Competitive Preference Priority 1: Need for Assistance

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

This innovative ***Gear Up*** project will implement personalized learning as the overarching mechanism to implement a challenging and engaging STEM curriculum proposed to move 3,436 students from a variety of schools, including 2,082 new magnet seats coming primarily from two of the lowest performing schools in the district. Students, parents and whole communities will experience a dramatic uptick in success at five magnet schools. The total cost of the ***Gear Up*** project will be $11,998,155. The cost of the project will average of $1,164 per student per year. The project will provide dynamic professional development, intensive coaching, peer modeling and multi-dimensional support for 169 teachers at the five ***Gear Up*** magnet schools. Utilizing:

- proven and highly effective change management model, personalized learning and integrated STEM or STEAM approach
- innovative technology based academic scaffolding solutions such as a gaming-based and highly engaging summer learning online support model,
- creative and dedicated business partners such as the Lakeland Catapult Entrepreneurial Works, which will sponsor Shark Tank competitions for middle school students,

these schools will transform educational opportunities in Polk County.

Funding through the ***Gear Up*** project will be carefully budgeted to ensure the maximum sustained results at each site. The following budget overview provides a glimpse of proposed expenditures, a more complete budget and narrative can be found in the Budget section.

Polk County Public Schools, Florida
2016 MSAP Gear Up Budget by School

Budget Categories	Acceleration	Rochelle	Combee	Polk	Daniel	Brigham	Total
Personnel	**$1,034,608**	**$577,587**	**$526,137**	**$790,218**	**$452,577**	**$508,777**	**$3,889,906**
Benefits	**$236,981**	**$92,170**	**$95,403**	**$160,498**	**$81,574**	**$87,797**	**$754,423**
Travel	**$129,750**	**$28,000**	**$26,200**	**$26,800**	**$26,800**	**$60,700**	**$298,250**
Travel Training	**$194,750**	**$163,656**	**$147,931**	**$167,106**	**$140,731**	**$299,649**	**$1,113,823**
Dues & Fees	**$24,300**	**$7,500**	**$6,000**	**$7,500**	**$7,500**	**$36,000**	**$88,800**
Furniture & Equipment	**$26,550**	**$450,667**	**$489,568**	**$592,702**	**$453,402**	**$127,152**	**$2,140,041**
Instructional Materials	**$9,700**	**$154,000**	**$170,650**	**$183,350**	**$156,700**	**$72,650**	**$747,050**
Software	**$36,000**	**$62,550**	**$81,000**	**$77,900**	**$48,350**	**$47,650**	**$353,450**
Supplies	**$48,120**	**$59,080**	**$66,000**	**$60,390**	**$44,900**	**$52,150**	**$330,640**
Contractual	**$90,420**	**$396,743**	**$353,313**	**$396,743**	**$396,743**	**$269,300**	**$1,903,262**
Postage	**$4,500**	**$1,500**	**$1,500**	**$1,500**	**$1,500**	**$1,500**	**$12,000**
Rental	**$22,500**	**$0**	**$0**	**$0**	**$0**	**$0**	**$22,500**
Total Direct Costs	**$1,858,179**	**$1,993,453**	**$1,963,702**	**$2,464,707**	**$1,810,777**	**$1,563,325**	**$11,654,145**
Indirect Costs (4.52%)	**$78,703**	**$51,801**	**$50,661**	**$66,682**	**$43,421**	**$52,743**	**$344,010**
Stipends	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Total Costs	**$1,936,882**	**$2,045,254**	**$2,014,363**	**$2,531,389**	**$1,854,198**	**$1,616,068**	**$11,998,155**
# Students	**3436**	**826**	**732**	**840**	**510**	**528**	**3436**
Total Cost Per	**$563.70**	**$2,476.10**	**$2,751.86**	**$3,013.56**	**$3,635.68**	**$3,060.73**	**$3,491.90**

Polk Polytech Academy: Lake Alfred Addair Middle School is co-located on a campus with a 6-8 grade conversion charter school, Discovery Academy. Lake Alfred Addair is a significantly under-selected middle school. This school was originally created to provide career education for

secondary students struggling in traditional schools. The conversion of the only middle school in the area resulted in Lake Alfred Addair becoming a middle school for Lake Alfred/Haines City and surrounding rural areas. The combination of low performing students, opt out and dismissed students from the charter school, and depressed socio-economics of the surrounding communities resulted in a middle school that has received four consecutive grades of F. In 2015, Lake Alfred Addair Middle school ranked 556th out of 587 Florida graded middle schools (bottom 1%).

Lake Alfred Addair Middle will be transformed to Polk Polytech Academy and will be a highly sought after personalized learning site offering STEM in a technology-rich environment for middle school students. The cost of these transformations is not attainable in the current budget available under state and federal funding to Polk schools. By creating a strong feeder pattern leading directly to a university program, Lake Alfred Addair will offer an innovative and academically rigorous choice.

Combee Academy of Design and Engineering: Combee Elementary, which will be renamed Combee Academy of Design and Engineering (CoDE), is located in the northeast corner of Lakeland, surrounded by low-income and Section 8 housing. This elementary school has earned a grade of F over each of the past three years and struggles to serve students in an extreme, multi-generational poverty community with an abundance of unemployed and underemployed, struggling families. In 2015, Combee Elementary ranked 1,823rd out of 1,852 graded Florida elementary schools (bottom 1%), and was the lowest performing school in Polk County. Nearly 100% of this Title I school's student population is economically disadvantaged students.

The school also has a mobile and transient population resulting in students who lack continuity in their academic studies. Creating a magnet school option for this community in need will stabilize mobility, since students from all over Lakeland will be transported to Combee

Elementary. To address the unique needs of these young and fragile students, this grant will utilize personalized learning as the organizational structure to create a student centered learning environment, providing an academically challenging STEM-based curriculum, fabrication labs and maker spaces; but more importantly, teacher training and curriculum development that results in rich academic experiences around STEM, with richly supported learning opportunities and scaffolding of academic instruction. Students who choose to enroll in this program will have the opportunity to participate in the Crystal Academy of Science and Engineering (CASE) middle magnet program centered around STEM aquatics and robotics.

Daniel Jenkins Academy of Technology: Daniel Jenkins is a 6-8 middle school located in the far northeast portion of Polk County. This heavily Hispanic community provides service industry workers to the Walt Disney and Orlando hotels and attractions. Because Polk County has an abundance of mobile homes, rental properties, and foreclosures available for occupancy, multiple families often reside in a single residence to defray costs and meet financial responsibilities while working long hours in low pay, minimum wage jobs. While some of the students served in these schools are not considered English Language Learners (ELL), for many of the parents, English is not their first language. They struggle with the language and with adequate time to be involved in their student's education. During the desegregation shift, the population included students from a mix of racial backgrounds but uniformly from a low socio-economic strata.

One of the goals of this grant will be to create challenging academic offerings with STEM focused, project rich learning designed around a personalized model, which will enable eighth grade Daniel Jenkins Academy students to matriculate to the same high school and college offerings described in the Polk Polytech Academy middle school program (See Quality of

Program Design). This program will prepare students to be successful in the College of Engineering and College of Innovation and Technology offerings at Florida Polytech University.

Rochelle School of the Arts: Rochelle School of the Arts is located in the central city portion of Lakeland, in a predominantly African American community where the school originally served as Lakeland's African American high school. Rochelle became a magnet school as part of the original desegregation plan in 1990 and has not undergone a magnet school revision since that time. The school offers an extremely successful arts program, however academics have lagged behind its stellar arts performance. The school serves an increasingly minority and low socio-economic student population and also exhibits decreasing academic performance.

The newly revised program will feature an increased emphasis on academics and art integration via a STEAM program. This STEAM program will spur schoolwide innovation and produce students who excel academically and artistically. Art and design are poised to transform Rochelle School of the Arts and build on the rigorous components that define STEM.

Brigham Academy: Brigham Academy offers an innovative STEM curriculum, however it feeds into Jewett Academy, which was recently awarded International Baccalaureate (IB) Middle Years Programme (MYP) accreditation. Students who matriculate from Jewett Academy have the opportunity to choose to attend the Haines City High School IB Programme. The purpose of including Brigham Academy in this project is to create a seamless continuum of program for the Brigham students who automatically roll into Jewett Academy while addressing the minority group isolation of black students in the feeder pattern. By building on the existing STEM focus, and creating an IB program, students will continue to receive the benefits of their stem-based curriculum while expanding to also include the global perspectives unique to the IB Primary Years Programme (PYP). Many African American parents in the community have expressed a

desire for a seamless K-12 educational option for their students. By adding Brigham Academy's IB program, not only will that seamless option be available and attract black students from surrounding feeder schools, but the global studies emphasis has been very successful in recruiting minority students to these programs.

(b) The resources available to the applicant to carry out the project if funds under the program were not provided.

Excellent Fiscal and Asset Management – Without a magnet grant, Polk will not be able to afford the ***Gear Up*** project, even with good fiscal management. Other districts in Florida have closed schools and/or laid off teachers to comply with Florida's costly Class Size Reduction amendment. Polk has complied without closing schools or laying off teachers. Grades K-3 are limited to 18 students, grades 4-8 core courses to 22, and high school to 25. The Florida DOE reports Polk is consistently among the best of Florida districts at directing dollars to the classroom. Polk ranks 65 out of the 67 districts in 2015 in administrative costs. According to the FDOE Quality Link, Polk's pupil transportation efficiency ranks 9th highest in the state overall and highest in the state for those districts with 400 or more buses.

Costs Paid by Polk – Polk school district allocates funding to each of the 160 schools, including but not limited to staffing, transportation, technology, and professional development. The district allocates significant dollars for staffing at each school, including teachers, administrative teams and support personnel. In the chart below, significant dollars are available to these schools in a number of areas, but it is not sufficient to fund the scope of this expansive reconfiguration of these schools. The chart immediately following demonstrates the district allocations per proposed magnet site in key specific categories.

School	Transportation	Staffing	Professional	Title II	Technology
Brigham Academy	$5,600,000 All Magnet/ Choice Transportation	$2,591,118	$1,674	$30,757	$3,696
Combee Elem		$3,834,112	$1,674	$30,757	$5,117
Daniel Jenkins		$2,069,138	$1,674	$30,757	$3,570
Lake Alfred Addair		$3,225,641	$1,674	$30,757	$3,850
Rochelle Arts		$2,818,298	$1,674	$30,757	$5,782
Annual District Cost	$5,600,000	$14,538,307	$8,370	$153,785	$22,015
Annual Project Need	District In-Kind	$17,553,895	$3,925,646		$2,261,666
Annual Project Shortfall	$0	($3,015,588)	($3,763,491)		($2,239,651)

Another key component in moving academic achievement forward in these severely underperforming schools, is the cadre of experts and their programs that will support and scaffold student learning, resulting in students who consistently excel academically, technologically and personally. For example, while Lucy Calkins' Reader's Workshop requires significant funding for materials and professional development, the significant, positive results in our current grant schools have moved persistently failing schools to schools whose performance is competitive with district, state and national school performance.

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

Polk's current financial climate does not allow for local funds to expand or enhance programs. Since Florida has no income tax, schools depend heavily on property and sales tax revenues. In the recent economic downturn, Florida's unemployment and foreclosure rates were surpassed only by Nevada. Polk was one of the most severely affected parts of the state, directly

reducing revenues for schools. This depressed economy has greatly curtailed district funds at the same time student and family needs have grown exponentially.

In the past six years, Polk's school taxable property value dropped by $6.4 million, or 19.84%. State funding dropped by 12% in the same period, and local funding by 11%, for a combined loss of $76.9 million. Capital funding dropped by 56%, from $450.5 million to $198.8 million and currently stands at zero. The district cut $6.2 million in 161 non-classroom positions, including bus drivers, administrators and accountants. Charter schools, encouraged by Florida Legislation, have flourished in Polk and currently serve 12,629 students. This channels $88,400,000 from the annual district budget to charter schools, though cost savings from fewer students are less. In addition to these painful reductions, the district has cut more than $18 million in the past years to fund teacher raises. Secondary schools have been rescheduled to curtail electives and reduce teachers by attrition, so that teacher raises are sustained.

Inner-city Poverty - Three ***Gear Up*** magnets, Rochelle, Brigham and Combee, will be located in urban neighborhoods comparable to large, metropolitan, inner cities in terms of minority predominance, poverty, rates of imprisonment, and crime victims. In a national comparison of school districts, Polk is the 30th largest. In our state, Polk is Florida's seventh largest, but poorest of the top seven in terms of school-age children in poverty. In fact, in all of the nation's largest 30, only seven districts are poorer. Polk's free and reduced lunch rate was 70% at the end of 2014-2015, compared to 58% in Florida and 66% in Nation. Another challenge is Community Schools formula used in calculating free and reduced lunch information.

Rural Poverty – The other two ***Gear Up*** magnets, Lake Alfred Addair and Daniel Jenkins, will be located in rural northeastern Polk. One of Florida's greatest concentrations of Hispanic citrus harvesters dominated this area for decades. Our Hispanic population now includes

significant groups of Cubans, Puerto Ricans and South Americans, outnumbering the black population that swelled with Haitian "boat people" in the 1990s. In 2010, the Brookings Institution reported Polk County had the nation's fifth-highest rate of *suburban* poverty.

Diversity – Polk's PreK-12 student body of 101,477 became "majority minority" in the past five years, now 43% white, 21% Black and 32% Hispanic. ***Gear Up*** will draw from these demographic groups and thus include a large group of disadvantaged and underrepresented children in magnets. This population has a critical need for excellent educators who will challenge and support them in mastery of state standards and habits of learning to achieve college and career readiness.

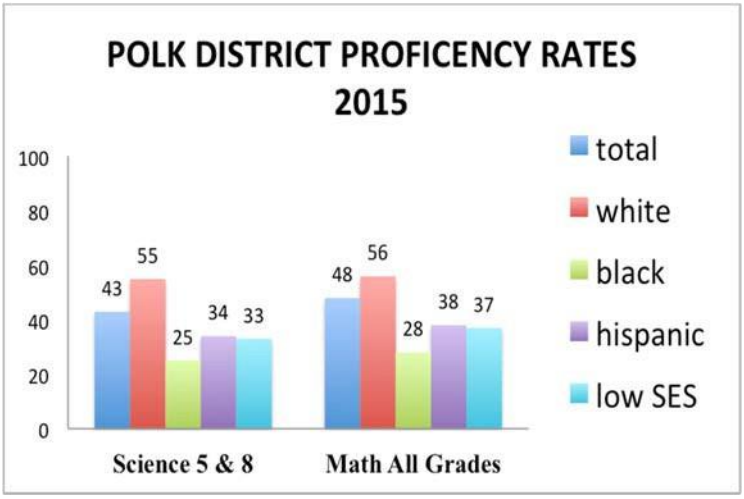
Need for Desegregation – The proposed ***Gear Up*** magnet programs are necessary to maintain the Polk school district's voluntary desegregation. The "Black and non-Black" racial quotas from the 1954 U.S. Supreme Court were replaced by the June 2007 ruling that schools may not determine student admissions by race alone. Polk's replacement system of random student selection for magnets over the next two years proved inadequate to insure continued balance in diversity over time. Membership trended toward having disadvantaged subgroups underrepresented in magnets. Meanwhile, Polk's Hispanic membership has doubled, from 16% of 83,000 students in 2004 to 32% of 101,477 students in 2015.

Polk County

The School Board of Polk County became the defendant in a desegregation lawsuit in 1963. Over the next four decades, the district attempted numerous methods to desegregate until implementing magnet schools in 1990. In March of 2000, the federal court granted unitary status to the district, and put into place a Settlement Agreement by which the district maintains the progress made in diversified student and staff assignments and equitable facilities.

Need for STEM Pipeline – Polk County's business community is demanding increased student performance to help feed the local economy by providing well-prepared workers. Businesses donated $150,000 in seed money for training and materials. Recently, Lawton Chiles Middle Academy became one of the first Southeast schools to offer the International Baccalaureate Middle Years Programme. As a demonstration site, Lawton Chiles has guided three additional middle schools for MYP IB and assisted with the implementation of three additional Fabrication Labs. The district also operates two International Baccalaureate high schools that stay at capacity. A list of major employers is found in ***Appendix1.1***.

Need for Improved Student STEM Preparation – While high tech development is rich with models for students to see STEM lessons applied in the local workforce, Polk's industrial community has reason to pressure the school system for improvements. This year the Florida Department of Education ranked Polk 53rd in student performance, out of Florida's 67 districts. The data shows schools need improvement in math and science, with minority groups especially vulnerable. This chart shows disparities between subgroups in math and science test results. In 2016, only 56% of Polk Algebra I students passed the state-required, end-of-course Algebra I exam, compared to 66% statewide.



Florida is one of the top five states for growth in STEM-related employment. STEMFlorida projects that in the next 10 years, 80% of new jobs in Florida will demand STEM preparation: jobs that require college education, and

also highly skilled tradesmen. These inspired Polk's planning team to identify our need for education in Science, Technology, Engineering and Mathematics as our ***Gear Up*** project.

(d) The difficulty of effectively carrying out the approved plan and the project for which assistance is sought, including consideration of how the design of the magnet schools project— e.g., the type of program proposed, the location of the magnet school within the LEA—impacts on the applicant's ability to successfully carry out the approved plan.

Gear Up will provide capacity for change that the targeted schools cannot otherwise afford. The project will serve a total of 3,436 students, of which 2,082 are brand new magnet seats for students at three new magnet schools. The remaining two schools are existing magnets desperately in need of reform. Each of these programs is located at an extremely low socio- economic neighborhood, in a county that is already struggling with low socioeconomic, depressed housing prices, low wage, low skill jobs and significant unemployment. The Lakeland/Winter Haven area in Polk County has the dubious distinction of being recognized as one of the 25 worst locations for promising job growth in the nation according to a US News and World Report study. The county suffers from significantly higher than average teen pregnancy and post-secondary completion rates in a state that performs below average in national studies. Polk County currently is ranked 46 out of the 67 counties in terms of academic performance. However, our magnet and choice schools have risen above these grim statistics. According to the most recently available testing data, two of our current magnets are among the top ten schools in the state, and all of our whole-school magnets performed at a grade of C or better with 6 out of 12 being rated as A schools.

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

Projects that are designed to improve student achievement or other related outcomes by supporting local or regional partnerships to give students access to real-world STEM experiences and to give educators access to high-quality STEM-related professional learning.

Gear Up project will establish three new and revise two existing magnet schools. To assure the attractiveness of our new STEM rich programs to diverse population, a significant part of our reforms will include engaging students in authentic STEM experiences and forming key partnerships that will assure quality of STEM education, professional development, and sustainability of programs. STEM direction was deliberately chosen based on needs of our community, partnerships with industries and higher education institutions, and a need for increased access to STEM careers for underrepresented student groups, including minority and low socioeconomic students. Located in the I-4 industrial corridor of Polk County, our district is home to many industries (see ***Appendix 4.1*** regarding Polk Economic Development) depending on the influx of highly qualified workers with rigorous STEM subject preparation and STEM career pathways available to qualified job seekers. This area is a home of phosphate mining companies, which extract a quarter of the world's phosphate and convert it into fertilizers, significant agricultural growing and processing operations, and major medical and high tech facilities. Theme parks, ports, and transportation hubs are in proximity of the district. Since 2010, Florida has seen a 63% increase in labor demand for jobs requiring STEM proficiency. STEMFlorida projects that in next 10 years, 80% of new jobs in Florida will demand strong STEM preparation (STEMFlorida, 2015). To address this community need, ***Gear Up*** will develop programs that will address access to advanced and rigorous courses and content in

STEM subject areas, as well as create a curriculum that will emphasize skills inherent to STEM within all subject areas and student interests. Emphasis on those skills will help all of our students prepare for the careers of the future. Among those skills are critical thinking, independence, problem solving, cognitive flexibility, communication and collaboration.

