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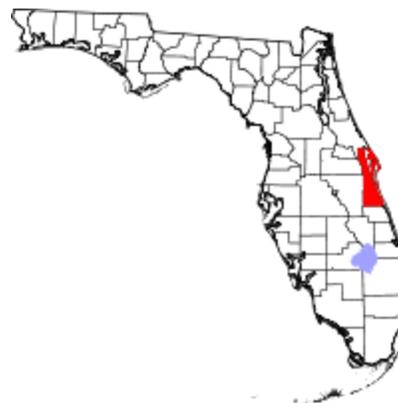
Priority 1 Need for Assistance

Background

Brevard Public Magnet Schools are *Generating STEAM for College Career Readiness* in attainment of Science, Technology, Engineering, Arts, and Mathematical (STEAM) skills. Rapid changes in the world – including technological advancement, scientific innovation, increased globalization, shifting workforce demands, and pressures of economic competitiveness – are redefining the broad skill sets students need to be adequately prepared to participate in and contribute to today’s society (Levy and Murnane 2005; Stewart 2010; Wilmarth 2010). The gap between employer needs and workforce skills is starkest in the critical areas of STEAM

education, as content mastery, technical skills, creativity, and innovation become increasingly important in the workforce. Yet, while demand is growing rapidly, the United States is on track to respond with only modest increases in the number of graduates in science, technology, engineering, and mathematics related fields (President’s Council on Jobs and Competitiveness, 2011-2012).

Research is consistent in the type of educational environments needed to ensure that students reach their full potential and are prepared for the unique demands of a 21st century world. It is clearly evident that the best employers the world over will be searching for the most competent, most creative, and most innovative people and will be willing to pay them top dollar for their abilities and services. Author



Daniel Pink remarks, “The future belongs to a very different kind of person with a very different kind of mind – creators and empathizers, pattern recognizers and meaning makers (Pink, 2006). Similarly, author Richard Florida states, “I call the age we are entering the creative age because the key factor propelling us forward is the rise of creativity as the primary mover of our economy (Florida, 2005). Moreover, the National Education Association affirms that every child should possess strong content mastery, as well as the “Four Cs”: critical thinking, communication, collaboration, and creativity (National Education Association). For reasons stated above, BPS has elected to add “Arts” to enhance STEM education by integrating art and design – transforming STEM ► STEAM and promoting the intellectual and creative potentials in the process.

Brevard County is located on the east coast of Florida, halfway between Jacksonville and

Miami. It is an extra-long county extending 72 miles from north to south, and averages 26.5 miles inland from the seacoast at any point. The county has a total area of 1,556.95 square miles, of which 1,018.19 square miles or 65.40% is land and 538.76 square miles or 34.60% is water, primarily the Atlantic Ocean, the St. Johns River and the Indian River Lagoon. The county is nearly equal to the landmass of the state of Rhode Island.

Guided by its strategic plan vision, **Brevard Public Schools** (BPS) *strives to serve every student with excellence as the standard.* BPS serves more than 72,000 students making it the 10th largest of 67 school districts in Florida and the 48th largest district in the United States. The single largest employer in Brevard County, the district employs more than 9,000 people, including more than 5,000 instructional personnel. With 85 schools, 17 special centers, and 7 charter schools, the district serves students in 17 different municipalities across the Space Coast. When it comes to educating tomorrow’s leaders, Brevard County is the launching pad for providing students with new, innovative, and inspiring educational programs. Brevard’s students consistently excel in state, national, and international competitions. Throughout the district, business partners, community leaders, and parents combine their efforts to assist our schools as they advance toward the future and focus on meeting the diverse needs of today’s students.

According to the 2010 United States Bureau of the Census Quick Facts, Brevard County has an estimated 18,708 children under age 18 (17.5 percent) and 11,694 children ages 5-17 (15.1 percent) living in isolated pockets of poverty throughout Brevard County. Since 2001, the percent of students qualifying for free or reduced price lunch (FRPL) under the Richard B. Russell National School Lunch Act increased from 29.69 percent to 43.6 percent; over 15 percent of the increase occurred in the last five years. According to Brevard’s Director of Food and Nutrition Services this drastic increase in FRPL percentage reflects current economic

conditions from events as phasing out and ending of the Space Shuttle Program. In addition to hardships caused by closing of the NASA shuttle program, the current economic slowdown created an even greater loss of jobs in the service industry, adding to the economic crisis faced by families with entry level employment skills thereby supporting the need for innovative magnet programs to prepare our students for college career readiness.

Brevard County, home of Kennedy Space Center at Cape Canaveral, has been accustomed to a vibrant economy combining high-tech and other industry with tourism, agriculture, and service businesses and organizations. However, uncertainties regarding sustainability of the space industry, including curtailing the space shuttle program and cancellation of Constellation, have significantly changed the dynamics of the county. Data released by Brevard Workforce reflects that about 23,000 workers at and around the Kennedy Space Center lost their jobs in recent years. That sum includes 9,000 “direct” space jobs and 14,000 “indirect” jobs at hotels, restaurants, retail stores, and others depending on activity at the space center. Based on November 2012 data, Brevard County led the nation with the number of homes in foreclosure (Realty Trac, 2012).

By 2018, it is predicted that Florida’s economy will demand more college graduates. According to recent analysis of occupation data and workforce trends by the Georgetown University Center on Education and the Workforce, 59% of Florida’s jobs will require postsecondary education. Between now and 2018, Florida will need to fill approximately 2.8 million vacancies resulting from job creation, worker retirements, and other factors. Of these job vacancies, more than 1.6 million will require postsecondary credentials. According to 2010 Census data only 37% of the Florida’s 9.5 million working-age adults (25-64 years old) hold at least a two-year degree and in Brevard only 26.4% of the population 25 years and older hold a

Bachelors or higher degree. According to the Florida College Access Network, with over a \$3.5 billion budget deficit, the Florida Legislature has proposed cutting into the Bright Futures Scholarship budget to help cover some of state shortfall. This measure will disproportionately impact Florida’s middle and limited-income students, our state’s fastest growing population. As a result, the district must ensure our students are ready for college or careers to be competitive in the global marketplace.

Florida’s Space Coast (Brevard County) was ranked #1–Most Concentrated High-Tech Economy in Florida (Milken Institute, 2011); #5–America’s Top Cybercities (TechAmerica Foundation, 2010); #7–Most Concentrated High-Tech Economy in the U.S. (Milken Institute, 2011); and #11–America’s Most Innovative Cities (Forbes, 2010). In accordance to the *Conference Board, Help Wanted Online* prepared by the Florida Department of Economic Opportunity, Labor Market Statistics Center, the top advertised occupations in Brevard County in December 2012 included: 1. Registered Nurses; 2. Computer Software Engineers; 3. Network and Computer Systems Administrators; 4. Computer Support Specialists; 5. Industrial Engineers; 6. Computer/Systems Software Engineers; 7. Computer Systems Analysts; 8. Web Developers; 9. Electrical Engineers; 10. Mechanical Engineers.

The district is committed to preparing students for successful careers and responsible citizenship in their community and a diverse and changing world. This is a seminal moment in history for education and competitiveness. The fundamental shifts in the economy demand bold and creative action, particularly for the Space Coast, as it focuses on revitalizing the workforce to meet the demands of a new era of space exploration. The Magnet Schools Assistance Program (MSAP) will enable BPS to create unique STEAM programs at one (1) elementary school, two (2) middle schools, and one (1) high school with high percentages of minority group isolation in

Brevard County, Florida. These programs will serve as “model” schools for the district as it transforms its educational delivery model to ensure every child has the “right stuff” to successfully contribute to their community and the nation as a whole.

(a) Cost of fully implementing the magnet schools project as proposed

Brevard Public Schools seeks to meet the needs of a growing and diverse student population within existing resources. The district is able to provide the basics for each proposed magnet school, which includes educational materials, supplies, facilities, basic teacher allocation, and some of the needed equipment. However, it is the unique aspects of the school-wide STEAM programs outlined in the program design section and respective school budgets that will attract new students to the proposed magnet schools.

The district was forced to reduce its budget by \$62.2 million since 2008-2009 due to declining enrollment and reduced local tax rolls. Last year, reduction of the operational budget included closure of one elementary school. Currently, the district is reducing the budget for the upcoming school year by another \$30 million, resulting in the closure of three additional schools and the elimination of approximately 410 employees district-wide. Costs associated with implementing four new magnet school programs outlined in the Magnet Schools Assistance Program proposal (personnel, staff development, instructional technology, equipment, and materials) are prohibitively expensive for Brevard Public Schools. MSAP funding is required to meet initial additional costs to effectively implement school-wide reform at the proposed sites. The budget request of \$11,262,523 over three years will serve approximately 3,592 students in kindergarten through twelfth grades. The MSAP funding is vital for building capacity and ensuring sustainability.

The grant funds will enable Brevard Public Schools to obtain the following, now cost

prohibitive with the current student base allocation received from local and state efforts:

- **Recruitment, Outreach, and Public Relations** campaign to attract students residing outside the schools’ boundaries to voluntarily transfer to the magnet schools.
- **Professional Development** for teachers to develop specialized curriculum materials and participate in comprehensive professional development.
- **Experts/Consultants** with expertise to support and guide implementation of STEAM, which includes challenge-based learning, inter-disciplinary planning, and authentic assessments.
- **Specialized Equipment and Supplies** specific to the STEAM curriculum areas identified by each school.
- **Monitoring and Evaluation** to be conducted by an independent evaluator to drive systemic reform decisions.
- **Magnet Specialists/Coordinators** at each of the four magnet schools to lead development and implementation of the school-wide reform (STEAM).
- **Project Management and Coordination**, which includes the hiring of a project director and support clerical to provide leadership and clear direction for implementation of the grant.

(b) Resources to carry out the project if funds under the program were not provided

The district is extremely committed to providing a quality education for its students by committing available resources to support student achievement outcomes. In 2010-2011 (the most current report), for every dollar the district received it spent: ►64.32 cents for classroom direct expenditures ►33.11 cents for additional school direct services ►2.57 cents for district indirect expenditures.

The district will not be able to implement the magnitude and quality of school-wide STEAM initiatives as proposed by each magnet school without the receipt and support of the

MSAP funding. Despite the district’s earnest efforts to find monies to support innovative educational changes needed to reduce minority isolation, it cannot implement the caliber of program supportive of all students’ needs in preparation for the 21st century unless MSAP funding is received.

(c) The extent to which the costs of the project exceed the applicant’s resources

The district has made exhaustive attempts to solicit additional funds to enhance educational instruction for all students. In the fall of 2003, the district joined in an alliance with the county and local municipalities to try to pass a sales tax referendum in which the district would receive a third (1/3) of a penny. In November 2012, the district attempted to pass a half (1/2) of a penny sales tax. The sales tax referendums would support the district in renovating and providing state-of-the-art technology programs for schools over three decades old, including sites proposed in the Magnet Schools Assistance Program. Unfortunately, voters rejected the sales tax referendums in both cases, leaving the district with minimum funds to operate a large school district. Anti-tax campaigns hinder the district’s abilities to raise taxes to support local initiatives such as the implementation of school-wide STEAM programs. With the continuing bleak economic forecast predicted for Brevard County, this picture is unlikely to improve in the immediate future. It is clear, that while BPS is firmly committed to the magnet school project and will make available as many resources as possible, the costs of fully implementing the project far exceed its current resources.

(d) Difficulty of effectively carrying out the approved plan

It will be difficult to implement four new magnet programs without the support of the Magnet Schools Assistance Program funding. Proposed sites are in the highest echelon of minority group isolation in our county. McNair and Stone middle schools are located in the

district’s most impoverished neighborhoods with the highest crime rates. Palm Bay High and Golfview Elementary are located in more commercial areas and many parents do not perceive the schools as “desirable.” Current perceptions of the demographic and economic conditions in communities where the proposed schools are located pose a challenge in attracting students from the feeder school communities. Per capita income for Rockledge, the location of Golfview Elementary and McNair Middle, is \$26,140. In Palm Bay, the location of Stone Middle and Palm Bay High, the per capita income is \$19,604. The surrounding feeder school communities from which the magnet schools will attract new students reflect a per capita range of \$30,011 to \$36,869. The per capita income for Brevard County is \$26,226.

The district, with the best of intentions, provides funding to make systemic changes at all schools in support of the implementation of Common Core standards, and rigorous technological requirements for online student assessments. It has created aggressive strategic plan outcome indicators to address narrowing the achievement gaps in identified sub-group populations. However, current educational funding does not afford the district the opportunity to purchase technology, curricular materials, state-of-the-art science labs, staff development, and the hiring of additional leadership – all paramount to the implementation of a comprehensive school-wide reform to prepare students for the 21st century. Brevard Public Schools understands that when students leave the school system, they will face a world in which a very high level of preparation in reading, writing, speaking, problem solving, mathematics, science, literature, history, and the arts will be an indispensable foundation for entering the workforce. They will be entering a world in which comfort with ideas and abstractions is the passport to a good job and in which creativity and innovation are the keys to the good life. The district willingly accepts responsibility of providing a rigorous and relevant education for students of Brevard County,

particularly as it addresses concerns relevant to students attending schools with high levels of minority isolation and poverty, as identified in this grant. However, without grant funding, BPS simply does not have resources needed to create educational pathways that are sound in research and provide students an array of identified critical skills to compete in a global market.

The continuing lack of full and diverse participation of all citizens in the science, technology, engineering, and mathematics (STEM) workforce threatens the economic strength, national security, and well-being of United States citizens. Over the past decade, data indicates that women and minorities in Florida earned a small and shrinking share of STEM credentials. The under-representation of certain groups also raises serious issues of social justice and lack of opportunity in a society that professes to be egalitarian and democratic (Pathways to STEM Careers, National Science Foundation, 2005). The MSAP funds will help to create the type of climate and culture at the four proposed schools that connects all students to one another, their schools, communities, and families. More importantly, school-wide initiatives will provide identified groups of isolated student populations with equal opportunities to engage in educational and career paths. Without broader participation of all students in our society, the vitality of the STEM workforce may decline and good jobs will continue to be exported to other countries.

Business leaders in Florida sounded an alarm that they cannot find science, technology, engineering, and mathematics (STEM) talent needed to stay competitive (Change the Equation, Florida Vital Signs, 2012). The STEAM MSAP grant funds will give Brevard Public Schools the means to morally and ethically respond, ultimately graduating skilled designers and problem solvers ready to meet competitive challenges.

Through the proposed MSAP, Brevard Public Schools will attract diverse student

populations to four racially unbalanced schools while meeting students’ academic needs by establishing interdisciplinary Science, Technology, Engineering, Arts, and Mathematics (STEAM) programs. Two schools will be designated as new magnet schools; two will be revising themes implemented 10 years ago during the 2004 MSAP cycle.

Careful planning and coordination was involved in the selection of the schools. The director of school choice collaborated with the curriculum and instruction division personnel, area superintendents and district facilities staff to examine eligibility data of all district schools. Final selection of schools for the proposed MSAP, as outlined thoroughly in **table six: New or Revised Magnet Schools-Competitive Priority two** was based on thorough analysis of student population, academic performance, trend data for student enrollment, school utilization or capacity, and administration and faculty acceptance for implementing a magnet program. Given Brevard County’s unique topography, geographical location of a school was a significant selection criterion. Selected schools must be easily accessible to students throughout the district who choose to attend one of the STEAM themed magnet schools. Therefore, physical locations of schools in the northern central and southern part of the county were reviewed against eligibility requirements to ensure the schools were strategically placed.

Another consideration in selecting the schools for inclusion in the MSAP proposal was the number and location of charter schools in the district. Brevard currently has seven charter schools. Two serve students in grades K-6, one serves students in grades K-7, and four serve students in grades K-8. Of the seven charter schools, none is located near the proposed magnet schools in the north central part of the county; two are in close proximity to the proposed magnet in the southern part of the district. These two charter schools serve students in grades K-5 and K-8 respectively. There are no charter schools serving high school students (grades 9-12), and none

of the charter schools has a school-wide STEAM emphasis.

After reviewing all of the eligibility data, including geographical location and charters schools in the area, four Brevard Public Schools were selected; one elementary school, two middle schools, and one high school. **Golfview Elementary Magnet** and **McNair Magnet Middle Schools**, located in the northern part of the district’s central area. The other two schools, **Stone Middle** and **Palm Bay High**, will be new magnet schools. They are located in the southern part of the county, which is also the most densely populated area of the county and home to Brevard’s largest city, the City of Palm Bay. Palm Bay High School will hold the distinction of being Brevard’s first magnet high school.

All four schools will implement **school-wide STEAM magnet programs** providing students of all abilities and disabilities equal access. Additionally, the magnet programs will attract students of a diverse population enabling the schools to achieve racial group percentages in line with district percentages. As shown on the following chart, the percent of minority students at each school significantly exceeds the district average while the percent of White students is considerably below the district average.

Enrollment October 2012	District %	Golfview %	McNair %	Stone %	Palm Bay %
Racial/Ethnic Group	2012-13	2012-13	2012-13	2012-13	2012-13
American Indian / Alaskan Native					
Asian					
Black or African American	14.99	45.98	31.44	30.00	24.61
Hispanic / Latino	9.45	11.62	7.64	13.38	11.92

Native Hawaiian / Pacific Islander	█	█	█	█	█
White	66.32	31.97	50.44	47.25	53.74
Two or More Races	6.36	9.40	7.82	8.00	6.64
Total School Population	70247	585	563	800	1552

Data Source: 2012-13 Florida Education Finance Program (FEFP) October FTE Survey

In recognition that magnet schools are an essential component to the school district’s portfolio and have proven to increase academic achievement, graduation rates, school attendance, parent, teacher satisfaction, and diversity, the School Board of Brevard County unanimously approved a resolution on February 26, 2013 designating Golfview Elementary and McNair Middle schools as revised magnet schools, and Stone Middle and Palm Bay High schools as new magnet schools. All four schools will offer school-wide interdisciplinary magnet programs with Science, Technology, Engineering, Arts, and Mathematics (STEAM) integration.

