activities, conduct recruitment and marketing, assist magnet theme teachers with curriculum integration, student support, and meet with parents and the community. Develop, implement and follow up on all staff development activities, coordinate focus group meetings for formative and summative evaluation processes. Each magnet coordinator will be highly qualified, holding a Masters degree, a Florida teaching certificate, and five years of experience in the theme area.

Broward's successful magnet programs have established strong reputations as programs of excellence in the community. These programs attract not only students, but quality teachers as well. The Innovative Programs Office regularly receives resumes from the best and brightest in the teaching community who are interested in joining the magnet school staff. As a result, there is a large and diverse pool of highly qualified applicants from which the Innovative Programs Office and magnet principals can choose to further ensure the delivery of outstanding programs through the Sprouting STEM Museum Magnet Project.

STEM Instructional Facilitator – TBA- The STEM Instructional facilitator will allocate 100% of their time to the project. Each of the 6 STEM schools will have a STEM Instructional Facilitator who will be responsible to work with all students and teachers in the school to deliver the theme area curriculum. The facilitator is included in the budget because he/she will act as an on-site catalyst to help lead the transition to a school-wide program. The STEM instructional facilitator will model to other teachers/staff the instructional strategies to reach students. They will collaborate continuously with all grade level teachers (K-5) to maintain the continuous curriculum improvement and assist in designing and planning curriculum which integrates the Common core state standards, Science benchmarks, Marzano's strategies, Paideia, Renzulli and Engineering for Elementary instructional strategies. Participate actively in the Science

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professional learning community sessions to plan with grade level teachers the unit of study theme.

Broward County Public Schools ensures that highly qualified teachers in the core academic subjects teach students. The term “core academic subjects” means English, reading or language arts, mathematics, science, foreign languages, civics and government, economics, arts, history, and geography. In order to meet the highly qualified definition, Sprouting STEM magnet teachers must possess a valid teaching license and demonstrate subject matter competency in the areas they teach through certification. In addition, teachers will be selected based on their expertise in their theme area, their desire to teach in a magnet setting, and their interest in further development of their educational skills. A significant percentage of magnet program teachers hold a Master's level degree or higher. Once selected for the Sprouting STEM Museum magnet program, these teachers will be extensively trained to sharpen their existing skills and learn new skills as appropriate for successful implementation of the Sprouting STEM Museum magnet project.

Florida’s Professional Development System Evaluation Protocol guides district professional development activities in Florida. This evaluation model is used by Broward County Public Schools and assesses the local planning, learning, implementation, and evaluation of professional development activities according to standards modeled after the Learning Forward standards as well as Florida Statutory requirements. The Professional Development System Evaluation Protocol includes standards that serve to identify and recognize best practices as well as to identify local professional development systems in need of improvement. The Florida Department of Education initiated the Professional Development System Evaluation Protocol in the Spring 2003 as a means to fulfill the requirements of section 1012.98, Florida Statutes. This

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legislation sets forth that the purpose of professional development systems is to increase student achievement, enhance classroom instructional strategies that promote rigor and relevance throughout the curriculum, and prepare students for continuing education and the workforce.

BCPS policy on professional development provides a professional pathway structure for the organizational learning and development of all employees resulting in increased student achievement and enhanced job performance thus preparing students for continuing education and the workforce. The National Staff Development Council Standards (NSDC, 2001), The Florida Professional Development System Evaluation Protocol and The Florida Leadership Standards constitute the framework for the Professional Pathways Policy. The Effective Schools Program of Continuous Quality Improvement (CQI) used by Broward County Public Schools provides an effective model for increasing student achievement by (School Improvement Plans F.S.

1001.42): using research-based theory, building/sustaining an effective team, identifying time for staff development, assisting schools with a framework for using technology, supporting schools with data analysis and data gathering tools, and conducting a comprehensive needs assessment.

(2)(iv)The applicant as part of its nondiscriminatory employment practices will ensure that its personnel are selected for employment without regard to race religion color national origin sex age or disability.

The School Board of Broward County, Florida, is an equal opportunity employer and prohibits any policy or procedure which results in discrimination against personnel or students on the basis of age, color, disability, national origin, marital status, race, religion, or sex as stated in School Board Policies 4000, 4001, 4001.1 and 5000. ***In accordance with these policies, discrimination is prohibited in recruitment and employment practices; hiring, employment and***

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assignment of personnel; student assignments; and student extracurricular activities and appropriate policies ensure compliance.

Vacant positions advertised to the general public are published in newspapers of high circulation. To further ensure a diverse employee applicant pool, these vacancies are also placed in newspapers with a high minority circulation. All educational facilities of the School Board, including proposed magnet school sites, are fully accessible to individuals with disabilities. As previously stated, the district's Equal Education Opportunities Department monitors, coordinates, and recommends action to ensure compliance with all district policies and remedy grievances with respect to equality and nondiscrimination issues.

Minorities, females, persons with disabilities and other traditionally underrepresented groups will be well represented in all advisory committees, administrative staff, instructional staff, and support staff of the Sprouting STEM Museum Magnet Schools project.

3) To determine personnel qualifications, the secretary considers experience and training in fields related to the objectives of the project, including the key personnel's knowledge of and experience in curriculum development and desegregation strategies

The Chief Portfolio Officer task assigned at the district level has experience working and overseeing magnet programs throughout Broward county public schools. As chief portfolio officer see oversee diversity and student assignment along with parental choice option to ensure equity and access for all children to high quality programming. In addition at the district level Leona Miracola, Director of Innovative Programs for the past eight years has overseen magnet programs for the District and overseen the development of magnet programs through MSAP funding and District funds related to the Sprouting STEM theme.

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The six principals are highly trained as effective leaders and school administrators. They are responsible for overseeing both instructional and support staff. In addition that oversees the daily operations of the facilities to ensure a safe and secure environment. They spearhead the continuous school improvement process to ensure high curriculum is in place to ensure student achievement for all learners. They work with parents, business partners and community leaders to create a collaborative network to support their schools.

c. QUALITY OF PROJECT DESIGN

(1) The Secretary reviews each application to determine the quality of the project design.

The Sprouting STEM Museum Magnet Schools will be organized around a comprehensive vision that focuses all efforts on fostering interaction among students of different socio-economic, ethnic, and racial backgrounds while raising student achievement. The learning environment at the SSMMS will be structured so that each student has the freedom to explore and discover and is motivated to reach academic standards. *SSMMS* will be deeply rooted in the belief that students are natural inquirers and that inquiry is the heart of all learning. The project design is planned around the following strategies:

- **STEM Museum Model-** Sprouting STEM Museum Magnet model will incorporate the engineering design processes of asking-imagining-planning-creating-improving; instructional strategies, along with the museum processes of researching, exploring, experimenting, explaining which will guide the students to make "connections" between subjects and acquire critical and creative research thinking skills! It will emphasize a process-oriented and interactive learning environment that will be fully

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interdisciplinary and extend beyond the classroom walls. The students will have access to extensive resources and learning experiences with local, national, and international museums, and STEM-related local businesses, higher-education institutions, and the world-at-large! Students will be connected via virtual and physical exposure to community and global field trips that will be STEM-related, inquiry-driven, aimed at fostering curiosity and real-life experiences. Students will physically utilize the local and school-based design museum galleries as their “learning space” and collaboratively research in “teams”, as well as plan and develop their interactive project exhibits.

- **Partnerships**-Partnering with prominent, renowned museums such as the Museum of Science, Boston; Young at Art/Museum, and Museum of Discovery and Science, students will be fascinated as they discover science, technology, engineering, and mathematics in a non-traditional setting.
- **Classroom Environment**-The hallways of the STEM Museum Magnet Schools will transform to STEM galleries where students’ works and projects will be exhibited and scientific projects will be archived. Big Idea STEM stimulating themes will be infused throughout the school with project-based learning to ensure all academic classes integrate the STEM concept. The classroom walls will extend as students travel across the globe through distance learning, correspond with students internationally, dialogue with electrical engineers, use web-based programs, prepare digital reports and create STEM blogs. Students will collaborate and work in groups as they use scientific equipment and multimedia technology. Experiential learning is the nucleus of the STEM Museum Magnet Schools.

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- **Differentiated Learning**-Using differentiated instruction, STEM teachers will motivate and engage students with the Renzulli approach that aligns with Next Generation State Standards and Common core state standards.
- **Technology**-Through the delivery of STEM curriculum, technology, and digital content, students are empowered to achieve more in their learning. The Paideia methodology will be incorporated with didactic instruction (utilized through STEM videos, demonstrations with STEM instructors, and lectures) intellectual coaching and modeling, and open-ended questions to increase understanding of ideas.

(2)(i) The Secretary determines the extent to which each magnet school for which funding is sought will Promote desegregation, including how each proposed magnet school program will increase interaction among students of different economic, ethnic, and racial backgrounds.

To promote desegregation, at the District level School Board Policy 5004.1, ensures equity and access for all students who participate in the *Sprouting Stem Museum Magnet Schools*. The design of *Sprouting Stem Museum Magnet Schools* makes available to each school:

To foster interaction at each *Sprouting STEM Museum Magnet School*, knowing that merely providing multicultural materials will not achieve the goal, careful constructed group learning activities will cultivate students' academic and social growth and facilitate closing the achievement gap. The museum school partnerships will also allow for differences in the skills and learning styles children bring to the classroom. Through an inquiry-based approach to teaching and learning, students will have opportunities to:

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- Work cooperatively with peers from a variety of cultures and ability levels, recognizing and respecting individual talents, strengths, learning, and work styles;
- Organize cooperative groups in order to solve problems, reflect and compare findings with others, interpret data and observations or complete a project; and
- Demonstrate responsible leadership and teamwork within work groups.