To accomplish the goals of the project, ***Gear Up*** will:

a) Develop a curriculum aligned to the needs of industry and higher education, anchored in standards and focused on design, critical thinking and problem solving

b) Create key partnership to build high-demand programs that attract the interest of all students, including minority and low socioeconomic students, and to engage students in authentic STEM experiences

c) Provide authentic training experiences to create a cadre of teachers and administrators who can sustain STEM reforms in our district

Each ***Gear Up*** school will feature a strong STEM focus as summarized in the table below:

SCHOOL	GRADES SERVED	STEM FOCUS
Combee Academy of Engineering & Design (CODE)	K-5	Engineering Design & Computer Science
Brigham Academy	K-5	STEM Infused IB/PYP
Daniel Jenkins Academy of Technology	6-8	Engineering Design & Computer Science
Polk Polytechnic Academy	5-8	Engineering Design & Computer Science
Rochelle School of the Arts	K-8	STEAM

In all schools, teachers will present engineering design as a broad discipline through which all other subject areas and disciplines are applied in real world, authentic situations. To create rigorous, inclusive programs, the new magnets will develop standard-based units that incorporate STEM focus through the design process as a method of critical thinking, searching for real life solutions and emphasizing diverse options of STEM careers. This approach will transform traditional compartmentalized science and math curriculum into a dynamic interdisciplinary, approach carried across the curriculum. This pedagogy will increase a deep understanding of the curriculum, with focus on students integrating information, applying concepts, and developing ability to think critically while generalizing and transferring knowledge through application.

Fabrication Maker Spaces Fabrication Maker Spaces (fab labs) will be an integral part of student activities and curriculum at each of the school sites. Full size fabrication labs will be installed at all middle schools, while smaller versions (due to safety) will be a part of our maker spaces at elementary levels. Originally designed for communities as prototyping platforms for local entrepreneurship, Fab Labs are increasingly used by schools for project-based, hands-on STEM education (Blickstein, 2010). Today, digital modeling may be a vector for raising interest in science and engineering careers, improving ability to apply math, science and engineering in real life, and providing opportunities for the students to improve computational thinking, problem solving, and creativity (Bull & Garafolo, 2009). Fab Labs were initially developed by the MIT's Center for Bits and Atoms as a venue for prototyping, building and digitally fabricating virtually anything. Fabrication "maker"

Students at LCMA demonstration site create a 3D prototype

spaces allow creativity to flourish as real world problems are solved through design thinking and natural application of science and math. As students engage in authentic design challenges, their engineering endeavors are driven by interest and purpose and selection of technology tools and approaches is driven by a specific task. Therefore, Fab Labs offer a space in which STEM exists as an integrated discipline to promote both academic and "soft skills" our society seeks of the workforce of the future. Furthermore, Fab Labs bridge gaps between "vocational" and "college bound", offering all students STEM literacy and knowledge they will need, for any career path they will choose in the future.

Students at Lawton Chiles Middle Academy (LCMA) demonstration site design and fabricate.

To integrate these maker spaces into cultures of our schools, we will foster critical partnerships with maker and engineering community. We will collaborate with **The Fab Foundation**, a non-profit organization that emerged from MIT's Center for Bits & Atoms Fab Lab Program with a mission "to provide access to the tools, the knowledge and the financial means to educate, innovate and invent using technology and digital fabrication to allow anyone to make (almost) anything, and thereby creating opportunities to improve lives and livelihoods around the world" (Fab Foundation, 2015). This partnership will be utilized to provide teachers

with authentic professional development in Fab Labs at our sites and around US, connect with schools and colleges around the world to work on collaborative projects and embed Fab Lab into our curriculum.

Furthermore, we will work closely with the **Catapult Lakeland**, a business incubator and a co-working space. Catapult Lakeland is currently planning installation of the large community maker spaces and offers support for entrepreneurship and creativity. Some of the services that Catapult provides include mentorship, guidance, and workshops that encourage entrepreneurship. Through the collaboration with catapult, our students will have an opportunity to make their ideas and dreams a reality. For example, students in middle and upper elementary grades will participate in a Shark Tank like project in which they will be able to imagine, design, and pitch their business ideas. Catapult is funded by the local businesses and established by the Lakeland Economic Council. Therefore, this partnership will further open the doors to partnering with local industries to support authentic STEM experiences for our students.

Industry Partnerships. We will build on existing partnerships with major industries in our area to provide our students with access to authentic STEM experiences. These experiences may encompass simulations, development and evaluation of real world problems and projects, site visits, job shadowing mentorships and that will bring STEM to life and present to students a view of careers of the future. Key industry partnerships will be established with phosphate industry and industry outreach organizations, such as Mosaic, American Institute of Chemical Engineers Polk Chapter, Florida Institute of Phosphate Research (FIPR), regional medical centers and other business in the area. Each school will further seek local partnerships specific to their needs. Our partners will actively participate in professional development, curriculum and

special activity program. For example, STEM teachers will participate in FIPR workshops that involve authentic experience in various phosphate plants.

Mosaic will assist us in creating simulation phosphate mines at elementary school sites, so that students can engage in hands on simulation of the complete mining process from core sampling to reclamation of mined land. Mosaic will also provide their educational bus that allows students to work with engineers and scientists on testing and collecting data in conjunction with the simulation. Finally, we will match students with scientists, engineers, and other partner volunteers to assist them with robotics teams and science and engineering fair competitions. This partnership will be especially beneficial for our low socioeconomic students who often lack resources and mentorship, which influences their access and performance in these events (See ***Appendix 4.2***, FIPR brochure).

Students work in Mosaic sim-mine at one of Polk's magnet schools

Higher Education Partnerships. To further provide our students with authentic STEM experiences, we will partner with **Florida Polytechnic University,** a STEM oriented university located with 30-minute drive from any of our schools. A key partnership will be established through interdistrict choice partnership with newly planned Florida Polytechnic University Charter High School. Through this partnership, 8th graders enrolled at Daniel Jenkins School of Technology and Polk Polytechnic Academy will have the opportunity to enroll at the 11th and 12th grade Florida Polytechnic University High School after completing 9th and 10th grade at the pre-academy located on the Polk Polytech Academy campus and funded through Polk County school district funds. Both of these schools are located in high poverty areas and serve a

significant low socioeconomic population. At our magnet program sites, accelerated paths will be available for all students in areas of their strengths, with a goal of offering acceleration to high school courses in middle school and preparing students for early college credit courses while moving forward through the high school programs offered through the district's continuum of this project. This will enable students to vertically align their program of study to access college level courses while in Florida Polytechnic University Charter High School, as well as complete high school with direct entry to the University, increasing the number of minority and low socioeconomic students on the path to college degree.

STEM + C Integration Computer Science for All is the White House initiative to empower American students to become equipped with the computational thinking skills they need to be creators in the digital economy and active citizens in our technology-driven world (White House, 2016). ***Gear up*** will emphasize development of computational thinking through integration of computer science into STEM units of study and offering computer science instruction and course pathways. The goal of computational literacy is not to teach everyone to think like a computer scientist; instead the outcome should be ability to apply common elements to solve problems and discover new questions that can be explored within and across all disciplines (Hemmendinger, 2010). Cuny, Snyder & Wing (2010) view computational thinking as a thinking process people involve in when formulating problems and seeking solutions that may use informational technology (Cuny, Snyder & Wing, 2010). Therefore, computational thinking is a process used to formulate and solve problems, often selecting computational tools to aid in solution. At our elementary sites the primary method of computer science instruction will be through integration of coding and algebraic thinking in math and application of computer skills and science through STEM units. At the middle school level, students will be able to choose electives within the

magnet theme, including Fab Lab and computer science electives. In addition, computational thinking will be integrated within the engineering design projects in all curricular areas.

Authentic STEM Professional Development To assure effective implementation of the STEM based curricula, our teachers will be provided a variety of opportunities for professional growth and collaboration, with the emphasis on authentic learning opportunities. For example, teachers may participate in the FIPR authentic on-site learning workshops that allow teachers to experience science within the actual phosphate processing plans. Furthermore, teachers will be provided an opportunity to collaborate with engineers and scientists to expand their content and application knowledge. STEM professional development will also focus on design thinking and its application to all curriculum areas, and understanding of STEM as a critical skillset for the 21st century workers. Additional PD information is available in the **Quality of Project Design** section of the narrative.

Polk magnet school teachers in authentic Fab Lab training

The Lawton Chiles Middle Academy demonstration site will provide authentic professional development for successful implementation of Fabrication Labs and design thinking curriculum. LCMA already has a recognized and operational Fab Lab program and will assist Rochelle, Polk Polytech and Daniel Jenkins Academy with planning, installation, hands on training, modeling, curriculum development and peer coaching to assure quality implementation of the Fab Lab curriculum at their school sites. Overview of the role of LCMA demo site at each supported ***Gear up*** school site is presented in the **Priority 2- New and Revised Magnets**.

Competitive Preference Priority 5 –

Supporting Strategies for which there is Evidence of Promise

Projects that propose a process, product, strategy, or practice supported by evidence of promise.

The ***Gear Up*** proposal is anchored in evidence and research, with citations indicating findings and research based approaches throughout our proposal. The pivotal studies that will guide the development and implementation of the ***Gear Up*** project are described below, including their relevance and our implementation of these strategies. These strategies were deliberately chosen because of their effect on low socioeconomic and diverse students, general effectiveness, and as a strategy to attract and retain diverse student population. The strategies will further strengthen the implementation of the main objective of the project, socioeconomic and racial integration, to create balanced and successful schools for all of our students.

REVIEW STUDY 1 - Strategy: Personalized Learning

This strategy will be implemented at Combee Academy of Design and Engineering (K-5), Rochelle School of the Arts (K-8), Daniel Jenkins Academy of Technology (6-8) and Polk Polytechnic Academy (5-8) and directly affect 2,908 students. The strategy was selected based on its promise to increase achievement and retention of low socioeconomic students, therefore contributing the goal of socioeconomic and racial desegregation and closing the achievement gap. At these sites, personalized learning will be an "umbrella" methodology, under which other initiatives will be integrated into a cohesive program. The research shows a statistically significant effect of personalized learning to the following outcomes outlined in our logic model:

- ✓ Improved academic performance for all demographic groups (including minority and low socioeconomic students) in math and ELA

- ✓ Decreasing the achievement gap among the demographic groups, including minority and low socioeconomic students in math and ELA

The effectiveness of the strategy will be assessed through the quasi-experimental research designed by CREDO at Stanford specifically for this project, as detailed in the **Quality of the Evaluation Plan** section of the proposal.

Study Citation:

Bill & Melinda Gates Foundation. (2014). Early progress: Interim research on personalized learning. Retrieved from http://k12education.gatesfoundation.org/student-success/personalized-learning/early-progress-interim-report-on-personalized-learning-rand/ (Meets WWC design with reservation. See ***Appendix 5.1*** for a copy of this study.)

Study at the Glance:

RAND Corporation conducted a research on the effect of implementation of personalized learning in 23 charter schools that served nearly 5,000 students from predominantly urban, low-socioeconomic backgrounds. RAND assessed the progress of students in reading and math over 2 years. The 23 schools were selected from schools funded by the Gates Foundation because

- ✓ they implemented personalized learning school-wide during both of the two academic years
- ✓ they administered Northwest Evaluation Association's (NWEA) Measures of Academic Progress (MAP) both years. The MAP assessment enabled RAND to compare achievement of students in the personalized schools (the treatment group) with students in the same grade in other schools (the virtual comparison group) who are similar in terms of achievement and the demographic characteristics of their schools.

In addition to the achievement study, RAND reported on several other aspects including school design characteristics and teachers and students perception of schools.

Citation Outcomes:

Students attending the schools in the study made significantly greater gains in mathematics and reading over the two years than a virtually matched comparison group. The "effect sizes" of the gain were statistically significant **0.41 in math and 0.29 in reading.** Furthermore, students generally ended the school year with math and reading test scores above or near the national average, after having started the school year generally performing below the national average. The research extrapolated four main strategies in common to all personalized learning schools in the study, as well teachers and students perceptions of their schools.

Relevance to the *Gear Up* Project.

The intervention in the study will be used as a guide for our four sites that are demographically comparable in the percent of minority and low socioeconomic students as those in the study. Furthermore, majority of low socioeconomic students at our sites perform below the state proficiency, comparable to the schools in the study. To assure the fidelity of the intervention, we will focus on the elements of personalized learning that study found in common.

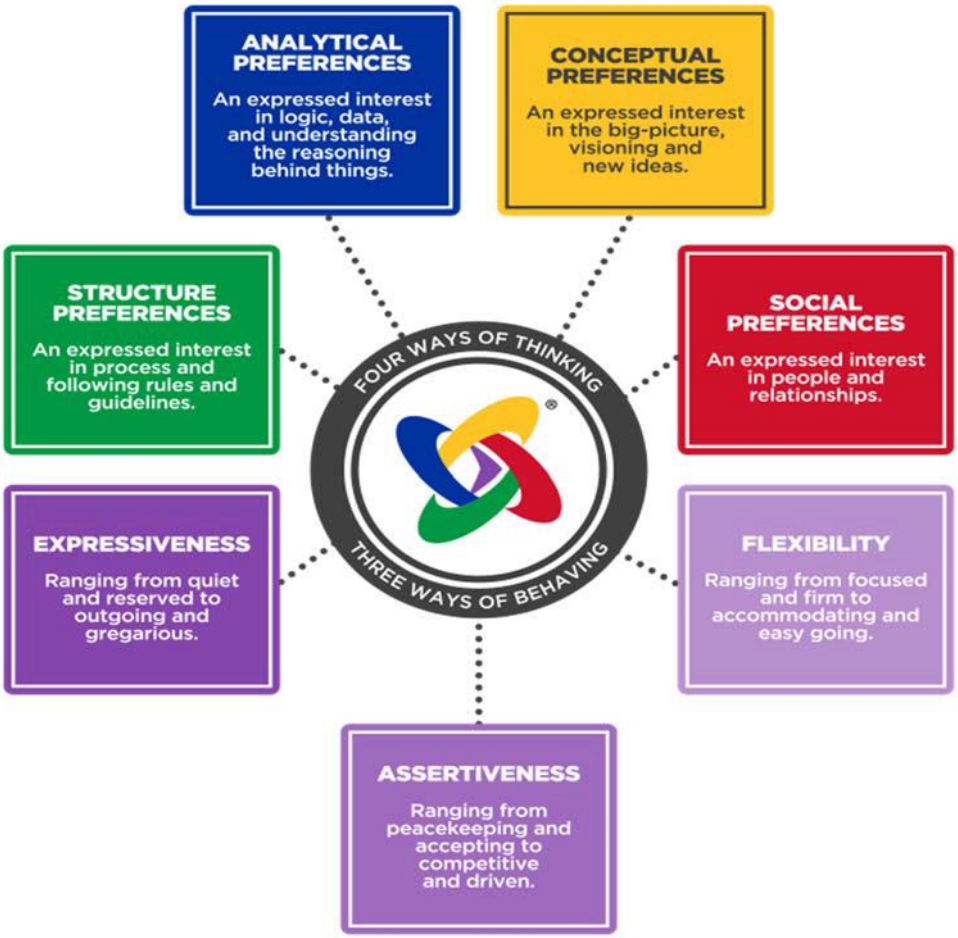
Study element 1- Learner Profiles Study describes learner profiles as follows: "Teachers have an up-to-date record that provides a deep understanding of each student's individual strengths, needs, motivations, progress, and goals to help inform his or her learning." (BMGF, 2014, pg. 6)

***Gear Up* project will utilize this element as follows:**

Students' learner profiles will be utilized in all aspects of planning, implementation and assessment. Students and teachers will frequently communicate and refer to learner profiles, and those will be shared with parents. Furthermore, teachers will use learner profiles to create flexible, student data driven tasks and interventions based on instructional data team discussions.

Aspects of integrating learner profiles include:

- **Emergenetics Profiles** The Emergenetics tool combines the core principles of effective learning, communication styles, and team interaction. The 100-item questionnaire is the product of extensive social research proven to reliably capture the major thinking and behavioral preferences people commonly use. This allows students the ability to capitalize on their insights to build self-esteem, understand their motivational drivers for learning, build appreciation and tolerance for others and improve academic performance. The report provides students' thinking and behavior preferences in seven research-based attributes, allowing them to better understand themselves (see ***Appendix 5.2***). The questionnaire is suitable for students in grades 2-8 and is normed by both gender and age to uniquely identify preferences compared to the general population. The profile will help students understand their learning, as well as work with teachers to develop personalized learning paths.
- **Data driven instruction** Teachers will have access to a multitude of formative and summative data on each students' performance. All teachers will receive training and support in understanding and using data to guide instructional planning and delivery. Students and teachers will compile a performance portfolio that will be used in teacher student conferences, as well as student/teacher/parent portfolio conferences. The data portfolio will include approximation to the mastery of the standards, student growth, and personalized paths to achieve student's individual learning goals. Instruction and personalized paths will be adjusted based on frequent formative data to assure maximum impact and use of instructional time.



Source: http://step.emergenetics.com/index.php/our-tool/

- **Teacher Instructional Teaming.** To analyze data and profiles, teachers will meet weekly in Instructional teams. During these meetings, personalization based on profiles and data will be discussed to direct instructional planning, modify current plans, and assure adequate support for each learner.

Study element 2 – Personal Learning Paths

Study describes personal learning paths as follows:

"Each student follows a customized path that responds and adapts based on his or her learning progress, motivations, and goals" (BMGF, 2014, pg. 6).

Gear Up **project will utilize this element as follows:**

Based on learner profile and data, each student, with support of teachers, will develop personal learning goals that will lead toward mastery of state standards or advanced and accelerated goals in core academic areas. To assure that all students are successful, goals will include scaffolds toward the mastery. This will provide students with attainable, yet challenging goals, assuring that all students are progressing in a supportive and efficient way. Students will engage in frequent self-reflection and confer with teachers frequently to adjust the goals and personal learning paths based on formative data and individual needs (See ***Appendix 5.3*** for the Student Goal Sheet).

Study element 3- Competency Based Progression

Study describes competency-based progression as follows:

"A student advances as soon as he or she demonstrates an adequate level of mastery" (BMGF, 2014, pg. 6).

Gear Up **project will utilize this element as follows:**

Teachers will map out curriculum in core subjects (such as math and reading) to include priority state standards. Standards will be unpacked to determine skills, concepts, levels of cognitive complexity and standard trajectories. Student assessment data will be analyzed and a student and a teacher will develop personalized learning path toward mastery of the standard. Students will work at their own pace moving through the continuum of standards, receiving adequate support and enrichment.