Golfview Elementary Magnet (grade K-6) was originally established as a magnet school in 1994 when the district amended its voluntary desegregation plan to include the school as a strategy for meeting desegregation. The school received funding in the MSAP 2004 cycle and was designed as a math, science, and technology magnet. In early February 2013, the School Board of Brevard County made a difficult decision to close several schools effective for the 2013-2014 school year. One of the schools chosen for closure was Gardendale Elementary Magnet, a very successful science, technology, math and arts magnet school. The school is projected to experience declining enrollment due to the loss of the shuttle program and general economic downturn. The school building needs extensive and costly repairs that are not now economically feasible for the district’s budget. As a result, the district is merging Golfview Elementary Magnet’s theme with Gardendale Elementary Magnet theme and infuse STEAM

through MSAP funding as a school-wide interdisciplinary focus. The superintendent reappointed the successful magnet principal from Gardendale to Golfview and has committed to reassigning a significant number of magnet school trained teachers from Gardendale to Golfview. The goal is that MSAP funding will give school choice options to the heart-broken families from Gardendale, so their children can call Golfview Elementary Magnet School-home.

Magnet programs, especially at the elementary level, provide students and parents with a sense of belonging. Merging the Gardendale magnet theme and infusing the new STEAM theme at Golfview will help unite the community. Both schools have worked diligently for over 13 years to maintain and sustain their individual magnet program by involving parents and the community for support. This merge will also enable Gardendale to bring magnet materials, supplies, and teachers with professional development training to Golfview, uniting all their hard work in a new direction for students and families of the community.

Through MSAP funds, Golfview will utilize real-time authentic professional development through AVID strategies, and Susan Kovalik’s Highly Effective Teaching (HET)-The HET model to assist educators in translating brain research into practical, conceptual curriculum and instructional strategies for the classroom and to participate in the creation of a culture of respectful relationships and learning communities that are dedicated to growing responsible citizens. Additionally, the systemic implementation of the HET model can greatly enhance intervention strategies. In addition, the teachers need systemic content knowledge coupled with the strategies. The STEAM consultant will provide a minimum of 16 - 24 hours of training for teachers to learn how to integrate STEAM concepts, write STEAM lesson plans, and provide articulation between current Golfview faculty and Gardendale faculty so they can build the STEAM foundation together rather than separately.

Funds will be used to upgrade outdated equipment, offer current STEAM training, replace existing magnet programs at two schools to create one school while upgrading thematic curriculum to maintain program attractiveness. Students and families who are being imposed upon by the closure decisions deserve the best and brightest Golfview can offer. The faculty is committed to staying positive, counseling students through the transition, and offering an exciting new STEAM program to students. The timing of the MSAP cycle could not be more perfect, and the funding is necessary to generate STEAM for College Career Readiness. Additionally, Golfview is located less than one mile from McNair Magnet Middle School providing for ease of vertical articulation between magnet teachers and a solution for parents seeking a K-8 continuum.

McNair Magnet School (grade 7-8) was built in 1959 and opened in 1960 as Poinsett Elementary School to an enrollment of all Black students, a staff of Black teachers and Black administrators. Today the school is still in the center of subsidized Section 8 housing and a high crime neighborhood. In 1986, after the Space Shuttle Challenger Disaster the school changed its name to Ronald McNair Middle School to honor the African American Astronaut Ronald McNair who died in the accident. The school’s enrollment was poor and declined year after year; achievement scores were among the lowest in the district. In 1990, McNair became Brevard’s first magnet middle school in the district as a strategy to overcome declining enrollment, reduce minority isolation, improve curriculum and increase student achievement. The magnet program included a full-time gifted student program, and a math, science, technology magnet. With district support for capital improvements, renovation was done in the home economics classroom to include six fully equipped kitchens with large and small appliances. The school woodshop was retained, and a television production and technology module lab was added to the vocational

education classroom. The science labs were created by converting two regular sized classrooms, each with a classroom area and a wet lab area. The business education classroom was refurbished to look like a modern office, and it was equipped with a wireless computer lab. The art room, created from two regular sized classrooms, was equipped with water and a sink, storage shelves, and several large work tables. In 2000-2003, McNair applied for MSAP funding with a vision of “Different Ways of Knowing,” infusing the Arts and state-of-the-art technology in all curriculum areas as pathways for learning. For over 13 years administration and faculty have worked to maintain and sustain the McNair Magnet program. With advances in technology and economic budget constraints, the school cannot afford to replace equipment and keep current with supplies. Implementing a STEAM theme and revising the magnet will enable the school to continue its vision and to attract students of all races, ethnicities, and backgrounds. The renovations that took place in 1990 (over 22 years ago) are no longer viable nor do they allow students to learn 21st century skills. With technological advances growing at exponentially fast paced even the purchases made during the MSAP 2004 cycle are now antiquated too. McNair is committed and excited to move forward with the STEAM theme, and having tighter articulation with Golfview to strengthen the academics, opportunities, and outreach in the city of Rockledge. In closing, the K-6 students who may have been displaced from Gardendale will have peace of mind that McNair Magnet Middle School, 2 miles away, will allow them to build from the STEAM foundation built at Golfview creating stability in the K-8 STEAM choice.

Stone Magnet Middle School (grade 7-8) was built in 1954 as a segregated school. It has been an elementary, junior, and high school, and is currently one of Brevard’s 12 middle schools. The school is located in a low socioeconomic neighborhood surrounded by Section 8 subsidized housing developments bordering on both the east and west sides of the school. Many

of the zoned neighborhood children are from disadvantaged homes and live within extended family units due to incarceration of immediate family members. For these students, there is little support at home which increases the challenges of teachers, administration, and staff to help students become successful citizens and successful in their educational journey. In 2004, Stone started a school-based Science and Technology Choice program offering students advanced rigorous classes. The program has been operating as a school within a school. As economies in Brevard and state declined, funding for Choice programs also declined. The school is unable to continue expansion of the program, adding of additional labs for hands-on learning, and offering field experiences. Designating Stone as a new STEAM magnet and implementing the programs with the assistance of the MSAP funding is vital to creating a much needed school reform. The MSAP funds will allow Stone to make a long-term goal come true by giving students a high caliber STEAM education just two miles from Florida Institute of Technology. The successful school within a school choice science research program will be translated into STEAM opportunities for the entire student body increasing academic achievement and college and career readiness. Stone will be the second magnet middle school in the district and is located less than two miles from Palm Bay, providing for ease of vertical articulation between middle and high school magnet teachers.

Palm Bay Magnet High School (grade 9-12) was originally opened as Southwest Junior High School in the 1950’s, in an area near what is now the Florida Institute of Technology and a historically black neighborhood in the south Melbourne area. At the time, Stone Middle School served primarily as a school for black students in the area, encompassing multiple grades. As desegregation progressed, the schools were re-purposed. Stone became a middle school with white children being bussed in from all neighborhoods south of the school. Southwest Junior

High became Palm Bay High School. The campus consists of several main buildings housing administration and classrooms, and a gymnasium and auditorium. During the 2004-2005 school year, the school received a private donation used to expand the library. Other facilities upgrades to support STEAM have not been financial achievable. The magnet program is desperately needed at Palm Bay to attract diverse populations of students and revitalize the school and change school culture. Palm Bay Magnet High School will offer an Academy of Engineering and Computer Science and an Academy of Health and Public Affairs. MSAP funding will allow Palm Bay to create new, specialized, academy pathways in Computer Programming, Bio-Medical, Engineering/Robotics, and Global Citizenship/Public Safety. Capitalizing on teachers who were once employed in these fields and by hiring two specialized teachers through MSAP funds students will have unique opportunities offered only at Palm Bay. In addition, students matriculating from Stone will continue to specialize in STEAM. In order to create freshman summer academy, first week *Rally, Rules, and Rigor* course, and offering brand new courses and sections the Principal, Curriculum Assistant Principal, and Head of Guidance had to discuss the diminishing return on investment of divergent programs that had existed for years. Through an articulation meeting with the Career and Technical Director the school personnel were able to drop existing ineffective or low enrollment programs in order to realign the entire school for MSAP STEAM theme. Every student at Palm Bay High will be in an academy and will learn through the STEAM framework. In addition, teachers will receive much needed professional development through Max Thompson’s *Learning Focused* modules which will catapult the lesson plans, curriculum alignment, and STEAM framework using technology and engaging instructional dialogue.

As described in **table five: Selection of Students-Competitive Priority three**, Magnet

school programs are open to all students including members of groups that have been traditionally underrepresented and these schools **will not** use academic criteria as admissions criteria to gain entrance into the magnet schools. Florida’s waiver from reporting Adequate Yearly Progress (AYP) under the Elementary and Secondary Education Act (ESEA) requires the state to report performance on Annual Measurable Objectives (AMOs) in several areas of academic achievement. Florida’s most compelling reasons for selecting the following AMOs is that they are consistent with the state’s long-term approach to school accountability based on measuring individual student performance. This accountability system has a clear record of tremendous success in raising student achievement for all students and all subgroups spanning more than a decade. These four AMOs will ensure a thorough and detailed examination of the most critical measures to advance all students, schools, and Local Educational Agencies in the state. Briefly, the four AMOs are 1) School Grades, which provides a comprehensive review of the performance of all schools including subgroup achievement and student learning gains; 2) Performance of all students and student subgroups in reading and mathematics; 3) Progress of students in the lowest-performing 25% in reading and mathematics; 4) Comparison of Florida’s student performance to the highest-performing states and nations. As indicated below students at the four selected magnet schools are failing to achieve the AMO’s in the areas of reading and mathematics.

READING Assessment Results 2011-2012 (FCAT 2.0 and AMO)								
Percent of Students Scoring Satisfactory and Above								
Subgroups	Golfview		McNair		Stone		Palm Bay	
	FCAT Results	AMO						

All Students	57	61	66	74	62	66	55	55
American Indian	N	N	N	N	N	N	N	N
Asian	N	N	N	N	75	94	60	40
Black or African American	54	57	45	56	43	48	25	33
Hispanic / Latino	42	52	51	79	56	57	54	50
White	65	62	81	85	70	73	67	66
English Language Learners	38	37	N	N	25	38	*	14
Students with Disabilities	38	36	30	40	24	36	24	34
Economically Disadvantaged	53	57	48	63	54	59	43	44
<p><i>* Indicates subgroups not included as separate sub-populations in reporting annual measurable objectives (AMOs) for ESEA compliance. Note: An 'N' indicates that no test results were reported. Data Source: FLDOE Report AMOs for FL Schools, Districts, and the State 2011-12</i></p>								

Mathematics Assessment Results 2011-2012 (FCAT2.0 and AMO)								
Percent of Students Scoring Satisfactory and Above								
Subgroups	Golfview		McNair		Stone		Palm Bay	
	FCAT Results	AMO						
All Students	43	51	62	73	56	64	62	51

American Indian	N	N	N	N	N	N	N	N
Asian	N	N	N	N	94	100	N	N
Black or African American	32	46	34	52	34	40	32	45
Hispanic / Latino	46	54	57	78	46	59	64	55
White	53	54	78	84	64	73	73	56
English Language Learners	31	29	N	N	35	29	N	N
Students with Disabilities	23	31	25	38	19	25	32	26
Economically Disadvantaged	40	49	44	60	46	55	58	50
<p><i>* Indicates subgroups not included as separate sub-populations in reporting annual measurable objectives (AMOs) for ESEA compliance. Note: An 'N' indicates that no test results were reported. Data Source: FLDOE Report AMOs for FL Schools, Districts, and the State 2011-12</i></p>								

As shown on the preceding student performance charts for Reading and Math every school included in the MSAP proposal has subgroups are not reaching the targeted AMO. With the state increasing the target AMO’s for each subgroup annually there is a critical **need** to implement instructional strategies of the STEAM interdisciplinary instructional strategies designed by each school as outlined in section (c) Quality of Project Design.

Priority 4: Promoting Science, Technology, Engineering, and Mathematics Education

The four Brevard Public Schools included in this MSAP proposal have designed individual school themes around Science, Technology, Engineering, and Mathematics (STEM)

with the addition of the Arts. They are "Generating STEAM for College Career Readiness" in the attainment of Science, Technology, Engineering, Arts, and Mathematical (STEAM) skills.

According to the 2012 National Assessment of Educational Performance (NAEP) report for Florida 8th grade students scoring basic, which correlates to the Florida Comprehensive Assessment Testing (FCAT) results of Level 2 or 3 on grade level proficient, minority Black students scored 35 percent in **Math** compared to the national percent of 37, Hispanic students scored 43 percent basic compared to the national percent of 44, Students with Disabilities scored 25% basic compared to the national percent of 26. In the area of **Reading** 43 percent of 8th grade students in Florida scored basic compared to the national percent of 44, Hispanic students scored 44 percent compared to the national percent of 45, and English Language Learners scored 24 percent basic as compared to the national percent of 26. As Florida schools transition from Next Generation Sunshine State Standards to Common Core State Standards (CCSS) and prepare for the transition from the FCAT 2.0 to the Partnership for Readiness of College Careers (PARCC) assessment the 2012 NAEP performance of Florida students can not be overlooked. The PARCC assessment will challenge students to model solutions for their answers, defend responses, and demonstrate comprehension of complex text from a variety of subject areas. For our students to be successful we must change the way we teach, and STEAM provides the vehicle for the transformation.

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

STEAM will be the framework by which teachers will teach across disciplines and students will have increased access to rigorous and engaging coursework designed to help them and schools reach the state’s required Annual Measurable Objectives. The STEAM framework enables students to apply science and technology concepts through utilization of engineering and

arts with all disciplines based in elements of mathematical concepts. The four proposed magnets will incorporate the rigorous coursework themes and will be the **first magnet public schools** in the district with school-wide STEAM interdisciplinary programs.

As a nation we are faced with economic uncertainty calling for innovations in educational practice for our students as a measure to ensure a prospective future. According to the STEM to STEAM organization “STEM+Art=STEAM” and is the mechanism to transform our economy in the 21st century just as science and technology did in the last century. Engaging all students, regardless of their abilities or disabilities, in rigorous interdisciplinary coursework where they are challenged to solve problems makes learning relative and meaningful. Students of diverse backgrounds and cultural experiences at the four magnet schools will work together to see the connection between math and science concepts as they use the scientific method to explore and discover their world. They will make connections between technology and engineering to creatively investigate the world of the created designs. Central to the interdisciplinary approach is the infusion of the arts, allowing students to realize their intellectual and creative potential regardless of the specific subject coursework.

In January 2013, a survey was made available to all 6, 7, and 8 grade students and parents in the district. The survey was offered electronically and hard copy. Responses regarding preferences of the attractiveness of possible career themes overwhelmingly show **science** as the career path for the majority of the students with an average 42 percent of the responses. **Engineering** was 2nd with 31 percent of the votes, and **Technology** was the third choice with 23 percent of students.

It is imperative to Brevard’s “Space Coast” future that magnet students get a well-rounded STEAM education. Florida Institute of Technology, Kennedy Space Center, NASA, and

other large companies call Brevard their home. Brevard Public Schools must foster successful STEAM programs to prepare the next generation of astronauts, engineers, problem solvers, and designers.

(b) Increasing opportunities for high-quality preparation of professional development

Teachers at the schools were asked to give input regarding their subject connections with the areas associated with STEAM. During faculty meetings at each school teachers were asked to think outside of the walls of their classroom for solutions and curricular connections between the benchmarks and standards that currently exist for their grade level or subject area and determine ways students can access STEAM throughout the entire school day. The session proved valuable as the STEAM writing teams took the design innovations and created the school-wide project design. Teachers were excited to be given the opportunity to create, explore, and collaborate with the entire faculty. Teachers were also given an interest survey to help the writing team determine current strengths and points to strengthen when deciding on professional development. Responses to the survey created an alignment with a professional development plan for school-wide STEAM professional development designed to improve instructional practices.

One of the major professional development opportunities, focusing on integrating STEAM into all subject areas, will be provided by STEAMedu Inc. The MSAP STEAM writing team worked with Georgette Yakman, founder and director of STEAMedu Inc., to tailor a STEAM plan for certifying teachers at the four schools as “STEAM educators” and designing the schools as “STEAM accredited schools.” This professional development is planned over the three year funding cycle to support and sustain the school-wide cultural shift that will occur.

Teachers and administrators will receive intensive STEAM training to include: overview, background, research, program design, structure, and project creation tailored to each

school/grade level. Students will be engaged through each class to create scaffold, flexible textbooks that can be used year to year. The ultimate goal is to transform teaching and the school culture to break down discipline specific silos and move toward multidisciplinary teaching and learning producing life-long holistic learners. Following completion of the teacher STEAM certification the school program will complete accreditation through a portfolio process. Criterion for the portfolio completion is annual and includes training updates to keep teacher up-to-date with the latest STEAM research. Per the National Governor’s Association request, this certification process was created, and teachers will be involved with real-life, on the ground, authentic training that will boost student achievement, increase rigor, and create connections and access to curricular choices that could not be afforded to students without the MSAP funds. Appendix A.1-7 provides a detailed outline of professional development from STEAMedu Inc.

Through a partnership with Florida Institute of Technology (FIT) teachers from each magnet school will be given the opportunity to participate in STEM workshops and conferences offered by the university. The university will be creating and hosting on the FIT campus summer workshops for the STEM magnet teachers on the proper use and lesson integration of STEM instructional materials. Teachers will be expected to share knowledge acquired during the summer training opportunities with teachers and the goal by the end of the three years is to have all STEM teachers trained and seamlessly using STEM instructional materials with students.

Additional STEAM support will be provided from community partnerships. A complete list and the corresponding appendix identification of legislators, higher education institutions representatives, businesses, and community leaders are included in Section (f) Commitment and Capacity. As outlined in their respective letters of support these partnerships have produced magnet support in a variety of methods including: general support for all aspects of the program;

curriculum development; STEAM equipment management; training on funding development and program sustainability; mentoring; providing guest speakers; career development; participation in the Boston Museum of Science webinars for engineering as a discipline, exciting demonstrations of design and engineering of underwater robotics, mechanical engineering, and aerospace opportunities connected to the future of the NASA space program.

(a) Plan of Operation

(a)(i) Management plan to ensure proper and efficient administration of the project

According to the Brevard Superintendent of Schools, Dr. Brian T. Binggeli, “School is a time to thrive, learn and discover interests and talents.” Providing Science, Technology, Engineering, Arts, and Mathematics (STEAM) magnet choice programs is a way for students to participate in engaging innovative academic programs designed to support his belief. Central to the Brevard Public School’s management plan is a dedicated instructional leader and visionary superintendent. Since 2009, Dr. Binggeli has worked tirelessly to connect the nobility of what we do to the mission of the organization. The overarching school district mission “to serve all students with excellence as the standard” is enhanced by the district magnet vision:

“Brevard Public Schools Magnet Programs provide public education choices emphasizing specialized learning environments and innovative instructional programs to promote excellence in student achievement and growth. This is accomplished by attracting diverse, multicultural student populations to distinctive, rigorous, and engaging theme-based learning environments specifically designed to enhance all students’ abilities, aptitudes, interests, and talents.”