Sprouting Stem Museum Magnet Schools will ensure that curricula, instructional materials, and realia (objects used as teaching tools) meet individual learning needs and reflect the diversity of the student population. It will establish communities of continuous learning where teachers and students actively collaborate in the teaching and learning process. Cultural pride, self-acceptance, and equity will be promoted through use of District curriculum guides such as *African-American; Journey through Time Manual, Hispanics Americans; Many Cultures One Voice, Women's Contribution to the United States; Honoring the Past and Challenging the Future, Manual; Haitian Culture Curriculum; and History of the Holocaust*. These resources help establish a classroom in which all students prize the contributions of every individual, and high-level instruction is standard for all learners.

Sprouting STEM Museum Magnet Schools will make available activities outside the classroom that promote student interaction. Planned extracurricular offerings at each school will encompass a wide range of interests including student enrichment activities such as I-MACS Robotics, First Lego League Robotics, SECME, Math Counts, and Museum Nights. Museum learning and STEM events will allow for student exposure to diverse areas of personal interest and growth. Participation in these activities supports high academic performance and provides meaningful involvement for all students.

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(2)(ii) Improve student academic achievement for all students attending each magnet school program including the manner and extent to which each magnet school program will increase student academic achievement in the instructional area or areas offered by the school.

To address student academic achievement, *Sprouting STEM Museum Magnet Schools* will begin by developing a strategic plan that aligns with the District's three goals and the six pillars of the Magnet Program Purposes. The newly designed curriculum will be validated by industry and educational nationally recognized experts in the field of education and STEM. Measurable goals and objectives will be established to quantify the effectiveness of the project.

Sprouting STEM Museum Magnet Schools have been designed as a top quality educational program to strengthen students' academic skills. Its instructional program design (1) addresses the promotion of national, state, and local systemic reforms, (2) is aligned with challenging state student performance standards, (3) include parents in the teaching and learning process, and (4) features innovative educational methods and practices that meet identified student needs and interests.

Sprouting STEM Museum Magnet Schools will cultivate environments where all students feel valued and whose staff and students display an increased sensitivity toward different ethnicities. These schools will also provide (1) equal opportunities for stimulating academic achievement; and (2) additional levels of support to enable all students to increase academic performance. The following table highlights basic elements that will be used to raise student interaction and performance.

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| Instructional Strategies to improve Student Achievement | |
|---|--|
| Action Items | Identified Strategies |
| <p>Improve student achievement through clearly defined academic focus and themes.</p> | <ul style="list-style-type: none"> • Address mastery of academic content that integrates acquisition of essential skills. • Use <i>Next Generation State Standards</i> and <i>Common core state standards</i> to clearly identify what students should know and be able to do. • Tailor opportunities for learning to individual interest and needs through use of theme focus, technology, small-group projects, research, and individual inquiry. |
| <p>Use innovative strategies to stimulate thinking and reasoning that cut across all disciplines.</p> | <ul style="list-style-type: none"> • Emphasize learning experiences that require students to organize, synthesize, interpret, explain, or evaluate complex information in addressing a concept, problem, or issue, and to apply learning situations in life. • Utilize media, realia, visuals, auditory and/or kinesthetic approaches, where appropriate. |
| <p>Implement initiatives such as planning, and coherent instruction to encourage diversity in groups and to actively engage students in all aspects of the learning</p> | <ul style="list-style-type: none"> • Daily use of instructional strategies which foster interactive participation: hands-on experiences, computer simulations, cooperative/collaborative learning, peer coaching, role playing, Socratic seminar, and dramatization. • Utilize methods of inquiry, research, and communication that require students to show understanding; use ideas, |

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| Instructional Strategies to improve Student Achievement | |
|--|---|
| process. | <p>theories, or perspectives considered essential to an academic discipline such as STEM.</p> <ul style="list-style-type: none"> • Require students to elaborate on their own understanding as outlined by Paiedia. |
| Utilize clear and focused standards for academic performance. | <ul style="list-style-type: none"> • Develop and prioritize learning goals and objectives according to the <i>Next Generations Sunshine and Common Core State Standard</i>, sequenced to facilitate student learning. • Establish and keep a written record of lesson plans that include among goals, instructional activities, and student assessments. • Focus special attention on building continuity across grade levels and subject areas. |
| Execute assessments of student progress which cover a broad range of opportunities to apply knowledge. | <ul style="list-style-type: none"> • Engage students in authentic assessment to demonstrate effective management of information, proficient communication skills, ability to solve problems, creative and critical thinking skills, and management of resources. • Demonstrate knowledge of STEM-related standards through project-based learning, and Museum virtual galleries. |
| Increase time for learning through the use of flexible | <ul style="list-style-type: none"> • Establish time-use allocations among subjects taught and time-use guidelines by staff. |

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| Instructional Strategies to improve Student Achievement | |
|--|---|
| <p>scheduling, technology, tutoring, mentorships, before and after school programs.</p> | <ul style="list-style-type: none"> • Provide extra learning time for students who want or need it; give extra help outside school hours through tutoring, mentorships, pair and share, etc. • Provide rigorous instruction in STEM education including: Engineering is Elementary, utilize web-based programs such as Gizmos, Renzulli Learning, First in Math, and Dimension-U, • Collaborate with post-secondary professors and museum educators to develop theme curricula through an interdisciplinary approach. |
| <p>Provide daily opportunities for students to work at meaningful tasks with peers from other racial/ethnic/social/ economic groups.</p> | <ul style="list-style-type: none"> • Employ multicultural content in instructional and extracurricular activities such as SECME, First Lego League Robotics, Science fairs, and Museum exhibition nights. • Utilize cooperative-learning strategies within the instructional theme. • Offer real-world opportunities through the museum partnerships that support multi-sensory learning experiences. |
| <p>Ensure a technology rich learning environment.</p> | <ul style="list-style-type: none"> • Emphasize the utilization of various media, experiences, and technology to facilitate access to information that |

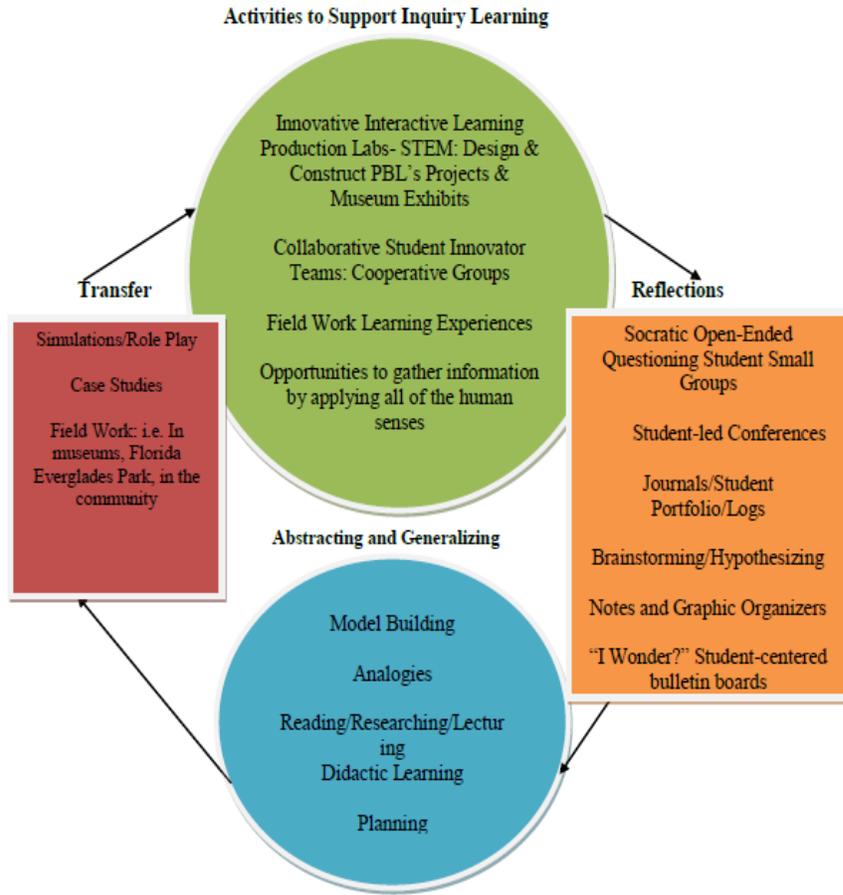
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| Instructional Strategies to improve Student Achievement | |
|---|---|
| | <p>promotes acquisition of skills including computers, multimedia tools, ipads, scanners, DVDs, and sound digitizers.</p> <ul style="list-style-type: none"> • Use adaptive learning tools as needed to permit physically challenged and learning disabled students to access technology; e.g., large type word processing programs, integrated learning systems, keyboarding tools. |
| Heighten college and STEM related career awareness, educational aspirations, and marketable skills. | <ul style="list-style-type: none"> • Invite speakers and mentors from STEM industry and post-secondary educational institutions such as the College of Engineering at Florida Atlantic University to expose students to STEM career; emphasize the importance of education; and show relevant connections between school and careers |
| Forge a collaborative partnership to engage parents and community. | <ul style="list-style-type: none"> • Promote meaningful communication, parental support, and increased student learning in partnership with Nova Southeastern University Parent Choice Department. |

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The Florida School Improvement and Accountability System

To ensure that all students at the Sprouting STEM Museum Magnet schools are on track for academic success, BCPS has aligned with Florida’s comprehensive plan for all Districts to implement the Common Core State Standards (CCSS) and meet the State’s timeline for Student Assessments. Florida was one of 40 states in the nation that had adopted CCSS and joined the Partnership for the Assessment of Readiness for College and Careers (PARCC). By the 2014-2015 school years, BCPS will complete full implementation of the CCSS in all K-12 grades. In addition, BCPS continues to follow the Florida Educational Accountability Plan which outlines

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the state education reform initiatives designed to monitor and improve student performance. A major component of this reform effort is the transition from the Sunshine State Standards to the CCSS as well as the transition from the Next Generation Sunshine State Standards (NGSSS) to the Common core state standards which identify what public school students should know and be able to do in eight subject areas: language arts, mathematics, science, social studies, the arts, health, physical education, and world languages.