Study element 4 - Flexible Learning Environment

Study describes flexible learning environment as follows:

All operational elements—staffing plans, space utilization and time allocation—respond and adapt to support students in achieving their goals (BMGF, 2014, pg. 6).

***Gear Up* project will utilize this element as follows:**

At each site implementing this strategy, students will be provided flexible spaces and schedules to work on their personalized goals. Classroom and school spaces will be arranged to be responsive to a variety of learning styles. In addition, students will be provided instruction in large and small groups, or one-on-one, based on their needs. Volunteers, paraprofessionals or peers will provide support as needed by an individual student. Students will be afforded ample choices in physical environment, support and tools used to achieve personalized goals.

***Study Follow Up**

Pane, J., Steiner, E., Baird, M., & Hamilton, L. (2015). Continued Progress: Promising Evidence on Personalized Learning. doi:10.7249/rr1365 Retrieved from http://www.rand.org/pubs/research_reports/RR1365.html

The follow up study was published in November 2015. While it has not yet been reviewed by WWC, the study uses similar methodology as the previous one. The study expanded the scope of research to include additional 62 schools and almost 11,000 students. The study supports the conclusion of the previous study and adds that results are more significant the longer the student is involved in the program. This has significant implication for our program, emphasizing the importance of retaining low socioeconomic and minority students in our schools, even when they enter the program with significant academic deficiencies. We will accomplish this through personalized learning, improving the quality of curriculum and teacher knowledge, and outreach to parents and community resources.

Overcoming potential study identified barriers.

Both the initial and the follow up study found that students in choice programs had higher gains than those in non-choice programs. In the initial study, virtual match comparison students from choice schools had a lower gap than those from non-choice programs, compared to treatment schools. In the follow up study, treatment students in non-choice schools showed lesser progress than those in treatment choice schools. Furthermore, both studies indicate that the progresses is cumulative and the length of program participation is directly related to growth in academic performance. This emphasizes a need to recruit and retain low socioeconomic and minority students into our programs. To assure this, each site will develop recruitment plans, specifically targeted to these demographic group and implement responsive strategies to assure success of diverse students in our schools (See ***Appendix 5.4*** for a sample recruitment plan template).

REVIEW STUDY 2 - Strategy: Learning opportunities during out of school time

This strategy will be implemented at Combee Academy of Design and Engineering (K-5), Rochelle School of The Arts (K-8), Daniel Jenkins Academy of Technology (6-8), Polk Polytechnic Academy (5-8) and Brigham Academy (K-5). The strategy will directly affect 3,436 students. This strategy connects to the personalized learning approach and further addresses retention and success of diverse student groups, including minority and low socioeconomic students. Many of these students experience a "summer slide", a loss of learning competencies during the lengthy period with no school. Many of the low socioeconomic students do not have means to participate in quality summer educational experiences available to their middle and upper class pears. In addition, their parents often lack access to quality educational materials. This promotes increase of the achievement gap among the demographic groups. The research has shown a statistically significant effect on implementation of summer interventions to the following outcomes outlined in our logic model:

- ✓ Improved academic performance for all demographic groups (including minority and low socioeconomic students) in math and ELA.
- ✓ Decreasing the achievement gap among the demographic groups, including minority and low socioeconomic students in math and ELA.

Study Citation

Zvoch, K., & Stevens, J. J. (2012). Summer school effects in a randomized field trial. *Early Childhood Research Quarterly*, *28*(1), 24–32. Retrieved from http://dx.doi.org/10.1016/j.ecresq.2012.05.002 (Meets WWC design without reservation; See ***Appendix 5.5*** for a copy of this study.)

Study at the Glance:

This field-based randomized trial examined the effect of assignment to and participation in summer school for two moderately at-risk samples of struggling readers. The study examined the impact of a summer literacy program on kindergarten and first-grade students who were at moderate risk for reading difficulties. Students were randomly assigned to either receive an invitation to attend the summer school intervention or to serve as a comparison group where summer school attendance was not offered. The study assessed students in both grades in both the spring (pre-test) and the fall (post-test).

Citation Outcomes:

Study conclusion was **"**targeted summer instruction can be a useful strategy to support student learning over the summer months." (Zvoch & Stevens, 2012). The researchers found **effect size of 0.69 for Kindergarten (alphabetic principle) and 0.61 for grade 1 (reading fluency).**

Relevance to the *Gear Up* Project.

This study showed positive effects of summer learning to progress of students at risk. Since many of our minority and low socioeconomic students enter the school already behind in academic growth, this intervention will be used to even the playing field and provide our students and families with personalized, quality interventions during the lengthy summer break. To accomplish this strategy, we will develop a summer learning program that offers students personalized pathways to learning based on their needs, availability of materials and access to technology tools. Below are some strategies we will employ:

- ✓ Free online and offline options
- ✓ Community resource connections
- ✓ Teacher monitoring and feedback
- ✓ Personalized learning paths for remediation, practice, and enrichment

Although the cited study applied for K-1 students, we will expand the scope of our summer learning to all grade levels served. We hope to overcome a barrier of attendance, participation and completion of the summer program by integrating summer learning as a regular component of our personalized learning plans from Kindergarten.

***Additional study in support of this strategy**:

Allington, R. L., McGill-Franzen, A., Camilli, G., Williams, L., Graff, J., Zeig, J., et al. (2010). *Addressing **summer** reading setback among economically disadvantaged elementary students.* Washington, DC: Office of Educational Research and Improvement, U.S. Department of Education, Grant # R305T010692-02. (WWC without reservations)

The study found that students who received three consecutive years of free, self-selected summer reading books had statistically significantly higher reading test scores than students who did not receive summer reading books. **The reported effect size of 0.14**

Invitational Priority – Socioeconomic integration

The Secretary encourages projects that propose to increase racial integration by taking into account socioeconomic diversity in designing and implementing magnet school programs. Projects may implement inter-district or intra-district integration strategies such as neighborhood preferences or weighted lotteries.

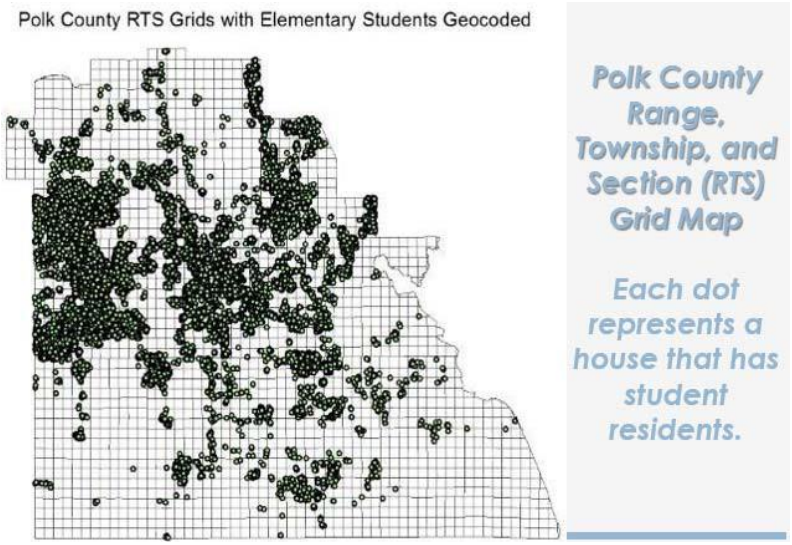
While our district has been addressing both the racial and socioeconomic desegregation through the magnet school system, socioeconomic integration has not yet been successfully addressed through our current district wide initiative. Additionally, there is significant evidence pointing to negative impacts and increase in socioeconomic isolation in some of our schools. Our current magnet and choice enrollment system takes into account socioeconomics of the neighborhood in which each applicant resides (***Appendix 3.1***) provides the Parent Presentation PowerPoint).

Existing Magnet Data Based on AYP Demographic Factors

Magnet Area	Average Lunch %	Race %				Average SWD* %	Average ELL** %
Lakeland	66	W 53	B 22	H 18	O 7	14	11
Winter Haven	74	W 50	B 21	H 22	O 7	11	16
Haines City	83	W 27	B 20	H 47	O 6	10	31
Bartow	73	W 51	B 17	H 27	O 5	12	17

*SWD: Students with Disabilities **ELL: English Language Learners
W: White B: Black H: Hispanic O: Other

Polk County developed an innovative magnet school weighted lottery process in response to the Supreme Court Ruling which no longer permitted districts to use individual student data to determine weighting for placement in enrollment processes. Using the four magnet school zones in place from the original desegregation court order, Polk County used the United States National Grid from the Federal Geographic Committee, which identifies each square mile in Polk County by range, township and section. Students were then geo-coded onto a map of Polk County to determine the number of students within each grid.



Using AYP demographic factors of

- Free or reduced lunch status
- Race
- Students with disabilities
- English Language Learners

Each grid was given a grid designation determined by all of the students in the grid depending on where they fell in each of these four categories. Once the designation for each student within a grid was determined, that entire grid was assigned a grid designation, and all students residing within a shared grid are assigned to the same applicant pool. While individual students within

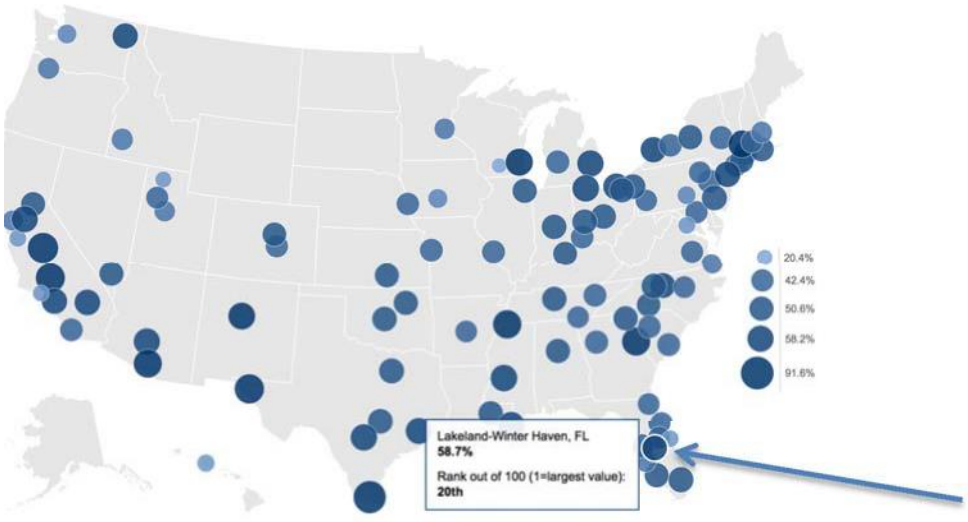
this grid may not exhibit the same category values as the grid in which they reside, there is a significantly increased likelihood that a student selected from an applicant pool will reflect the select demographic categories of the identified grid. As seats become available in a magnet school, staff reviews the demographic category values for that particular grade level and the magnet school. They then determine which applicant pool is needed for that grade level based on the student population of the magnet school. Once that determination is made, a computer generated lottery is conducted to select a student from the appropriate applicant pool. There are three applicant pools. One applicant pool coincides with students who fall within the low range of the grid within this magnet zone. The second applicant pool coincides with the average range for the grid within this magnet zone. The final applicant pool reflects the high range for the grid in this magnet zone.

The challenge that will be addressed during the Magnet School Assistance Program grant will be to determine appropriate socioeconomic data that is an alternative to the community schools designation for free or reduced lunch. Polk County will once again partner with Berkeley Unified School District (***Appendix 6.9*** for Letter of Support from this partner), which has a somewhat similar enrollment process, to explore alternatives to our current weighted socioeconomic factors. In addition, Polk County will partner with other districts around the state and throughout the nation to address solutions to the Title I conundrum. Additionally, Polk County will review zones, boundaries and other choice options, such as transfers in light of the socioeconomic impact on both sending and receiving schools.

Rise in concentrated poverty in Lakeland-Winter Haven Area. Polk County has always been an area with significant pockets of poverty, but in the recent years that trend has resulted in greater isolation of pockets of poverty within areas that have more affordable housing and higher

opportunities for agriculture or manual work. A study by the Brookings institution, identified the Lakeland-Winter Haven Urban areas, in which all of our schools are located, as one of the areas in the country experiencing the greatest rise in concentrated poverty.

Brookings identifies the trend of poverty becoming more concentrated in high-poverty and disadvantaged neighborhoods, including those "distressed" with more than 40% and "high poverty" where more than 20% of residents live in poverty." Furthermore, this study found that "minorities continued to make up a disproportionate share of residents in higher-poverty tracts and experienced concentrated disadvantage at higher rates than white residents." Brookings Institution found that 58.7% of poor population lives in "high-poverty" tracts, with 7.6% living in "distressed" tracts. Since most of the schools in our district are neighborhood zones, this presents a potential issue in rise of concentrated poverty schools and isolation of low socioeconomic schools. This has dramatic implications for quality of education and performance of our students.



Source: Brookings

Evidence of significantly lower performance of Title I schools on the latest Florida Standard Assessment. According to the results of the 2014/2015 Florida Standard assessments

and Florida school grades, Polk Title 1 Schools performed significantly lower than those not designated as Title 1. For example, none of the A rated schools were Title 1, while ALL F and D rated schools were. This mirrors the statewide disparity in achievements among non-Title 1 and Title 1 schools. In further analysis- the highest performing schools in the district had the least percentage of students from poverty, with the school grade steadily declining with rising percentages of students from poverty. For example, the highest performing schools had percentages of low socioeconomic students below 30%. In addition, some of the most persistently low performing schools are located in the low-income areas of the district and have traditionally served high percentage of students in poverty. This analysis highlights the findings of the studies that point that student performance tends to be related to the school's socioeconomic status. The first study was conducted by the Rand Institute and analyzed by the Century foundation (Schwartz, Heather. "Housing Policy Is School Policy: Economically Integrative Housing Promotes Academic Success in Montgomery County, Maryland." *The Future of School Integration: Socioeconomic Diversity as an Education Reform Strategy*. New York: Century Foundation, 2012. 27-66. Retrieved from: https://tcf.org/assets/downloads/tcf-Schwartz.pdf). Schwartz found that low socioeconomic students whose random housing assignment resulted in placement in high socioeconomic schools performed better and made significantly larger gains than peers that ended up in lower social economic environments due to random housing assignments. This difference was in spite of higher spending and intervention programs within lower socioeconomic schools. Some of the reasons underscoring these results include higher expectations of all students, lesser discipline problems, and higher rate of language development. The study supported findings by Coleman dated decades ago (Coleman, James S. Equality of Educational Opportunity (COLEMAN) Study (EEOS), 1966. ICPSR06389-

v3. Ann Arbor, MI: Inter-university Consortium for Political and Social Research 2007-04-27. http://doi.org/10.3886/ICPSR06389.v3).

The research has shown a statistically significant effect on strategies to recruit and retain students to promote voluntary desegregation to the following outcomes outlined in our logic model:

- ✓ Improved academic performance for all demographic groups (including minority and low socioeconomic students) in math and ELA
- ✓ Decreasing the achievement gap among the demographic groups, including minority and low socioeconomic students in math and ELA

Through this project we will begin to address an issue of concentered poverty and socioeconomic segregation. The first step will be to overcome a barrier of identifying socioeconomically isolated schools. This has become difficult due to recent changes in Title 1 designation. Three years ago, our district, like many other districts across the nation, adopted a "community school" model in which schools designated at Title 1 provide Title 1 services to 100% of students, eliminating the need for filing for free/reduced lunch. While this has resulted in an increased number of students receiving free and reduced lunch services, it has also resulted in a lack of data on poverty thresholds once designated by the free/reduced lunch. Currently, all measures of socioeconomic status are self-reported using much more stringent standards of qualifying for food stamps. Since the status includes self-reporting, it is challenging to determine the accuracy of reports. This raises concerns with using socioeconomic status as one of the criteria for magnet school lottery. In addition, we are not able to determine the exact numbers of low socioeconomic students in community magnet schools or their feeder pattern. Therefore, an important aspect of our project will be devising metrics for socioeconomic determination that would provide us

adequate information of school poverty distribution. These metrics will have an impact on our recruitment, enrollment and support services, and answer the questions a) is there a significant socioeconomic isolation in our district? b) can it be addressed through magnet enrollment lottery? and c) what is the impact on students' performance?

Once the metrics are established, we will employ strategies to mend or prevent socioeconomic isolation and its impact on our students through:

- Enrollment system that includes socioeconomic factors along with other factors to promote voluntary desegregation (As described in Priority 3-Selection of Students)
- Integrated strategies to assure retention of students who voluntarily apply and are selected such as: attractive magnet themes, quality teachers, personalized learning, summer learning support and attention to strategies that promote interaction and collaboration among diverse student and parent groups. These aspects are further discussed in the section addressing Desegregation V(a).
- Site specific targeted recruitment and outreach efforts that induce diverse student groups to apply and accept enrollment at our schools
- Personalized learning paths for remediation, practice, and enrichment

(a) Desegregation

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

Magnet schools in Polk are open to all students. Representatives from high performing magnet schools visit an array of local schools to market their magnet programs with recruiting materials for parents and students. The Magnet Office ensures that recruitment materials are clear for parents of students with disabilities while outlining a full range of choices that are available. All magnet materials are available in Spanish and Haitian Creole with additional translations available upon school and parental request. Polk County actively recruits to guarantee that every magnet school is serving the broadest population of these students possible.

Prior to the student selection, the Magnet Office targets recruitment by identifying underrepresented groups in the applicant pool or magnet school. It uses these strategies:

- WE3 Choice Fair
    - 3 day event.
    - Open to schools and the community.
    - Each magnet school has a booth with hands on activities and school information.
    - Translators and materials in multiple languages are available.
    - Held on a Saturday so all parents have the opportunity to attend.
- Work with businesses and community groups to provide information via presentations, hands out and referrals.
- Publication of print media in multiple languages to hand out at presentations or to leave for parents to pick up in public places; markets, community centers, and churches

- Outreach through the district's ESOL Department, Magnet Office and local school staff including home visits with translators to overcome language barriers
- Individual phone calls to parents to discuss magnet options and application opportunities
- Organization of feeder school visits utilizing students in presentations. For example, an eighth grade jazz band from Rochelle School of the Arts goes to Philip O'Brien Elementary to play a mini-concert and discuss experiences at their school

Polk Polytech Academy and Combee Academy will recruit students for 1,572 new magnet seats. They will work from priorities to recruit students from different social, economic, ethnic, and racial backgrounds. This will be accomplished by hosting parent nights with translators and school visits during the day for parents to observe school activities.

Media – Polk advertises magnet application information through local papers, news programs, cable TV public service channels, and on our web pages. The Internet address is printed on all publications and online at www.polk-fl.net keyword "school choice." The local cable television network on channel 14, Polk Government Television (PGTV), plays Magnet Office recruitment videos during varying hours of the day over several months before and during application periods. Staff will use Facebook and Twitter as well to market magnet schools and answer questions.

Flyers and Brochures - Every student enrolled in a Polk County school receives a detailed information sheet about school choices sent home via report cards. More than 90,000 flyers are distributed this way. The flyers provide an overview of magnet programs and information on how to apply in English, Spanish, and Haitian Creole. The magnet schools print 16,000 brochures annually for recruitment in the community. Brochures are placed at schools in predominantly minority neighborhoods to encourage nonwhite students to apply.