Guided by the school district and the magnet vision all individuals involved in the management plan have an obligation to ensure the success of the magnet program and its proper administration and efficiency. The management plan is comprised of multi-tiers with each area

having distinctive purposes and stakeholders as follows:

Brevard Public School’s Magnet Management Plan	
MSAP Oversight	
Purpose	Stakeholders
Provide guidance and support for MSAP alignment with Curriculum and Instructions, Student Services, School Choice, Equity, and Financial Services for program success and sustainability. Receive program updates, analyze data and determine strategies for replication of programs at other schools in the district.	School Board Members, Superintendent, Director School Choice, Area Superintendents, Associate Superintendent for Curriculum & Instruction, Assistant Superintendent Student Services, Associate Superintendent of Financial Services, Assistant Superintendent of Educational Technology, and School Board Attorney
MSAP Brevard Governance- Advisory Council	
Purpose	Stakeholders
Meet at a minimum twice annually (December and May) to review each magnet school’s progress, gauge program development, and examine future program goals and milestones.	Director of School Choice, MSAP Project Manager, magnet school administrators, MSAP Coordinating Teachers from each school, magnet school faculty members, community business partners, higher education representatives, and parent representation from each magnet school
Program Administration	
Purpose	Stakeholders

Ensure all aspects of the MSAP grant are being administered with fidelity by conducting on-site program reviews and constant review of program and financial activity.	MSAP Project Manager, Magnet School Administrators, MSAP Coordinating Teachers, and faculty members
Program Compliance	
Purpose	Stakeholders
Monitor MSAP program compliance with all federal grant requirements for program and financial activity.	MSAP Project Manager, MSAP Data Specialist, and district Grant Development Administrator
Program Evaluation	
Purpose	Stakeholders
Collect program data for reporting, to the Governance Advisory Council, Oversight personnel, and the schools.	MSAP Project Manager, MSAP Coordinating Teachers, faculty members, and external evaluator
Fiscal Responsibility	
Purpose	Stakeholders
Maintain accurate financial accounting of all MSAP program expenditures and prepare financial reports for submission to the USDE, MSAP Governance Advisory Council, MSAP Oversight personnel, and the schools.	MSAP Project Manager, MSAP Data Specialist, MSAP Coordinating Teachers, and district Federal Fund Accountant

(a)(ii)(A) *Attaining specific outcomes to accomplish the purposes of the program*

All schools included in the magnet proposal have selected themes grounded in Science, Technology, Engineering, Arts, and Mathematics (STEAM) and as a result have established specific overarching outcomes aligned to support the **MSAP purposes** as follows:

***BPS MSAP Goal 1:** As a result of successfully implementing the magnet programs at Golfview, McNair, Stone, and Palm Bay minority group isolation will be reduced.*

Performance Measure Outcomes:

1.1: By October of each year, minority group isolation of African American/Black students at all four schools will decrease by 2% for 2014, 4% for 2015, and 6% for 2016. (Aligns with performance GPRA measure a)

1.2: The annual Ad Hoc report will indicate that, as a result of recruitment for the new school-wide magnet program at each target school, there will be no significant impact on Minority Group Isolation at any of the feeder schools (zero), as verified by school and district enrollment records. (Significant impact is defined as: a projected increase in MGI of more than 2 percentage points, which would be caused by students leaving a feeder school to attend an MSAP-funded magnet school.)

***BPS MSAP Goal 2:** As a result of successfully implementing the whole-school magnet programs at the four schools students will have access to innovative educational methods and practices increasing access to challenging standards based content and increased academic achievement for college career readiness.*

Performance Measure Outcomes:

2.1: Annually, performance of students at all four schools; especially major racial and ethnic

groups, scoring 10% or more below proficiency levels on the state assessment for reading/language arts will increase by a minimum of 2% for year 2014, 4% for 2015, and 6% for 2016 closing the gap between the AMO targets established by the state. (Aligns with GPRA performance measure b and f)

2.2: Annually, performance of students at all four schools; especially major racial and ethnic groups, scoring 10% or more below proficiency levels on the state assessment for mathematics will increase by a minimum of 2% for year 2014, 4% for 2015, and 6% for 2016 closing the achievement gap between the AMO targets established by the state. (Aligns with GPRA performance measures c and f)

2.3: Decrease the average of the achievement gaps between white students who score proficient or above on state assessments in reading/language arts and other major racial subgroups (minimum 25) in the same magnet school. A 2014 baseline will be established, a minimum of % decrease will occur in 2015 and 3% in 2016.

***BPS MSAP Goal 3:** As a result of successfully implementing the STEAM magnet programs at the four schools educational methods and practices promoting diversity for all students will increase.*

Performance Measure Outcomes:

3.1: Annually, the amount of weekly STEAM theme-related instruction at all four magnet schools will increase documenting educational method and practices from the baseline of 120 minutes weekly in 2014, to 150 minutes weekly in 2015, and 180 minutes in 2016.

3.2: Annually, the educational methods promoting diversity for all students will be assessed through a student/teacher survey rating of STEAM program practices verifying increased promotion of diversity and high-quality educational options from the baseline of 50% established

in 2014 to a minimum of 65% in 2015, and 85% in 2016.

3.3: Annual classroom-visit reports by outside evaluators and/or school-based personnel will show evidence of all of the following: 1) challenging instructional materials, 2) magnet units/curriculum aligned with Common Core state performance standards, and 3) measures of technology integration, using the SAMR Model for Technology Integration after first year implementation the 2015 results will show 50% compliance, 2016 results will show 75%.

***BPS MSAP Goal 4:** As a result of successfully implementing the STEAM magnet programs at the four schools parents and community members will actively be involved in project planning, implementation and decision-making.*

Performance Measures Outcomes:

4.1: Annually, staff at all four schools will respond to an online survey measuring magnet program parent’s involvement opportunities to have an active role in magnet implementation and input into decision-making. Responses will support a minimum of 50% agreement in 2014, 65% in 2015, and 80% in 2016.

4.2: Annually, parent responses to items on an online magnet survey will support 1) continued participation in magnet planning, 2) having an active role in magnet implementation, and 3) providing input into school decision-making. Responses will support a minimum of 50% agreement in 2014, 65% in 2015, and 80% in 2016.

4.3: By June 30, 2014, each magnet school will develop and conduct a minimum of two distinctive, theme-related parent events and attendance and/or participation by parents will increase for each year of the project. Baseline attendance and participation will be gathered in 2014 and 2015 data will support a minimum of a 10% increase in attendance, and 2016 a minimum of 20% increase in attendance.

4.4: Annually, staff and parents responding to items on an online survey will agree that community partners are active in the design and implementation of the magnet program and that they help the school ensure relevance and extend learning into the 21st century. Data will support a minimum of 50% agreement in 2014, 65% in 2015, and 80% in 2016.

4.5: Beginning in 2015, annual focus group data will be collected confirming parents and community partners are active in magnet planning, implementation, and decision-making. Data will support 50% compliance in 2015 and will increase to a minimum of 75% in 2016.

***BPS MSAP Goal 5:** Successfully implementing the magnet programs at the four schools will improve the capacity of the district to continue operating magnet the schools at a high performance level beyond the funding cycle.*

Performance Measure Outcomes:

5.1: By June 30, 2016, 85% of the STEAM teachers at each school will participate in a minimum of 20 hours of district offered, specific STEAM training and instructional best practices to continue supporting current and new teachers beyond the funding cycle. (Aligns with GPRA performance measures d and e)

5.2: By June 30, 2016 teachers at each school will increase knowledge and instructional practices through targeted professional development in STEAM and deliberate instructional strategies measured by staff agreement with three targeted statements. Project staff development activities have: 1) increased my content knowledge, 2) improved my instructional skills, and 3) supported innovative practices. Results for 2014 will show a minimum 50% agreement, 75% agreement in 2015, and 90% agreement in 2016.

5.3: By June 30, 2016 Staff responding to items on an online survey will agree with all four statements: 1) I participate in collaborative learning teams 2) Collaborative learning teams meet

regularly, 3) Team members reinforce strategies learned in staff development, and 4) there is collaboration among team members. Results for 2014 will show a minimum 50% agreement, 75% agreement in 2015, and 90% agreement in 2016.

***BPS MSAP Goal 6:** Implementing the STEAM themed programs at four MSAP schools will provide a high quality education enabling all students to succeed academically and realize their full potential to continue on to post secondary education or a career of their choice.*

Performance Measure Outcomes:

6.1: Annually, staff at all four schools will demonstrate an increase in responses to an online survey of five statements: 1) My magnet classroom instruction includes innovative, challenging instructional materials and content that promote diversity and choice. 2) I am using a minimum of 3 new MSAP-identified research-based "best practices" this school year. 3) I use strategies that encourage students from different racial and ethnic groups to interact. 4) My magnet school provides students with a resource-rich, interactive learning environment. 5) Magnet curriculum includes and ensures students develop 21st Century Skills. Results for 2014 will show a minimum 50% agreement, 75% agreement in 2015, and 90% agreement in 2016.

6.2: Annually, students at all four schools will demonstrate increased responses to an online survey of five statements: In my classroom(s), 1) Students work together in groups. 2) I have worked with most of the students in my classroom (core classes). 3) The teacher(s) allows me to demonstrate my learning through projects and/or class presentations. 4) I feel my teacher(s) care about me and about my fellow classmates. 5) I am developing 21st century learning skills. Results for 2014 will show a minimum 50% agreement, 65% agreement in 2015, and 85% agreement in 2016.

6.3: Annually, parent data from all four schools will demonstrate an increase in responses to an

online district parent survey rating how well their children are learning eight identified 21st skills: teamwork; effective communication; meaningful projects; practical use of technology; real-world issues; research; organizational skills; personal character. Targets will be established for 2015 and 2016 from the baseline data collected in 2014.

(a)(ii)(B) Attaining specific outcomes within the project period

The above referenced performance measure outcomes are reasonable and attainable within the project period. The multi-tiered MSAP management plan with shared responsibilities enables Brevard to continuously access/plan, design/do, implement/check, and act/evaluate for assurance of program effectiveness and attainment of specific outcomes. Utilizing this process of continuous improvement enables all stakeholders to be informed, engaged, and vested in the immediate and long-term success of the MSAP program. Brevard Public Schools establishes in its mission statement a vision of academic excellence and responsive leadership based on the continuous improvement model. Through the district management information systems, detailed descriptions of a variety of student data are available to all stakeholders. District and school-based annual improvement plans provide data-driven actions to address differentiated accountability. All magnet schools in the district are part of this continuous improvement process as they monitor program outcomes based on indicators which inform and direct future improvement efforts through the use of the district’s Magnet Continuous Improvement Model (Appendix B.8).

Through the use of this continuous improvement model (CIM), program outcomes are enhanced as this model provides for collaborative and continuous planning of program excellence by all stakeholders identified in the management plan. The district is committed to high standards and a professional teaching culture marked by shared purpose, collegiality,

innovative spirit, and continual learning. This CIM instrument measuring quality program performance is essential for ensuring attainment of specific outcomes.

(a)(ii)(C) Attaining specific outcomes that are measurable and quantifiable

The Brevard Public Schools Continuous Improvement Model provides a clear process for all stakeholders to be engaged in progress monitoring of MSAP program outcomes. As outlined in the Evaluation Plan section, each goal is tied to specific assessment methods. All assessment methods will collect quantifiable data and will be monitored throughout the entire three year funding cycle.

The MSAP evaluation plan, developed by the external evaluator, includes both summative and formative components. The evaluator will meet with and maintain communication with the project director and other district personnel as required to provide measurable and quantifiable reports.

(a)(ii)(D) Attaining specific project outcomes to determine progress in meeting outcomes

Over the three year period there will be multiple opportunities to assess the progress toward meeting intended project outcomes as outlined on the Timeline for MSAP Evaluation Activities schedule in appendix C.9. Led by the external evaluator, a two-person team will visit each school three times per year. In preparation for the visit, the site-based leadership team completes a template, developed by the external evaluator and is aligned with the goals and performance measure outcomes of the project. At site visits, evaluators and site-based staff discuss the template and current implementation progress. Evaluators also attend training sessions; conduct school walkthroughs; visit classrooms; hold focus groups with teachers, students, administrators, and parents; survey stakeholders; and conduct classroom observations to document the implementation of new instructional strategies and the use of magnet curriculum

units. Following each visit, project management receives a written report. These written, formative evaluation reports document the implementation of the project and compare actual progress to expected progress as described in the original grant application. Areas of strength and areas needing improvement, recommendations, are summarized. At subsequent visits, the project manager and school representatives provide updates on recommendations included in the previous site visit report. As needed, the evaluators make oral presentations of findings to other administrators, supervisors, and/or School Board members interested in project outcomes.

(a)(iii) Utilization of resources and key personnel to achieve the objectives of the project

Brevard’s MSAP Project Director and Magnet Principals will review the project objectives and monitor compliance in the following ways: MSAP Coordinating teachers will be required to complete weekly monographs to include progress toward performance measures and create goals for the following week. Monthly accountability meetings will be held to determine progress towards measures. Site visits will occur on a monthly, quarterly, and annual basis by the Project Director and the External Evaluator. Quarterly updates will be formally reported twice annually during the Magnet Governance Advisory Council meetings. Annual program evaluation and annual performance appraisals will reflect the performance-based progress of each MSAP funded position. Tasks will be assigned through the management plan.

(a)(iv) Equal access and treatment for eligible project participants

It is the policy of the School Board of Brevard County to offer opportunity to all students to participate in appropriate programs. MSAP coordinating teachers and guidance counselors will collaborate to disaggregate data on the student enrollment in STEAM related courses and extracurricular participation by sub-groups. Enrollment for major ethnic groups, underrepresented populations, and students with varying abilities will be examined. Through

directive counseling and advisement participation and performance of these groups will increase. Assistance through before/after school programs for tutoring and mentoring will be provided for academic support. Adaptive equipment for students will be provided in accordance with the student’s individualized education program. Guidance counselors will assist teachers and extracurricular sponsors in monitoring student progress and implement intervention strategies required for successful participation and performance.

As outlined in the BPS MSAP Management Plan [(a)(ii)] each MSAP Coordinating Teacher will report on recruitment efforts during weekly reports, monthly Coordinator meetings, and bi-annual Governance meetings. The MSAP Coordinators will create a unique STEAM recruitment showcase for feeder school visits and recruitment shows/fairs. Coordinators will engage teachers, students, and parents to highlight what a magnet school is and what it is not. Through the use of current pictures, videos and student friendly descriptions the MSAP Coordinators will paint a picture of “a day in the life of a magnet student.” The showcases will inform stakeholders in the feeder schools, and the community at large. Students will be invited to shadow a current STEAM magnet student for the day on an “educational field trip.” The MSAP Coordinators groom students to be mentors for this shadow process, and the shadows follow the mentor for an entire day. These shadow experiences solidify whether or not the STEAM rigor and the innovative curricular choices are attractive to the incoming student. In conjunction with the morning drop off for the shadow day, parents are offered a guided tour of actual STEAM classrooms in action. Transparency and honesty about the magnet curriculum, school location, before and after school STEAM innovations, extra-curricular STEAM offerings, and school safety are paramount to the success and trust-building process for the parents and students. The questions that must be answered by the MSAP Coordinators are; “Why should I send my kid to a

magnet school rather than the zoned school in my neighborhood?” and “What is special about a magnet school?” The first hand view of the school in session helps the parents truly experience the power of the BPS STEAM magnet schools. Offering shadow experiences and tours is an extremely successful past practice for BPS Magnet Schools, and will remain a recruitment effort with the MSAP 2013 funds.

In addition, MSAP Coordinators will offer several open houses and STEAM nights to showcase programs, course offerings, and STEAM themes. Parents from feeder schools with 65% or higher majority rates will be invited to engage with their children while taking part in hands-on activities throughout the school. In addition, teachers, administrators, and counselors will give guided tours while explaining the STEAM infusion throughout the school. Students and parents will be invited to attend Logo Robotics competitions, arts productions, and theme nights to become a part of the school prior to application.

(a)(v) Recruiting students from different social, economic, ethnic, and racial backgrounds

The selection of students is in accordance with the School Board of Brevard bylaws and policy 2260 regarding nondiscrimination and access to equal education opportunities declares to provide an equal opportunity for all students, regardless of race, color, creed, disability, religion, gender, ancestry, age, national origin, place of residence within the boundaries of the District, or social or economic background, or any other legally protected characteristics, to learn through the curriculum offered in the District. Strategic recruiting efforts at feeder schools with majority populations over 65 percent will ensure no minority group isolation occurs at the feeder schools. The choice timeline, with years of proven effectiveness, has been used by schools and parents. Under the direction of the district office of school choice, marketing choice fairs will be held, magnet school opportunities will be made available in the community on billboards,

marquees, BPS television promotional videos, brochures, and the district website.

(b) Quality of Personnel

Critical to the success of the MSAP program is identifying key personnel at the district office, the four schools, and externally for evaluation. The following chart provides an overview of these personnel and the funding source for each. As shown there will be 70 key personnel associated with the program, of which 21 positions will be funded through the grant and 49 funded through district operating funds.

Location	Personnel	In Place	To Be Hired	FTE	Funding Source	
					District	MSAP
District	MSAP Project Director	X		1		1
Schools	Administration (4 Principals, 4 Assistant Principals, 4 Guidance Professional)	X		12	12	
Schools	STEAM Change Agents	X		20	20	
District	STEAM Resource Teacher Support	X		10	10	
Schools	11 MSAP Coordinating Teachers / 7 STEAM Support Personnel		X	18		18
Schools	MSAP Project Accounting Specialist		X	1		1
District	Directors of Elementary, Secondary, and Middle School Programs, and School Choice	X		4	4	
District	Budgeting Director, Accounting	X		3	3	

	Manager, and Fund Specialist					
External	DKH Consulting, Inc. MSAP Evaluation		X			1
Total					49	21

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

Selection of Brevard’s Magnet Schools Project Director is critical to the success of the program. The selection criteria involves finding an individual with the following credentials, abilities, and proven instructional leadership: masters degree, certification in educational leadership, proven experience with the Magnet Schools Assistance Program, state/federal grants management, ability to manage a multi-faceted project through quarterly and annual reporting, the ability to meet deadlines, and work with educators from diverse backgrounds providing coaching and mentoring.