At the local level, BPCS's Student Progression Plan SB Policy 600.1 sets the stage for high student achievement in the District. The application of the Common Core State Standards down to the performance task (specific to each content area and grade) level further delineates national, state, and district standards with regard to student performance. The District administers the Benchmark Assessment Tests (BAT) twice per year to track progress of students' level of proficiency in the areas of Reading, mathematics and science based on the Next Generation Sunshine State Standards. By 2014, the BAT will assess the newly adopted Common Core State Standards as an interim evaluative tool to monitor progress and identify strengths and weaknesses in student mastery of content. The results of these assessments will assist teachers and school leaders make instructional decisions to ensure all students are academically proficient in Literacy and STEM-related standards.

At the end of the school year, students will be assessed with the Florida Comprehensive Assessment Test. The results will be used to analyze students' growth based on the Annual Measurable Objectives (AMO) for each sub-group that will allow the schools to plan effective instructional strategies to improve student achievement for the following school year. In addition, the results from teacher practice and student achievement will help determine needs for professional development. Students' BAT, FCAT scores, demographics, academic history

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including behavior and guidance referrals are located in our District’s Local Instructional Informational System (LIIS), Virtual Counselor and Behavioral and Academic Support System (BASIS) that provides additional student data needed to drive instruction. This information helps support fully informed decision making that promotes high quality instruction to help all students succeed. The following table below shows how students at the *Sprouting STEM Museum Magnet Schools* students performed in comparison to the District average. Without significant staff development, student and parent awareness campaigns and school level accountability systems that this grant proposal provides, the six Sprouting STEM Museum Magnet Schools will remain academically stagnant.

School Grades, 2003-04 through 2011-12

| | Grade 2003- 04 | Grade 2004- 05 | Grade 2005- 06 | Grade 2006- 07 | Grade 2007- 08 | Grade 2008- 09 | Grade 2009- 10 | Grade 2010- 11 | Grade 2011- 12 |
|-----------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|----------------------|
| School Name | | | | | | | | | |
| Atlantic West | A | A | A | A | A | A | A | A | B |
| Brow Estates | C | A | B | C | C | A | C | D | D |
| Colbert | B | B | B | B | C | C | C | C | C |
| Liberty | A | C | A | A | A | A | A | A | B |
| Plantation | C | C | B | B | C | B | C | D | C |
| Royal Palm | C | C | C | C | C | C | C | D | D |
| DISTRICT | | | | | | | | | |
| GRADE | B | B | A | B | A | A | A | A | B |

Source: BCPS Research Department, 2013

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Third Grade FCAT 2.0 Subgroup Performance, 2010-11 & 2011-12

| School (Grade 3) | ESE | | Non-ESE | | FRL | | Non-FRL | |
|-----------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | 2010-11 | 2011-12 | 2010-11 | 2011-12 | 2010-11 | 2011-12 | 2010-11 | 2011-12 |
| | % | % | % | % | % | % | % | % |
| FCAT 2.0 Reading | | | | | | | | |
| Atlantic West Elementary | 29 | 21 | 55 | 51 | 40 | 41 | 88 | 50 |
| Broward Estates Elementary | 18 | * | 35 | 31 | 34 | 26 | * | 60 |
| Colbert Elementary | * | 8 | 36 | 42 | 34 | 35 | * | * |
| Liberty Elementary | 36 | 29 | 49 | 54 | 41 | 50 | 67 | 55 |
| Plantation Elementary | * | * | 40 | 30 | 37 | 28 | * | * |
| Royal Palm Elementary | * | 13 | 36 | 34 | 35 | 30 | * | * |
| DISTRICT GRADE 3 | 34 | 33 | 60 | 59 | 45 | 44 | 75 | 75 |
| FCAT 2.0 Mathematics | | | | | | | | |
| Atlantic West Elementary | 42 | 25 | 59 | 59 | 50 | 44 | 75 | 67 |
| Broward Estates Elementary | 29 | * | 50 | 59 | 47 | 54 | * | 90 |
| Colbert Elementary | * | 17 | 42 | 44 | 41 | 39 | * | * |
| Liberty Elementary | 42 | 39 | 51 | 58 | 45 | 55 | 67 | 58 |
| Plantation Elementary | * | * | 49 | 35 | 47 | 35 | * | * |
| Royal Palm Elementary | * | 7 | 41 | 40 | 40 | 35 | * | * |
| DISTRICT GRADE 3 | 41 | 37 | 63 | 63 | 49 | 49 | 78 | 78 |

- Denotes subgroups with less than 10 students

Source: BCPS Research Department, 2013

One of the District’s strategic goals is to ensure a highly effective continuous improvement model for all schools. As part of the continuous improvement model, the six

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proposed magnet schools will adopt a variety of alternative assessments that will be used to guide curriculum and instruction at all grade levels. Assessment will be integrated in such a manner that it not only measures student progress, but becomes part of the entire learning process for students. Teachers will learn to design or select different types of formative assessments. The results will be used to adjust student's learning path and type of instruction needed. Part of the continuous improvement cycle is for teachers to conduct regular and effective teacher-student conferences based on the results of these assessments. The conferences help guide the ongoing process of monitoring student progress and support the transference of responsibility for learning from the teacher to the student. These conferences will teach students how to keep track of their own learning as well as how to create specific measurable and attainable goals aligned to their individual needs based upon assessment results. This model will be supported by the supports by the Curriculum Academic Support Team of experienced, dedicated teachers, under the leadership of the school's principal. This dynamic team will research applicable literature and identify strategies for using state-of-the-art technologies, innovative instructional materials, and enrichment programs. Stellar programs will be studied to determine what works and why it works. This team will visit these successful schools and then replicate their effective practices, resulting in the implementation of models that raise student achievement.

As part of the continuous improvement models, teachers will use the backwards-planning methods and work to engage students in a system of inquiry aimed at fostering intellectual curiosity and real-life discovery. Curriculum maps will be developed at each *Sprouting STEM Museum Magnet* school in collaboration with instructional facilitators, curriculum writers from external partners, and teachers to: (1) see a clear link between the STEM curriculum, the

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Museum instruction model, and authentic assessment tools; (2) strengthen curriculum; (3) reflect on lessons learned; and (4) facilitate teaming vertically (across different grade levels) and horizontally (at a grade level). These maps will play an important curricular role in:

- Ensuring that *Next Generation State Standards and Common core state standards* are met, thereby strengthening student skills and knowledge;
- Helping teachers understand what is taught and when, in all subject areas and grades;
- Understanding concepts, ideas, and activities across many subject areas;
- Eliminating redundancies in what is taught across grade levels;
- Helping coordinate areas of study into larger interdisciplinary units, even if assessment takes place by subject area;
- Acting as a successful venue for fostering conversation about curriculum and instruction among all faculty members; and
- Assisting teachers in reflecting and adjusting their own lesson plans through the school year.

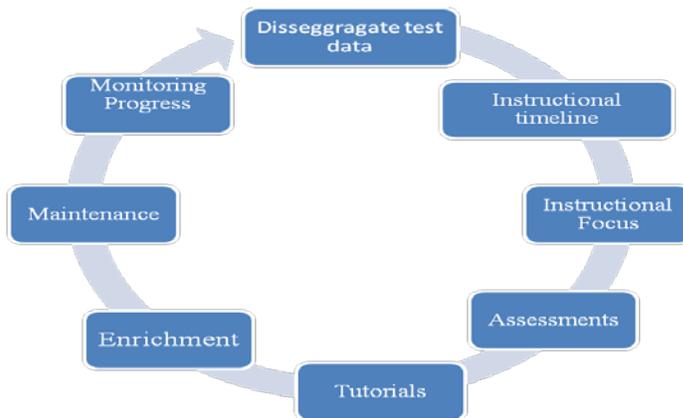
Site-based curriculum teams, responsible for developing these maps, will be primarily composed of Magnet Coordinator, Instructional Facilitator, STEM Resource Teacher, Site-Based Teachers, Content Specialists, Team Leaders, School Leaders, and external partners. Each curriculum map will include:

- The processes and skills emphasized;
- The content in terms of essential concepts and topics; and
- The products and performances that are the assessments of learning.