Printed Materials – The Magnet Office prints marketing materials annually in Spanish and Haitian Creole to tell the focus and culture of each magnet. Chambers of Commerce, local Realtor groups and other public service agents distribute Parent Resource Guides.

School Marketing Videos - Each magnet school has a marketing video. Each video is 15-20 minutes long and gives students insight to the focus and culture of that specific school. Students may view them on the local cable network as they are played or online at http://www.polk-fl.net/districtinfo/departments/schoolbased/schoolchoice/videos.htm.

Open House – Each magnet will publicize and host open house events for all. The marketing options listed above provide a macro and micro approach to informing parents. Macro- marketing, through the use of local newspapers, news media, and cable networks, provides the recruitment information to the entire district. The micro-marketing, individual school open houses and school tours provide a more individualized and personal approach to informing parents of choice options. The overall intent is to target each household in the district and provide information on public school choice options available in Polk County.

Recruitment of Diverse Students – With assistance of the Magnet Office, each magnet school will market beyond the traditional strategies of brochures and videos for informing parents about educational programs and enrollment procedures for each magnet site. We will have Spanish translators available at each event and Haitian Creole translators available upon request.

This project will provide parent access to computer labs within each of the four magnet zones whose residents may apply to the magnets in their zone. Each school staff using the lab for recruitment and family events can use the included computer software to translate various documents and school communications. These labs will the epicenter for family-friendly

outreach for events such as immunization fairs for incoming kindergartners, homework help workshops and math manipulatives for families, parent conferences in "neutral" or neighborhood settings, engineering demonstrations, workplace volunteer recruitment with cooperation from local employers, exhibits, help with resume writing and job applications for parents, and other Internet access and uses recommended by School Advisory Committees and by students.

The district is promoting "transition" projects and ***Gear Up*** will expand existing magnet schools' practice of inviting Head Start children from the neighborhood to a four-week session of daily, one-hour classes called "Bridge to Kindergarten." Besides offering a service to the community, this practice has proven an effective recruitment tool, as an increasing number of Head Start parents are applying to have their children attend these magnet schools. Another example is "Welcome to Our World" Visitors Day, modeled after EPCOT exhibits at Walt Disney World. Publicity will include distribution at churches, Health Department clinics, laundromats, adult education centers, through employers, and via the district's Farmworkers Program. The day will feature student presentations on biodiversity, business partners from the Mosaic Company with a soil testing mobile lab, Florida Fish and Game Department officials with live animals, and observation learning activities. Potential students and their parents will leave with a true understanding of the program as well as animal tracks molded in plaster, a plant collection, and color photo of the student with a live reptile.

Diversity Management Goals in the District Strategic Plan

District Strategic Plan Goals	Related Diversity Management Objectives
SP Strategy 1: We will ensure each student meets his/her academic and	Ensure that proactive strategies are implemented to detect and eliminate any systemic barriers to minority students reaching his/her academic and

personal goals	personal goals.
SP Strategy 2: We will ensure that our instruction and curriculum meet the educational needs of each student.	Initiate and implement innovative activities that make a difference in learning, diversity, multicultural education, and the unique contributions of minority history.
SP Strategy 3: We will establish a learning environment that ensures the academic and personal success of all students	Promote initiatives that increase multicultural cooperation within the schools and community.

Each of the new magnets in this proposal will develop a marketing plan in conjunction with staff from the Magnet Office. Recognizing that this may be a new and challenging experience, the office will provide support matching each of these schools with a highly successful demonstration school site with extensive experience and success in marketing their magnet schools. Carolyn Bridges, Senior Director, currently holds bi-monthly Magnet meetings. New magnets will meet an hour before these meetings with their demonstration schools for specific grant planning. In addition, demonstration school sites will provide resource and support throughout each enrollment period to assist these schools in marketing and recruiting.

(2) How it will foster interaction among students of different social, economic, ethnic, and racial backgrounds in classroom activities, extracurricular activities, or other activities in the magnet schools (or, if appropriate, in the schools in which the magnet school programs operate).

Gear Up will deliberately embed strategies to increase interest, access, and success of diverse populations, especially underrepresented groups, in all of our programs. This will contribute to interest in program, as well as academic achievement of diverse students. Specifically, at each school or feeder pattern, isolation of minority students will gradually decrease as specified by our evaluation plan. Key factors in increasing interactions include a strong, challenging academic program attractive to diverse population, activities structured to promote interaction during the day, and effective teacher training in addressing the needs of diverse students. Some of the strategies we will utilize to assure interaction among diverse students during all activities at our magnet sites are described below:

Heterogeneous Classrooms and Grouping - All ***Gear Up*** classes will feature heterogeneous, diverse, inclusionary classes. In all programs, teachers will use sound practices for linguistically diverse students such as modeling, nonlinguistic representation, use of multiple modalities, visual and graphic organizers, audio representation and use of technology for translation and to aid expression. Furthermore, heterogeneously grouped classes will utilize a variety of differentiated strategies to reach all learners, regardless of their learning style or level of academic performance. Magnet teachers will use differentiated instruction to reach all students, regardless of their background, interests, abilities or learning needs. With differentiation, the curricular concepts will be the same for all students but the learning paths, products and assessments may differ to challenge each student and provide adequate scaffolds and supports when needed.

Building on the 21st century skills, magnet school courses and classroom projects within individual classes will include small, collaborative group work. Small, collaborative groups bring students from diverse backgrounds together to learn from, communicate with and support each

other. Students are grouped by common interest or project topic. Teachers will help students develop trust, understand and accept differences, and cooperate. When students learn to work cooperatively, they will be able to actively participate, express and justify their point of view, explore multiple ideas and learn within a supportive group environment. Heterogeneous grouping will teach students how to learn in a democratic, fair, respectful and equitable environment.

Interdisciplinary common-interest projects/topics - Themes chosen for revised and new magnet programs emphasize interdisciplinary approach to curriculum. This interdisciplinary approach will be structured to allow students choices of learning projects such as performances, presentations, or showcases. This teaches students they share certain interests with others different from themselves, foster positive attitudes and promote respectful learning environments.

Inclusive Classroom Setting - To reach diverse learners, teachers will create a classroom environment where students engage in learning in a variety of ways and demonstrate their understandings through multiple assessment methods. Furthermore, teachers will use strategies that challenge students to look for multiple solutions or perspectives to a problem or an issue, and create personal links to knowledge, events, and ideas.

Extracurricular Opportunities for Students extracurricular opportunities and family events will be organized at all school sites to foster interaction of diverse students. Extracurricular offerings, such as middle school robotics clubs, will be organized to assure that all students can have access. For example, meetings before school or during lunch will be offered to students who have transportation issues. At each campus, extra-curricular offering will tie into students' interest and magnet themes to further increase attractiveness of the program to diverse students.

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

school, *e.g.*, women and girls in mathematics, science, or technology courses, and disabled students.

An important aspect of the ***Gear Up*** project is ensuring that all students enrolled in the magnet schools have equitable access to high quality education. Currently, minority and low socioeconomic students are unequally represented in advanced high and middle school courses offered by the Polk school district. In addition, number of girls participating in advanced math, computer science and engineering courses or vocational programs does not reflect the demographic makeup of the district. ***Gear up*** will open additional 2,082 magnet seats in our district, increasing access to quality, magnet education for district's diverse students. Our enrollment system (discussed in previous section) is designed to assure enrollment equity and access to rigorous coursework in our schools. At each site and district wide, we will design a recruitment plan to inform families and community about the programs and provide assistance in application for lottery.

Curricular and programmatic choices at each site have been deliberately designed to attract interest of underrepresented groups, as well as to support their academic development to enable students to prepare for demands of advanced and STEM coursework. ***Gear Up*** will address specific needs of various groups to assure equitable access and success in our programs. The themes are selected for their high motivational value for all students, as expressed by our communities, and students attending these schools are bound by a common interest in the magnet theme.

FOCUS AREA	STRATEGIES	EXAMPLES
Addressing needs	Actively recruit girls for participation in STEM classes,	In collaboration with local

of girls in STEM programs	competitions and extracurricular activities; Provide professional women mentors for girls; Include women engineers and other professionals as speakers; Engage girls in long term STEM collaborative projects of their interest; collaborate with afterschool programs and community organization to provide STEM activities and recruit girls.	non-profit after school program Girls, Inc., schools will provide access to Fab Lab to minority girls for enrichment & special interest projects
Success for Linguistically Diverse Students	All teachers of ELL students will receive training leading to ESOL endorsement to improve instruction; Involve parents of linguistically diverse students; Utilize research based ESOL strategies in classroom; Provide ELL students with respectful, safe environment with multiple opportunities to practice language;	Provide materials and translation during school meetings in native language to assure successful school-home collaboration with linguistically diverse families.
Bridging the digital divide (particularly relevant for low socioeconomic students)	Create a technology checkout program for students without access; During parent information night, provide parents with technology checkout policies and list of libraries, centers and other places for Internet access; Begin intensive technology integration across curriculum from kindergarten; Provide access to computer labs before and after school; Develop enrichment programs to hone technology skills.	Schools will collaborate with local businesses and provide students with an incentive program to earn coupons toward free meal at places that offer free Internet services

Success of diverse groups	Actively recruit diverse population; strive to recruit diverse faculty; include contributions of diverse individuals within curriculum; provide diverse students opportunities to participate in academic and STEM competitions and teams; provide tiers of support systems; match students with mentors with whom they can identify; hold high expectations of all students; provide teachers with training and support for reaching diverse students.	During the "View of the Future" school-to-career program, schools will recruit diverse speakers with whom all students can identify.
Success for Students with Disabilities	Train staff in implementation of exceptional students' accommodations and individualized education plans; Provide services in the least restrictive environment, full inclusion, with assistance of special education teacher; provide students and teachers education on tolerance and diversity by the district ESE department; differentiate instruction that meets needs of SWD.	Special education teacher will participate in curriculum development and PLCs to assure use of up to date, research based strategies for individual students with disabilities.

To further assure access and success for all students, with specific attention to those from the commonly underrepresented groups, we will utilize the following approaches:

a) Personalized learning

b) Supports for academic development

c) Engaging academic themes

d) Partnerships with community for authentic experiences and mentorships

e) Parental involvement and decision making

a) Personalized Learning: Personalized learning will be a backbone of academic programs at four of our sites, with the 5th site (Brigham Academy) implementing major components within its curriculum. The role of personalized learning will be to create individual development pathways, enabling all students to experience success, accelerate or receive adequate support. Competency based progression will assure that all students can develop academic skills progressively, whether they need to catch up or move faster. This is especially important as many of our sites experience a significant achievement gap that results in underrepresentation of minority and low socioeconomic students in advanced courses such as high school level courses taken in middle school or challenging engineering, computer science or robotics courses. To ensure access to all students, campus computer facilities will be opened before and after school during school days and checkout for equipment will be available at the sites as needed by students. Schools will further form partnerships with local libraries and community centers that provide access to the Internet and devices for students who do not have those at home. Access to personalized learning opportunities will help students learn at their pace and strengthen their academic skills.

b) Student academic supports:

Differentiation of Instruction Particular focus will be on differentiation strategies necessary to meet needs of the diverse population, assuring access to and success in quality programs by diverse students. Tomlinson (2001), in her discussion of differentiated instruction for diverse learners, notes that "learning takes place most effectively in classrooms where knowledge is clearly and powerfully organized, students are highly active in learning process, assessments are rich and varied, and students feel a sense of safety and connection" (Tomlinson,2001, p.8). All programs will feature heterogeneous, diverse inclusion classes. In all programs, teachers will

use sound practices for linguistically diverse students such as modeling, nonlinguistic representation, use of multiple modalities, visual and graphic organizers, audio representation and use of technology for translation and to aid expression. Furthermore, heterogeneously grouped classes will utilize a variety of differentiated strategies to reach all learners, regardless of their learning style or level of academic performance. Bush (2006) remarks that differentiation of instruction is "difference between proaction and reaction" (Bush, 2006, p. 44). Magnet teachers will use differentiated instruction to reach all students, regardless of their background, interests, abilities or learning needs. Differentiation will allow all students to meet standards and successfully learn within the magnet theme. With differentiation, the curricular concepts will be the same for all students but the learning paths, products and assessments may differ to challenge each student and provide adequate scaffolds and supports when needed. **Multi-tiered Support System (MTSS)** In addition to ongoing differentiation and personalization of learning we will provide support for students striving to meet standards through the Multi-Tiered System of Support (MTSS). MTSS is a three-tiered approach to meet individual academic needs. Faculty teams, typically including the guidance counselor and specialists, will help teachers figure out why a student is struggling, brainstorm solutions, and monitor how well interventions work. Their goal is to resolve the root of any problem, often involving the family as well as emphasizing consistent reinforcements at school. ***Gear Up*** will revise the typical MTSS process by adding an intermediate step as a preventative measure for students at risk.

TIER 1 Students who are successful in meeting standards within regular, core instruction. The school goal is to reach 80% of students, or recognize system problems interfering with this level of school performance.

SUPPORTED TIER 1	Students who are at risk or struggling to meet standards and need additional supports within core, regular instruction to maintain progress. This is an extra step that is unique to our program.
TIER 2	Students who are currently not meeting standards within core, regular instruction and need different ways to learn with specific supports.
TIER 3	Students who need intensive remediation and are currently at least a year behind in meeting standards. This should not exceed 5% of students.

Tier 1 Strategies - Tier 1 strategies are data-driven and include differentiation of instruction based on students' entry point in the curriculum, progress, learning style, interest or achievement. Weekly teacher teams, called Data Teams, are organized into Professional Learning Communities, continuously monitor progress and adjust activities to assure mastery.

Supported Tier 1 **-** This Tier will be added as a prevention, proactive step to address needs of any student. The goal of Supported Tier 1 strategies is to prevent student attrition from magnet programs and help them be successful in Tier 1 instruction. This intermediary step will decrease the number of students needing more intensive interventions by proactively addressing student needs. Support may include academics, behavior, social and emotional functioning or attendance. The program will include

a) ongoing monitoring of student progress toward mastery of standards

- During weekly teams meeting teachers will analyze data for students in Tier 1 to determine progress and adjust instruction.
- Data will be shared with others involved in Tier 1student success (this may involve special education teachers, support staff, resource teachers etc.)

- Ongoing communication with home using student agendas will continuously inform parents of students' progress
- Student data will be discussed with parents during monthly meeting

b) differentiated learning

- Personalized learning pathways and ongoing monitoring will be developed by teachers based on data
- Modification of homework assignments based on data
- Additional assistance during school day by resource and support staff

c) assistance to families in helping in meeting standards; and

- Connect families to community resources needed for success
- Materials and tools for family assistance (books, technology etc.)
- Scheduling of meetings at a convenient time to assure parent can attend

d) team monitoring interventions.

- Each month the MTSS support team that includes parents, teachers and support staff appropriate to individualized needs of students will analyze and discuss student progress and determine interventions needed

Tier 2 - Interventions will target subjects or other areas unique to the student and include additional one-on-one or small group time. Tier 2 interventions will be available during school day to assure that all students can attend, as well as before or after school as needed.

Tier 3 - Students in Tier 3 need intensive interventions to succeed. For these students, additional individualized one–on-one interventions will be embedded in all subjects in which students struggle. They will have extra time for instruction as needed in small-group tutoring and other interventions. School teams may seek outside support and testing as needed.

Special attention will be placed on support for English Language Learners (ELL). As Hispanic population is growing in Polk County, a need for addressing specific challenges of ELL is in the forefront of achieving equity and increasing success of our students. Under the Florida Consent Decree, all primary teachers (core subject teachers) of ELL must complete a prescribed sequence of courses leading to ESOL Endorsement. This consists of 300 hours of content that includes cultural competency, methodology, assessment and linguistics. For teachers of support subjects (such as electives), this requirement is 100 hours. At our sites, all primary teachers will either have a state ESOL endorsement or will be in the process of acquiring this credential. To support ELL, teachers will utilize evidence-based strategies and practices such as use of graphics organizers.

(c) Engaging academic themes: Themes chosen will attract diverse students typically underrepresented in STEM fields including minorities, low SES students and girls. The choice of themes was guided by the needs of community, economic opportunity and need to attract diverse population and appeal to those typically underrepresented in the STEM workforce, including minorities and women. Located in the Central Florida's I-4 corridor, our district is a home to many industries looking for STEM qualified workers. In the recent meeting of the Lakeland Economic Development Council, the complaint of the 15 largest employers in the area was that "the difficulty of doing business in Lakeland is getting access to an educated workforce." This collaboration and planning also focused on keeping students on the cutting edge of Science, Technology, Engineering and Mathematics while capitalizing on school, community and post-secondary resources, services and programming. For example, interdistrict partnership with Florida Polytechnic University will provide opportunities for smooth transition to high school and college, with emphasis on STEM preparation.

To foster interaction within each magnet program during the school day, each magnet school will provide all students with high-quality, inclusive educational opportunity. Each magnet school will be free from behaviors that may present barriers to active participation and engaging learning environment, such as stereotypes and different level of expectations. Themes selected have high motivational value for all students, and students attending these schools are bound by a common interest in the magnet theme. The theme's diversity focus will include community projects that bring the student population together. Strategies to develop inter-group relations that foster the climate of acceptance and promote active participation and engagement of students regardless of their background, will be implemented in all areas of school functioning.

POLK POLYTECHNIC ACADEMY (5-8) – new magnet **DANIEL JENKINS ACADEMY TECHNOLOGY (6-8)- new magnet** **THEME: STEM**
▪ Focus on engineering, computer science, and integrated STEM ▪ Computer science sequence for all students ▪ Advanced math courses allowing middle school acceleration (high school credit) ▪ Explorations in agriscience, robotics, manufacturing, and applied engineering ▪ Fabrication Lab ▪ Partnership for transition to high school and college through Florida Polytechnic University offering transition to STEM high school established by the University; 11-12th grade on University site with transition program to University
COMBEE ACADEMY OF DESIGN & ENGINEERING (K-5)- new magnet **THEME: STEM**
▪ Focus on engineering, computer science, and integrated STEM

- Computer science integrated in math courses for all students starting in Kindergarten
- Engineering Lab featuring fabrication makerspace
- Core academics through interdisciplinary units of study featuring authentic engineering challenges
- Feeder pattern to middle school Crystal Academy of Science & Engineering (CASE) for grades 6-8

BRIGHAM ACADEMY (K-5)- revised magnet

THEME: STEM INFUSED PYP/IB

- International Baccalaureate Primary Years Programme infused with strong STEM Focus
- Engineering Lab featuring fabrication makerspace
- Foreign language fundamentals
- Core academics through transdisciplinary units of study
- Feeder pattern to Jewett Middle Academy, accredited IB/ Middle Years Programme for grades 6-8 & opportunity to attend Haines City IB for High School

ROCHELLE SCHOOL OF THE ARTS (K-8)- revised magnet

THEME: STEAM

- Integrated STEAM approach with focus on application of engineering and design thinking
- Computer science supports for all students through integration in math and elective subjects
- Advanced math courses allowing middle school acceleration (high school credit)
- Explorations in crossroads of arts and robotics, manufacturing, and applied engineering
- Fabrication Lab and makerspace opportunities from Kindergarten
- Strong preparation for transition to Harrison School of the Arts High school or high school academies and advanced programs

Common theme threads at all sites: Authentic STEM experiences will be a common thread in all of our school, responding to the calls from the industry and community, as well as alignment to the higher education. To assure attractiveness of our new STEM rich programs to diverse populations, our programs will adopt a variety of themes uniquely supported by the STEM backbone, allowing students to transfer knowledge and apply science, technology, engineering and mathematics within various contexts. Infusing STEM in a variety of magnet themes (such as IB, arts or engineering) will help attract interest of diverse students, as well as offer an opportunity to develop a dynamic, rigorous high interest curriculum. Thematic areas such as IB and arts, will further enhance STEM by allowing students to view science, mathematics, engineering and technology as broadly encompassing disciplines with limitless applications. This is particularly important in assuring that all demographic groups, including those traditionally underrepresented in technology, engineering, science and math careers, develop understanding of applicability of STEM in their interest areas and choices of the future.