The district has identified Mrs. Cari Kupec as the project director as she exemplifies all of the selection criteria and is the most qualified individual. Her experience with MSAP is extensive as she served as an arts coordinator teacher at McNair Magnet Middle School for three years and was promoted to assistant director of school choice, where she served for one and a half years overseeing magnet, charter, and other district choice school programs. Because of district economic and budget constraints the office of school choice was reduced to one director and she was assigned to an elementary school where she served as Assistant Principal for three years. In this role she set an example of outstanding instructional leadership. When the district received the Race to the Top (RTTT) grant (2010-2013), Mrs. Kupec was selected as the most qualified candidate to lead the reform effort as project manager, her current assignment. As required through the RTTT scope of work, she manages quarterly compliance and reporting on

such topics as: teacher and principal appraisal systems; Career and Technical Education; Common Core implementation; installation of a single sign on learning management system; district-wide professional development; grant writing; and initiating a RTTT University Collaboration committee. Her resume and full qualifications can be reviewed in appendix D.10-11. Ms. Kupec has worked to develop shared leadership of the RTTT project and immediately upon the district receiving notification of the MSAP award she will begin a seamless transition from the RTTT project manager to the MSAP project manager.

Mrs. Kupec has a strong relationship and an established positive rapport with school administrators at the four proposed magnet schools. Her experience as a member of the superintendent’s leadership team keeps her involved in the most up-to-date educational reform systems and her intense passion for continual learning makes her a great choice as the change catalyst for the MSAP project director.

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

Identification of qualified principals, assistant principals, and guidance professionals who are instructional leaders and champions for the magnet program is critical to the success of the project. The instructional leadership team for each school is comprised of the principal, assistant principal for curriculum, and a dedicated guidance counselor working together to support teachers, staff, students, and parents. They are the catalyst for the school-wide culture shift infusing STEAM across the curriculum, embracing the diversity of the school population, setting high expectations for all students and teachers, ensuring implementation of the program with fidelity, and leading by example. Each of the four schools included in this proposal have instructional leaders who exemplify these qualities and are ready to accept the challenges and rewards of implementing a school-wide magnet program.

Golfview Elementary Magnet School Instructional Leadership Team

Principal: Mrs. Terri Moeller has been principal of a magnet program with four themes: Performing Arts; Math and Science; MicroSociety; Arts and Cultures within one school for the past nine years. Managing a magnet school successfully on a modified school calendar gives her unique experience in recruiting and sustaining a magnet program. (Resume Appendix E.12)

Assistant Principal: Ms. Karen Ivery has 21 years experience. She is currently pursuing her doctorate on the influence of educational leaders on student achievement in high poverty schools. Ms. Ivery holds various district awards and leadership experience. (Resume Appendix E.13)

Guidance Counselor: Mrs. Angela Fullmore has 21 years experience in secondary schools, and a proven track record of helping all students achieve high levels of academic achievement on state and district performance goals. (Resume Appendix E.14)

McNair Magnet Middle School Instructional Leadership Team

Principal: Mrs. Rosette Lipscomb-Brown has been the principal at McNair Magnet School since 2001. She grew up in the McNair neighborhood and attended the school when it was a segregated minority elementary school. She has personally experienced negative effects of minority group isolation and inequitable education. Her stake in the success of the magnet school program is immense, and her commitment is driven by the belief that all children and adults deserve equal opportunities regardless of race, religion, color, national origin, gender, age or disability. Mrs. Brown has served for several years as a recruiter for the School Board of Brevard County, visiting minority colleges and universities to encourage new minority graduates to seek employment in the Brevard County Public School system. A former “neighborhood kid,” Mrs. Brown has been able to muster strong grass roots support for the magnet school concept and is

responsive to community needs with her open-door policy and shared decision-making philosophy. She is a well-known and respected leader in the district and works effectively with district level personnel, community and business partners, teachers and staff, students and parents from all strata of society. (Resume Appendix F.15-16)

Assistant Principal: Mr. Echevarria was appointed to McNair in 2005. Over his 15 years with the district he has served as an elementary classroom teacher, and middle school dean. He is an integral part of the school guidance team, coordinates ESOL activities, develops the school schedule, and oversees the academic support program. (Resume Appendix F.17)

Guidance Counselor: Ms. Kristen Merrick has served at the school for six years. She holds a master’s degree in school guidance and counseling. She counsels students and parents to ensure correct course selections are made. Mrs. Merrick has a strong background in work with minority and non-minority students, at-risk students, and high-achieving students. (Resume Appendix F.18)

Stone Magnet Middle School Instructional Leadership Team

Principal: Mr. Andrew Johnson has served as principal at Stone since 2005. Prior to this assignment he was the assistant principal at McNair Magnet Middle from 2001-2005 covering the period the school received MSAP funding. He is intimately aware of the MSAP requirements as he was involved with external evaluations, compliance, and annual reporting. He has tireless drive and enthusiasm extending back to his military career. He is motivated to encourage students from poverty to “beat the odds,” and he does not take no for an answer. He was the Middle School Principal of the Year for Brevard in 2008. He received the Onyx Award for Excellence in Education in 2010. He was instrumental in decreasing the out of school suspensions and tardiness rates by 75 percent. He received the Florida Department of Education

Matchmaker Grant four times, and Stone received the ATTAIN award for Excellence in Education in 2010. Mr. Johnson recently led the charge of a diversity discussion with his principal colleagues and area superintendents to discuss desegregation issues, and how to improve access for all students to a rigorous curriculum. (Resume Appendix G.19-21)

<p>Assistant Principal: Mrs. Janee Campbell was appointed to Stone in 2012 and has been an educator since 1993. She holds bachelor’s degrees in marine biology, biology, and secondary education, master’s degree in educational leadership and is pursuing a Doctorate in Instructional Leadership. She is an vital member of the STEAM team and instrumental in the creation of the school’s pathways and innovative magnet curriculum. (Resume Appendix G.22)</p>	<p>Guidance Counselor: Mrs. Kelly Persing has served at Stone since 2007. She is instrumental to the creation of a seamless whole school magnet STEAM theme with options and access for all students to succeed. As a social science major in college, Mrs. Persing has a diverse and wide-ranging perspective of a school community. She is currently pursuing a master’s degree in Comm. Counseling to better serve the population at Stone through directive magnet counseling. (Resume Appendix G.23)</p>
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Palm Bay Magnet High School Instructional Leader Team

Principal: Mr. John Thomas has served as the principal at Palm Bay High School for 15 years. He is in his 37th year with BPS and is more committed than ever to his school, community, and the magnet program. The foundation of his educational leadership philosophy lies in his belief that schools should create opportunities for students to participate and reach their full potential. His commitment to the students of his community extends two generations of his own family, as his children and now grandchildren are attending the school. Mr. Thomas overwhelmingly enthusiastic about the opportunity to lead his school in a cultural change that will be recognized

through implementation of the innovative STEAM magnet program. (Resume Appendix H.24)	
<p>Assistant Principal: Mrs. Lena Wiebelt has served in this position since 2005 and has been with Brevard Public Schools for 15 years. Her knowledge of Common Core Standards and Differentiated Instruction will be beneficial as she supports her teachers in implementing rigor across the curriculum. Mrs. Wiebelt is energized about the innovative programs that the magnet school opportunity will bring to the Palm Bay students and community. (Resume Appendix H.25)</p>	<p>Guidance Counselor: Mrs. Stefany Colona has served at the school for 13 years and has been with Brevard Public Schools for 22 years. As a 1984 Palm Bay High School graduate, Mrs. Colona attributes her love of education to her experiences at Palm Bay High School. Mrs. Colona’s professional experience as a special education teacher and guidance knowledge will aid in developing programs of study to reach all students academic levels. (Resume Appendix H.26)</p>

The instructional leadership team at each school has identified key personnel as STEAM teams serving as the change agents for the school. These individuals were selected based on experience, drive, commitment, ability to lead and inspire, and proven record of being a catalyst for change. They facilitated faculty buy-in sessions at each school to create the project design and scopes of work for their respective schools. In addition, they assisted with the distribution of the community and stakeholder surveys to gain input from their feeder schools and surrounding communities. Each of the STEAM area change agents from the schools is partnered with key district personnel to create a cadre for content area support. Each of the STEAM area change agents from the schools is partnered with key district personnel to create a cadre for content area support. The following chart provides the name and appendix identification for each of the cadre members resumes:

STEAM Content Area Change Agent Cadre					
Site	Science	Technology	Engineering	Arts	Mathematics
Golfview	N. Holmberg Appendix I.27	L. Smith Appendix J.34	E. Wallace Appendix K.39	D. Pringle Appendix L.45	L. Benjamin AppendixM.51
McNair	J. Winet Appendix I.28	J. Wales Appendix J.35	R. Widmeier Appendix K.40	L. Hill Appendix L.46	S. McDougle AppendixM.52
Stone	R. Regan Appendix I.29	G. Shupe Appendix J.36	D. Coleman Appendix K.41	H. Targee Appendix L.47	W. Russo AppendixM.53
Palm Bay	L. Feronti Appendix I.30	B. Clark Appendix J.37	M. Conroy Appendix K.42	B. Fine Appendix L.48	S. Van Bever AppendixM.54
District	G. Davis Appendix I.31, K. Bragg Appendix I.32, E. Short Appendix I.33	M. Frey Appendix J.38	D. Soboleski Appendix K.43 D. Avvampato Appendix K.44	B. Geiger Appendix L.49 C. Johnson Appendix L.50	J. Wagner AppendixM.55 K. Bragg Appendix I.32, D. Gard AppendixM.56

The following chart provides an overview highlighting years of experience and qualifications for each of the above identified STEAM cadre members:

SCIENCE
Golfview – <u>Nicole Holmberg</u> , Science Coach, 6 years experience/Biologist with Florida Fish and Wildlife Conservation Commission/Environmental Specialist with Florida Department of Environmental Protection/Field experiences of Ecology of Birds, Manatee research and Kinosternids of Boyd Hill Nature Park/Florida Master Naturalist

McNair -Joy Winet, Science Teacher, 10 years experience/Published three articles relating to the effects of hypoxia and oxygen consumption on organisms/Asst. Coordinator of FL Technology Future Educators of America/Research-Using GPS technology

Stone -Rich Regan, Science Teacher, 28 public schools K-12, 9 -post secondary years of experience/curriculum coordinator and instructor of Gateway to Engineering/Technology, Science, Math and Resources for Tomorrow/co-director of regional science fair/coordinator of Space Coast Science Center Summer Programs

Palm Bay -Lauren Feronti, Science Teacher, one year experience/S.T.E.M. training/iPAD certified/Anatomy and Physiology student teacher

District - Ginger Davis, Secondary Science Resource Teacher, 36 years K-12 experience, 6 years higher education/Intracoastal Science Fair Director/President of the Florida Association of Science Supervisors/Publication: *Making Sense of Integrated Science* Kim Bragg, Middle School Science Resource Teacher, 28 years experience/Florida Department of Education Mentor Teacher/NASA Space Education Teacher 1998/Facilitator and presenter for national, state and district workshops promoting innovative teaching strategies Ed Short, Elementary Science Resource Teacher, 40 years experience/Fl. Association of Science Teachers Florida Outstanding Educator of the Year Award in 2008-09/inducted into the Space Coast Science Education Alliance Exemplary Science Teacher Hall of Fame in 2007

TECHNOLOGY

Golfview -LaToya Smith, Library Media Specialist, 9 years experience/Facilitator of a Television Production course/Creator/Facilitator of Forensic Science Curriculum/Creator/Facilitator of 21st Century Technology Curriculum/Instructor of technology applications such as Google docs, story boards, video projects

McNair -Julie Wales, Library Media Specialist, 36 years experience/Technology Professional Development Trainer and Presenter/Software trainer/Recipient of the 2012 National Library Award

Stone -Gordon Shupe, Technology Specialist, 30 years public schools, 7 years higher education/Apple Certified Professional Development Provider- Presenter to K-12 and post secondary schools/Online Projects Data Manager/Facilitator for workshops on computer applications

Palm Bay -Buster Clark, Math, Drafting and Design Teacher, 6 years experience/AutoCAD Certified/Tech Ed Certified/Certified for the AP College Board in Statistics

District -Matt Frey, Educational Technology Manager, 20 years experience/Educational Technology Manager/Integrations District-wide/Designer/Trainer for District’s technology training programs/President of the Florida Council of Instructional Technology Leaders

ENGINEERING

Golfview- Elizabeth Wallace, Lead Magnet Teacher for Math and Science, 19 years experience/Extensive experience in guiding students in the steps of the engineering design process and testing.

McNair -Rich Widmeier, Science Teacher, 16 years experience/Coach for Lego Robotics/Field Research on the behaviors of the Black Skimmer/Laboratory and Field Research of natural habitats

Stone - Diane Coleman, Science Teacher, 22 years experience/Coach for Lego Robotics/AVID trained in Science/Facilitator/Trainer of Brevard Learns about Science and Technology

Palm Bay -Matt Conroy, Engineering Teacher, 32 years experience/President of the State of Florida’s Assoc. for Supervisors of Technology Education/Developed award-winning

Technology Education programs/Facilitator for vocational technical programs

District –Dennis Soboleski, Career Technical Education Resource Teacher, 29 years experience/District lead for STEM education/member of the Florida STEM Education Council/Florida Chair International Technology and Engineering Educators Association

Devona Avvampato, Career Technical Education Resource Teacher, 13 years experience/Field Engineer for Honeywell Computer Systems/Electronics Technician

ARTS

Golfview – Debi Pringle, Arts Magnet Lead Teacher, 31 years experience/20 years of dance training/musical theater experience/musical and theater production

McNair -Lisa Hill, Performing Arts Teacher, 9 years experience/Featured Performer for National baseball games/Choir Director/theater manager/stage craft and set design manager/musical production director/costume design coordinator

Stone Middle -Heidi Targee, Art Teacher, 16 years experience/public schools K-12, 6 -post secondary/Facilitator for Professional Development on Arts Education/Art Educator at Foosner Art Museum/Facilitator for the Museum of Art, Rhode Island School of Design

Palm Bay -Barbara Fine, Graphic Design Teacher, 5 years experience/Curriculum designer of project based software applications/Web designer/Adobe Certified Instructor

District -Bridget Geiger, K-12 Arts Resource Teacher, 32 years of experience/Co-Coordinator for Kennedy Space Center Arts Integration Seminar/National Board Certified Teacher/Writing team member for FLDOE Visual Arts Course Description, Cynthia Johnson, K-12 Music Resource Teacher, 33 years experience/President of the Florida Music Supervisors Association/National Board Certified teacher in Early Adolescence Through Young Adulthood Music/Mentor Teacher for the Arts District-wide

MATHEMATICS

Golfview –Lorri Benjamin, Mathematics Coach, 10 years experience/STEM Coach/District Staff

Development for Math Instructor/Member of the Florida Council for Teachers of Mathematics/Math Bowl Coach/Creator/Facilitator of Forensic Science Curriculum

McNair - Sharon McDougle, 23 years experience/Mathematics Department Chair/Peer Coach/Common Core Trainer/Member of the school leadership team

Stone -Weston Russo, Mathematics Teacher, 2 years experience/Trained in AVID Math Strategies/Math Counts coach

Palm Bay -Steven Van Bever, Mathematics Teacher, one year experience /Upper level math teacher; Calculus I and II/Trained in foundational area of engineering

District -Julie Wagner, Secondary Programs Math Resource Teacher, 13 years experience/Facilitator of the Harris STEM workshop/Certified with the National Board for Teaching Standards/Presenter at FCTM for hands on graphing Quadratics and Polynomials, Kim Bragg, Middle School Math Resource Teacher 28 years experience/Florida Department of Education Mentor Teacher/NASA Space Education Teacher (1998)/Facilitator/Presenter for national, state and district workshops promoting innovative teaching strategies, Diane Gard, Elementary Math Resource Teacher, 32 years K-8, 8 years higher education /FCAT Content Item Review & Standards Level Setting Committees for FLDOE/member of the Office of Mathematics and Science Advisory Board

These outstanding STEAM Change Agents will work together to share their knowledge and experience with each other, with faculty members at the four schools, and ultimately with other schools in the district seeking to implement a STEAM interdisciplinary educational model. They will also assist in the selection process of the MSAP Coordinating Teachers hired and

assigned to each school. MSAP Coordinating Teachers are required to have a master’s degree, certification in education, and at least three years of successful teaching experience. Their overarching duty is to provide support necessary to implement a quality magnet program within the schools. Within the schools they will support recruitment and retention efforts, grant development for program sustainability, coordination of the professional development plan, planning special programs, and writing curriculum. At the district level the MSAP Coordinating Teachers are expected to serve on various MSAP committees as outlined in the management plan and serve as the community liaison for all magnet related program information. Full details of the job description are provided in appendix N.57-58. In addition, the candidates’ instructional personnel performance appraisal will be reviewed. The positions will be posted for a minimum of five days on local and national job sites. Mrs. Cari Kupec, MSAP project director, will review the applicant pool using non-discriminatory practices and abiding by all federal labor laws, state statutes, and local Board Policy 3122-Equal Employment Opportunity. Once the applications have been screened to meet the minimum requirements, Mrs. Kupec, will convene a hiring committee (first round) comprised of magnet principals and choice office coordinators. All applicants will be interviewed through a targeted selection style interview. First round interviews will not be site specific. The first round interviews will shorten the candidate pool to the top 15-20 candidates based on the job description. Second round interviews will be held at the school site with a hiring committee comprised of the magnet project director, magnet principal, magnet STEAM change agents’ cadre members. Second round interviews will be specific to the magnet site based on “fit” for the school and population. All other MSAP support personnel will be required to have a high school diploma or other qualifications per the job descriptions see appendix O.59-62 and will go complete interview process. The Director of the Office of School

Choice will provide support to the Magnet Project Director throughout the entire MSAP cycle.