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Curriculum mapping’s big picture affords the staff at each school site the opportunity to consider both small-scale and large-scale steps to improve student performance. Additionally, it offers a means for ongoing, systematic, immediate, and long-range planning. Grade level teams will work with museum staff to plan hand-on learning experiences using the Plan, Do, Study, Act continuous improvement cycle below:



To support implementation of an effective curriculum model, the six *Sprouting STEM Museum Magnet Schools* will encourage teachers to engage in collaboration using the lesson study format. In line with opportunities for teachers to collaborate plan with one another to better meet the need of students. Schedules will be designed to allow kindergarten through grade five teachers will meet during the school day to research, plan lessons, develop assessments, and analyze data etc. Multiple *Critical Friends Groups* (CFG) will also be created at each school site for the purpose of improving students’ academic achievement. Each group will be composed of 8-12 teachers who meet monthly to look at student work and explore how teaching practices can be improved. The meetings will be facilitated by teachers who have been trained as coaches to provide a collegial atmosphere within their groups, one that promotes close reflection on practice and student work, with a constant focus on improving student learning. Teacher participants (1) identify student learning goals specific to each school; (2) reflect on teaching practices intended

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to achieve those goals; and (3) collaboratively give personalized feedback and suggest alternate practices. Having colleagues look at student work provides teachers with insights and ideas.

They draw upon their own experiences, as well as their colleagues' observations, to determine how they can improve their teaching practices, thereby increasing their students' success.

Research has shown that this type of professional development was more satisfying because (1) it is continual; (2) it is focused on teachers' own teaching and their own students' learning; and (3) it takes place in a small group of supportive and trusted colleagues within their own school. (Dunne, Nave, and Lewis, 2000).

Technological enhancements to the instructional program will include:

- For K and 1, the schools will implement Innovations for Learning (IFL). A huge cross-departmental team has been working on this. It is a multi-tiered approach to ensure reading by the end of first grade. It includes full time coach support from IFL for the K and 1 classrooms to help teachers progress monitor and personalize instruction; and centers based classrooms with a) direct teacher instruction assisted with i-Touches; b) independent skill development using I-Pad minis with personalized lessons based upon data; c) leveled readers assisted with mp3 players; d) weekly executive tutoring for 1st graders via a Skype type system with IFL recruiting, background checking, and training all of the remote corporate tutors.
- *Renzulli Learning*, where students apply, deepen and extend their learning through differentiated assignments that enhance critical thinking and problem solving skills.
- *Gizmos*, where students participate in math and science simulations to improve conceptual understand and knowledge of essential concepts. Correlated to Common core state standards and Next Generation of Sunshine State Standards.

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STEM Interdisciplinary Approach

The Science, Technology, Engineering, and Mathematics (STEM) program will focus on STEM literacy, which includes: scientific, technological, and mathematical literacy. With the acquisition of STEM literacy, students will apply the learned knowledge in all subject areas. Teachers will develop interdisciplinary lessons that focus on STEM concepts using the Museum model while teaching core subject areas. Students will have multiple opportunities to participate in inquiry-based projects, working in small groups or individually on researched-based activities to connect students and address multiple learning styles.

To stimulate interest in science, math, and engineering, each *SPROUTING STEM MUSEUM MAGNET* school will participate in the First Lego League Robotics and SECME (Science, Engineering, Communication, and Mathematics Enhancement) programs which provide hands-on experiences for students in areas of STEM.

Further, the mathematics and science curricula will continue to be enhanced through the infusion of technology such as GIZMOS, First in Math, and Dimension-U. In addition, *Project M.I.N.D.* is another innovative example of methodology that will be used to supplement the school's standard-based curriculum. Even though its focus is mental math, it has been found that those skills carry over to all the curriculum areas. The purpose of the Project MIND (Math Is Not Difficult) curriculum is to suggest some ways to make mathematics fun, interesting, and challenging for children. It includes activities such as mental math, math stories, math games, competitions, puzzles, problem solving through connection with real life, and a variety of methods and strategies to solve math problems quickly and accurately. As a result of math games and mental math activities carried out as a part of Project MIND, students gain self-confidence and the ability to enjoy mathematics through both competition and teamwork.

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Sprouting STEM Museum Magnet Schools embrace the teaching approach of *Paideia*, which was proposed by philosopher Mortimer Adler. Adler believed that in order for students to be prepared for the future, they needed to spend part of their day in didactic instruction, in intellectual coaching, and seminar dialogue while educating not only the mind, but also the heart. *Paideia* seminars are an integral of the *Sprouting STEM Museum Magnet Schools* program. These seminars align with Museum model and are based on a text, picture, or artifact that relates to something the students are studying. During the seminar, the students sit in a circle with the teacher, who serves as a facilitator by simply asking open-ended questions. Students respond by having a conversation about what they think or feel about the seminar focus. *Paideia* seminars are used to build conversation, enhance thinking skills and improve discussion among students.

Coached exhibit projects will align with the Museum model of instruction and provide for student projects with school-wide themes aligned to STEM and interdisciplinary units of study. Demonstrations of learning will occur in every classroom in all grades kindergarten through five. Students in grades K -5 work on one school-wide exhibition in year one in the grant project. In year two, all students will participate in two school-wide exhibit projects and by year three all students will participate in one school-wide exhibit each nine weeks.

Sprouting STEM Museum Magnet Schools will embrace the arts and world languages as disciplines and as part of the STEM learning process to develop the whole intellect. The integration of STEM in the arts will be used as an approach to promote understanding of self, cultural and perceptual awareness, creative problem solving, and communication skills. Students will be able to participate in Museum activities with partners such as: ***Museum of Science, Boston***, a partnership that will increase diverse STEM experiences and educational opportunities for students using technology literacy skills. ***Fort Lauderdale Museum of Discovery and***

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Science, a partnership that provides an opportunity for students to participate in object-based learning and science content exploration; *Young at Art*, This art program utilizes art displays and projects as a vehicle for students to learn and convey positive messages to their peers and communities; and *Museum of Art Fort Lauderdale*, a program that provides innovative, interdisciplinary learning experiences at the Museum.

All *Sprouting STEM Museum Magnet* school teachers will be afforded the opportunity to participate in a variety of blended learning professional development training sessions to enhance their knowledge and skills. Following is a sampling of professional development opportunities available over the three years of the grant.

- **Professional Learning Communities for the Critical Friends Team**-the purpose of improving for the purpose of improving student academic achievement. Each group will be composed of 8 to 10 teachers who will meet monthly to look at student work and explore how teacher practices can be improved.
- **Understanding by Design** Teachers attend workshops, a summer institute, collaborate with STEM instructional facilitator each quarter, and work in small teams with the STEM resource teacher who facilitates model lessons and peer observations;
- **Curriculum Mapping: Training of Trainers**, a 2 day workshop for Lead Teachers, Department and Grade Level Chairpersons, and Administrators to learn how to (1) build a culture and support system for mapping, (2) learn how to align curriculum and assessment to state standards, and (3) learn procedures for assisting their school sites in carrying out data collection;
- **Creating a Climate for Success (True Colors)** – a Nova Southeastern University/NIEO facilitated hands-on seminar that will help teachers and administrators understand

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personality traits, learning styles, and the uniqueness of self and others to develop more meaningful relationships;

- ***STEM Museum Teacher Academy summer training.*** The Summer Institute will include: *First Lego League Robotic Training*, *SECME (Science, Engineering, Communication, and Mathematics Enhancement)* a 4-day instructional-content activity for elementary, focusing on proportional reasoning in mathematics and force and motion in science; Summer Arts Institute developed by the Nova Southeastern University's Fischler School of Education National Institute for Educational Options (NIEO) for art teachers to explore and create in each of the four arts disciplines; *Critical Friends Group* which provides a 2-day training for teachers to learn the skills needed to facilitate collaborative learning experiences among teachers and to learn how to assess student work for this purpose.
- ***Renzulli Learning training***-provides a 5-day personalized learning to tailor learning objectives, content, method, pace, and environment to each student's unique learning needs with a strong emphasis on: (1) 21st century learning; (2) A collaborative partnership between teacher, parent, student, and school; (3) Student-driven participation in developing the learning pathway; (4) Varied learning environments; (5) Choices in curriculum programs; and (6) Use of technology.
- ***Paideia*** training for all teachers in building skills related to the three column of instruction: didactic instruction, coaching, and conducting the seminar.
- ***Positive Teaching in Challenging Times Seminar*** facilitated by Nova Southeastern University/NIEO will allow school administrators, teachers, and staff to renew, reflect, and refocus their purpose in education. The focus will be on cultural diversity and how to

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communicate effectively with at-risk youth. The goal is to understand the significant correlation of authentic relationships with at-risk students to positive student achievement. All participants will reflect on personal identity and develop and apply trust-building strategies to identify with their students. In addition, teachers will develop a personal plan of action.

- **Engineering is Elementary**-this training will increase teachers' knowledge of their engineering, technology, and the engineering design process. This program will help teachers how to help students increase their technology literacy through knowledge and experience. This program is developed by the Museum of Science, Boston.
- **Museum Learning with Partners**-teachers will have an opportunity to participate in workshops/seminars hosted by museum staff that focuses on museum resources and assist in the development interdisciplinary lessons with STEM focus. The museum experts will also come to the classroom to assist teachers with exhibit learning activities. Through the workshops and training, teachers will learn to bridge formal and informal environments using interdisciplinary approaches.
- **Project Mind**-this training will provide teachers with some ways to make mathematics fun, interesting, and challenging for children that includes activities such as mental math, math stories, math games, competitions, puzzles, problem solving through connection with real life, and a variety of methods and strategies to solve math problems quickly and accurately.
- **Developing STEM thematic & interdisciplinary curriculum with the Museum Model**-teachers will participate in workshops and training that provides them with background knowledge and view to create a curriculum approach that consciously applies

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methodology and language for more than one discipline to examine one central theme, issue, topic, or experience.