Fabrication Labs: Fabrication makerspaces will enhance authentic STEM opportunities at all sites, as hubs of innovation and service learning providing students with opportunity to build and create. Makerspace will encourage students to use tools and materials to tinker, innovate, and collaborate. Originally designed for communities as prototyping platforms for local entrepreneurship, Fab Labs are increasingly used by schools for project-based, hands-on STEM education (Blickstein, 2010). Today, digital modeling may be a vector for raising interest in science and engineering careers, improving ability to apply math, science and engineering in real life, and providing opportunities for the students to improve computational thinking, problem solving, and creativity (Bull & Garafolo, 2009). Fab Labs were initially developed by the MIT's Center for Bits and Atoms as a venue for prototyping, building and digitally fabricating virtually

anything. These "maker" spaces, allow creativity to flourish as real world problems are solved through design thinking and natural application of science and math. It was not long before educational world saw the potential, and Fab Labs begin to grow in educational settings (Blickstein, 2013). This idea was driven by shifting paradigms in education and need to increase participation is STEM, both as college and vocational tracks, as well as growth in demands for preparing the "21st century ready workforce" (CPST, 2007; Machi, 2008). To connect and dissolve boundaries for the STEM subjects, teachers frequently utilize an engineering design process. This process draws on engineering and engineering education as well as "mainstream" science as sources of ideas for instruction, therefore, bridging the disciplinary boundaries between science and engineering (Kelly, Brenner & Pipoer, 2010). The engineering design problem or challenge functions as a correlating channel for learning, emphasizing the integration of science and math subject areas with technology and engineering (Sanders 2008; Kelly, Brenner & Pipoer, 2010). To utilize engineering design methodology and infuse strong engineering and technology concepts, Cavanaugh (2009) suggests that school programs should

be designed so engineering lessons ". . . ask students to make use of math, science, and technology knowledge and skills. . . and emphasize problem solving, the ability to use equipment and technology, communication and collaboration with others" (Cavanagh, 2009). In addition, there is a need for deliberate integration of technology into STEM. According to Pearson & Young, 2002, "although the United States is increasingly defined by and dependent on

technology and is adopting new technologies at a breathtaking pace, its citizens are not equipped to make well-considered decisions or to think critically about technology" (Pearson & Young, 2002). Fab Labs have a potential to redefine STEM curriculum by emphasizing the "T and E" of STEM to allow students to apply mathematical and scientific principles. "Maker" culture and

constructionism movement evolved with work of S. Papert, and build on the developmental psychology ideas of Piaget and constructivist views of Dewey. Papert stipulated that knowledge is constructed when students can build, make and share their products (Blikstein, 2013). Papert further suggests that technology is not meant to make traditional education better, but rather to disrupt it by putting construction materials in hands of students (Papert, 1993). Fab Lab maker spaces allow students to use technology to "design, manufacture, operate, and repair technological artifacts" (Pearson & Young, 2002). As students engage in authentic design challenges, their engineering endeavors are driven by interest and purpose, and the selection of technology tools and approaches is driven by a specific task. Furthermore, science and mathematics are applied as students design and prototype using a variety of materials and ideations. Therefore, Fab Labs offer a space in which STEM exists as an integrated discipline to promote both academic and "soft skills" our society seeks of workforce of the future. Furthermore, Fab Labs bridge gaps between "vocational" and "college bound", offering all students STEM literacy and knowledge they will need, regardless of the career paths they will choose in the future.

(d) Partnerships with community for authentic experiences and mentorships. To attract and retain diverse students, including those traditionally underrepresented in STEM, we will form partnerships with community to enhance educational experiences, provide mentorships and role models and familiarize students with opportunities for the future. Partnerships with industry will include mentoring and providing feedback for student projects and one to one mentoring for students based on their interest. We will engage minority and women entrepreneurs and professionals as speakers and mentors, allowing our students to envision themselves in the future. At each site, we will implement "View of the Future" career sequence in which students

will explore careers. This will be embedded in units of study in which special focus on careers will be included, with emphasis on bringing community and business partners to schools for guidance and support. For our middle schoolers we will actively seek job-shadowing experiences with local industry and higher education. In addition, we will actively work with community organizations such as Girls, Inc. and Boys and Girls club, as well as local libraries and community centers to provide mentorship, academic supports and guidance for our students. Our many business and community partners have committed to support the project as noted in our letters of support.

(4) The effectiveness of all other desegregation strategies proposed by the applicant for the elimination, reduction, or prevention of minority group isolation in elementary schools and secondary schools with substantial proportions of minority students.

Recruitment of students. Section (1) of this section provides a comprehensive list of the combined efforts of individual schools, the Magnet Office, as well as business, community and other departments' support to ensure that information about magnet schools is provided to the whole district to all socioeconomic and racial groups. Whether a teacher team is visiting each of the local Pre-K programs during peak hours of parents picking up their children to provide magnet school information or the Principal of the school is a guest speaker during a Sunday morning church service at a local congregation or perspective parents are provided free tickets to attend a spaghetti dinner, STEM night at a local magnet school where students are eating their spaghetti dinners with simple machines that they have constructed from common household tools, our schools employ creative and personalized methods to ensure that every sector of the community is given the opportunity to learn about the unique programs and rigorous academic expectations of these magnet schools. It is not sufficient to just recruit a diverse body of students,

once these students are enrolled, it is equally important to provide the support and academic scaffolding needed to ensure their success at the school site and infuse a love of learning into their academic experiences.

Retention of underrepresented students. Equally important as recruitment is the retention of underrepresented students in ***Gear Up*** programs. Research has repeatedly found that effects of quality educational programs are cumulative, meaning that the longer the student stays in a program, the more likely the student is to show significant academic gains. A study " Are High Quality Programs Enough to Close the Achievement Gap?" found that significant gains in performance are related to the length of participation (Fryer & Dobbie, 2009). Furthermore, several studies show significant attrition of students from choice charter programs is related to "lack of feelings of belonging and success" (Flay & Allred, 2003). Therefore, ***Gear Up*** has embedded safeguards to assure retention and support for underrepresented students. Polk District Magnet schools have a relatively low attrition rates for all students, including underrepresented ones. However, we anticipate that many of our new magnet students will be significantly behind academically. In addition, active parental involvement will need to be increased by welcoming diverse parents and understanding their needs and cultural characteristics. To assure retention of students we will focus on:

- providing academic supports through personalized learning, differentiation, and multiple ways of learning and demonstrating knowledge
- increasing interest in academics through engaging, hands on , relevant magnet themes
- community partnership for mentorship, guidance and support services

- fostering parent involvement by utilizing the strategies outlined in the Hanover study and Epstein's Types of Parental Involvement **(described in detail in Quality of Management Plan)**
- providing culturally responsive , nurturing environment with high expectation and respect for all students and families

Summer Learning Program. In addition to the above strategies, we will promote retention and success of students in the ***Gear Up*** program by providing opportunities for meaningful summer learning. Summer learning is one of the major systemic reforms that will be implemented at all of our sites. Rationale and studies pointing to significance of this strategy are discussed in detail in *Priority 5- Evidence of Promise*. Summer learning loss has been a well-documented phenomena, often presenting a barrier for our underrepresented students. During the lengthy summer break, students from impoverished circumstances lack opportunities their middle and upper class peers enjoy. Lack of access to quality educational experiences have an adverse effect on these students. ***Gear Up*** sites will provide Summer Learning programs, available both on and off line, consisting of quality, high interest activities to bridge the summer learning gap. In addition, the program will utilize community partnership, such as libraries, community centers and summer camp providers to increase access to support, computers and Internet. Staff at ***Gear Up*** sites will monitor and assist students and parents during summer. Programs will be implemented from rising Kindergarten on, building habits and forging relationships to further success and retention of our underrepresented students.

Lawton Chiles students engaged in hands-on STEM activities.

(b) Quality of Project Design

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

Extent of academic improvement. ***Gear Up*** will address needs of some of our district's persistently low performing schools, along with schools that are currently experiencing academic decline. As described by our attached logic models, activities planned are anchored in research based strong theory that will lead to significant academic improvement and alleviate the achievement gap among our minority and low SES student groups. Based on research and prior experiences in raising achievement at low performing schools, ***Gear Up*** has set ambitions, yet achievable academic targets for each of participating schools, as detailed in the ***Quality of Management Plan*** and ***Quality of Evaluation Plan*** sections of this narrative. While all components of the program are geared toward academic achievement, the following objectives provide metrics to determine the extent of academic achievement at each of the sites:

- **Objective 2:** To design and develop innovative educational methods and practices which promote diversity, increase choice and ensure students gain 21st century skills.
- **Objective 3:** To provide professional development for magnet school teachers related to implementing high-quality educational programs, increasing achievement for all students, improving instructional practices and ensuring program sustainability.

- **Objective 5:** To increase percentages of all magnet students, including those from major racial and ethnic subgroups, who score Achievement Level 3 and above on the statewide assessment in reading/language arts and mathematics

The manner in which *Gear Up* will improve academic achievement. To achieve targets of the above objectives, ***Gear Up*** will guide schools in transformation to innovative, rigorous 21st century schools. The program includes common elements, based on evidence and research, along with support for customizing and personalizing approaches to meet the needs of all students, including those from minority and low SES groups. Participating magnet schools will extend standard based curriculum beyond minimum standard requirements through innovative, challenging, highly motivating activities not available in traditional schools. With a goal of preparing students to be college, career and citizenship ready for the 21st century, ***Gear Up*** created challenging and innovative framework that extends learning beyond academic achievement guided by the state standards. Through this alignment, each student will be **guaranteed** a quality curriculum that prepares him/her for career choices of the future. A curriculum framework example is attached in ***Appendix 6.1***. Innovative themes and interdisciplinary approach will strengthen academic knowledge and skills, and reinforce the knowledge through integration of technology, global and community projects, and multiple paths to learning. STEM focus will permeate all themes through use of design process and a variety of STEM based electives. Each school will carefully plan standards based curriculum related to the magnet theme and guided by each school's academic goals and objectives shaped through in depth data analysis. Teachers in each school will be provided curriculum development time during the day, according to the district's Collective Bargaining Agreement. In addition, schools will provide teachers with substitutes for planning time during outside contractual hours.

1. Magnet Standards Magnet standards will include common elements of ***Gear Up*** project, as well as theme specific components. Magnet standards will be fully developed or modified, with assessment and reporting starting in the year 2 of implementation. Magnet standards will assure that all students at ***Gear Up*** sites are engaged in magnet instruction; participate in 21st century; technology rich authentic experiences; develop academic and "soft" skills; participate in rigorous, innovative, standard aligned learning; and develop self-direction and independence Common Magnet standards will include**: 1) Global Outcomes; b) 4 Cs (collaboration, critical thinking, communication & creativity); 3) 21st Century Skills and 4)Basic STEM skills (technology, computational and design thinking)**. In addition, each site will create one or two site-specific standards, directly relating to demonstration of standards within their magnet theme.

MAGNET STANDARD 1 (common standard) – Global Outcomes Each school will implement high-level outcomes based on the Florida Academic Standards, which are required items all students must learn. ***Gear Up*** staff will work with teachers to increase the rigor, building outcomes that require higher-level thinking and enduring conceptual ideas, allowing students to transfer knowledge and generate new questions for individual action or research. Magnet standards can be applied to individual subjects or used as interdisciplinary outcomes. Sample of enduring understandings translated into grade level magnet standards are below, with more extensive guide attached in ***Appendix 6.2***.

GRADE 8 SCIENCE	GRADE 1 (INTEGRATED)
• Evaluate the relationship of stability and change within and among systems • Evaluate the relationship between multiple	• Evaluate how authors are strategic in creating meaning • Evaluate how patterns emerge over

causes and effects to formulate and defend a prediction of multiple outcomes • Evaluate the relationship between ethical decisions & their impact on a global society • Solve problems using models • Demonstrate the process of inquiry: Create plausible solutions through the inquiry process • Construct viable arguments and critique the reasoning of others	time • Evaluate personal wants and needs in relation to societal wants and needs • Evaluate the function of a system and the relationship of parts within a system • Evaluate the relationship between decisions and resources • Construct viable arguments and critique the reasoning of others o Reason abstractly and quantitatively o Model with mathematics o Use appropriate tools strategically o Attend to precision o Look for and make use of structure o Look for and express regularity in repeated reasoning • Create a process to solve a problem o Reason abstractly and quantitatively o Model with mathematics o Use appropriate tools strategically o Attend to precision o Look for and make use of structure o Look for and express regularity in
GRADE 8 (SOCIAL STUDIES)	
• Evaluate how perspective and bias generate and shape global citizenry • Demonstrate the process of inquiry: o Identify a problem o Generate questions o Justify possible solutions to the problem • Utilize principles to evaluate theories • Create plausible solutions through the inquiry process • Construct viable arguments and critique the reasoning of others • Evaluate patterns of past events to hypothesize future events	

• Evaluate the factors which sustain & destroy systems	repeated reasoning
	• Create meaning strategically in: Reading, Writing, Speaking, Listening
	• Demonstrate the process of inquiry:
	  ○ Identify a problem
	  ○ Generate questions
	  ○ Test possible solutions to the problem
	• Evaluate evidence to distinguish relevant and non-relevant information to support a position
	• Evaluate how actions impact sustainability
	• Justify the roles, rights and responsibilities of citizenship

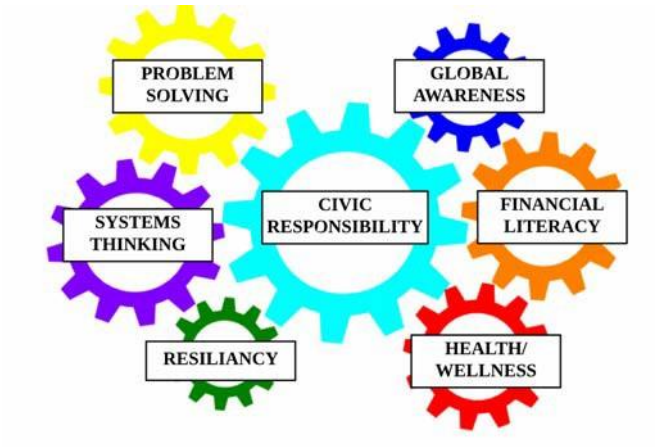
GRADE 8 (LANGUAGE ARTS)
• Evaluate how perspective & bias shape global citizenry
• Demonstrate the process of inquiry:
  ○ Identify a problem; Generate questions
  ○ Justify possible solutions to the problem
• Utilize principles to evaluate theories
• Create plausible solutions through the inquiry
• Construct viable arguments and critique the reasoning of others
• Evaluate patterns of past to hypothesize future
• Evaluate the factors which sustain & destroy systems	

MAGNET STANDARD 2 (common standard) – 4Cs

In addition to alignment to the state standards and increased complexity, units of study will include **4Cs** aimed at preparing all students for workplace of the 21st century. Critical Thinking, Collaboration,

Communication and Creativity are the 4Cs. Established by the Partnership for 21st Century Skills, these skills are considered by education experts to be the most important attributes or "super skills" that students will need to compete and succeed in the global economy. A sample assessment rubric is attached in ***Appendix 6.3***.

MAGNET STANDARD 3 (common standard) – 21st Century Skills 21st Century Skills represent expertise needed to succeed in the real world. In the past when the focus of industry was the assembly line, American educators successfully prepared students for their futures through memorization and regurgitation of information. Now companies want more. Researchers have found that when students utilize the higher levels of thinking, including analyzing, evaluating and creating, they are able to better retain the skills they have learned. This provides students the ability to lead their learning, while teachers act as guides, ensuring that they master important skills, standards and content along the way. ***Gear Up*** has adopted the following list of 21st Century Skills, which can be incorporated in lessons, depending on their relevance to the topic. An assessment rubric is attached in ***Appendix 6.4***.



Brigham Academy students collaborating to solve an engineering problem.

MAGNET STANDARD 4 (common standard) – Basic STEM skills (technology integration, computational & design thinking) All magnet sites will implement curriculum and magnet

theme focused on STEM. A common thread at all sites will be deliberate integration of technology, computational and design thinking within units of study and academic subjects.