The external evaluation will be conducted by Deidra K Honeywell, Ph.D. She is the president and sole owner of DKH Consulting Services, which was incorporated in August 2002. Since becoming a consultant in 2000, Dr. Honeywell has been an evaluator on three district wide magnet program evaluations and 17 MSAP grant projects—nine of the MSAP grants are/were DKH contracts. Dr. Honeywell began working with magnet schools in 1991 and, in addition to her evaluation experience; she has managed two MSAP projects and was the primary or major contributing author on eight funded MSAP applications. Besides her MSAP experience, Dr. Honeywell has a broad foundation in higher-level mathematics (eight courses) and statistics (four graduate courses), which provides her with a thorough understanding of quantitative and qualitative research and evaluation, as well as the use of various types of data and statistical analyses and processes. She also has managed and has evaluated MSAP grants that established STEM programs at the elementary, middle and high school levels. She has a BA in math education, an MA in gifted education and a Ph.D. in curriculum and instruction. Over 20 years of magnet school experience have provided Dr. Honeywell with a broad foundation in, and extensive knowledge of, desegregation issues, innovative programs, and strategies for ensuring interaction among students from different racial and ethnic groups. See appendix P.63-64 and Q.65-67 for additional details on DKH and the MSAP Scope of Work.

(b)(iii) Teachers are qualified to implement the special curriculum of the magnet schools

Retaining and hiring teachers receiving highly qualified/effective evaluations and holding specific areas of certifications to support the magnet theme are vital to the implementation of an innovative and specialized STEAM curriculum. The following chart shows the degrees held by the teachers at each school:

2012-2013 Degree	Golfview	McNair	Stone	Palm Bay
Level	# / %	# / %	# / %	# / %
Bachelor's Degree	36 / 64.2%	26 / 63.4%	32 / 53.3%	51 / 48.1%
Master's Degree	19 / 34%	14 / 34.2%	2 / 3.3%	52 / 49.1%
Specialist Degree	1 / 1.8%	1 / 2.4%	25 / 41.7%	2 / 1.9%
Doctorate	0 / 0%	0 / 0%	1 / 1.7%	1 / 0.9%
Total All Degrees	56	41	60	106

A major component of Brevard’s Race to the Top educational reform model is implementing a new research-based appraisal system for teachers and administrators created by district leadership teams and professional development division personnel. Teachers earn 21 points from Professional Practices (left side of the chart below) based on Florida’s educator accomplished practices. Student Growth measures and individual accountability (right side of the chart) allow for value added growth measures, collaborative teams focusing on closing the achievement gap, collaboration towards the school improvement plan goals, and accountability for all students in the school through the use of the regression. The appraisal handbook can be viewed on the Brevard Public Schools website at

http://benefits.brevard.k12.fl.us/HR/comp/pas/ipinfo/IPPAS_Handbook_0205%2013.pdf.

Golfview Elementary Magnet School STEAM Academy

for Science, Technology, Engineering, Art, & Math... Forging Full STEAM Ahead!

Golfview Elementary Magnet School STEAM Academy will unite, ignite, and inspire students, parents, faculty, and the community to forge full STEAM ahead in a time of change and revitalization. The instructional leaders of the school are ready to unite to merge the magnet from the closed Gardendale Elementary Magnet school into the Golfview Elementary Magnet School through a STEAM revitalizing. Guided by their magnet mission “*Preparing Students to UNITE, IGNITE, INSPIRE...empowering them with learning skills for career-college readiness, a competitive global market, and active citizenship in the inter-connected 21st century world*” elementary students will receive a well rounded educational program in preparation for future success. The STEAM framework will be infused in every elementary classroom as follows:

S...Unite, Ignite, Inspire through Science students will...

- participate in real-world, hands-on science through hydroponics, aquaponics, gardens, addressing green technologies, the environment, botany, ecology, and general horticulture.
- participate in the study of forensic science (CSI) through our partnership with the Rockledge Police Department and county Medical Examiner, as well as “being there” experiences at the *CSI Experience* (in Orlando, which can also be done online, as well).
- design plans to encourage recycling and conservation on the school campus and in their homes through “being there” experiences with Forever Florida and through a partnership with Keep Brevard Beautiful, developing self-awareness with these initiatives with a goal for a global green awareness.
- experience weekly hands-on science exploration through the use of Full Option Science System kits for inquiry learning in the Science Lab and classrooms.

T...Unite, Ignite, Inspire through Technology students will...

- investigate and invent through the use of mobile technology, thus bridging the digital divide, and allowing them the opportunity to create authentic learning experiences through the collaboration of technology and real world exposure.
- experience video conferencing through NASA and other sources relevant to the curriculum.
- have the opportunity to participate in virtual field trips to enhance their “being there” experiences, thus extending the learning environment beyond the classroom to the borderless communities of virtual learning.
- experience enhanced technology through the use of state-of-the art TV Studio production equipment to create culminating, integrated, socially relevant video reports.

E...Unite, Ignite, Inspire through Engineering students will...

- experience increased involvement in the FIRST Robotics/Lego program, engaging students in developing engineering skills, fostering the use of cooperative learning and team-building.
- have the opportunity to develop engineering skills through the BRICKS 4 Kidz program, which helps to develop engineering skills through self discovery with specific examples (building windmills when discussing renewable energy) .
- experience EIE, “*Engineering Is Elementary,*” through a partnership with the Boston Museum of Science, integrating authentic multi-cultural literature to be used in creating authentic projects.
- have the opportunity to participate in Odyssey of the Mind, a creative problem-solving that provides cooperative student teams the ability to learn creative problem solving,

teamwork, brainstorming, self-reliance, and respect for individual strengths. The Long Term Problem element allows teams to develop a theatrical and engineering solution to a specific situational problem over several months. The Spontaneous Problem element allows students to develop brainstorming skills to solve problems given at the competition.

A...Unite, Ignite, Inspire through Art students will...

- be able to develop communication and media skills through TV and video production, digital video art, and music technology (mixing, editing, and recording).
- be able to develop creative expression through Performing Arts with opportunities to participate in Chorus, Jazz Band, Orchestra, traveling Show Choir, Broadway Junior Productions, set and costume design, choreography, World Drummers, and Orff Instrument Approach, a developmental approach that combines music, movement, drama, and speech into lessons that are similar to a child’s world of play.
- participate in Core Content Integration, utilizing digital and performing arts to create student products.
- have the opportunity to participate in the Future Problem Solving which stimulates critical and creative thinking skills, encourages students to develop a vision for the future, while preparing students for leadership roles.
- be able to participate in the Artist in Residence program utilizing elements of digital imagery, drawing, painting, and prior knowledge to create an authentic project that reflects the Arts, as well as other STEAM initiatives.

M...Unite, Ignite, Inspire through Math students will...

- have the opportunity to engage students in real-world, problem-solving activities that enable them to deepen their understanding of mathematical concepts and ideas.

- have the opportunity to engage in more hands-on, project-based activities.
- be able to participate in a micro society-type experience with the horticulture component, learning how to grow sustainable products in the gardens, track data for accountability (count, weigh produce), and learn how to be an active participant in community service by donating produce to the community Sharing Center.
- have the opportunity to participate in the Future Problem Solving competition, providing motivated, creative, and analytical teams of students the ability to learn to troubleshoot, brainstorm, and implement solutions to community and global problems.

McNair Magnet STEAM Academy

“Touching the World Through Inspiration and Invention”

McNair Magnet STEAM Academy will prepare students to touch the world through inspiration and invention. The school is prepared to take on the challenge of implementing a school-wide STEAM integration with global application. Guided by their mission “*McNair Magnet makes each student a winner by preparing an innovative, arts-infused curriculum design and state-of-the-art education technology through involvement of students, parents, staff, and the community, so that each student reaches maximum potential to become productive individuals in today’s changing society*” students will:

- be able to use technology and higher-order thinking skills to solve problems
- be exposed to and explore STEAM-related career paths
- be prepared to excel in STEAM high school academies
- develop 21st century skills to compete in a global economy
- become engaged and self-directed in their learning
- interact through core classes and electives with students of various backgrounds and races

- have increased awareness of sustainability issues, locally and for the world at large
- learn ways in which STEAM can be used to provide real-life solutions

Through a focus of global extension and emphasis, specifically reaching out with vision and purpose to use STEAM knowledge, skills, and concepts to help (‘touch’) others in the local community, nation, and the world students will explore global environmental and technological issues across the curriculum. McNair STEAM Academies and Inter-Related Strands overview:

Touching the World through Science students will...

- be taught a Common Core based curriculum that will infuse Bio-Technology and the Environment addressing Global Engineering Solutions, including Green Technologies, the Environment, and Sustainability through Botany & Ecology.
- participate in real-world, hands-on science through hydroponics, aeroponics, aquaculture, aquaponics, gardens, and horticulture activities.
- have the opportunity to participate in service learning projects enabling students to provide fresh produce and fish for the local food pantry and meals on wheels programs.
- through cooperative design solutions to encourage recycling and conservation around the school campus and the community. Student leadership skills will be promoted and encouraged to spearhead these movements, which will be tied to our whole school “Global Green” theme.
- Study endangered species and current zoological engineering design of natural habitats, and sustainability in aquaculture at the Brevard Zoo.

Touching the World through Technology students will...

- have access to mobile technologies that assists students to: 1) successfully investigate, learn and produce products for Core Content and Elective classes, and 2) master the technology

skills themselves which are common to various pieces of every changing equipment, software, and Web 2.0 application skills which will be transferable to future technology equipment and venues, regardless of the subject content or specific purpose of the moment. The ultimate goal is to bridge the digital divide not only with technology and software access, but also with qualified individual instructing students.

Touching the World through Engineering students will...

- have the infusion of engineering applications in the core content areas, and through the addition and adaptation of elective classes. Students will experience engineering concepts in all core content classes. Math: Drawing designs using scaling, geometry, and measuring; Calculating costs for materials construction, upkeep and maintenance; Real Engineering Word Problems – Mathematical Solutions; Slopes and graphing (inclined planes related to speed, acceleration, eg. science matchbox car lab; Gathering data; Two-Step Equations [manipulation of scientific equations in science labs]; Solving proportions; Statistics: measure of central tendencies (mean, median, mode) Science: Explore and use equipment created for scientific inquiry – Space Science, Genetics, Life Science, Biotechnology; Create and make inventions; Aerodynamics. Language Arts: Look at Patent Applications and explore the technical writing needed to write them; Read and interpret instruction manuals; Develop detailed procedures for the fabrication and operation of an invention; Research famous inventors and engineers, seeking out especially those from ‘under-represented’ groups, such as women and racial minorities. Social Studies: Investigate inventors and their inventions; Discuss politics related to countries and their inventions; Discuss how inventions have benefited mankind and improved quality of life; Explore architecture and the tools of the time periods used to create them; Study alternative energy

and its impact, especially on Third World Countries; Study global clean water issues and related mortality statistics, especially among children. Raise awareness and solicit student-proposed solutions.

- have the opportunity to choose electives that will include a newly created class entitled Engineering Concepts (I and II), an engaging sequence incorporating many of students’ favorite topics, such as Robotics, Science Olympiad, Solar Car Design, Hydrogen Fuel Cell cars, Woodcraft, 3D CAD, and Engineering is Elementary from the Boston Museum of Science. The second elective added during year two will be Technical Stage Craft: set design & building, programmed lighting, sound engineering. Students completing this elective would ultimately serve as the ‘tech crew’ for the performing arts programs in musical theater, drama, dance, band, and orchestra. A third elective also added during year two and three, will be GIS (global/geo-spatial mapping). McNair will be the only middle school in the district to offer GIS program. This is a combination technology and engineering Career and Technology Education elective which will offer two years of high school credit and industry certification.

Touching the World through the Arts students will have...

- integration of the arts across the curriculum as teachers challenge students to use digital and performing arts to produce products and to creatively design solutions. Students will be expected to show what they know by demonstrating and modeling learning. The integration of the arts ties directly into the common core state standard expectations and the new form of state assessment that the students requiring students to model their learning.
- the opportunity to choose electives that will provide digital and expressive arts experience and integration. Digital Visual Art; Set Design; Choreography Creation through

technology; Communications (publishing, web design, TV and video production); Music Technology (song craft, mixing, editing, recording); Photography & Media Production; Advertising (produce advertising/public relations materials for all academies); Photographic/video history of academies; Careers in the Technical Arts. Beginning & Advanced Visual Arts; Beginning & Advanced Drama; Musical Theater; Chorus; Beginning & Advanced Dance; Beginning & Advanced Band; Orchestra; Piano Keyboarding; TV & Video Production

- the opportunity to participate in extra-curricular opportunities beyond the school day to include World Drummers, led by Assistant Principal Mr. Echevarria, Dance Team, led by Dance Teacher, Ms. Conwell.

Touching the World through Mathematics students will be...

- shown how Statistics, Graphing, Data Tables, Charts, Measurement & Conversions, angles, geometrical logic, and Scientific Notation skills they are learning in math 2, pre-algebra, algebra, and geometry classes are all incorporated in real-life problems and challenges.
- challenged with hands-on, project-based activities that incorporate mathematical standards applied to real world applications.
- introduced to various mathematics high-interest careers incorporating the use of mathematics, including gaming, web-design, and sound engineering will be explored. Math will not seem an isolated subject as students are mastering concepts, applying their knowledge across the curriculum solving real world problems.

Stone Magnet Middle School

S.T.E.A.M.@STONE: Innovations in Interdisciplinary Education

Stone Magnet Middle School will bring “*Innovations in Interdisciplinary Education*”

through the S.T.E.A.M.@STONE magnet program. Guided by the magnet mission “*To empower innovative, collaborative, critical thinkers with interdisciplinary curriculum incorporating Science, Technology, Engineering, Arts, and Mathematics to meet the challenges of our global society*” all students will:

- develop Science, Technology, Engineering, Arts, and Mathematic skills needed to be global citizens
- value lifelong learning that supports continued intellectual, physical, and social development
- interact cooperatively and collaboratively with others in a variety of real-world challenges
- create critical thinking skills, including decision-making, problem-solving, and inquiry techniques
- prepare technology fluent learners who can interpret and produce compelling digital products

The S.T.E.A.M.@STONE framework will be infused across the curriculum as follows:

The S. in Science -Students in the Stone Middle School STEAM Magnet Program will experience a unique and exciting hands-on science curriculum with an emphasis on high-tech inquiry science. Technology will be infused into all academic subject areas with students using technology as a productivity tool. High achievement, positive attitude toward learning, and cooperative student-teacher interactions define science at Stone. The Stone Middle School STEAM Magnet Program will provide students with standards-driven, inquiry-based science instruction that includes opportunities for challenged based learning.

The T. in Technology - The Technology Component of the STEAM Focus is both prominent in one sense because it is not a separate discipline (as the others are), but integral to how modern society (the learners) accomplish tasks in all of the other disciplines. Stone will continue to build on two decades of technology excellence with the leadership of distinguished

educators who are actively watching for tools that will encourage learning, communication, and collaboration.

The E. in Engineering - Engineering is the element that ties all the parts of S.T.E.A.M together. The E is the process and the product that allows each area to work. Engineering is a collaborative effort and it allows students to think creatively to grow to produce something in the set of steps that allows it to engage students along their paths. The engineering design process will be present in every classroom regardless of the subject the students are being taught. Through the E process students are using their skills of thinking to solve problems and create solutions to fix the problem. It is not only the process in getting there, it is teaching the students how to think through a situation whether it be math, language arts, electives, arts, social studies or even science. In the first year of infusing STEAM at Stone, the school will introduce the Engineering Design Process through all classes. The engineering design process is the set of steps that a designer takes to go from identifying a problem or need to creating and developing a solution that solves the problem or meets the need. The fundamental principles of engineering (especially the design process and systems thinking) provide a solid framework to design and organize a curriculum. Engineering provides an ideal platform for integrating mathematics, science, arts, and technology. It promotes learning across the disciplines. Starting in the second year the school will have a Robotics/Engineering Elective. It will be an Educational Robotics Lab for 24 beginning robotics students per semester.

The A. in Arts - The role of art and design in fostering innovation: putting art and design in the center of STEM (Science Technology, Engineering and Math) - an innovation revolution at Stone. The arts curriculum designed and taught by a Nationally Certified Teacher with training from one of the most prestigious art and design schools. The school will build on individual

successes of the arts foundation at the school to become an arts-rich school incorporating more arts experiences such as, digital media arts, dance, and photography.

The M. in Mathematics - Mathematics education at the secondary level today is at a crossroad. Traditionally, class tends to follow the format of direct teach, note taking, followed by practice at home. When teachers spend most of their time direct teaching, student engagement tends to decrease (Benedict, M & Hoag, J 2004). Students who are raised in the 21st century come to the classroom with different needs and challenges when compared to those 20 years ago. The teachers at Stone will take the challenge of integrating technology into their curriculum in order to engage students with a yearning to be instantly satisfied, stimulated, and connected in as many ways as possible.

Palm Bay High Magnet School

“Academy of Engineering and Computer Science & Academy of Health and Public Affairs”

Palm Bay Magnet High School will be the first magnet high school in Brevard. The school will offer school-wide STEAM focused interdisciplinary programs through the Academies of Engineering/Computer Science & Health/Public Affairs. Guided by their mission *“Palm Bay High Magnet School will provide high quality, innovative instructional programs that promote choice, equity and diversity, and academic excellence for all students. We are committed to offering high interest STEAM related programs that excite and prepare our students to continue to a higher education or be viable to directly compete in the world workforce.”* The entire school believes that every student can learn and perform at a higher level regardless of the socioeconomic status, ethnicity, or racial background.

As a Science, Technology, Engineering, Arts, and Math (STEAM) magnet school the focus of the curriculum at the Palm Bay will be committed to providing every student, regardless

of their academic level, with a college preparatory program that will enable them to be successful in the 21st century. Palm Bay will provide students with academic guidance and support in order to become productive citizens that emphasize ethics, moral values, and strong character. The goal of the magnet program will be to connect Math, English, Science & History (MESH) coursework with “Learning Focused” (Thompson, 2012) principles under the STEAM framework (Yakman, 2012) to provide a foundation for all students to continue to a higher education or be viable to enter directly into the workforce.