- **Vernier Data Acquisition**-teachers will learn how to guide students in collecting data in various STEM activities related to weather, temperature, force, light, and motion.
- **GIZMOS**- teachers will learn how to web-based math and science simulations to help students improve conceptual understand and knowledge of essential concepts.
- **IMACS/Robotics**-this training will help teachers learn how to coordinate an IMACS after school and summer enrichment program. Teachers will learn the components of the program which include math enrichment, computer programming, virtual robotics, computer science and electronics.
- **Innovations for Learning**- These trainings and workshops will provide teachers with strategies to progress monitor and personalize instruction for reading in grades Kindergarten and first grade. Teachers will learn how to use direct instruction assisted using technology devices.
- **Virtual Learning in the Classroom-Socrates Institute**-teachers will participate in workshops and training that focus on interdisciplinary curriculum while bringing the world of museum to the classroom through virtual field trips. Teachers will learn ways of encouraging their students in the development of a scientific mind. These trainings will assist teachers develop interdisciplinary learning environment.

To ensure effective implementation of professional development at the six Sprouting STEM Museum Magnet Schools, teachers will have opportunities to collaborate through professional learning communities be given coverage, time to work collaboratively with peers, trainers, and STEM partners and will receive compensation for attending after

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school trainings, seminars, and video conferences.

(c)(2)(iii) Encourage greater parental decision making and involvement

A commitment to facilitating and encouraging greater parental involvement is essential to the project design of *Sprouting STEM Museum Magnet Schools*. Research has demonstrated that informed parents are their children's best advocates. (Ain, 2013). Further, children from diverse cultural backgrounds tend to do better when parents and professionals collaborate to bridge the gap between the culture at home and the culture in the learning institution. To invite greater decision-making and parental involvement, *Sprouting STEM Museum Magnet Schools* will:

- **Identify school-site personnel to serve as liaisons** between the school and the home. Teachers will communicate with parents by e-mail, telephone, student-involved conferences, and teacher/parent journals, frequently, aiding them in making informed choices about their children's future.
- **Promote parent/student advocacy** by (1) advising families of supplemental educational services available to their children; (2) advising families of advanced programs placement for which their children may be eligible; (3) providing literature in the home language; (4) assisting families and students with the application process for magnet programs; and (5) implementing professional development for teachers and staffs on how to communicate with parents
- **Assist with recruitment** by breaking down the barriers caused by unfamiliarity with the multiple bureaucratic layers of a large urban school system. (1) Parents will be counseled and informed, in their own language, of their rights and of all the choices that are available to their children; (2) multilingual printed materials featuring the variety of

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quality school choice options will be distributed; and (3) families will be provided with the necessary information to access district and school web sites on the Internet.

- **Form collaborative relations with local business and community-based organizations** to address family and community issues. (1) School liaisons will meet with community organizations to identify resources, including youth groups and programs for young people that actively cultivate relationships with parents and community agencies; and (2) community/business-based representatives will be included on the School Advisory Council for dissemination of information and input.
- **Encourage parental involvement** by (1) engaging parents and students in “Exhibit Night” that focuses on a school-wide theme culminating in an exhibit night; In year 1 there will be one exhibition night to show student work in a Museum model; in year 2 there will be two exhibitions and in Year 3 there will be 4 exhibitions. Parents will have the opportunity to ask questions and meet some of the staff and PTSA members. (2) providing for outreach efforts to encourage participation of all parents (3) inviting parents to serve on each school’s School Advisory Council or on other subcommittees within the school for the purposes of sharing parent concerns and giving input; and (4) providing a forum several times a year for parents to share their ideas and/or concerns in a non-threatening multicultural atmosphere.
- **Parent Educational and personal success seminars Nova Southeastern University /National Institute for Educational Options (NIEO) facilitated seminar** will provide a series of three parent workshops that build parenting skills, communication with schools. *Positive Parenting in Challenging Times* will address self-efficacy in parents. The goal is to modify parent’s behavior to improve communication skills, to improve discipline

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techniques, and to set proper boundaries. Parents will be trained in strategies to raise resilient children, to access community resources, and to increase their level of involvement in schools.

- **True Parenting (NSU/NIEO facilitated workshop)** parents will be offered the opportunity to learn the “True Colors” of each member of their family and how to parent their children by knowing each child’s personality, communication style, and ways in which each child will respond.
- **Class curator** parents from each classroom will serve as the point person for the PTSA and coordinate class volunteers and anything else that might be needed in the classroom. This person will serve throughout the school year.
- **Student-led conferencing** held twice each year, are a way for students to share with their parents, work samples, goals, and accomplishments they have made. Student-led conferencing will offer students a way to take ownership of their learning. Teachers will be available to talk with and answer any questions that parents may have.

d. BUDGET AND RESOURCES

(1) Adequacy of Facilities

The School Board of Broward County is committed to providing safe and secure schools to service students and staff at all schools. The MSAP grant magnet schools range in age from 10 years to 55 years, but have had continuous improvements and renovations to their facilities. Moreover, the MSAP grant magnet schools are all have capacity to accept students from outside their attendance zone. A brief overview of facilities for each school is listed below:

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- (2) **Atlantic West** (38 yrs.) - (51) Classrooms, (4) Primary Skills Labs, (3) Elementary Covered Play Areas and PE space, (3) Art and Music Labs, and (4) ESE Classroom/Area. Atlantic West has a building capacity of 759 Students. Its current enrollment is 630 students. Thus, its utilization rate is only 83%.
- (3) **Broward Estates** (55 yrs.) - (31) Classrooms, (2) Resource Room, (3), Primary Skills Labs, (2) Art and Music Labs, (2) ESE Classroom/Area, and (3) Elementary Covered Play Areas and PE space. Broward Estates has a building capacity of 691 Students. Its current enrollment is 533 students. Thus, its utilization rate is only 77.1%.
- (4) **Colbert** (22 yrs.) - (40) Classrooms, (2) Resource Room, (4) Primary Skills Labs, (3) Art and Music Labs, (1) ESE Observation Booth, and (1) Career Room. Colbert has a building capacity of 812 Students. Its current enrollment is 569 students. Thus, its utilization rate is only 70%.
- (5) **Liberty** (10 yrs.) - (63) Classrooms, (1) Student Activity Room, (2) Primary Skills Labs, (4) Art and Music Labs, (3) ESE Classroom/Area, (1) Career Room and (1) Elementary Covered Play Area. Liberty has a building capacity of 1,260 Students. Its current enrollment is 941 students. Thus, its utilization rate is only 74.7%.
- (6) **Plantation** (13 yrs.) - (40) Classrooms, (2) Student Activity Room, (3) Primary Skills Labs, (3) Art and Music Labs, (5) ESE Classroom/Area, and (1) Career Room. Plantation has a building capacity of 814 Students. Its current enrollment is 549 students. Thus, its utilization rate is only 67.4%.
- (7) **Royal Palm** (40 yrs.) - (42) Classrooms, (5) Primary Skills Labs, (2) Art and Music Labs, (4) ESE Classroom/Area, and (1) Computer Area. Royal Palm has a building

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capacity of 892 Students. Its current enrollment is 740 students. Thus, its utilization rate is only 83%.

- (8) All the proposed magnet school sites provide safe and welcoming learning environments. Each school also has adequate space available to accommodate potential student enrollment increases resulting from magnet school programs. The district will provide facility services for these schools and will maintain a high level of efficiency.

(2) Adequacy of Equipment and Supplies

The School Board of Broward County is committed to contributing significant resources to operate and sustain high quality magnet programs. The facilities and technology infrastructure is in place to support the Sprouting STEM museum school project at each site. All equipment and supplies will be purchased in accordance with district bid procedures and will be approved by the Innovative Program Director.

(3) Adequacy and Reasonableness of the Project Budget

Broward County Public Schools is experienced in starting and maintaining high quality magnet programs and understands the financial need in creating the Sprouting STEM museum school magnet programs at the six elementary schools. The proposed MSAP budget for the six schools allows adequate financial support to effectively design and implement project activities and meet the identified project goals and objectives. Budget items include: salaries for district-level magnet coordinator, school site magnet coordinator, STEM instructional facilitator, resource teacher elementary mathematics or science, bookkeeper, micro-tech specialist, and secretary, curriculum writers, technology and laboratory equipment, software, theme supplies, marketing materials, staff

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development, and travel. The budget narrative below provides additional details regarding the requested funding.

(4) ***Personnel*** - *Approximately 43% of the MSAP budget allocated*

(5) **District-level Magnet Coordinator:** This proposal requests funding to support 100% of the salary for one full-time district-level magnet coordinator at [REDACTED] per year plus 3% annual pay raise. The coordinator will oversee the development and implementation of the STEM museum magnet project with the six elementary schools. The district coordinator will collaboratively work with school administration, the school site magnet coordinators, STEM instructional facilitators, resource teachers, staff, students, parents, STEM partners and other community stakeholders. The district coordinator will align the goals and objectives, establish benchmarks/timelines, assist a unified monitoring/evaluation system, ensure quality staff development, assist with the design of museum STEM curriculum activities, and student projects. This individual will provide ongoing technical assistance including: implementation of evidence-based instructional strategies, development of rubrics, monitoring tools, professional learning communities.