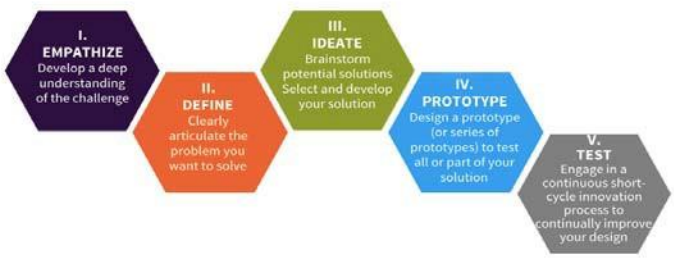
Technology Integration: Last month, Florida Congress approved addition of Computer Science Standards. (See draft attached in ***Appendix 6.5***) At this time, schools are not required to implement and assess these standards. ***Gear Up*** will begin integration of these standards during the first year of program implementation. Technology integration component will focus on students' ability to select and use a variety of devices and programs to research, plan, organize and create, and will be integrated throughout the curriculum and interdisciplinary units of study. The components and standards integrated include:

Multimedia & Device Literacy	▪ Using tech tools to support learning ▪ Using tech tools to collaborate & communicate with various audiences ▪ Using tech tools to plan, problem solve and create ▪ Selecting task appropriate tools
Informational Literacy	▪ Locate relevant information and engage in research ▪ Evaluate and document sources of information ▪ Manage and organize information ▪ Present information and share with various audiences ▪ Communication & collaboration using computing devices and Internet
Personal, Community, Global, &Ethical Impacts	▪ Apply safety guidelines to protect self and other while using tech tools ▪ Understand the impact of computing resources on local and global society ▪ Security, privacy, information sharing, ownership, licensure and copyright ▪ Responsible use of technology

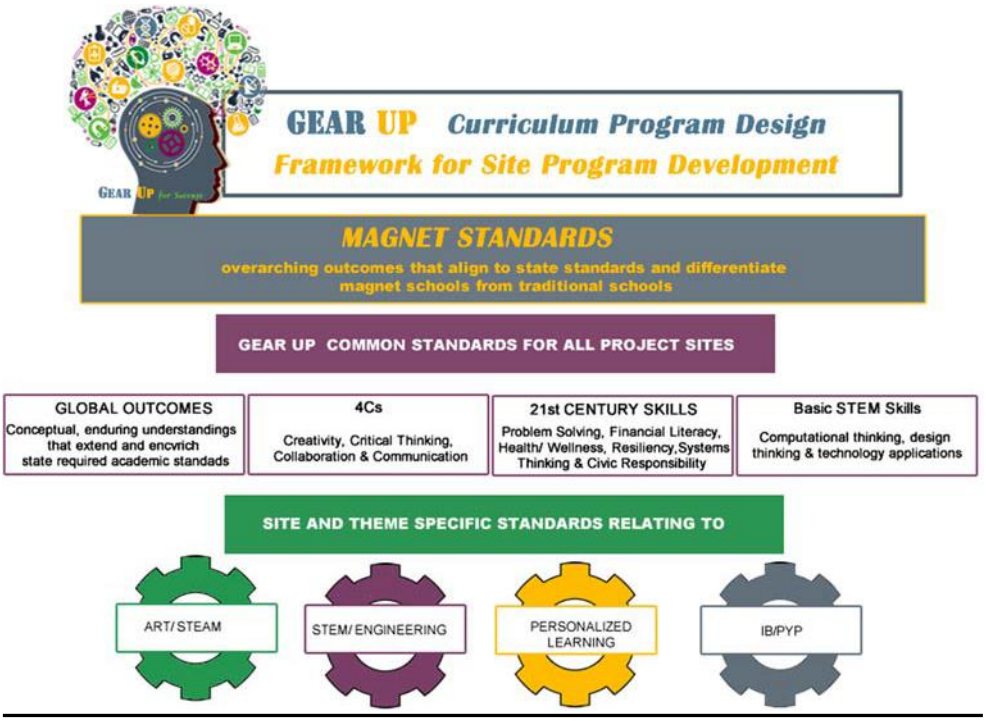
<u>Computational Thinking</u> In the recent State of the Union speech, President Obama reemphasized a need to put the computer science and literacy in a forefront of the educational initiatives (Obama, 2016). Researchers note that computing education needs to start early in educational career, and it is no longer enough to wait to college or high school to begin introducing computational concepts such as algorithmic problem solving and computational methods. (Barr & Stevenson, 2011). Cuny, Snyder & Wing (2010) view computational thinking as a thinking process people involve in when formulating problems and seeking solutions that may use informational technology (Cuny, Snyder & Wing, 2010). Building on these findings, ***Gear Up*** will embed the coding and computational thinking within our units of study, as well as

provide more structured instruction through math and computer science classes and electives. For example, elementary students will utilize pathways such as Code.org to understand the basics of computer programming. In intermediate elementary grades, students will begin more structured instruction using programs such as Alice to visually program and animate. Finally, in middle school Computer Science electives will lead students toward high school level advanced computer programming classes. In addition, computational thinking will be fostered and applied in our Fabrication makerspaces, by providing students creative challenges tied to the real world issues and students' personal interest. A digital fabrication (Fab) Lab merges computation, tinkering and engineering, and has potential to promote computational thinking through high interest engagement. For example, Kafai et.al. (2010) discussed the benefits of applying "maker culture" to computing education noting that children today are less interested in coding for the sake of the code then in conjunction with tangible products. Within the Fab Lab, many dimensions of computational thinking can be practiced and applied. Our demonstration site at Lawton Chiles Middle Academy will provide professional and curriculum development and technical assistance to all new Fab Labs established in this grant.

Design Thinking. At all school sites, STEM will be emphasized through integration of engineering and design thinking. There are many models of design thinking utilized in STEM practices. Our schools will adapt the design process based on Stanford Design Thinking model, selected because it is applicable to all areas of creative thinking and, while it mirrors the engineering design process, it is not limited to engineering.



Site Specific Magnet Standards In addition to the common Magnet standards described above, each school will develop site-specific standards tied to their magnet theme. Standards will be developed in the year 1 of the project, following staff professional development and change management processes to revision each site, setting them on the road to success.



Community interest and features of each site guided the selection of magnet themes.

SCHOOL	NEED	MAGNET THEME	FEEDS TO
Combee Academy of Design and Engineering (K-5)	• Improve academic rigor to raise the persistently low performance • Achieve magnet zone demographic targets	• Personalized learning • Computer science • STEM/Engineering	• Crystal Academy of Science and Engineering (CASE) 6-8

Brigham Academy IB/PYP (K-5)	• Create a K-12 IB continuum for Winter Haven Area students • Achieve magnet zone demographic targets	• International Baccalaureate Primary Years Programme • STEM	• Jewett Middle Magnet IB 6-8 • Opportunity for 9-12 IB Programme at Haines City HS
Polk Polytechnic Academy (5-8)	• Improve academic rigor to raise the persistently low performance • Achieve magnet zone demographic targets	• Personalized Learning • STEM/ Engineering • Computer Science	• Opportunity to attend Polytechnic High School
Daniel Jenkins Academy of Technology (6-8)	• Increase middle school acceleration to improve performance in science and math • Achieve magnet zone demographic targets	• Personalized learning • STEM/ Engineering • Computer Science	• Opportunity to attend Polytechnic High School
Rochelle School Of the Arts (K-8)	• Improve performance in core academic and STEM subjects • Achieve magnet zone demographic targets	• Personalized learning • STEAM	• Opportunity to attend Harrison School for the Arts 9-12

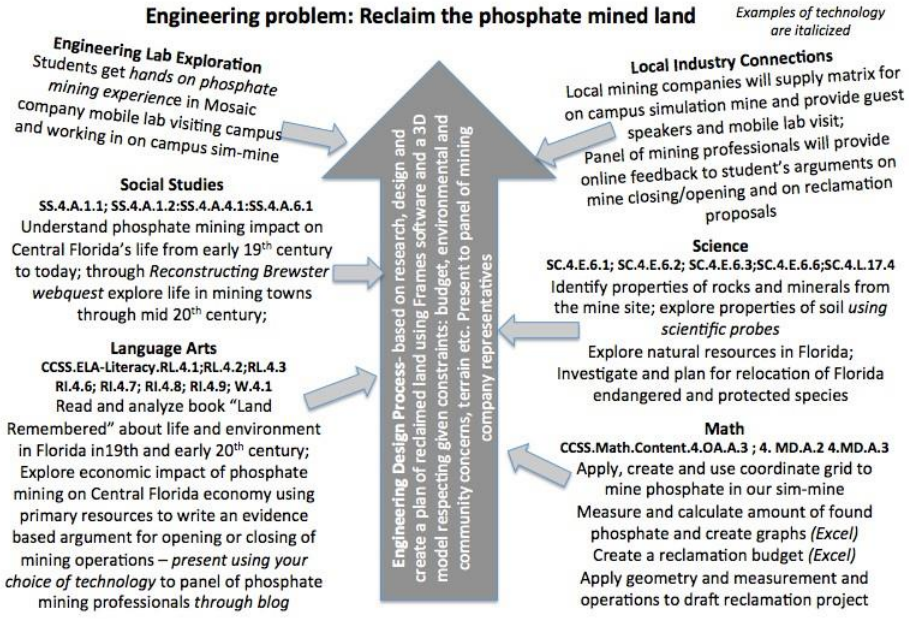
2. Implementation of magnet programs at individual school sites

Polk Polytechnic Academy (5-8) FOCUS: STEM The goal of the Polytechnic Academy will be to prepare students for STEM careers through personalized, accelerated learning paths that meet needs of each individual student. School's magnet theme will be STEM with emphasis on computer science, design and engineering. Students at Polytechnic Academy will experience personalized approach to learning that will amplify their potential and academic growth. Personalization strategies will include digital learning, interest based projects, competency-based paths, small and large group direct instruction, and collaborative learning. Intensive professional development and support will be provided to all teachers, enabling them to engage students in state of the art technologies and innovative academic experiences. Pedagogy will emphasize inquiry, problem solving and collaborative engagement in authentic, real life learning experiences. Accelerated paths will be available for all students in areas of their strengths, with a goal of offering acceleration to high school courses in middle school and preparing students for early college credit courses. Students will be able to choose electives within the magnet theme, including Fabrication Lab, Project Lead the Way Computer Science Sequence, or accelerated computer science courses. In addition, STEM units of study will utilize engineering and fabrication lab experiences connected to and extending academic standards. In grades 5 and 6, special accelerated math sections will be opened for advanced students including Algebra I or pre-algebra paths preparing students for Algebra I. The goal of the math acceleration is that significant number of students are ready for Algebra I in grade 6 and majority take Algebra I and Geometry while in middle school grades. Students will also have time for independent, interest driven projects as a part of personalized approach to learning. Fabrication Lab will be available at all levels for application of engineering and design concept to authentic projects (see ***Appendix 6.6***).

Students at this site will have an opportunity to continue vertically aligned STEM pathway by entering grades 9 and 10 located on the Polk Polytech Academy and 11-12 located at Florida Polytechnic University (*Note: the high school component is NOT MSAP funded*). Florida Polytech University has invested significant resources in its fabrication labs and maker spaces. By creating similar experiences, projects and units of study at the middle and high school level, this STEM-rich curriculum coupled with a personalized learning approach will result in students who are academically and personally prepared to succeed in the challenging College of Engineering and College of Innovation and Technology offered at Florida Polytech.

Combee Academy of Design & Engineering- CoDE (K-5) FOCUS: STEM The goal of the Combee Academy of Design and Engineering (CoDE) will be to provide personalized access to rigorous academics with an emphasis on STEM. This theme will be infused in academic offerings from Kindergarten through interdisciplinary STEM units of study, as well as magnet attractor discrete Engineering Studio class. This class will be available as a weekly rotation for all students and feature advanced engineering projects, coding, and digital fabrication for students in grades K-5. STEM subjects will be studied as integrated, interconnected areas of study, rather than in isolation as in traditional education settings. This will facilitate students' understanding of the high cognitive complexity concepts and algorithms and promote application and generalization of the skills. Classrooms will be designed to promote collaborative learning, provide access to all students and make current technology and equipment available to all students. A variety of instructional strategies will be utilized in each classroom to assure differentiation of instruction to meet the needs of a diverse student population. Integrated STEM units will utilize engineering design process to allow students to learn and apply science and math as an inquiry based discipline. For example, students will engage in a project based unit

that challenges students to identify community problem and then plan and implement the community action event. The unit plan graphic below shows the STEM integrated unit model:



Examples of unit's authentic performance tasks integrated with engineering design process: STEM/Engineering

The proposed coding curriculum at CoDE Academy will allow even the youngest student to begin to explore the exciting world of coding. Using programs, such as Code.org, as an online support to the engineering and coding curriculum, all students, including ELL and ESE students, can participate in this innovative and enjoyable Code Studio learning platform. Success in this program will be enhanced by the addition of an intensive, teacher-led, district supported personalized learning program, based on the highly successful *The Leader In Me*, Stephen Covey publications. Personalized learning will frame the curriculum. Personalization model may include digital learning paths, small and large group instruction, interest-based individual studio projects, acceleration paths, individual instruction, and other research based approaches.

Teachers will utilize Readers and Writers Workshop Model (Lucy Calkins, Columbia Teaching College) as a backbone of the research based curricular approach. Schools who utilized

this program in our current grant have seen dramatic improvement in their reading performance, particularly with low performing and ELL students. Reader's Workshop allows students to spend the majority of reading instructional **time** to actually read. Students spend that reading time working with **text** that are developmentally appropriate for students and are topics of interest to those students. The program features explicit **teaching** of reading strategies and skills followed by meaningful **tasks**. In addition, the program provides time for readers to engage in authentic **talk** about their book. Finally, the program embraces **testing** used as a tool to guide teacher instruction rather than to define student performance. Further support for the implementation at this site will be provided by the Winston Academy of Engineering who successfully transformed from low performing school to innovative engineering magnet recently. Winston will provide support through site visits, collaborative planning and sharing of resources and expertise.

Daniel Jenkins Academy (6-8) FOCUS: STEM Primary goals of the MSAP grant at Daniel Jenkins is to increase middle school acceleration, provide state of the art technologies including digital fabrication experiences, and improve overall performance preparing students for STEM college and workplace experiences. Academic program, instructional approach, and high school opportunities at Daniel Jenkins will be similar to the offering at the Polytechnic Academy described above. Daniel Jenkins students will participate in a challenging academic curriculum with a strong focus on STEM. A personalized learning approach will ensure that students have adequate **time** for learning, including a summer online enrichment and remediation program; technology, personal success strategies and instructional design **tools** to maximize academic performance; business, community and **industry** partners and real-world projects tied to high-wage, high-skill jobs in the technology and engineering fields; multiple instructional delivery **methods** and student choices in the classroom; leverage individual **people** and educator skills

and interests with student preferences and data driven needs; as well as digital learning **environments** that empower students and teachers to build and complete learning pathways.

The STEM program at Daniel Jenkins focuses around the Carl Sagan quote "We can do science, and with it we can improve our lives." STEM at Daniel Jenkins middle will be based on action rather than reading about science, technology, engineering and math. Not only will students take core courses in science and math and elective offerings around technology and engineering, but STEM concepts will also be integrated into every aspect of unit development, teacher instruction, and a myriad of projects and real-world problem-solving that will be integral to student learning. Resources, such as Lego Mindstorms, iPods, GPS units, SMART pens, greenhouses, hydroponics and gardens will allow students to experience problem solving.

Rochelle School of the Arts (K-8) FOCUS: STEAM The major focus of the school will continue to be the arts, but academic offerings and content integration will be enhanced through the STEAM focus. The STEAM approach at this site will be emphasized through STEAM units of study and creation of the Fabrication Makerspace that will enhance school's art and engineering offering. The STEAM theme will be infused in academic offering from Kindergarten through interdisciplinary STEAM units of study. With a focus on creativity and ingenuity, the school will feature:

- critical thinking and decision making skills,
- problem solving,
- fearless pursuit of academic excellence and artistry,
- implementing both dance and design studios,
- risk-taking in the arts and academics,

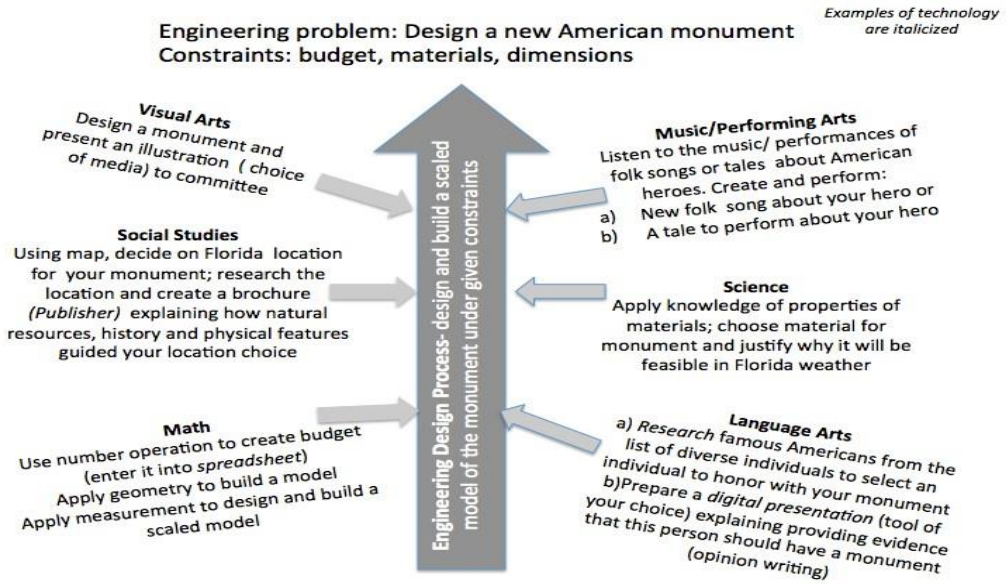
- problem solving, innovative products, solutions and performances,

while requiring students to ask the deep questions about humanity, their place in the world, and which way is actually forward. The personalized learning components of the program at Rochelle School of the Arts allow the student to drive their own learning. Students have both a voice and a choice in their programs. This motivates students to become engaged in their learning and learn to explore topics of interest to them but tied back to standards and curricular goals. Accelerated options in elementary school and middle school acceleration will be offered through personalized learning, with a goal of offering students an opportunity to earn high school credits while in middle school and be prepared for AP and early college credits in high school. Classrooms will be set up with multiple stations to provide students the opportunity for choices of how to learn and demonstrate understanding of a concept, and will change the classroom environment. For example, classroom and environmental changes can include:

- **Creation Zone** with iPads and laptops where students write, edit, develop and refine content presentations to demonstrate learning, grouped with productivity tools.
- **Dream Team Corner** where tables or desks are grouped together for collaborative work allowing learners to drop in to talk about their learning, find solutions, help each other, and just think.
- **Thinking Zone** has beanbags, chairs or low couches to allow individual space for work or journaling where students can go to work individually or ask for help, advice and explanations from a teacher or peer.
- **Discovery Zone** with high work stations where students can stand and access technology to discover answers, investigate and solve problems, collaborate on projects and create presentations.

- **Show Off Zone** learners demonstrate their understanding through writing, presentation and artwork, choosing whatever medium they wish to show their work. They work with the instructor to finalize and edit their projects and products and have a "safe place" to fall, fail, and improve until their work reaches mastery.

Design process will integrate curricular components allowing students to apply science and mathematics through use of technology. To enrich STEM curriculum, fine arts will be integrated within curricular themes. For example, in one of the STEAM units students will be challenged to design a new American monument that represents an American they admire. Interdisciplinary STEAM unit flow is presented on the figure below.