The STEAM framework will be infused school-wide through programs of study pathways in each of the academies as follows (see appendix R.68, S.69-71, T.82-74, U.75-77, and V.78-80 for full academy designs and programs of study pathways):

(c)(i) Promotion of desegregation and student interaction

Recruitment for all four schools will focus on reducing minority group isolation by attracting a diverse population of students. All recruiting efforts will clearly communicate the importance of being a member of a culturally diverse community and that tolerance for others and mutual respect is the expectation. The district’s voluntary desegregation plan and supporting documents are provided with the required enrollment tables #1-4 outlining additional methods of recruiting and promotion of desegregation.

The following **STEAM related activities** will be used by the four schools to increase interactions among students of different social, economic, ethnic, and racial backgrounds:

Golfview Elementary Magnet School - Within this collaborative learning environment is a rich multicultural blend of students of diverse needs, socio-economic backgrounds, and academic abilities. Golfview strongly believes that under a STEAM initiative every individual student can find their unique learning style and grow through self discovery. Among the

disciplines this will be achieved through hands-on real world application and problem solving. Students will engage in interdisciplinary, cooperative projects to become knowledgeable in their subject matter and see the connection to their community and the global network. The vision for Golfview students is to empower them for the 21st century by applying skills that will ensure college and career readiness. This philosophy of self-motivated students who take responsibility through inquiry and problem-solving will have the initiative and the drive to be competitive in a global market and an active citizen. The motto of “full STEAM ahead” will be the driving force and focus for our students, staff, and community to unite the passion of learning and success.

Golfview has the unique opportunity to unite two school communities; Gardendale Elementary Magnet, which the district was forced to close next school year, with Golfview. New friendships and cooperative relationships will be developed among the diverse social, economic and ethnic backgrounds of the students. Teacher rapport will develop as they collaborate and work cooperatively on the STEAM teaching framework in their new environment. Students will benefit from the blending of the two school communities because of an abundant amount of talents and resources that will be shared with the mutual purpose of student success. The unifying commitment to forge “full STEAM ahead” by uniting, igniting, and inspiring teachers, students, parents, and the community in the realization of forming a cohesive working environment with a shared purpose.

With STEAM classes being formulated to focus on self-discovery students will be given multiple learning opportunities in the areas of science, technology, engineering, arts, and math through core instruction and interdisciplinary teaching. This instructional design will integrate the STEAM incentive throughout the academic day and allow learning gains for high performing students while simultaneously filling the learning gaps for Exceptional Student Education,

English Speakers of Other Languages, and intensive remediation students. A variety of learning strategies will be utilized to allow the students to experience real-world hands-on problem solving and creating a sense of trust and connectedness which will increase student confidence. Golfview will unite, ignite, and inspire learning with the following STEAM learning strategies focused to provide students with engaging and exciting opportunities for student growth through a framework that includes all types of learners:

- Student directed learning
- Peer coaching
- Hands-on learning
- Document based questions
- Arts and technology integration
- Integrated thematic instruction (HET-Highly Effective Teaching- Susan Kovalik)
- Small group instruction
- Collaborative group projects
- Higher order thinking and questioning skills
- Real-life applications and problem solving
- Cooperative learning groups

Participation in before and after school programs and extracurricular activities will enhance the STEAM initiative. Various opportunities in the area of the arts, math tournament, Florida Future Problem Solvers, Odyssey of the Mind, Sunshine State Book Bash, LEGO Robotics, traveling show choir, Broadway junior productions, jazz band, orchestra, and chorus will be some of the offerings. “Being there” experiences will be provided to a variety of environments that equally support full STEAM ahead. Guest speakers and volunteers with various cultures, races, and socio-economic and academic backgrounds will be included throughout the year to provide students with authentic real-world connections.

McNair Magnet Middle School - Looking beyond the low socioeconomic area that surrounds McNair is a school that serves a diverse student population of differing abilities, ethnicity and socioeconomic status. Through the interdisciplinary implementation of STEAM

with a focus on global studies, McNair believes that all students will be given the opportunity to develop their awareness beyond their personal needs and interests to local community, the national and ultimately an awareness of the world, its conditions, and its needs. To encourage students to use their new skills to better mankind and combine scientific, technological, engineering, artistic and mathematical skills and perspectives to creative solutions to global problems.

Through the implementation of diverse STEAM courses and the integration of STEAM across the curriculum, students will be given the opportunity to explore the many opportunities available that will develop themselves as members of a global society. McNair not only wants to attract majority students to the school by providing STEAM programs but also encourage the neighborhood, often at risk, students to have the desire to also explore the STEAM programs. McNair wants these students to participate in these programs giving the students opportunities that they would not otherwise have and to interact with students they may never have interacted with. McNair’s desire is to see the students who do not really feel a part of the special programs to find an identity in them and discover talents and abilities they did not know they had. McNair’s cross curricular instructional design will implement challenged based problems, cooperative learning and student-directed instructional design.

Participation in before and after school activities and extracurricular activities will enhance the STEAM initiative. The opportunities include SECME (Science, Engineering, Communication, Mathematics and Engineering), Future Problem Solvers, Sunshine State Book Bash, LEGO Robotics, Science Olympiads, Science Bowl, Dance Team, World Drummers and Knowledge Masters Open is some of the opportunities. “Orienteering” through Physical Education using navigational skills, devices and topographical maps will extend to student sports

furthering the infusion of STEAM across the school curriculum.

Stone Magnet Middle School – The belief at Stone is that all students can learn regardless of their abilities, disabilities, race, or ethnic backgrounds in a technology rich learning environment. Increasing interaction among students will occur in a variety of ways:

- Students at Stone will be engaged in meaningful hands-on inquiry based labs and activities on a regular basis with an emphasis on high-tech science. Every science classroom is equipped with basic science equipment and flat top lab tables, allowing all students to interact in inquiry based science activities on a regular basis.
- A 1:1 Mobile Device Initiative (where every student is issued a mobile computing device) provides ubiquitous access to the resources of the world’s most massive collection of learning resources. With the incorporation of the 1:1 initiative, all students, regardless of racial or ethnic background, will have equal access to the content. This delivery method, in turn, provides instructors with valuable class time to help students identify common misconceptions, practice with support, and dive deeper into concepts through collaboration and creation of finished products. This model also better allows instructors the opportunity to align their teachings with Common Core standards by creating classroom time for students to make sense of problems and persevere in finding solutions.
- All students will master and apply the processes of science through hands-on inquiry, challenge based instruction, collaboration, technology integration, data collection, and analysis.
- Students will quantify their observations, model and test their ideas, with appropriate technology.
- All students will work together to express their ideas and provide solutions using a creative

process with a variety of print and non print medians, as well as advanced visualizations and multimedia technologies.

- Student will be encouraged to communicate and collaborate in all subject areas.
- Through band, chorus, drama, and visual arts experience students will have opportunities to work with other students and express their individual creativity.
- Students in STEAM education will learn and work collaboratively through projects that fuse reading, writing and math with critical thinking, problem solving, communication, creativity and innovation.
- Through a partnership with the Society of Women Engineers Space Coast Section Stone will host an annual “WOW! That’s Engineering” daylong engineering and robotics events for all girls in grades 7-10. The partnership will also support the school STEAM initiative providing all students, especially girls with mentoring from female engineers and scientists.
- Partnership with Florida Robotics Education, Inc. (FREDi) a Florida FIRST LEGO League® to expose all of its students to the developing world of S.T.E.A.M education in new and innovative ways using Lego instruction.
- Curriculum/Innovation Fairs at the end of each year to showcase all students inventions, creations, and products to the students, families, and community.

Palm Bay Magnet High School will promote desegregation, including interaction among students of different social, economic, ethnic and racial backgrounds by enrolling all incoming 9th graders into the Palm Bay High Magnet School Freshman Achievement Academy where all freshmen will take English I Honors and World History Honors. Historically, we have seen our students from these subgroups taking only non-honors courses. By having all of our students take two honors-level courses their freshman year, our hope is to expose these students

to higher expectations and that many of them will rise to the challenge and continue with honors-level courses and Advance Placement courses.

The Palm Bay High Magnet School Summer Bridge Program will give students and their parents the opportunity to become “high school ready”. This program is designed for students who have been struggling in their academic courses in 8th grade. The Summer Bridge Program will provide students with the extra help needed to meet challenging course standards and provide them with the support needed to make a successful transition from middle school to high school. Parents will also be invited to participate. Parent seminars will include such topics as parent/teacher communication, tutoring options, calculation of GPA, graduation requirements, and course rigor and program expectations. Parents will be surveyed to determine any specific topics they would like to receive information about.

The Freshman Achievement Academy will kick off each school year with “Rally, Rules, and Rigor” week. All 9th graders will participate and their parents also will be invited to take part. On the first day of school all freshman and their parents will gather in the auditorium where they will be welcomed by the Palm Bay High Magnet School Principal and reminded of all the exciting benefits of attending our magnet school. Parents and students will then be divided up into smaller groups and each small group will participate in a series of “Round Robin” seminars which include such topics as goal setting, school rules, school improvement, the importance of being involved (volunteering, clubs, sports,), the keys to a smooth transition from middle school to high school. The rest of the week all 9th grade MESH, Pathway Elective Wheel and Career, Research and Decision Making/Critical Thinking Skills teachers will focus on foundational skills and communicate expectations for all students; they will emphasize note taking and study skills as well as organizational skills. The teachers will set high expectations for

all students regardless of socioeconomic status, ethnicity or racial background. Teachers will communicate to their students that every student can learn and perform at a higher level and together through communication and extra assistance when needed we will all get there.

(c)(ii) Improve and increase student academic achievement for all students

As shown on the student performance charts for Reading and Math, provided in the priority one: Need for Assistance section, every school included in the MSAP proposal has subgroups are not reaching the targeted AMO. To address the critical need of increasing academic achievement teacher’s at all four schools will have the opportunity to actively participate in staff development related to the STEAM framework, implementation, and best practices. The STEAM teaching focus will provide an overall approach to make the interdisciplinary curriculum and environment ultimately helping all students attain the highest possible level of academic success. Through the STEAM initiative and authentic teaching and learning practices, student’s natural curiosity and motivation will ignite. The following **STEAM instructional strategies** will be used by the schools to increase student academic achievement and create a strong foundation for students to succeed.

Golfview Elementary Magnet School: All teachers will have the opportunity to actively participate in STEAM framework, implementation, and best practices professional development..

- Susan Kovalik’s Highly Effective Teaching (HET)-The HET model can assist educators in translating brain research into practical, conceptual curriculum and instructional strategies for the classroom and to participate in the creation of a culture of respectful relationships and learning communities that are dedicated to growing responsible citizens. Additionally, the systemic implementation of the HET model can greatly enhance intervention strategies. This model is more than just a new way of learning; it’s about students learning that they can

make a difference in their world.

- **AVID Elementary- Golfview will be the only elementary school in the district offering the AVID program.** This program takes a systemic approach through *Beginnings, Foundations, and Bridges* implementation resources for the various levels to support all students on their journey to college readiness. *AVID Elementary Beginnings* addresses the beginning years of education when students are emerging as learners. *AVID Elementary Foundations* addresses the foundational years when students are becoming independent learners. *Avid Elementary Bridges* addresses the transitional years of education when students are becoming independent thinkers. Classrooms are designed to promote learning through WICOR (Writing Inquiry, Collaboration, Organization, Reading) throughout the academic day. AVID Elementary covers four essentials: Instruction (WICOR), Culture (promotes college readiness), Leadership (leaders that support, guide, and facilitate AVID implementation), and Systems (utilizes Pillars of Excellence-accountability, articulation, assessment, calibration)
- **Harris Super Science Saturday-**This program supported by the Harris Corporation and the Brevard Public School’s science leadership cadre will provide 5th grade students with hands-on explorations to cover concepts and is designed to enhance their science knowledge and experience.

McNair Magnet Middle School: All teachers will have the opportunity to actively participate in staff development regarding the STEAM framework, implementation, and best practices. STEAM through global extension and emphasis will enable the students to specifically reach out with vision and purpose to use their knowledge, skills and concepts to help (‘touch’) others in the local community, nation and the world. Additionally, the school will incorporate the

elements of the following programs to enhance STEAM initiatives:

- STEAM professional development will be provided for all teachers to learn beyond their area of expertise to implement all components for an interdisciplinary approach.
- Students will have the opportunity to experience guest speakers for STEAM careers with specific representation from women and minorities, as role models for the students.
- Before and after school enrichment programs will be available for students focusing on academic support for student increased achievement and beyond the school day opportunities for STEAM programs.
- Teachers will be given professional development on integrating technology across all courses over the course of three years. This training will give all teachers the tools to implement a technology infused curriculum that ties to the standards for college and career readiness for students to enhance their learning in all subjects.
- Middle School AVID program, funded by the district, will implement the AVID strategies cross curricular to focus on writing, inquiry, and collaboration as methodologies to accelerate student progress.
- Off-campus project-based learning experiences through established partnerships with Florida’s Environmental Protection Agency, the Brevard Community College Planetarium, and the Brevard County Parks and Recreation.

Stone Magnet Middle School: All teachers will have the opportunity to actively participate in staff development regarding the STEAM framework, implementation, and best practices.

- A 1:1 computer initiative will create an environment where all students have access to technology for use in individual and collaborative assignments in every class throughout the

school. The 1:1 initiative will leverage multimodal, multimedia, differentiated personalized learning strategies for all students as they will experience a more personalized student driven and managed learning environment. Differentiation is accomplished both in pace, style, mode of expression of content experienced by the learning consumer, and in the output or solution communicated by the learning producer. Additionally, the 1:1 initiative will support the push for eLearning requirements for students to take online courses and have access to online books by 2015.

- Challenge Based Learning opportunities provide students with the chance to solve real world problems using the power of technology provided by the 1:1 initiative. Challenge based learning will engage students through collaboration, problem solving, reflection and action.
- Inquiry and challenged based learning workshops and professional development opportunities for teachers. Collaboration through professional learning groups will allow teachers to share ideas and solve problems.
- Students will learn through the engineering design process building upon knowledge of science, technology, and math capitalizing upon their visualization and creativity skills with the arts, and integrating their knowledge and skills with their view of the world. The Engineering Design Process is cyclical and may begin at, and return to, any step as students learn to understand the need, brainstorm different designs, select a design, plan, create, and improve. Through teaching the engineering design process the teachers at Stone Middle School are opening a world of possibilities to their students.
- The flipped classroom model will help alleviate some of the stress of pushing time sensitive curriculum. In a flipped classroom, teachers pre-record their lessons for students to view prior to engaging with the material at class. Teachers then post their recorded lessons online

for students to access. Students are then expected to view this material online to learn the basics of the concept being delivered. This effective method can create obstacles for some due to the fact that computer and internet access is essential.

- Curriculum designers would be on staff to collaborate with parents (parent leaders and parents that are historically underrepresented), the community and teachers to bring real-world problem solving and arts-based learning to *each* classroom in an interdisciplinary way.
- Creative scheduling of courses and increased electives offered to provide sustained time for academics, robotics, hands on inquiry experiences, challenge based learning, technology learning adventures, cross curricular learning, collaborative forums, and real world connections to learning.
- To increase mathematical performance, students will receive additional tutoring for students at risk outside of the regular school day. This will be delivered by a qualified math teacher and be offered multiple times a week. The co-teach and inclusion models will enable the ESE population needs to be met with general education students. Expanding access to higher level math course to engage and challenge students to succeed academically.

Palm Bay Magnet High School: Currently many of the low achieving students at Palm Bay High fall into one or more subgroups such as low socioeconomic, exceptional education and/or belong to an ethnic minority group. According to MPR Research (2010) [STEM Course taking among High School Graduates 1990-2005], White students are nearly twice as likely to earn credits in advanced math and science courses as African Americans and Hispanics. So, as a new strategy, Palm Bay High Magnet School will provide all students with the opportunity to take at least two honors level courses in the 9th grade. The National Center for Education Statistics, NAEP 2004 reports that, 17 year old African American and Latino students

read and do math at the same level as 13 year old White students. Palm Bay High Magnet School will strive to close these gaps by offering all students opportunities to participate in advanced coursework and upper level math and sciences classes regardless of the Magnet Pathway they choose. Beginning in the ninth grade all Palm Bay High Magnet School students will enter the Freshman Achievement Academy (FAA). Within the FAA all students will take English 1 Honors and World History Honors. This will give our low achieving students exposure to high level academics. Our goal is to raise expectations for all students, to use the Pygmalion effect or self-fulfilling prophecy as part of the culture shift where every adult on our campus believes that every student can learn and perform at a higher level. To further infuse the STEAM curriculum and allow students options every 9th grader will participate in a Pathway Elective Wheel. The Pathway Elective Wheel will be a year-long course that will give students an overview of each program within each pathway. Students will get enough information about each program so that in the Spring of their Freshman year students will be able to choose the Pathway they will focus on the next three years. Within the FAA students will also take a Career, Research and Decision Making class paired with a Critical Thinking Skills course. This class will provide academic support to struggling students, enrichment for advanced students and reinforcement of foundational skills for all students.

Palm Bay High Magnet School will offer two Academies: Academy of Engineering and Computer Science and Academy of Health and Public Affairs. Within each of these Academies students will have pathway choices. Each pathway will encompass the STEAM principles. During directive counseling, guidance professionals will assist each freshman create a STEAM pathway. Each Pathway contains three programs. Each program was developed to cover the STEAM principles. Regardless of the program, every student will be exposed to STEAM

curriculum that will excite and prepare them to continue to a higher education or be viable to directly enter the STEAM workforce.

The Max Thompson “*Learning Focused*” program will provide us with the school-wide focus we need to get all of our teachers excited and motivated to commit to our mantra “every student can learn and perform at a higher level.” The “*Learning Focused*” model emphasizes teacher effectiveness and accelerated learning. Studies show that teachers who participate in 49 hours of professional development can boost their students’ achievement by 21 percentile points (Southwest Regional Educational Laboratory at Edvance Research, Inc).

The first part, “*Learning-Focused*” Lessons is the fundamental workshop that provides schools with a common planning framework that increases teacher effectiveness and accelerates learning by focusing instruction on how students learn and whether students learn. The framework ensures that the top research-based strategies and exemplary practices are purposefully connected in every lesson. The second module includes students being prepared for any STEAM related career by increasing their higher order thinking skills. Using this framework for planning and implementing effective lessons, teachers will learn to integrate higher order thinking strategies into their lessons to increase rigor, deepen student learning, and challenge students to critically analyze and interpret what they learn to develop new insights. Part three *Mapping Standards into Learning Units* (including both State Standards and Common Core State Standards) Learning Units ensure that students apply higher order thinking strategies to effectively make decisions, solve problems, experiment, investigate, and generate ideas in very unit. Part four- *Effective Assignments and Assessments* students will rise to the grade level rigor expected of them.