(6) **School-site Magnet Coordinator:** This proposal requests salary support for 100% of effort during the academic year for one coordinator at each of four schools and 75% at the two revised magnet schools, at the salary of [REDACTED] per year plus 3% annual pay raise. The revised Magnet schools are currently provided with a 25% position through the district magnet budget. This 25% position will continue to be paid through district funds, and the MSAP grant will support the remaining 75% of the school-site magnet coordinator positions. Responsibilities of the school-site magnet coordinator include coordination the development of sequential grades 1-5 thematic curriculum, focused on problem-solving, discovery, and

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exploratory learning, align the curriculum to state and local standards, integrate theme concepts across core academic subject areas, develop, implement and follow up on all staff development activities, coordinate focus group meetings for formative and summative evaluation processes, facilitate community forum meetings, assist with effective marketing practices, assist with application and student selection processes, research additional funding sources, develop industry level partnership for the program, and facilitate effective communication between students, teachers, school-based administration and district staff.

- (7) **STEM Instructional Facilitator:** This proposal requests salary support for 100% of effort during the academic year for one certified STEM Instructional Facilitator at each of the six schools at a salary of [REDACTED] per year plus 3% annual pay raise. The instructional facilitators' responsibilities will include coordination of the magnet theme implementation, professional development (PD) schedule, coordinating the school's marketing plan, recruitment of students, communicating the new theme with all key stakeholders at meetings, presentations, school and community events. They will also oversee field trips, student activities, and museum collaboration, coordinate student activities with teachers, teacher professional development trainings related to the theme, assist administration with Magnet ordering, set-up of the Innovative STEM Lab. This position will act as an on-site catalyst to help lead the transition to a school-wide program, will work with students and teachers in the school to deliver the museum STEM curriculum. This position will also work throughout the project term to develop capacity within the school to ensure all teachers integrate the theme across the curriculum and serve as a PD coach for grades K-5 in the classroom. The coordinator will oversee the STEM Innovative Learning Center operations, schedule teachers with their students, develop support activities, and projects.

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- (8) **Resource Teacher Elementary Mathematics or Science:** This proposal requests salary support for 100% of effort during the academic year for one certified Resource Teacher Elementary at each of the five schools and two at Liberty Elementary at a salary of [REDACTED] per year plus 3% annual pay raise. Resource teachers will collaborate continuously with all grade-level teachers (K-5) to maintain the continuous curriculum improvement. Assist in designing and planning curriculum which integrates the Common Core Standards, Science benchmarks, Paideia, Renzulli and Engineering for Elementary instructional strategies. They will assist teachers and their students with demonstrations and learning activities in the STEM Innovative Learning Center operation.
- (9) **Bookkeeper:** This proposal requests salary support for 100% of effort during the calendar year for a Bookkeeper at a salary of [REDACTED] plus 3% annual pay raise. The Bookkeeper will process salary and non-salary expenses, reconcile overall budget, process amendments, and maintain budget reports accordingly, ensuring budgeting compliance and providing full and accurate fiscal reports to The School Board of Broward County, as well as the U.S. Department of Education.
- (10) **Secretary:** This proposal requests salary support for 100% of effort during the calendar year for a Secretary at a salary of [REDACTED] plus 3% annual pay raise. The secretary will perform all typing, word processing, mailing, and all other duties associated with program implementation.
- (11) **Micro-Computer Tech Specialist:** This proposal requests salary support for 100% of effort during the calendar year for a micro-computer tech specialist at a salary of [REDACTED] plus 3% annual pay raise. The micro-computer tech specialist will support the six schools

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on a daily basis to ensure effective installation of software, equipment, and web- based applications.

- (12) **Curriculum Writers:** This proposal requests salary support for 19 teachers for 350 hours at [REDACTED] per hour plus 3% annual pay raise. Curriculum writers will work together to produce a collection of Museum STEM curriculum that integrates hands-on activities for K-5th grade students. These projects will be ongoing for all students, aligned with the annual menu of student activities and projects. All STEM activities will be integrated throughout core content areas. This curriculum will include the authentic assessment tools.
- (13) **Substitute Teachers:** This proposal requests salary support for 1,920 hours of substitute teachers at [REDACTED] per day for over 3 years. Substitutes will provide classroom teachers the opportunity for release time to participate in model classroom visits, work with the magnet coordinators, and collaborate with peers on theme integration and instructional strategies. In addition, substitutes enable teachers to coordinate/oversee student activities aligning with STEM curriculum, field trips, competitions and industry/research project. Teachers will also be able to participate in professional development to ensure high quality training and support implementation of STEM curriculum.
- (14) **Stipends:** Stipends are requested for teachers at each magnet school to receive staff development in academic performance standards and assessment methods and theme area training. Stipends are for teachers to participate in essential training related to the Museum STEM project and student achievement. All training will align with academic performance standards, assessment methods, and researched-based instructional pedagogies, STEM and museum instructions, technology integration, Paideia methodology, virtual teaching and learning. The training will use PLC's and align with each individual teacher's professional

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development plan. The budget will allow for 30 hours each year of after-school and summer training for 230 teachers at [REDACTED] per hour. The stipends are a crucial component of the grant because staff development in areas, such as data acquisition strategies, curriculum development, Engineering is Elementary and other student enrichment activities and projects.

(15) Fringe Benefits: *Approximately 10% of the MSAP budget allocation*

The Broward County School District's currently established variable rate for fringe benefits is [REDACTED] (FICA, Worker's Compensation, Unemployment Compensation, Retirement) plus a fixed rate of \$7,276 for health insurance for full-time employees, and a variable rate of 9.5% for stipends.

(16) Travel: *Approximately 1% of the MSAP budget allocation*

(17) Out-of-County - An annual request of \$31,500 will support key MSAP Staff to attend essential meetings related to MSAP. This will include local and national school reform conferences throughout the grant, one conference per year at a cost of \$1,500 per person per trip for two District and eighteen school staff each year. Also included is out-of-county travel for one expert of the six member Collaborative Network Team each year. This will cover the airfare, lodging, and food.

(18) In-County - An annual request of \$2,100 at \$0.565 per mile is requested for the magnet coordinator and other magnet staff to travel between the district and the school sites to attend meetings and assist with project implementation. Travel is important to maintain communication between project participants and key stakeholders. Mileage for the micro-computer tech specialist to travel between school sites is also included.

(19) Equipment: *Approximately 10% of the MSAP budget allocated*

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(20) Funds requested will provide necessary equipment, essential to successfully carry out the STEM museum magnet program at each school. The budget table provides a description of items requested, such as: smart carts, web-based instructional programs including Gizmos, DimensionU, Renzulli, Innovations for Learning (IFL), and First in Math.

(21) ***Supplies:*** *Approximately 25% of the MSAP budget allocated*

Each item requested is essential to fully carry out the Sprouting STEM Museum program at each of the six schools. A description of item requested is provided in the budget table and includes: Hand-held tablets, hand-held PDA (Vernier Probeware), desktop and laptop computers, flip video camera. Instructional materials and supplies will be purchased to support the academic and theme areas in each school. Training materials and supplies to support professional development of all teachers will be purchased along with teacher resource guides and planning materials.

(22) ***Contractual:*** *Approximately 5% of the MSAP budget allocated*

(23) ***MSAP Evaluation:*** The Metis staff will review project dates, conduct school-site observation visits, survey key stakeholders for customer satisfaction, and create a summative annual report and adhoc report to reflect the status of implementation of the entire project.

(24) ***Consultants:*** Funds are requested to support theme-based educational and museum consultants in curriculum development, teacher training, and students project based (exhibition model), to work with schools to design museum projects. Museum partners will be contracted to provide teacher training and assist in the development of interdisciplinary unit and student activities. Post-Secondary Institutions, such as FAU and Nova Southeastern University will be contracted to provide professional development for teachers, student enrichment programs, and parent outreach.

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- (25) ***Other:*** *Approximately 3% of the MSAP budget allocated*
- (26) ***Marketing:*** A comprehensive communication/marketing plan will be implemented to attract parents/students and provide quality choice options at the Sprouting STEM Museum schools. A major focus is to create and sustain a diverse student population at each school.
- (27) ***Registration Fees:*** Registration/Admissions for students including museum field trips, summer programs, First Lego League and Southeastern Consortium of Minorities in Engineering (SECME). Also included is registration for staff to attend MSAP conferences.
- (28) ***Indirect Costs:*** *Approximately 3% of the MSAP budget allocated*
- Indirect costs are calculated at 3.79% of direct costs, excluding all equipment and software, and approved as the negotiated indirect costs rate with the Florida Department of Education.

f. EVALUATION PLAN

(1)The Secretary determines the extent to which the evaluation plan for the project includes methods that are appropriate for the project.