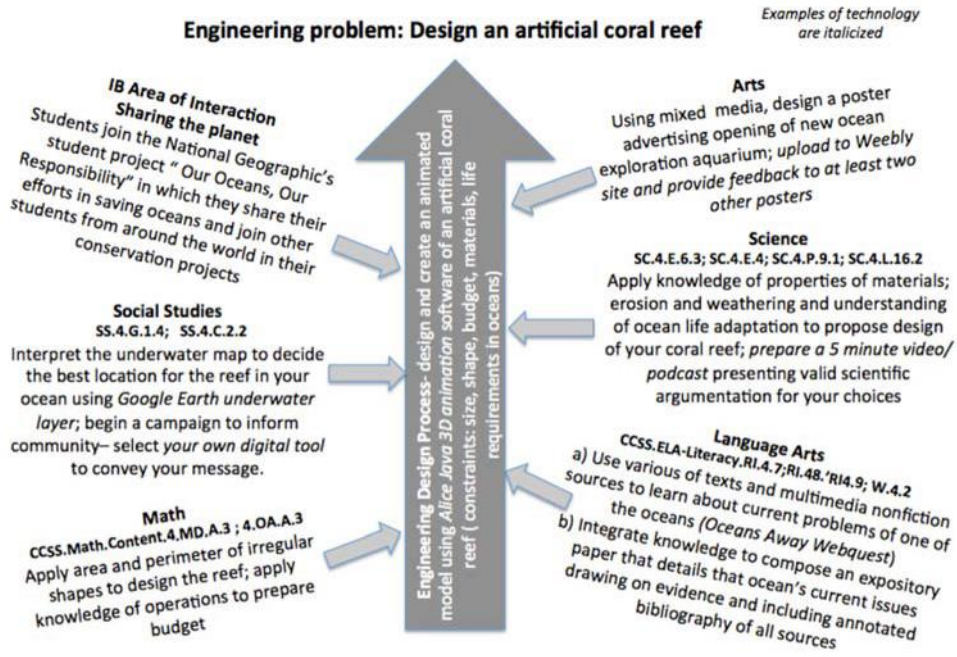


Brigham Academy IB/PYP (K-5) FOCUS: STEM infused International Baccalaureate

IB/PYP theme will create a continuity of programming and a seamless K-12 International Baccalaureate Programme continuum. The program features the opportunity to incorporate local and global issues into the curriculum and effectively allow students to "step up" beyond the confines of learning within subject areas. Addition IB program is especially relevant to our community because of its global focus that will appeal to Hispanic population by further

enhancing district's dual language offering, as well as multicultural heritage in our community. IB's focus on inquiry accommodates the demands of rigorous STEM curriculum. STEM and IB well together, as both approaches emphasize inquiry, 21st century skills and interdisciplinary nature of core subjects. Using concept-based learning along with other research based strategies, IB offers students an opportunity to develop deep understanding and apply academic skills. The transdisciplinary nature of program lends itself to STEM integration in which we will use the engineering design process to solve authentic problems. The program features 6 transdisciplinary themes (Who we are; Where we are in place and time; How we express ourselves; How the world works; Sharing the planet; How we organize ourselves). The IB curriculum also provides PYP students the opportunity to learn more than one language during their elementary years. The transdisciplinary themes helps teachers to develop a program of inquiry/ investigations into important ideas, identified by the schools, and require a high level of involvement on the part of the students. These inquiries are substantial, in-depth and usually last for several weeks. This creates a learning environment where students make connections between what they are learning in the classroom and the world around them, thereby creating global citizens and leaders. The graphic below shows the synergy of IB & STEM approaches applied to the unit of study.

To assure successful and smooth transition to the IB program, Brigham will receive additional in district support by Lincoln Avenue Academy who is expected to earn accreditation becoming the first PYP Programme in the district. Support may include site visits, assistance with curriculum planning and guidance through the accreditation process.



Examples of unit's authentic performance tasks integrated with engineering design process: STEM/PYP

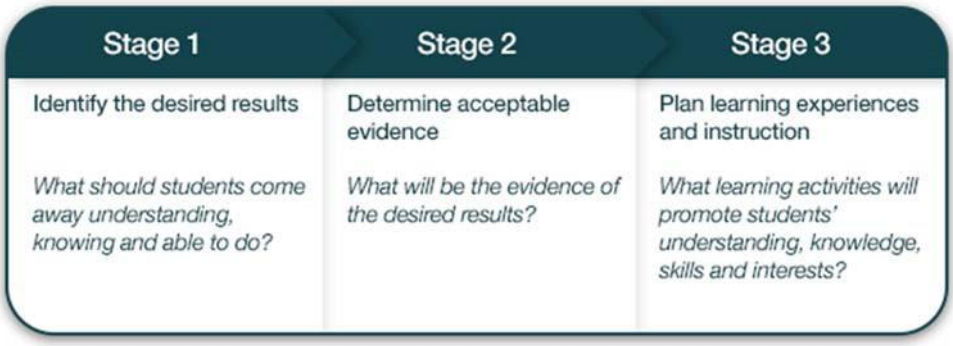
3. Systemic Reforms Systemic reforms will be implemented at all school sites and represent transformational changes to the way curriculum and instruction are planned, designed, implemented and assessed. Systemic reforms are anchored in research and evidence, an integral part of our strong theory (logic model) and supported through professional development. The following is a summary of major systemic reforms.

Strategy	Effects on student achievement
Backward Design & Standard Aligned Units of Study	By focusing on the learning outcomes, teachers will choose activities and assessments that lead toward desired results, align units to the state & magnet standards, and develop cohesive school wide curriculum
Personalized Learning	At four of our sites, personalized learning framework will provide students with individualized pathways and progressions of learning to assure all students master the desired outcomes. Training and support in

	various research based pedagogy will help teachers select strategies to meet needs of all learners.
Quality assessment design & Data Driven Instruction	Assessment process will frame the units, focusing teaching on differentiated needs of students and assuring all students are mastering state and magnet standards. Ongoing monitoring of student learning and planning of instruction to meet learner's needs will improve academic performance and alleviate the achievement gap between racial and socioeconomic sub-groups.
21st century skills (including technology integration)	Inclusion of 21st century skills will develop creativity, problem solving, critical thinking, cross cultural communication, technology skills and self-direction, motivate students to learn; increase technology proficiency necessary in 21st century workplace, enhancing creativity and self–direction.
Emphasis on Effective Literacy Strategies	Literacy strategies will be used across curriculum and be tightly aligned to rigor and demands of the state ELA standards. This will assure that students are improving both literacy and content area skills. Literacy instruction will encompass reading, writing, speaking & listening.
Project & Inquiry Based Learning	Students will actively make observations, collect, analyze, synthesize information, and draw conclusions to develop deep concept understanding and problem-solving skills.
Concept based learning (IB school)	Focused on deep understanding of concepts and reaching beyond factual knowledge, CBL will help students improve academics through inquiry and higher level thinking.

Differentiated Instruction	Instruction is designed for multiple learning styles and in response to individual student needs increasing performance of all students.
Gradual Release Model (Scaffolded instruction)	This model, also known as "I do, we do, you do" gradually allows students increased independence, personalization, and choice. It consist of three tiers that gradually decrease teacher support from teacher driven to student led, leading to mastery of concepts.
Responsive, diverse learning environment	Heterogeneous, inclusive learning environment, conscious of student diversity, with high expectation of all students and focus on cooperative learning will increase interaction among all students, boosting self-esteem, achievement and positive cross-cultural relations.
Summer Learning	Our summer learning program will include rich resources and personalized learning pathways that will help alleviate the negative effects of summer learning loss, especially pronounced for our low socioeconomic skills.

Backward Design & Interdisciplinary Unit Development At each site, teachers will develop challenging, innovative units of study using backwards design developed by Wiggins & McTighe. Learning experiences will be planned with the final assessment in mind as described in the graphic below. (Source: Wiggins and McTighe, 2000).



By beginning with the end in mind, teachers are able to avoid the common problem of planning forward from unit to another, only to find that in the end some students are prepared for the final assessment and others are not. Really focusing on the end, from the beginning, also helps teachers to better structure lessons, choosing activities and assessments that accomplish the outcomes. The process of backward design begins by identifying standard based outcomes, including those tied into state standards, as well as individual magnet school standards. Teachers will develop standards aligned units of study that will include personalized approaches leading toward mastery and developing a cohesive magnet theme curriculum at each school site.

Personalized Learning. Personalized learning enables students and educators to have a wide choice of what, how, when and where they learn. This choice extends to how learners demonstrate mastery of a range of academic and metacognitive competencies. With competency- based progressions, students will be able to accelerate or receive adequate support for academic development. This strategy is especially relevant in our diverse environments, as it provides an opportunity to alleviate gaps in background knowledge or effects of lack of educational opportunities prior to entering our programs. Furthermore, personalization will contribute to student retention in programs by providing learning supports and respectful work.

GEAR UP **PERSONALIZATION MODEL** In collaboration and extensive support by Gregory & Denby Associates, our personalized	**TIME.** Providing students with more scheduling flexibility in scheduling; additional resources to review lessons or continue them at later time; flexibility in scheduling for teachers to implement personalization.
	ENVIRONMENT. Organizing the work spaces and schools to complement different learning style and preferences,

learning model will include the following 6 key areas. Source: Gregory & Denby	allowing for choice, flexibility and movement.
	TOOLS. Exposure to and choice of a variety of resources and tools for educators and their students in all settings.
	METHODS. Building the capacity to implement a variety of approaches and instructional delivery methods that account for learner choice, interests, and needs based on data.
	INDUSTRY. Development of reciprocal partnerships that include internships, staff externships, leveraging of industry members as mentors and instructors, as well as community outreach and resource sharing.
	PEOPLE. Leverage individual educator skills and interests with student preferences and data driven needs.

As students' needs are determined based on formative assessments, teachers will select from a variety of sound, research based instructional practices that will meet differentiated needs of students. We are currently evaluating different technology platforms (e.g. Schoology or PEAK) that will be used to provide sustainable solution for 24/7 access to personalized learning paths. **Personalized Learning significance and implementation strategies at our four sites are further detailed in the Priority 5- Evidence of Promise.** For the entire Personalized Learning proposal from Gregory and Denby, see ***Appendix 6.7***.

Quality Assessment Design Burke (2010) notes that "teachers who draw upon a rich repertoire of both formative and summative assessment strategies capture the strengths, weaknesses, interests, styles and motivation levels of their learners." Teachers will be provided significant professional development in

assessment strategies that will lead to better utilization of assessment process to determine and address students' differentiated needs. At all sites, assessment design will include effective formative assessment embedded in daily instruction and use of common formative assessments to determine students' progress and needs, and guide instructional decision-making. Black and Wiliam (2010) analyzed the impact of formative assessment on student learning and concluded that that "the gains in achievement appear to be quite considerable and among the largest ever reported for educational interventions" (Black & Wiliam, 2010, p.91) ***Embedded Formative Assessment*** Frequent in-class formative assessments and multiple opportunities for improvement with feedback will guide students in reaching outcomes. Examples of daily formative assessments are journals, exit tickets, response systems, white boards or student self-assessment. Intentional and ongoing, formative assessments in the classrooms will help teachers provide a descriptive, targeted feedback to guide each individual student. ***Common Formative Assessments*** All teachers will be trained in development and implementation of common assessment to assess and monitor mastery of prioritized standards. Standardized formative process will include weekly data-team meetings, development of common formative assessments during, collaborative scoring, data analysis and instructional decision-making.

Data Driven Instruction To maintain laser focus on achievement, all instructional decisions will be guided by data on student progression toward mastery of standards and concrete evidence of student learning. Professional Learning Communities (PLCs) will follow protocols that make formative process free of subjectivity and bias, such as collaborative scoring and team development of assessments. Teams will chart and analyze data to determine student progress, assure that instruction is aligned to standards and plan differentiation strategies to meet students' needs. Teachers will be trained and supported in implementation, with train the trainer model used to develop capacity for ongoing support.

21st Century Skills All sites will emphasize 21st century skills throughout the curriculum. 21st century skills will be embedded in each standard aligned unit. Specific emphasis will be on integration off up to date technologies as a tool of learning, communication and demonstration of knowledge.

Quality Literacy Instruction In compliance with the state required K-12 Comprehensive Reading Plan, magnet sites will implement a reading program that addresses critical elements of reading tied to the Florida Academic Standards, with literacy integrated in all areas of curriculum. Strategies utilized to effectively teach the above skills to the diverse population will include direct instruction, modeling, guided practice, independent practice and opportunity for application and generalization of skills. Nonfiction text will be utilized across curriculum, as students integrate knowledge from multiple sources and engage in research projects. In addition, students will engage in technology rich experiences such as webquests and thematic research projects to generalize reading skills across genres, subjects and publication media. Enriching the magnet curriculum, literacy skills will be integrated throughout the day allowing students to generalize and apply literacy skills for a variety of purposes. Challenging cross-curricular projects, in depth studies and student led project will give students a chance to practice and extend literacy skills by application to real world situations. At elementary level, schools will use Calkins' Reading Workshop as a primary model for reading instructions, and in some site Writer's workshop will also be utilized. This approach ties into the personalized learning, allowing students to progress while engaged in work at their developmental level. These workshop levels build the balanced literacy repertoire and tie into research linking the quantity of reading and exposure to language to development of literacy skills. Readers' workshop allows students improve reading by self-selection, self-pacing, and time spent reading and sharing books. The teacher demonstrates how to explore text and supports student-led discussion groups. Students gain the knowledge to understand text on multiple

levels and respond to it thoughtfully. Theme connection to STEM subjects will increase student's motivation to read and further expand content knowledge.

Project Based Learning (PBL) PBL is an instructional approach built upon authentic learning activities that engage student interest and motivation. These activities are designed to answer a question or solve a problem and reflect the types of learning and work people do in the everyday world outside the classroom. PBL strategies will utilize hands-on, interactive approach to learning infused with up to date technology, allowing students to become skilled in technology and able to select appropriate technology tools to create and share knowledge with local or global audiences. **Inquiry Based Learning(IBL)** IBL supports development of critical thinking, concept understanding, problem solving, and content learning by encouraging students to develop questions about the world, make connections between self, school and society, and apply integrated thinking to solve real problems. Through IBL, students will become aware of multiple paths to solutions and answers to problems. Teachers will integrate IBL in their units to help students develop creativity and critical thinking skills and improve understanding of critical concepts at the highest levels of cognitive complexity.

Concept-based learning (CBL). CBL learning plays a prominent role in International Baccalaureate curriculum and will be intertwined in units in our STEM infused IB site. CBL raises the bar for curriculum and instruction by shifting the design focus to the conceptual level of understanding. In a CBL model teachers use facts in concert with concepts and generalizations to improve higher order, synergistic thinking. Facts provide the foundation and support for deeper, conceptual thinking and understanding. CBL supports student inquiry and constructivist learning to support personal meaning-making (Erickson, 2012).

Differentiation of Instruction Particular focus will be on differentiation strategies to meet the needs of the diverse population, assuring access to and success in quality programs by diverse students. Tomlinson (2001), in her discussion of differentiated instruction for diverse learners, notes that "learning takes place most effectively in classrooms where knowledge is clearly and powerfully organized, students are highly active in learning process, assessments are rich and varied, and students feel a sense of safety and connection" (Tomlinson,2001, p.8). All programs will feature heterogeneous, diverse inclusion classes. In all programs, teachers will use sound practices for linguistically diverse students such as modeling, nonlinguistic representation, use of multiple modalities, visual and graphic organizers, audio representation and use of technology for translation and to aid expression**. Differentiation strategies are discussed in more depth in the V.(a) Desegregation section of this proposal.**

Gradual Release Model. The Gradual Release Model is a best practice instructional model where teachers strategically transfer the responsibility in the learning process from the teacher to the students (Fisher & Frey). Typically, the model of teaching has four phases: I DO- where the teacher models the lesson objective in a focus lesson, WE DO- guided instruction with both input from the teacher and the students, YOU DO TOGETHER: Collaborative learning in small groups or partners and YOU DO ALONE- independent practice**.** Teachers will utilize this process in unit planning as well as daily instruction. The gradual release of responsibility model ensures that students are supported in their acquisition of the skills and strategies necessary for success. During the "I do" phase, when new material is being introduced, the teacher has a prominent role in the delivery of the content. But as the student acquires the new information and skills, the responsibility of learning shifts from teacher-directed instruction to student processing activities. In the "We do" phase of learning, the teacher continues to model,

question, prompt and cue students; as student move into the "You do" phases, they rely more on themselves and less on the teacher to complete the learning task. In a way, the entire ***Gear Up*** project is structured as a gradual release model. Program wide this model will be implemented as schools become increasingly more independent in successful implementation of the grant's objectives. In year one supports from district and demonstration sites will present the "I do" phase, leading the process of change toward increase in independence and initiative.

Responsive, Diverse Learning Environment. Magnet schools will serve a diverse student body. The key factors in increasing interaction include a strong, challenging academic program attractive to diverse population, activities structured to promote interaction during the day, effective teacher training in addressing the needs of diverse students, and a school wide behavior support systems developed at each site. **Key strategies are discussed in more depth in the V.(a) Desegregation section of this proposal.** Finally, we will utilize research-based strategies such as Jensen's Teaching with Poverty in Mind to reach all of our students.

Summer Learning. To offset the detrimental effects of the summer learning slide, especially those from underprivileged backgrounds, we will design and implement summer learning program at all ***Gear Up*** sites. Summer learning program will include high quality on and off line resources to develop a personalized summer pathway for each student. **Significance and implementation strategies are further detailed in the *Priority 5-Evidence of Promise.***

(2) The extent to which the applicant demonstrates that it has the resources to operate the project beyond the length of the grant, including a multi-year financial and operating model and accompanying plan; the demonstrated commitment of any partners; evidence of broad support from stakeholders critical to the project's long-term success; or more

than one of these types of evidence.

The superintendent and School Board have reviewed and approved this magnet school grant application as part of Polk's February 23, 2016 work session. They have pledged their support to the ***Gear Up*** project as presented, and to sustain the magnet schools created by ***Gear Up*** after the grant expires. Numerous district leadership team members and their staff, such as the Associate Superintendent of Operations, Associate Superintendent Chief Academic Officer, Assistant Superintendent of Career, Technical, Adult and Multiple Pathways, Senior Director of Human Resource Services, Senior Director of Acceleration and Innovation, and Senior Director of Professional Development, have committed their time and expertise to the development and implementation of this project.

The Polk County School Board has a long-standing history of commitment to reducing minority group isolation in the schools it serves through the support of thirteen magnet schools, four choice schools and 25 charter schools created over the past 25 years. The original eight magnet schools that the district established in 1992 have remained open continuously serving students since their inception. In addition, the district has supported various needs, including but not limited to building capacity through staffing, facilities and student transportation. Almost all of Polk's existing magnet schools have waiting lists, ranging in length from 125 at the smallest magnet to more than 1,000 at larger magnets. The seven elected school board members are responding to community demand by proposing ***Gear Up***. In response, the Superintendent has appointed the Senior Director for Acceleration and Innovation to lead ***Gear Up*** planning. Meetings have been held with the Leadership Team at each school to discuss the expectations of the project as well as the needs of the schools in terms of professional development, technology,

curriculum development, student diversity, teacher planning and other identified areas of need (see ***Appendix 6.8*** for Expectations shared with each Principal). Each principal also met with their School Advisory Council, Parent Teacher Organizations and staff to review the key elements of the ***Gear Up*** project and provide input into the program implementation, professional development needs and technology needs at each school. Throughout development of the existing student selection process, sixteen (16) community meetings were held with parents at multiple sites throughout Polk County to gather input and answer questions about the development and implementation of the final selection & lottery process. A similar process will be held to provide opportunities for parents and the community to review the proposed changes to the student selection process that address the socioeconomic challenges facing Polk County.

With the support of the Polk Education Association (PEA), Polk's teachers union, an agreement was reached in 2013 allowing any teacher working at a newly formed or significantly revised magnet school a one-year window to request placement on the displaced teachers list in lieu of committing to the rigorous professional and curriculum development components of the ***Gear Up*** project. Both the school district and PEA recognize that not every teacher is able or willing to commit the time and professional growth that is required when developing a new magnet school or significantly revising an existing magnet school. This agreement with PEA guarantees these teachers will be placed in another school within reasonable proximity of their existing work location.

The School Board of Polk County has honored the Unitary Status granted by the federal district court. Each year, the Superintendent has endorsed, and the Board has approved, student transportation budgets to ensure choice opportunities are not diminished. This is despite tremendous reductions in overall revenues in recent years. In addition, the district has further

demonstrated its commitment through the annual staffing plan process where each of the magnet schools has been provided magnet attractor units above and beyond the traditional staffing model for their schools. Once magnet school funds are no longer available, each of the International Baccalaureate magnet schools has been budgeted an additional $40,000 each year since 2013 to further support their program and professional development costs. The district commitment to transportation, staffing and budgeting models are expected to continue throughout and beyond the length of the ***Gear Up*** project.