Modules five and six of the program are the support pieces for the professional

development. In the Conferencing piece, administrators will meet with “*Learning-Focused*” associates to discuss implementation progress and issues. Teachers will meet “*Learning-Focused*” associates individually or in teams to discuss their successes and needs. Teachers will leave their conferencing session with a focus point that drives their implementation and practice. And lastly the *Monitoring for Achievement* framework uses observations and conversations to drive continuous improvement. School leaders will learn how to use the walkthrough process to gather meaningful evidence related to the school’s instructional focus and how to provide the reflective feedback and coaching necessary to bring about needed changes. This school-wide approach to professional development will take approximately 18 months to complete the modules, but with the conference and monitoring pieces in place throughout, this is a sustainable model for every teacher to boost student achievement at Palm Bay High Magnet.

District coordinated professional development opportunities will be imbedded, offered in a variety of different delivery methods, outside of the school day, during the summer, and in collaboration between the four magnet schools. Just as students have different learning styles the professional development, when possible, will be aligned to the teacher’s preferred style of learning. Providing ongoing professional development will contribute to the sustainability of the magnet program beyond the funding cycle. The following timeline provides an overview of combined/collaborative professional development opportunities for all four schools:

Professional Development	Participants	2013-2014	2014-2015	2015-2016
STEAMedu	All MSAP schools, Administration,	July – May 5 days at each school for PD	July – June Quarterly evaluations and 3	July – May Quarterly evaluations and 3

	and faculty	and development of STEAM framework. 3 additional days of PD	days of additional PD toward program certification	days of additional PD toward program certification
Florida Institute of Technology (FIT)	All MSAP Schools, STEAM teachers	Summer STEAM workshops	Summer STEAM workshops	Summer STEAM workshops
FIT UTEACH Kits, Mobile Science Labs	ALL MSAP Secondary STEAM teachers, selected	UTEACH kits semester long usage. 2 days of mobile science lab at each site	UTEACH kits semester long usage. 2 days of mobile science lab at each site	UTEACH kits semester long usage. 2 days of mobile science lab at each site
SECOR Strategies, Inc.	All MSAP teachers and administrators	Summer, 2 day community building	Summer, 2 day- grant writing, parent involvement	Summer, 2 day- Sustaining the STEAM magnet post-funding

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

As outlined in the Management Plan section opportunities for parent decision-making and involvement are present in the MSAP Brevard Governance Advisory Council. Additionally, goal four and specifically performance measure 4.5 provides for parent input through parent focus groups at each school.

Research shows that two broad approaches to parent involvement can have positive results: (1) integrate parents into school programs which can significantly improve language skills, test performance, and school behavior; (2) build a strong relationship between school, family, and community, with parent and community interest in high quality education as a critical factor for the impact of the school environment and on the student achievement. The National Education Association researchers cite parent-family community involvement as a key to addressing the school dropout crisis and note that strong school-family-community partnerships foster higher educational aspirations and more motivated students. The evidence holds true for students at both the elementary and secondary level, regardless of the parent’s education, family income, or background—and the research shows parent involvement affects minority students’ academic achievement across all races.

Golfview Elementary Magnet School and McNair Magnet Middle School: Golfview will embrace both approaches to improve and enhance home-to-school communications, thereby providing a warm, welcoming, and friendly place dedicated to the educational aspiration of students and parents. McNair parent involvement will embrace both approaches to create an open communication between the parent, students and school therefore fostering a caring community maximizing their students’ potential in school. **Communicating/Involving Parents to address dropout rates and minority achievement:** Open House and STEAM Expo nights; PTO/SAC Meetings; STEAM Schools Website; School Newsletter; Volunteer Luncheons; SynerVoice messages; Parent Conferences/Team Meetings; School Tours and Shadows; Quarterly Recognitions Awards; Character Education Night; Writing/Reading Night-Parent Academy; Concerts/Plays/Performances; Festivals: Fall Festival/ Arts Festival; Super Science Saturdays; and STEAM Curriculum Nights (for Science, Technology, Engineering, Art, Math).

Stone Magnet Middle School and **Palm Bay Magnet High School** will encourage greater parental involvement and decision-making through several processes. According to the research from Association for Middle Level Education (Epstein, 1995; Epstein, Sanders, Simon, Salinas, Jansorn, & Van Voorhis, 2002) parents should be engaged in up to 6 different ways: parenting, communicating, volunteering, learning at home, decision-making, and collaborating with the community. These schools will focus their parent engagement to include a variety of ways during each school year through a wide menu of options that allow parents to authentically collaborate with the MSAP school and their child’s education.

Parenting: The *Summer Bridge Program* will give parents the opportunity to transition from middle school to high school with their students. Information will be given to parents so that they can become or remain active participants during their student’s high school years. Stone will offer a summer program as well as a no zero zone to support students and parents for intervention. In addition, parents will be invited to several STEAM expo nights to learn alongside their children.

Communicating: “Rally, Rules and Rigor” seminars conducted the first day of school will give parents another opportunity to be involved with their student and the school. Parents can participate with their student in the exciting first day of high school. Stone will invite incoming seventh graders and their parents to be involved and participate with the school prior to enrollment. Parents and students will be invited to internet safety courses prior to receiving the laptop (1:1 initiative).

Volunteering/Learning at Home: Schools will host “STEAM Nights” for parents and students. STEAM Nights will be seminars that focus on advanced placement opportunities and post graduation options.

Decision Making: Palm Bay all 9th grade Palm Bay parents will be invited to IPS meetings with their student’s guidance counselor to create Individual Programs of Study (IPS) with their student. Parents will be able to make informed decisions about the most successful pathway for their students. Stone will have IPS meetings with all incoming 7th graders and their parents to make informed decisions about rigorous coursework, pathways of study, and career options. In addition, students will give their input about strengths and areas for middle school improvement.

Collaborating with the Community: There will be guest speakers from state universities, local businesses such as Harris Corporation, Northrup Grumman, and College Board. Parents and students will be able to get important information about college and career prospects and how to reach those aspirations. Stone will offer STEAM expo nights that include topics such as Isafe, STEAM coursework, Technology/Internet safety, as well as specific STEAM activities.

(d) Budget and Resources

(d)(i) The adequacy of the facilities that the applicant plans to use

In order for the STEAM magnet schools to be successful in attracting students from diverse backgrounds, races, and ethnic groups Brevard Public Schools ensures that the four facilities are adequate to meet the curricular and physical needs of the students and teachers. In 2005-2006, district facilities staff did a thorough analysis of each building to complete a seven year plan for renovations and repairs. Three of the four schools were eligible and received approximately \$30 million dollars in renovations.

Prior to and as a part of the planning stages for the current MSAP proposal, district facilities staff conducted another analysis of the four facilities to assess their ability to accommodate a top-notch STEAM program. All buildings were determined by district staff to be adequate for the needs for the proposed magnet programs. All buildings meet and exceed

applicable codes and are compliant with the American Disabilities Act requirements. Specific and unforeseen STEAM magnet needs will be addressed by the director of school choice, MSAP project director, MSAP coordinating teachers, and other key staff through MSAP funding.

Each school has unique facilities needs as follows: **Golfview Elementary Magnet** houses over 500 students utilizing 82% of the building. The school is in good condition, and has an attractive façade with native flora and fauna. Nearly ten years ago when Brevard received MSAP funding for the first and only time, Golfview created a math, science, technology magnet where students had outdoor and indoor scientific investigations. They are not requesting any facility renovation from MSAP, but they need to purchase updated science and technology equipment as shown in appendix W.81. In addition, the faculty needs updated professional development and training in order to successfully implement a STEAM magnet program. Golfview was not part of the district’s seven year facility plan in 2006, but the school is 50 years old and an aging building, but is not in need of major repairs.

McNair Magnet Middle School received several upgrades during a seven year facilities plan from 2005-2006. The school received a performing arts building, new track, and some furniture refurbishment. Unfortunately, due to budget cuts the upgraded science labs and applied technology upgrades were eliminated. McNair serves over 500 students with an 85% of the building being utilized. The facility has been well kept by school and district staff, but the school needs MSAP funding to give all students access to rigorous and challenging academic programs and innovative curriculum. McNair, built in 1959, is one of the oldest buildings in Brevard County, and the students deserve opportunities that currently cannot exist with the outdated science and technology equipment. Renovations at this site have cost the district \$1,955,000 million dollars since 2005. McNair still needs to modify two existing classrooms which currently

house two lab areas into two separate fully equipped science labs. Currently there is not a facility space for use by parents/mentors to meet with students. As depicted in appendix X.82 McNair needs to establish an outdoor area for student meetings located in a secure area between two buildings with shade covering. Another facility need is to upgrade network infrastructure to accommodate wireless computer access. After assessing the current network infrastructure, which has made wireless lab access very undependable at the school, the technology specialist has recommended that we upgrade our servers, antennas, and switches. This recommendation is supported by district educational technology staff and will make access to labs dependable, providing access to new wireless labs purchased through the grant. A set of network infrastructure items considered each year of the grant, will provide consistent and dependable log-on capability for students.

Stone Magnet Middle School was built in 1955 as a segregated school in the middle of the Section 8 government subsidized housing originally built to be used as an elementary site. Currently, it houses 800 students utilizing 79% of the building. The school has one wing with science equipment for research, but only a small portion of the population has access to this lab. In order to create access and equity for all students at Stone the school needs to upgrade the equipment and renovate the science and technology labs. The MSAP grant funds will be used to accomplish these tasks. Heating, ventilation, air conditioning and a roof for the media center were the only items listed on the district’s seven year facilities plan from 2006, totaling \$4.6 million dollars cost. No change has been accomplished due to economic demands faced by the district. The school has no curb appeal and is in desperate need of a makeover. A first impression of the school’s exterior is that the building has suffered from age. There is an eight foot chain link fence running across the front and along the heavily traveled side road bordering the school

and the look needs to be minimized to create a more inviting learning environment. Additionally, there is interior fencing that needs to be removed, walls which need painting, and walkways that need repairs as shown in appendix Y.83. The school was built on a sandy fill with minimal top soil. All the native pine trees were removed 15 years ago. Except for a few memorial trees in honor of deceased staff members and about 20 young oak trees in the front of the school the majority of the 35 acres is barren. The school has a very old sign with removable letters limiting the messages that can be posted. A new electronic sign that reflects the STEAM theme and enables the school to broadcast messages for student, parents, and the community is needed.

Palm Bay Magnet High School is located on a sprawling, expansive campus on a busy thoroughfare that is home to Section 8 government housing, low-income apartments, college dorms, and middle class home sites. The “Palm Bay Pirates” theme can be felt throughout the school with touches of red and black paint. The school was built in 1959, and is one of the oldest facilities in Brevard. Several renovations occurred in 2004-08 costing the district \$26 million dollars. The facility houses over 1700 students with a current utilization rate of 64%. The school is a perfect location for a magnet school as it is highly visible, and accessible. There are several highlights of the facility that make it a viable usage for a STEAM magnet such as: a music suite, performing arts auditorium, forensic/law building, technology labs, and a construction lab. However, based on a thorough analysis by facilities, technology education, and school facilities administration the school needs to upgrade the entire campus for technology equipment and infrastructure, giving every student access to technology based learning. Like Stone, Palm Bay needs enhanced curb appeal and interior upgrades as shown in appendix Z.84. The school needs an electronic messaging sign to provide the students, parents, and community with school information.

(d)(ii) Adequacy of the equipment and supplies

The proposed magnet schools must have high quality equipment and supplies in order to offer the most desirable STEAM program possible. All four magnet sites will have the typical allocation for equipment, supplies, textbooks, and utilities that other district schools. Each magnet site completed an analysis of current equipment to determine the amount of MSAP funding needed for equipment, renovations, and supplies. Only necessary and prudent items are being requested in the budget proposal. The process for selecting the equipment is three-fold: need, necessity, and priority. The STEAM writing team at each school, consisting of experts in each field, determined the needs and worked closely with district staff to ensure the technology equipment will be adequate and accessible for all students. In addition, adaptive technology or other assistive technology/equipment was determined based on the exception education students’ needs. Curriculum, consultation, and other direct services for professional development or training purposes were determined through a partnership with the departments of curriculum and instruction, human resources, professional development, educational technology, and school choice. Specific equipment and supplies proposed for each site are found in the individual school budget narratives. **Overview of Major Equipment and Supplies Needs for Labs and Activities Includes:** Computers, laptops, mobile devices to support 1:1 education, wireless computer labs, printers, technology equipment, software, hardware, licenses, science lab equipment, programming kits, engineering packs/licenses, certification packages, servers, robotics kits, field experiences, rocketry kits, genetics lab equipment, STEAM professional materials, STEAM related books, interactive readers, databases for STEAM research, GPS / GIS equipment, personnel.

(d)(iii) Adequacy and reasonableness of the budget

All MSAP funding requested under the grant supplements the Florida Educational Finance Program school funding. The MSAP funding request of approximately 4 million dollars per year for 36 months is adequate and reasonable to plan, open, and implement four magnet schools, and to support the achievement of project objectives of the MSAP program. The budget contains two components: district budget, and budgets for each of the three years for the four proposed magnets.

Under the MSAP funding the district is proposing to hire a project director for magnet schools, an accounting specialist/clerk, an external evaluator, and consultants to deliver targeted professional development. The magnet project director in collaboration with the magnet coordinating teachers will ensure the accomplishments and success of the project outcomes. The magnet project director will manage the federal funds with the assistance of the federal fund accountant, accounting and budgeting departments. In addition, the race neutral random lottery, parent phone calls, district recruiting, choice fairs, and other magnet activities will be managed by the project director. The accounting specialist/clerk will be managed by the project director and will handle the purchase requests, travel forms, parent calls, magnet webpage, and other magnet recruitment. Fringe benefits are contractual obligations, and the indirect cost rate is set by the State of Florida. The external evaluator will be managing the evaluation plan, assembling on-site visits, preparing reports, and evaluating the effectiveness of the magnet theme. The STEAM consultant will provide 3-4 days per year with each magnet site to develop and align curriculum, provide training, and complete observations in classrooms to provide feedback to teachers. Florida Institute of Technology will support the four schools by providing professional development for teachers to learn how to manage instructional materials in STEAM classrooms. Secor Strategies, Inc., under the direction of Paul Secor is a well established funding and grant

professional consultant contracted by NASA, Aerospace companies, high educations institutes and other businesses to conduct face to face and online professional development. Mr. Secor will deliver targeted professional development for school team focusing on locating sources for sustainability of the federal magnet program. Brevard has determined that these personnel and consultants are vital and necessary to the success of the magnet grant based on the positive experience during the 2000-2003 MSAP cycle.

In order to provide access to national networking and school visits that allow educators to share best practices to create magnet opportunities for all students, travel is requested for district and school personnel to attend national magnet conferences and to visit successful magnet programs. Budget funds are allocated for marketing and recruitment activities for the proposed sites and the district office. These include, but are not limited to: advertising, printed materials, electronic materials, postage for mailers, and other “scream the theme” necessities. Also, dues and fees for Magnet Schools of America and other professional science, technology, engineering, arts, and mathematics organizations and conferences are included.

At the magnet sites, in order to accomplish program objectives, funding is needed for personnel, equipment, instructional materials, supplies, upgrades (technology, science and art labs), and consultants in the areas of STEAM. Magnet sites are proposing two magnet coordinating teachers for curriculum integration, modeling, co-teaching, and recruiting. In addition, science or technology specialists are proposed to bring rigor and innovation to the lab settings. Guidance professionals are included to allow staff to perform magnet duties, to assist students in directive counseling, pathways, and STEAM related marketing/recruitment activities.

In order to attract students to the innovative programs, the sites need state of the art equipment. Underrepresented and all students should be given access to this equipment through

real world experiences. All personnel hired must be of the highest quality, and the hiring practices are outlined in the Quality of Personnel Section. All equipment and supplies are purchased at or below state bid prices, are sole source, or are purchased following receipt of three bids and following district purchasing procedures. All salaries are aligned to Brevard’s instructional personnel and the non-bargaining salary schedules.

(e) Evaluation Plan

Using an outside evaluator can reduce bias and better ensure the integrity of data and reports; therefore, an outside evaluation company was identified and collaborated in the preparation of this application. The program evaluation will be conducted by DKH Consulting Services, Inc. The lead evaluator has 1) extensive experience evaluating, designing, and implementing state and federally funded projects, 2) over 40 years of progressive educational experience, and 3) is working on, has worked on, or led 17 MSAP project evaluations (12 school districts in eight states) – nine of which are/were DKH contracts.

(e)(i) Includes methods that are appropriate to the project

This evaluation plan is written in accordance with the notice inviting applications for the Magnet School Assistance Program for fiscal year 2013 (CFDA Number: 84.165A). This plan 1) is based on the project’s desired outcomes and performance measures and 2) includes two evaluation components; formative and summative. Specifically, the plan will determine how effective the schools and their magnet programs are in meeting their goals for reducing minority group isolation in school populations and increasing student achievement. The outside evaluator and district personnel have identified six MSAP Goals (outlined in the Plan of Operation section) each of which are directly aligned with the purposes of the Magnet Schools Assistance Program. Each goal has an objective and performance measure outcomes. Based on benchmarks set for

each performance measure outcome, data indicators will determine the extent to which the magnet schools meet their objectives. In Annual and Final Performance Reports, data for the Government Performance and Results Act program performance measures will be reported in appropriate MSAP tables and project performance measure will be addressed in the ED 524B template provided by the USED. Reporting for each project performance measure will include four steps - 1) Document and Monitor Activities, 2) Determine Targets for the Current Performance Period, 3) Assess Progress, and 4) Explain Progress.

As described in the Scope of Work, included as appendix Q.65-67, DKH produces a series of reports over the project period: formative, summative (APR and Ad Hoc) and final. DKH believes that formative evaluation is very important to the success of a project. It measures the degree of implementation fidelity, frequency with which students are exposed to new theme-related activities and magnet curriculum units, and the use by teachers of the new instructional strategies (best practices). Without ensuring that these components are being implemented with fidelity and frequency, the project’s impact on summative measures (such as student achievement) cannot be correlated with project supported reform efforts.