The School Board of Broward County, Florida proposes to retain Metis Associates to conduct the program evaluation. For over 35 years, Metis, a national educational research and evaluation firm, has provided technical assistance and professional support for a wide range of education and human services initiatives. Metis currently serves as the external evaluator of The School Board of Broward County's FY 2010-13 MSAP grant and has conducted evaluations of MSAP initiatives over the past 8 funding cycles for 9 community school districts in New York City (NYC), as well as school districts in Champaign, IL; Orangeburg County, SC; Beacon, NY;

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and Baltimore County, MD. Sample data collection tools developed by Metis for these evaluations are highlighted by the USDOE on its web-based evaluation toolkit for magnet programs. In addition to MSAP evaluations, Metis has provided external evaluation services in the areas of local magnet programs, charter schools, and Voluntary Public School Choice Programs, among a wide range of K-12 evaluation projects.

Metis has a duly-constituted Institutional Review Board that is registered with the U.S. Department of Health and Human Services and assures compliance with Federal-Wide Assurance requirements for the Protection of Human Subjects. Metis will collaborate with the District's Research Services Department to secure approval for all activities conducted for the evaluation of the magnet initiative.

The evaluation of the Broward County Public Schools (BCPS) MSAP initiative will be directed by Claire Aulicino, a Senior Research Associate at Metis. Ms. Aulicino currently directs the evaluations of MSAP grants in Broward County, Community School District 14 in NYC; Champaign, IL; and Orangeburg County, SC. Over the past 4 MSAP funding cycles, she served as the lead evaluator for grants in Baltimore County and NYC Community School Districts 9, 10, 22, 27, and 28. Ms. Aulicino will be supported by highly qualified staff and will regularly consult with Metis's Design Consulting Committee on all aspects of the evaluation. The evaluation team will participate in all USDOE Project Directors meetings and will assist BCPS in fulfilling all compliance monitoring or other program-related requirements. Ms. Aulicino's resume is provided in the attachments.

The evaluation will be formative and summative and will use multiple measures over multiple groups of subjects. Data from all sources will be synthesized and analyzed to maximize

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precision of outcome information and enrich the capacity of the Project Director and the BCPS MSAP stakeholders to make informed and timely decisions about program development and implementation. Evaluation data will provide a key source of formative and summative findings in the District's continuous improvement effort of the initiative.

Formative evaluation methods, including documentation reviews, written surveys, interviews, and biannual field observations, will be conducted to answer questions about: the outreach and recruitment strategies being used; how the schools are planning, developing, and implementing the STEM theme and ensuring that all students have access to magnet thematic curriculum and activities; the types of staff development being offered and the levels of participation in these; and the collaborations, among instructional staff, within the school community, and with external partners, being fostered to support the program. Project status reports, ongoing informal communication, and presentations by the evaluator will provide the Project Director and other audiences with formative feedback on program implementation and best practices.

(2)The Secretary determines the extent to which the evaluation plan for the project will determine how successful the project is in meeting its intended outcomes including its goals for desegregating its students and increasing student achievement.

Summative evaluation activities, including analysis of monthly program implementation logs, survey data, enrollment and applicant pool data, standardized achievement test scores, and district-developed student assessment data will assess the extent to which project objectives have been met. This section outlines how the evaluation plan will include the use of data results to determine the extent to which the 5project-level goals and related performance measures (which

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are presented in the Plan of Operation) are met in each project year.

Outcome #1: Reducing Minority Group Isolation in Sprouting STEM Museum Magnet Schools

It is expected that in each project year, each magnet school will achieve an annual enrollment that reflects a racial and ethnic composition that results in a reduction of minority group isolation. At each magnet school, it is expected that minority group isolation among African American students will be reduced by at least 2 percentage points in each project year. (Performance Measure 1.1) and that the proportion of African American students in each of the over-crowded magnet feeder sending schools will be equal to or below the proportion of African American students in the district total enrollment (Performance Measure 1.2). It is also expected that the proportion of applicants to the Sprouting STEM Museum Magnet Schools who attend charter or private schools will increase by 3% in each project year.

Data to assess these performance measures will be obtained from an annual analysis of student enrollment data from the District's registers for all active students as of the 20th day of enrollment for each project year. Frequency calculations will be conducted by school and grade to determine the number and proportion of students by racial/ethnic group. Data to assess the proportion of applicants from charter or private schools will be derived from the district's magnet application database. Results from the enrollment and applicant pool data analyses will be synthesized with data on outreach and recruitment logs and marketing materials for each school and the District to assess the effectiveness of the outreach and student recruitment plans.

Outcome #2: Increase the Percentage of Proficient Students in Reading, Math, and Science in each Sprouting STEM Museum Magnet School

It is expected that students at each magnet school will demonstrate measurable

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improvements on the Florida state assessments in reading, math, and science as measured by an increase of 3 percentage points or more in the proportion of students who score at performance levels 3 or higher on the state assessments in each project year (Performance Measures 2.1, 2.2, and 2.3).

The standardized instruments for student assessment in the elementary grades include Florida's Comprehensive Assessment Test (FCAT) 2.0 in ELA and math that are administered annually to students in grades 3-11. Results for these tests are expressed both in scale scores and performance level equivalents. Scale scores are equal-interval, criterion-referenced scores that create a continuous scale that extends across grade levels. For each grade, scores are categorized into one of 5 performance levels. A score that falls in performance level 3, 4 or 5 is labeled proficient or higher. In 2014-15, the FCAT 2.0 will be replaced with the Partnership for Assessment for Readiness of College and Careers (PARCC). The new tests will be aligned to the FCAT 2.0 to ensure for comparison of student proficiency rates across project years.

Student achievement results will be derived from performance level analyses using matched data to calculate the proportions of students in each year who are proficient or higher (Performance levels 3 or higher). Chi Square Tests of Independence or other appropriate statistical measures, such as McNemar tests, will be conducted to determine if changes in student achievement from one year to the next and if differences in achievement by student subgroup are statistically significant. Cohen's *d* statistics will be calculated to determine the effect size of the statistical significance. All analyses will be conducted by school, by grade level, and by student subgroup, including each major racial and ethnic group, students with disabilities, and English language learners (ELLs), except in cases where the number of students in a category is less than 10 and therefore insufficient to yield statistically reliable information, and/or where the results

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yield personally identifiable information.

It is also expected that at each Sprouting STEM Museum magnet school, the proportion of students who achieve mastery of at least 80% of the National Educational Technology Standards (NETS), will increase by at least 10 percentage points in each project year (Performance Measure 2.4). Data to assess this performance measure will be derived from the administration of a district-developed technology assessment that will be administered to all students (grade K-5) in each magnet school in the spring of each project year. Frequency and cross-tabulation calculations will be conducted to assess the proportion of students who meet the benchmark of 80% mastery. All data will be analyzed by school and by grade level.

Outcome #3: All Sprouting STEM Museum Magnet Students will have Access to Highly Rigorous Thematic Curriculum

At each magnet school, it is expected that all students will receive interdisciplinary STEM instruction aligned with Common Core State Standards, museum, and the engineering thinking process for a minimum of five hours per week in Year 1, 10 hours per week in Year 2, and 15 hours per week in Year 3 (Performance Measures 3.1, 3.2, and 3.3). Data to assess these performance measures will be derived from a systematic review of magnet lesson plans, curriculum development and implementation logs, and copies of thematic curriculum units. Qualitative data to provide contextual information about the implementation of thematic curriculum lessons will be obtained from biannual site visits by the evaluator to each magnet school in each project year that will include class observations and interviews and focus groups with planning team members and teachers.

Through the implementation of highly rigorous thematic instruction at each Sprouting STEM Museum Magnet Schools, each school will achieve an increase in total enrollment of 2%

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in Year 1, 10% in Year 2, and 15% in Year, as compared to baseline enrollment for the 2012-13 school year (Performance Measure 3.4). Data will be obtained from an annual analysis of student enrollment data from the District's registers for all active students as of the 20th day of enrollment for each project year.

Outcome #4: Increase the Proficiency of African American Students, Students with Disabilities, and English Language Learners in Each Sprouting STEM Museum Magnet School

It is expected that the subgroups of African American students, students with disabilities, and English language learners (ELLs) will demonstrate measurable improvements on the Florida state assessments in reading, math, and science as measured by an increase of 2 percentage points or more in the proportion of students in each subgroup who score at performance levels 3 or higher on the state assessments in each project year (Performance Measures 4.1 through 4.6). Data will be derived from an analysis of test scores from the FCAT 2.0 or PARCC in reading, math, and science in each project year. The analyses will be disaggregated by student subgroup (including racial/ethnic groups, students with disabilities, and ELLs), by grade, and by school. Chi Square Tests of Independence or other appropriate statistical measures, such as McNemar tests, will be conducted to determine if changes in student achievement from one year to the next and if differences in achievement by student subgroup are statistically significant. Cohen's *d* statistics will be calculated to determine the effect size of the statistical significance.

Outcome #5: Build Capacity of Sprouting STEM Museum Magnet Schools

In order to build the capacity within the magnet schools to provide rigorous, theme-based instructional programs, it is expected that the proportion of teachers at each magnet school who participate in theme- or program-related professional development will be at least 30% in each

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project year, and by the end of the grant, at least 90% of teachers will have participated in at least 120 hours of theme-related professional development (Performance Measure 5.1) Data will be derived from a review of each magnet school's professional development activity logs, and professional development agendas and sign-in sheets.

It is also expected that the proportion of parents in each Sprouting STEM Museum magnet school who indicate that the magnet program meets or exceeds their expectations for providing their child with a high-quality STEM instruction will be at least 75% in each project year (Performance Measure 5.2). Data will be derived from an analysis of responses to a parent survey that will be developed by the external evaluator in consultation with the school and District MSAP staff, and will be analyzed using frequency and cross-tabulation calculations by school and for the project. The survey will be administered to all parents and/or guardians at each magnet school in the spring of each project year to collect data on parental satisfaction with various aspects of the Sprouting STEM Museum magnet curriculum and program.