Formative evaluations are carried out on a regular basis (three times per year) and findings are used to guide program improvements. Site visits include: meetings with school-based teams and project leadership; school walkthroughs; classroom observations (using a rubric); focus groups and interviews (staff, parents, students); reviews of implementation plans, staff development plans, and curriculum units; and attendance at professional development and/or other special events. Formative evaluation reports are generated from data collected during site visits. They include a listing of areas of strength and recommendations, and are summarized by school. During the visit, findings are presented to those administrators and supervisors directly

involved with the magnet program. Evaluators follow-up on recommendations at the next site visit and, based on leading indicators, project implementation strategies are reviewed and adjusted.

Summative evaluations provide information calculating attainment of project objectives and performance measures. These results are summarized in each annual performance report and/or ad hoc report and supported by relevant data. Government Performance and Results Act data will be submitted on the appropriate data collection forms. Summative evaluation reports are produced on an annual basis and progress on performance measures is reported using the ED 524B format. [Note: performance measure outcomes were developed for each goal and each defines annual quantitative targets.] Annually, the reports will address each magnet school individually, and results will be presented to school administrators and district staff at the conclusion of the school year. Recommendations for improvements based on a review of the data are also included and, based on these results, implementation plans may be adjusted.

A final report is written at the conclusion of the project. The final report examines long-term outcomes of the project. While summative reports address issues on an annual basis, the final report looks at program effects over the project period (three years). This report includes data on each program performance measure and each project performance measure is addressed using the ED 524B format, provided by the USDE. In addition, the report includes General Performance and Results Act charts and MSAP tables. The purpose of the final report is to share the results of this project with other stakeholders and audiences who may use the information to make major program decisions. Program modifications are not made using the final report since the report is not completed until the particular study has concluded. However, information in the report may influence future studies, interventions, and decisions on the effectiveness of the

magnet programs. Findings will be shared with school and district personnel, and an executive summary will be distributed to parents and the community.

(e)(ii) Meeting intended outcomes, desegregation, and increasing student achievement

The following text provides an abbreviated overview of the six project goals and appropriate data collection instruments. For summative evaluation reports, these data will be compared to performance measure targets to determine degree of attainment. In addition, to the quantitative data included in the ED 524B chart, other data that confirms and supports the reported data is included in the explanation. Decisions on adjusting the implementation plan are based on the totality of collected data. [Note: a full text version of the performance measure outcomes can be found in the Plan of Operation section.]

BPS MSAP Goal 1: As a result of successfully implementing the magnet programs at Golfview, McNair, Stone, and Palm Bay minority group isolation will be reduced.

Assessment Measure: Data will come from school, LEA, and feeder school enrollment charts (MSAP tables), which are disaggregated by race and ethnicity. In addition, applicant pool and student placement data will be used to determine the effectiveness of the project’s marketing and recruitment plans. Actual data will be compared to target percentages to determine whether the project is on track to meet its final targets. Analysis of these data will be used to determine project improvements.

BPS MSAP Goal 2: As a result of successfully implementing the whole-school magnet programs at the four schools students will have access to innovative educational methods and practices increasing access to challenging standards based content and increased academic achievement for college career readiness. **Assessment Measure:** Data will be collected on staff use of innovative methods (project-identified best practices) through 1) staff, student, and parent

surveys/interviews, 2) class or daily schedules of teachers and magnet specialists, 3) feedback from focus groups (staff, parent, student), 4) classroom observations using an evaluator developed rubric, and 5) three-year implementation plans. These data will be collected, summarized, and reported and, based on the results, project adjustments will be made. Florida assessments are given annually and data is analyzed and reported by the Florida Department of Education, sent to the District, and posted online. These data will be reported by school and subgroup and gaps in achievement among subgroups will be determined. These data will be compared to project benchmarks, statistical methods will be used to determine if changes are significant, and the results will be reported in the annual performance report and/or the ad hoc report.

BPS MSAP Goal 3: As a result of successfully implementing the STEAM magnet programs at the four schools educational methods and practices promoting diversity for all students will increase. **Assessment Measure:** Data will be collected through staff surveys, focus groups, walkthroughs, classroom observations (including measures of technology integration using the SAMR scale), three-year staff development plans, and evaluator review of magnet units and minutes/schedules of Collaborative Learning Team meetings. These data will be used to ensure that teachers are participating in the appropriate magnet training and applying the project-identified strategies and pedagogies in classroom instruction.

BPS MSAP Goal 4: As a result of successfully implementing the STEAM magnet programs at the four schools parents and community members will actively be involved in project planning, implementation and decision-making. **Assessment Measure:** Data will be collected through staff and parent surveys, records regarding magnet theme related parent events, attendance at parent activities and events, number of parent and community representatives on magnet leadership

teams, and focus groups/interviews. These data will be used to determine parent/community participation and decision-making as well as their satisfaction with the magnet programs.

BPS MSAP Goal 5: Successfully implementing the magnet programs at the four schools will improve the capacity of the district to continue operating the magnet schools at a high performance level beyond the funding cycle. **Assessment Measure:** Data will be collected on staff training in best practices through a magnet staff development spreadsheet (including topics, number of hours offered, and attendance) for each teacher. The number of hours attended by each teacher will be summed over the school year and compared against the target and the percentage meeting the target will be calculated.

BPS MSAP Goal 6: Implementing the STEAM themed programs at four MSAP schools will provide a high quality education enabling all students to succeed academically and realize their full potential to continue on to post secondary education or a career of their choice.

Assessment Measure: Data will be collected on staff integration of 21st Century skills into lesson planning, classroom learning environment, and assessment. Student data will be collected to support collaborative learning opportunities, alternative assessment methods, school culture, and 21st century learning skills development. District and individual school online survey data will support improved parent reporting of 21st century skills development. These data will be used to determine staff, student, and parent evaluation of the magnet programs.

(e)(iii) Includes methods that are objective and that will produce data that are quantifiable

As previously described, the evaluation plan is comprehensive. It 1) includes a data collection plan with both formative and summative data, 2) uses a variety of methods to analyze data, and 3) will produce both quantitative and qualitative data. Each performance measure includes quantitative benchmarks supported by both quantitative and qualitative data. By hiring

an outside evaluator, the district further ensures objectivity. Although some data is collected directly by the district and others directly by the evaluators, all of it will be analyzed offsite in DKH offices by trained evaluators; a process that increases the objectivity of results. Validity is increased by using multiple data sources (such as surveys, interviews, focus groups, walkthroughs, and classroom observations) to assess the same performance measure.

The following data collection instruments will be developed for this evaluation plan: student, parent, and staff surveys; standardized questions for interviews with school/district personnel; standardized questions for focus groups; a classroom observation rubric; templates for implementation and staff development plans; staff development spreadsheets; and site visitation templates (aligned with project objectives). These instruments will be designed by the evaluator with input and feedback from school and district personnel. The student, parent and staff surveys will include items that relate to specific objectives and performance measures. After the first year of the project, survey items will be reviewed to determine whether items need to be modified or deleted and/or new ones added. Standard sets of questions for interviews and focus groups allow evaluation team members to collect data from different sources using the same questions. These questions also will be reviewed annually to determine usefulness and applicability. Rubrics will be created for use in assessing the classroom environment and magnet curriculum/instruction. Finally, a site visitation template will be created to serve as a data collection tool for the assessment team when conducting site visits. Templates will also serve as outlines for the formative evaluation reports. Instruments will contain Likert-scale, multiple choice, and open-response items. The evaluator will train assessment team members on the proper use of all instruments. The purpose of this training is to reduce variability in interpretation in order to limit errors in scores.

A continuous improvement feedback loop will be used to draw inferences on the success or need for improvement of MSAP strategies and structures. Data on long-term indicators, such as increases in student achievement, are more difficult to interpret – particularly in the early years of program implementation. These types of outcomes require a “build-up” of improvements and reforms over several years of changes in teacher behavior before the full effects can be seen. At the end of each school year, the evaluation team and evaluators will use the continuous improvement loop to look at leading indicators, long-term indicators, and program implementation results to draw conclusions based on the totality of the information collected. While single data points are important, it is essential to look at the big picture – all student outcomes and implementation results in total – to assess program progress.

Quantifiable Results: As mentioned earlier, the project has six goals and 19 project performance measures outcomes. Each performance measure has a quantifiable target and annual benchmarks have been set for each year of the project. As appropriate for the ED 524B used in the annual performance and ad hoc reports, annual targets are either numbers or ratios and corresponding percentages. Quantitative data will be reported in the ED 524B tables, and supporting qualitative data will be included in the explanation of progress. Outcomes will include calculations and statistical analyzes for the following data elements: staff, parent, student survey items; focus group/interview feedback; frequencies and percentages of parent involvement, community involvement, and theme-related instruction; classroom observation rubric measures; district and magnet school enrollment/percentages by grade and race; feeder school enrollment/percentages by race; impact of magnet enrollees on feeder schools; percentages of students by subgroup who are proficient or above on Florida assessments in reading/language arts and mathematics; and the impact on the achievement gap for students by

subgroup, as measured by Florida assessments in reading/language arts and mathematics. A timeline for evaluation services may be found in appendix C.9.

(f) Commitment and Capacity

(f)(i) Is committed to the magnet schools project

Brevard Public Schools (BPS) is fully committed to magnet schools program to reduce minority isolation and to provide high-quality academic instruction. Creating learning environments that respect cultural differences and provide students with opportunities to effectively work with others of different social and cultural backgrounds is paramount for successfully implementing the magnet schools assistance program. Incorporating the school-wide STEAM initiative at each of the four proposed magnet schools demonstrates the district’s commitment to best equip all students with essential skills for an ever-changing world.

Despite the recent economic difficulties due to significant reduction of student funding, BPS continues to be committed to providing educational choice as evidenced by approximately 18,709 students participating in an array of choice schools/programs – five magnet schools, three elementary choice schools, two choice junior/senior high schools, International Baccalaureate programs, Cambridge (AICE) programs, dual enrollment and collegiate high schools, academies and small learning communities, Career and Technology Education (CTE), charter schools, and controlled open enrollment (Florida’s process for students to transfer to another school within the district). Magnet schools play an intricate role in the district’s quest to provide feeder patterns, ensuring children the opportunity of educational choice from the time they enter elementary school to graduation. The array of choice programs reflects the district’s systemic planning and commitment to all students to provide diverse and rigorous educational opportunities.

The district’s ability to continue magnet project activities is amply demonstrated by the

continuous functioning and success of previously funded MSAP projects. BPS created its first magnet school over two decades ago. In 2004, the district received MSAP funding for four additional magnet schools. Moreover, the School Board created a Choice Office to implement and support various choice programs, including the expansion of magnet schools.

Budget requests contained in this proposal are designed to assist the district with the continuation of its magnet programs after special funding is discontinued. This is accomplished by assigning high budget priorities to start-up costs for new programs, staff development activities, and purchasing of equipment. These one-time expenditures will provide staff development and equipment purchases as long-term investments, continuing to pay educational dividends over a period of many years.

As illustrated above, magnet programs are an integral facet of the district’s total instructional program. They are effective in providing an equitable high quality education to children that live in the immediate neighborhoods and those students who choose to transfer to the magnet schools. Commitment is obviously strong at all levels – School Board, Superintendent, District Staff, Administrators, Students, Parents, Business Partners, and Community. All parties have played a vital role in the evolving process of planning magnet programs proposed in this grant. The district and schools have cultivated firm reliable business and secondary education partnerships committed to the magnet school missions.

As a recipient of two previous MSAP grant awards, the district is cognizant of the importance of implementing strategies to sustain grant activities. The MSAP project will build internal capacity through diligent deployment of professional development, acquisition of materials, expansion of parent and community support, and creation of curriculum and assessments, affording continuation of magnet grant activities after grant funds end. These

activities will assist in building capacity for project continuation:

- Project funds will be utilized to provide training for all magnet school staffs, building capacity to continue activities. All magnet school staffs will receive intensive, high quality training during the three-year period of the grant, which they will continue to utilize to enhance instruction after grant funding ends. Staffs will remain active in Professional Learning Communities in order to sustain their respective magnet project designs. Proficiency in lesson study methodology will continue to enhance teacher collaboration and lesson reflection, critical skills in improving student performance. When applicable, BPS will incorporate “train the trainers” for the support of continuous staff development, particularly for engaging new teachers. Incorporating technology into all aspects of teaching and learning will afford teachers opportunities to be life-long learners, which is vital to preparing students for STEAM careers in the 21st Century.
- Project funds will be utilized to provide and purchase materials and equipment, provide time for teachers to write integrated, theme-related curriculum, lessons and assessments, building capacity to continue project services. Teachers and students will continue to use project–purchased and developed materials, equipment, and technology. Maintenance, updating of resources and replacement costs will be assumed through local resources.
- Outreach to parents and community, project visibility, and communication with the media will build advocacy for expanding and maintaining services. Parents and communities will advocate for school services and activities to ensure continued success. Parent Teacher Associations and School Advisory Councils will assist in providing funds. Partnerships with local colleges, businesses, and community organizations will augment the continuance of community support.

- Use of grants for one-time expenses, use of local resources for ongoing needs, to ensure planned project sustainability. The district remains committed to sustaining the school-wide STEAM initiatives, which can serve as models for other schools in the district. BPS is confident that it will be able to offer a high level of continued support to the magnet schools described in this proposal because of its outstanding record of pursuing competitive grants. Currently, the district is administering approximately \$50 million in competitive, entitlement, and discretionary grant programs directly, or indirectly, supporting existing magnet school programs.

(f)(ii) Other resources to continue support for the magnet school activities

The majority of the funding requested in this application is start-up costs, one-time expenditures to purchase equipment, materials, curriculum development, and training. Due to the restricted finances of the school district, this application was designed to project costs that are reasonable to assume in subsequent years of the programs. These initial costs are not recurring; therefore, the magnet programs will require minimal funding to maintain capacity. Successful staff training for the implementation of the school reform curriculum and the purchasing of needed equipment and technology will sustain the grant programs well beyond the funding cycle. The Office of School Choice will assume the managerial responsibilities and provide the required district support to sustain the magnet programs. In addition, the area superintendents and other key district staff will continue to provide guidance and leadership.

All budget expenditures are constructed with sustainability as a goal. At the end of the three-year grant period, BPS will be prepared to absorb the costs for sustaining the programs through regular school allotments, local funds, and the solicitation of other grant sources. The district and the magnet schools will continuously seek resources to address the financial obligation of

sustaining the magnet school programs. Brevard Public Schools has maintained five magnet schools created with previous MSAP grant awards and offers the same commitment to the four schools included in this proposal. In addition to seeking grants and other contributions, the magnet programs will be sustained with in-kind contributions from the district that include: support from district personnel and subject area resource teachers; appropriate allocations for staff salaries and benefits; public utilities and energy; materials and supplies; purchased services; and instructional budgets. The total cost of the basic program (averaging \$6,508 per student) will be the responsibility of the district.

Each school’s established business partners, regardless of size, will invariably play a major role in the school’s continued success by providing monetary contributions, invaluable services-in-kind, and long-term resources such as technical expertise and staff training. The following legislators, higher education institutions, businesses, and community leaders have pledged magnet support in a variety of methods including: general support; curriculum development; STEAM equipment management; training on funding development and program sustainability; mentoring; providing guest speakers; career development and underwater robotics. Their respective letters of support are provided in the appendices. The following list provides the name and appendix number for each letter of support:

- U.S. Senator Bill Nelson, Appendix AA.85
- Congressman Bill Posey, Appendix AA.86
- Kathy Meehan, Mayor City of Melbourne, Appendix AA.87
- Thomas Price, Mayor City of Rockledge, Appendix AA.88
- James McKnight, City of Rockledge Manager, Appendix AA.89
- Lionel Cote, Chief of Police Rockledge Police Department, Appendix AA.90

- Linda Seals, Director University of Florida-Brevard County Extension, Appendix AA.91
- Dr. Catanese, President and CEO Florida Institute of Technology, Appendix AA.92
- Paul Secor, President and CEO Secor Strategies LLC, Appendix AA.93
- Tony Gannon, Director Space Florida, Appendix AA.94
- Lesley Fletcher, Deputy Division Chief of Education NASA, Appendix AA.95
- Robert Klien, Vice President Northrop Grumman, Appendix AA.96
- Monte Rector, Area Director Apple Computers, Appendix AA.97
- Laura Melnik, Florida Robotics Education, Inc., Appendix AA.98
- Carol Craig, Founder/CEO Craig Technologies, Appendix AA.99
- Susan Floyd, Society of Women Engineers, Appendix AA.100
- Travis Dellinger, Director iSAFE, Appendix AA.101
- Douglas Britt, CSS-Dynamic, Appendix AA.102
- Mark Senti, President Advanced Magnet Lab, Appendix AA.103
- Dana Maira, Coordinator Fl. Dept. of Environmental Protection, Appendix AA.104
- K. Wilson, Director Maxwell C. King Center for the Performing Arts, Appendix AA.105
- Suzanne Leslie, Assoc. Dir. Brevard Community College Planetarium, Appendix AA.106
- M. Lisciandro, J. McFadden, Founders Viera Studio for Perf. Arts, Appendix AA.107
- D. Ratliff, Operating Off. Ctr. for the Advancement of Sci. in Space, Appendix AA.108
- Susan Schleith, K-12 Manager Fl. Solar Energy Center, Appendix AA.109
- Lisa Arnott, Arnott Air Suspension Products, Appendix AA.110
- D. Ludgate, Sr. Program Development New Media Consortium, Appendix AA.111
- David Rees, President Osprey Solutions Group, Appendix AA.112
- Greg DeRossett, President DeRossett Group, Inc., Appendix AA.113

- Greg Devlin, President World Wide Tiki Tribe Inc., Appendix AA.114
- John Hinton, President Math Matters, Inc., Appendix AA.115
- Steven Van Meter, Owner Steven Van Meter Consulting, Appendix AA.116
- F. Kinney, Vice Pres. for Research Florida Institute of Technology, Appendix AA.117
- I. Golden, Director Brevard Cty. Housing and Human Services Dept., Appendix AA.118
- Ioannis Miaoulis, President and Director Museum of Science, Appendix AA.119