At each Sprouting STEM Museum magnet school, it is also expected that 5% of enrolled students will participate in a student-led STEM organization or activity in each project year (Performance Measure 5.3). Data will be derived from an analysis of program documentation and activity logs, and rosters of student clubs and theme-based activities.

The results of the quantitative and qualitative data analyses will be synthesized and presented to the USDOE in the Annual Performance Reports and Ad-Hoc Reports for each project year, including a final report at the end of the grant period. Metis will assist BCPS staff in preparing the reports to present succinct findings about the success of the project in meeting the intended outcomes that are outlined in the project objectives and performance measures. The District will also provide data to the USDOE to report on progress on the six project level

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measures.¹

(3) The Secretary determines the extent to which the evaluation plan for the project includes methods that are objective and that will produce data that are quantifiable

The evaluation plan will include the use of quantitative and qualitative methods to collect and yield reliable, objective, and quantifiable formative and summative data regarding the proposed project's progress in achieving its performance measures, including program implementation and impact. Both formative and summative data will be collected from multiple respondents using multiple methods. All data will be triangulated to incorporate perspectives from the diversity of program stakeholder groups. The findings will be synthesized to objectively *document* the effort expended to implement program activities and determine the *effectiveness* of project activities and *efficacy* of the project in relation to outcomes achieved.

Student achievement outcomes will be evaluated using assessment procedures that are valid, reliable, and fair for the target populations. The FCATs are criterion-referenced tests that are aligned to the Sunshine State Standards (SSS) and are administered each year to students in Grades 3–11. The FCAT is proven to be valid and reliable measures of student achievement. The PARCC assessment, which will replace the FCAT in the 2014-15 school year, is aligned with Common Core State Standards and is being developed for a consortium of 22 states to create common assessments to measure skills and standards that are required for college- and career-readiness. Student unit-level test scores will be analyzed to provide quantifiable data to evaluate the performance measures.

¹ In 1993, the U.S. Congress passed GPRA, which established a process for using performance indicators to set goals for program performance and measure and report program results.

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District-developed student assessments will be administered to all magnet students in each project year to collect quantifiable data on student mastery of technology skills based on the NETS. The assessments will be tested in Year 1 with item analyses and reduction conducted to ensure validity and reliability of the items in measuring the intended outcomes.

A written survey will be administered to parents in each magnet school to collect quantifiable data on family satisfaction with the new magnet programs. The survey will be pilot-tested for face validity in Year 1. All data will be analyzed in SPSS using valid statistical procedures.

g. COMMITMENT AND CAPACITY

(1) The Secretary determines whether the applicant is likely to continue the magnet school activities after assistance under the program is no longer available

Funds from the MSAP grant will allow schools to create a STEM program for elementary schools that will attract a diverse student body and at the same time help to reduce minority isolation at the six targeted schools. These schools will offer parents of children attending schools in need of improvement with the opportunity to transfer their children to a better performing school, and provide enriched educational choices for students. The Sprouting STEM Museum Magnet Schools will offer a stimulating program that is expected to grow each year and stand ready to commit district funds and resources to sustain the programs even after the federal funding is no longer available. BCPS confidently asserts this; it is an assertion that is rooted in the District's long-standing commitment to desegregation and its historical commitment to sustain magnet programs.

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(2)(i)The Secretary determines the extent to which the applicant is commitment to the magnet school project

The School Board of Broward County, Florida is committed to the Sprouting STEM Museum Magnet Schools as a tool for reducing minority group isolation, offering choice to students and their families, reforming and improving schools, improving student performance as measured by rigorous standards, developing innovative models of instruction and strengthening knowledge in academic subjects for all students. It will also provide a direct feeder pattern to our implemented Growing STEM middle schools in the District. This commitment is reflected, in part, by the District's integration of magnet programs across the organizational framework of the District and its dedication of measures to the magnet concept.

Under the new leadership of Mr. Robert W. Runcie, Superintendent of Schools, strategic school support initiatives began in the 2012-2013 school year to ensure quality assistance to all schools throughout the District and especially to schools identified as in need of assistance. The first strategic support initiative was the development of an organizational structure that provides direct assistance to school administrators and staff. With the creation of the Office of School Performance and Accountability, experienced and highly-qualified principals were appointed to serve as Cadre Directors. Each Director assists up to 25 schools offering their support of improving student achievement, sharing effective instructional strategies, and working with operational needs. With the establishment of the Cadre Directors, principals receive quick responses for support and assistance to ensure student achievement. The Cadre Directors assigned to the six-targeted elementary schools will be trained to fully support the implementation of the *Sprouting STEM Museum Magnet School Program*. The second major

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initiative is the District's recently unveiled *Three-Year Strategic Plan* that addresses three strategic goals: high quality instruction, continuous improvement and effective communication. Based on these three goals, District will support *Sprouting STEM Museum Magnet Schools* as part of a strong accountability system that will provide a fair and comprehensive school evaluation, timely and accurate data to principals and teachers, clear reports to parents and the public, and both rewards for success and consequences for failure. Even without additional funding, the District is committed to develop highly effective teachers and leaders by providing rigorous examination of our practices, developing innovative and sustainable approaches, and engaging in highly effective collaboration among internal and external partners. This aligns with the District's vision of "*Educating today's students to succeed in tomorrow's world*".

(2)(ii) The Secretary determines the extent to which the applicant has identified other resources to continue support for the magnet school activities when assistance under this program is no longer available

Historically, magnet programs initiated with MSAP funds continue to be funded by the District through local support after the grant period ends. As the grant application was approved for MSAP funding, The School Board has committed to assuming the ongoing operating costs for the Sprouting STEM Museum Magnet Schools after funding ends. The start-up costs represent the major expense in implementing the new magnet programs; these will be supported by MSAP funds. The Director of the Innovative Programs Department annually monitors participation rates to ensure that equitable access continues after the program ends. School Board Policy 5004.1 requires that monitoring continue each year beyond the funded years.

An additional factor that will ensure the quality and support of the *Sprouting STEM Museum Magnet Schools* is that of the high-quality professional development offered by the

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District. During the project period, professional development will build capacity at each school to promote student success. Once funding ends, Broward's professional development offerings will continue to provide educators with necessary knowledge, skills, aspirations and behaviors to impact student achievement. The District offers its staff a Master Inservice Plan (MIP) for inservice activities. The MIP contains over 1,000 courses that include Common Core State Standards, culturally responsive pedagogy diagnosis, instructional technology, evaluation of student performance, instructional leadership, inter-active learning environments, effective school management and research-based reading strategies. Every teacher will continue to create a Professional Growth Plan (PGP) that will address any areas that may need additional reinforcement and that will have measurable training objectives as well as an evaluation component to determine efficacy. In addition, all new teachers will receive support through a New Teacher Academy (NTA) and will receive an intensive 30-hour overview of required components.

The District's *Three-Year Strategic Plan* addresses the need to support all schools. As part of the plan, the District has set a goal to achieve the lowest-cost operations while improving the quality of services delivered to the schools. The cost-savings will provide funding to support classrooms at all levels. Additionally, the District will support magnet schools as part of a strong accountability system that will provide a fair and comprehensive school evaluation, timely and accurate data to principals and teachers, clear reports to parents and the public, and both rewards for success and consequences for failure. Accountability tools, metrics and processes will be implemented to improve the academic outcomes for all students.

An additional component that will ensure that the program is supported even after funding ends is the continuation of the Critical Friends Group (CFG) and the Collaborative

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Network Team's (CNT) input. The CFG is a school-based team comprised of teachers and school leaders who will meet to identify areas in need of adjustment in the program. It will function as a Professional Learning Community where ideas are considered, training is organized and scheduled and concerns are resolved. The CNT is a school based advisory group, formed by community members with experience in the areas of education, diversity, school law, and community involvement will continue to network and provide input to each school with the Sprouting STEM Museum Magnet Program. The CNT will work in collaboration with the School Advisory Councils and School Advisory Forums to provide regular updates to the Director of the Innovative Programs Department who will serve as liaison between the schools and the District. The CNT will make periodic assessments of the program's performance goals and objectives, review evaluation data and make recommendations for program improvement. The CNT will also recommend strategies to continuously increase awareness of the program to all parents, and will participate, when available, in all marketing campaigns and parent events.

A commitment to facilitate and increase parental involvement is essential to this project. Educators must be committed to ensure that parents receive accurate and transparent information. The very nature of magnet programs, lends itself to increased parental involvement. When a parent applies to a magnet program, they are automatically involved in the decision-making process for their children.

The District has historically committed to providing transportation to students in Magnet schools. This commitment will continue with the Sprouting STEM Schools and will ensure that distance is not a barrier for students enrolling in the program. The District will also commit to continue marketing the Sprouting STEM Museum Magnet Schools so that information is available not only in English, but also in Spanish, and Haitian-Creole the most spoken languages

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in Broward. Information will be available in both printed and electronic formats for easy access to all interested parties.

Should the MSAP grant be approved for funding, it is clear that the District will continue with its extensive support of the programs after the initial start-up year's end. With three years to prepare, the District will incorporate the program sustainability into the operational budget so that capacity is maintained and continuation of program offerings is secured.

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