At the end of the ***Gear Up*** project, student enrollments at magnet schools will earn FTE to support their magnet teaching units. The district has committed to fund the supplemental magnet attractor units, not only on a continuing basis after the grant but during the grant so that the dollars are freed up for professional development, curriculum development, student recruitment and other essential elements. Equipment and technology will be in place and staff trained to use and maintain it. The ***Gear Up*** schools will take a tiered-approach when purchasing technology using MSAP funds. This stair-stepping of technology purchases helps ensure the district can replace key pieces of technology after the ***Gear Up*** project ends. Software purchases are also tiered, providing the ***Gear Up*** schools the latest software versions to continue supporting ongoing work in the classrooms after funding has ended. The schools in this project will build materials and supplies into their annual budgets. In addition, the school district continues an extra, per-pupil materials allowance for magnet schools above that for other schools, in the interest of maintaining their magnet attractors and continuing the district's commitment to these schools, which helps with instructional materials and supplies.

Beginning in year one, each school will develop a sustainability plan and continue to revise this plan each year of the project. By year three of the project, each school's sustainability plan

will include parent volunteers, community and business partnerships, grant writing development and fundraisers. Strong business partnerships will assist in sustaining the ***Gear Up*** magnet theme through volunteering in the classroom, monetary donations, fundraisers, donating supplies and materials, etc. Pledges from the business community will support the continued need for STEM instructional materials and technology in the classroom as well as for the Fabrication Labs at each of the ***Gear Up*** magnet schools. Each of the schools has already obtained letters of support from existing business partners, which the schools plan to expand upon (***Appendix 6.9***). Each school has developed a Parent Teacher Association (PTA) and School Advisory Council (SAC). These racially and socio-economically diverse organizations bring together parents, school staff and community business leaders to participate in discussion about school activities, school culture and fundraisers. Letters of support have been provided by existing school-led organizations (***Appendix 6.9***). The district ***Gear Up*** Senior Coordinator of Pedagogy and Curriculum will also work closely with each school's leadership team to write grants that will support sustainability of the magnet theme. In addition, district allocated funds will maintain the International Baccalaureate annual fee for the Primary Years International Baccalaureate program at Brigham Academy once grant funds have ended. The district has borne this cost for Bartow High School's and Haines City High School's IB programs for over 15 years as well as for the three Middle Years Programmes at Lawton Chiles Middle Academy, Jewett Middle Academy and Union Academy since 2013. Although the district's elected School Board cannot obligate a future board, it has approved the ***Gear Up*** project for the Personalized Learning, Primary Years IB components as well as the Science, Technology, Engineering, (Arts) and Mathematics (STE(A)M) components. The board understands from its experience with the existing magnet programs that certain expenses will remain.

Although professional development expenses are a challenge to maintain, Professional Learning Communities (PLCs) will be held weekly by each school's leadership team with teachers to continue opportunities for professional development and collaborative planning. In addition, the ***Gear Up*** project plans to video record lead teachers in the classroom at existing magnet schools showcasing the implementation of magnet systemic reforms and improve pedagogy. These training videos will be housed in a central location, and all teachers will have access to view them on an as needed basis. Any training and other school projects documented by the ***Gear Up*** schools will become accessible to all. Train-the-trainer models will also be used with regard to professional development at the ***Gear Up*** schools as well as key district staff. This model ensures that there is a team of experts at each school and that professional development continues, including refresher courses each year for returning teachers and training for new teachers. A team of lead teachers will become the trainers so that if one teacher leaves, there are still other lead teachers able to continue training.

A multi-year financial plan has been developed for the ***Gear Up*** project for the use of MSAP funds. These MSAP funds are not budgeted for construction or transportation. MSAP funds are budgeted for

- Personnel (*salaries, benefits, special activity payroll and substitutes for trainings, curriculum development and collaborative planning*),
- Travel and Travel Training (*professional development and school site visits*),
- Dues and Fees (*professional organizations that support professional and curriculum development*),
- Furniture and Equipment (*implementation of the Personalized Learning Model and magnet theme in STEM/STEAM or IB*),

- Instructional Materials and Supplies (*materials needed to support implementation of the magnet theme and project objectives*),
- Software (*support implementation of magnet theme, personalized learning, systemic reforms and fab labs*),
- Contractual (*key consultants to work with school leadership teams and key MSAP staff in ensure attainment of project objectives, provide professional development, and to evaluate the **Gear Up** project*),
- Recruitment (*postage for marketing, recruitment efforts, communication with parents and community partners, see **Appendix 6.10** for Jewett Arts Brochure*),
- Room Rental (*adequate space for professional development opportunities offered within the county*), and
- Indirect Costs (*project administration*).

The attached budget narrative provides a detailed description of each itemized expense and/or group of expenses anticipated throughout the ***Gear Up*** project.

(3) The extent to which the training or professional development services to be provided by the proposed project are of sufficient quality, intensity, and duration to lead to improvements in practice among the recipients of those services.

All staff will be trained in systemic reforms and magnet themes, with each teacher engaging in a minimum of 60 hours of targeted training annually. While it is our goal to personalize professional development experiences based on teachers' needs, each teacher will be required to participate in a minimum of five hours of training in each of the main focus areas. Objectives and evaluation criteria for measuring both quantity and quality of professional development are

described in detail in the Quality of Management Plan and Evaluation sections of this narrative. The focus areas of our training include:

FOCUS AREAS	EXAMPLES OF TRAINING OFFERED
Magnet theme	▪ STEM , engineering & design thinking ▪ Personalized learning ▪ IB training
Magnet identified "best practices"	▪ Backward Design ▪ Formative and Authentic Assessment ▪ Change Management
Core content instructional programs	▪ Reader's and Writer's Workshop ▪ Mathematics Standards & Practices ▪ Teaching Science through Inquiry
Socio-economic and cultural diversity	▪ Teaching with poverty in mind ▪ ESOL strategies ▪ Working with diverse families
Technology for instruction	▪ Fabrication Lab training ▪ Using mobile devices ▪ Blended learning strategies

Gear Up training will go well beyond district and state requirements and equip educators with pedagogy and content area skills needed to develop and implement proposed rigorous curriculum activities. Intensive, ongoing training and onsite support will provide students with quality

instruction needed to increase achievement. We will utilize a number of renowned educational researches and leaders, such as Gregory & Denby (personalized learning), Eric Jensen (Teaching with Poverty in Mind); Reader's and Writer's Workshop trainers, and Jay McTighe (Backward Design) to prepare and guide educators at each site. In addition, educators will have an opportunity to attend relevant conferences to update their knowledge, for example NSTA STEM EXPO, a conference dedicated to STEM pedagogies and tools in K-12 education. For a site seeking IB accreditation, teachers will participate in IBO's three tier approach to professional development to become an authorized IBO school through in-service trainings, workshops, and attendance of regional and training conferences sponsored by the IBO. All staff will be trained in implementation of the engineering design cycle and various pedagogies that support inquiry and interdisciplinary nature of STEM. Finally, intensive training in up to date technologies will enable teachers to integrate technology in all areas of the curriculum. Train the trainer model will be utilized, with district support staff, lead teachers and coordinators attending a variety of certification and train the trainer activities that will enable them to continually provide training and support for teachers. At each site district and school support personnel will support teachers in development and implementation of curriculum to assure rigor, quality, student achievement, and sustainability of all programs beyond the grant years. ***Detailed professional development charts with major trainings offered at each site are attached in Appendix 6.11.***

(4) The extent to which the proposed project is supported by strong theory.

The ***Gear Up*** project is framed by the strong theory, as outlined in district and school logic. The district logic model can be found at the end of this section. Individual school logic models are in ***Appendix 6.12***. With the MSAP funding and available material, human and knowledge/

skills resources, we will transform five school sites into innovative, rigorous academic programs that will attract diverse students. The main measurable objectives of the ***Gear Up*** project are summed up as long term outcomes of the logic models, as well as detailed in our evaluation plan.

Logic models are anchored in the research supported practices. Throughout the narrative, we have identified significant sources of programmatic decisions that will influence implementation of the project. Those have been analyzed and embedded into our logic model, to create a strong theory of impact and outcomes of the program at participating sites. Below are brief summaries of most impactful research based approaches utilized. The bibliography available in the Appendix list all sources of information used in planning and design of ***Gear Up***.

- **Cultural & Socioeconomic Diversity** research is fundamental to all aspects of the ***Gear Up*** program. As the program strives to decrease isolation of minority students and at the same time begin to address socioeconomic inequities, we used the findings of these studies in selection of all other components of the program. The studies have also been pivotal in designing appropriate professional development and theme choices for our schools. Major sources used included Jensen's "Teaching with Poverty in Mind," The Coleman Report, Century Foundation research, Kahlenberg's "The Future of School Integration" and Schwartz's research "Economically Integrative Housing Promotes Academic Success in Montgomery County, MD." The last study is further described in the ***Invitational Priority*****.** In addition, WWC reviewed study on impact of summer interventions **(*Priority 5-Evidence of Promise*)** have guided programming and design of this significant reform.
- **Personalized learning** research is described in depth as ***Priority 5-Evidence of Promise*****.** Studies by RAND and Gates Foundation on effectiveness of personalized learning were

used to extrapolate common elements that effected significance. Based on these findings, we have collaborated with Gregory & Denby to further design an implementation plan for four of our sites. An "umbrella" framework, personalized learning raise achievement and promote success for diverse students by targeting each students' needs & interests.

- **Curriculum Design** methodology by Wiggins & McTighe has guided the ***Gear Up*** curriculum framework. Their Backwards design has proven effectiveness and is applicable at all sites and themes. This includes our new IB school, as IBO has embraced the backward design in their curriculum development requirements. Furthermore, work by Reeves, Ainsworth, Jacobs-Heyes, Black & William, and others were used to frame the curriculum thorough standards alignment and quality assessment.
- **Pedagogy** research on "best practices" by numerous leaders in educational research and thought guided our choices of instructional practices. Of those, Tomlinson's work on differentiation, Calkins' work in literacy and Fisher's scaffolded, gradual release models have been heavy influencers in program design.
- **Innovation and 21st Century Skills** are emphasized by our program and influenced by work by Wagner, McTighe, Wiggins, Covey and others, along with research on what business of the future need of our students. We explored the innovative technology approaches such as Fabrication Labs, computational thinking and personalized learning options. Our research is anchored in finding by the National Science Foundation studies and include research by Kafai, Cuny, Snyder & Wing, the Fab Foundation, International Society for Technology in Education and Computer Science Teacher Association.

All six of the Logic Models can be found in Appendix 6.12. The District Logic Model is included on the following page as an example.

(c) Quality of Management Plan

(1) The adequacy of the management plan to achieve the objectives of the proposed project on time and within budget, including clearly defined responsibilities, timelines, and milestones for accomplishing project tasks.

Gear Up will use STEM and personalized learning to support the transformation of five Polk County public schools into diverse, high performing Science, Technology, Engineering, (Arts) and Math (STE(A)M) magnet schools. In addition, an existing STEM magnet – Brigham Academy (K-5) -- will gain authorization as a Primary Years Programme (PYP) International Baccalaureate magnet school.

Combee Academy of Design and Engineering (CoDE) and Polk Polytech Academy, formerly Lake Alfred Addair Middle School -- two of the lowest performing zoned schools -- will completely transform their current traditional curriculum using year one as a planning year and beginning implementation in year two (2017-2018) of the project. Daniel Jenkins Academy will convert to a magnet school with implementation in year one of the project. Rochelle School of the Arts and Brigham Academy will also significantly revise their current magnet programs with implementation in year one (2016-2017) of the project.

Appendix 7.1 provides an operational timeline that demonstrates the major milestones of the project. Measurable objectives and performance measures for each ***Gear Up*** school appear in the chart below.

	Performance Measure	Target	Timeline
Objective 1: To eliminate, reduce or prevent minority group isolation in the targeted schools without negatively impacting feeder schools.			
1.1a	Minority Group Isolation of Black students at Rochelle School of the Arts will decrease from the baseline by	1% point 3% points 5% points	October 1, 2017 October 1, 2018 October 1, 2019
1.1b	Minority Group Isolation of Black students at one of Brigham Academy's selected feeder schools (Garner Elementary or Inwood Elementary or Elbert Elementary) will decrease from the baseline by	1% point 3% points 5% points	October 1, 2017 October 1, 2018 October 1, 2019
1.1c	Minority Group Isolation of Hispanic students at Daniel Jenkins Academy will decrease from the baseline by	1% point 3% points 5% points	October 1, 2017 October 1, 2018 October 1, 2019
1.1d	Minority Group Isolation of Hispanic students at Combee Academy of Design and Engineering (CoDE) will decrease from the baseline by	2% points 4% points	October 1, 2018 October 1, 2019
1.1e	Minority Group Isolation of Hispanic students at Polk Polytech Academy will decrease from the baseline by	2% points 4% points	October 1, 2018 October 1, 2019

1.2	Each of the five MSAP-funded schools will receive at least 250 applications annually.	5 schools 5 schools 5 schools	September 30, 2017 September 30, 2018 September 30, 2019
1.3	During the first year of implementation, each funded school will develop (and, thereafter annually update) a plan for ensuring that regular education classrooms and before- and after-school programs are reflective of the racial, gender, and socio-economic diversity of the school population.	3 schools 5 schools 5 schools	September 30, 2017 September 30, 2018 September 30, 2019
1.4	Magnet school enrollees will not change enrollment percentages of major racial and ethnic subgroups (White, Black, Hispanic) at any MSAP feeder school by more than ± 2 percentage points by October 1 of each year.	3 schools 5 schools 5 schools	September 30, 2017 September 30, 2018 September 30, 2019
Objective 2: To design and develop innovative educational methods and practices which promote diversity, increase choice and ensure students gain 21st century skills.			
2.1	The percentage of magnet teachers responding to the survey at MSAP funded schools who agree with the following statements: *1) my instruction includes innovative, challenging instructional materials, 2) magnet content promotes diversity and choice; 3) I use strategies that encourage students from different racial, ethnic and*	50% 75% 90%	September 30, 2017 September 30, 2018 September 30, 2019

	socio-economic groups to interact; 4) my magnet school provides students with a resource-rich, interactive learning environment; and 5) our magnet curriculum promotes the development of 21st century skills will increase at each school to		
2.2	The percentage of magnet teachers responding to the survey at MSAP funded schools indicating consistent use of three (3) or more MSAP site-based identified "best practices" will increase at each school to	50% 65% 85%	September 30, 2017 September 30, 2018 September 30, 2019
2.3	The percentage of students responding to the survey at MSAP funded schools who agree with the following 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) my 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, and 5) I am developing 21st century skills* will increase at each school to	N/A 65% 85%	September 30, 2017 September 30, 2018 September 30, 2019
2.4	The percentage of classroom observation rubrics at MSAP funded schools showing evidence of meeting all five criteria: *(1) classrooms that provide a resource-rich, interactive learning environment and (2) that are equipped with computers and other technology; (3) teachers using MSAP identified research-based "best practices" and*	N/A 50% 75%	September 30, 2017 September 30, 2018 September 30, 2019

	strategies, (4) instruction that promotes diversity and encourages students from different racial, ethnic and socio-economic groups to interact; and (5) students who are demonstrating 21st century skills will increase at each school to		
Objective 3: To provide professional development for magnet school teachers related to implementing high-quality educational programs, increasing achievement for all students, improving instructional practices and ensuring program sustainability.			
3.1	The percentage of magnet teachers responding to the survey at MSAP funded schools who indicate that project staff development activities: *1) increase their content knowledge, 2) improve their instructional skills, 3) increase innovative practices, and 4) will help to sustain the magnet program* will increase at each school to	50% 75% 90%	September 30, 2017 September 30, 2018 September 30, 2019
3.2	The percentage of magnet teachers responding to the survey at MSAP funded schools who agree with the following statements: *1) I participate in Professional Learning Communities (PLC), 2) PLCs meet regularly, 3) PLC team members reinforce strategies learned in staff development, 4) PLC team members collaborate, 5) PLC teams develop theme-related curriculum units, and 6) the work of my PLC supports magnet sustainability* will increase at each school to	50% 75% 90%	September 30, 2017 September 30, 2018 September 30, 2019

3.3	The percentage of classroom observation rubrics at MSAP funded schools showing evidence of meeting all three criteria: *(1) challenging instructional materials; (2) magnet units/curriculum aligned with State Assessment Satisfactory/Proficiency Standards; and (when technology is used in a lesson) measures of technology integration on the SAMR Model at the augmentation level or higher* will increase at each school to:	N/A 50% 75%	September 30, 2017 September 30, 2018 September 30, 2019
3.4	The percentage of magnet teachers at each MSAP funded school who participate in a minimum of 60 hours annually of MSAP-related training and/or coaching will increase to	50% 75% 90%	September 30, 2017 September 30, 2018 September 30, 2019
3.5	The percentage of magnet teachers completing a total of 60 hours annually in professional development, including a minimum of 5 hours each in the following categories: magnet theme strands, magnet-identified "best practices," core content instructional programs, socio-economic and cultural diversity, and using technology for instruction will increase to	50% 75% 90%	September 30, 2017 September 30, 2018 September 30, 2019

3.6	The percentage of MSAP funded schools whose administrative team members participate in a minimum of 50 hours annually of MSAP-related training will increase to	45% 65% 75%	September 30, 2017 September 30, 2018 September 30, 2019
3.7	The percentage of magnet classroom teachers at MSAP funded schools submitting an annual paper or electronic form describing how they used technology for instruction at the augmentation level or above on the SAMR Model will increase to	N/A 50% 60%	September 30, 2017 September 30, 2018 September 30, 2019
3.8	Annually, Brigham Academy will complete the steps required by IBO and submit the appropriate documentation for IB PYP Authorization.	Submit info form Candidate School status Request for Authorization PYP Authorization	September 30, 2017 September 30, 2018 September 30, 2019 September 30, 2020
Objective 4: To ensure parents and community members are actively involved in project planning, implementation, and decision-making.			

4.1	The percentage of parents responding to the survey at MSAP funded schools who indicate that the magnet program provides opportunities to: *1) participate in magnet planning, 2) have an active role in magnet implementation, and 3) provide input into school decision-making* will increase at each school to	N/A 65% 80%	September 30, 2017 September 30, 2018 September 30, 2019
4.2	The number of parents at MSAP funded schools attending magnet theme-related parent events will increase from the baseline at each school to	N/A Baseline 20% increase	September 30, 2017 September 30, 2018 September 30, 2019
4.3	The number of parents at MSAP funded schools responding to electronic or paper requests for input regarding magnet planning or implementation ideas will increase from the baseline at each school to	N/A Baseline 20% increase	September 30, 2017 September 30, 2018 September 30, 2019
4.4	The percentage of parents responding to the survey at MSAP funded schools who think that community partners *1) are active in the design and implementation of the magnet program and 2) help the school ensure relevance and extend learning into the 21st century* will increase at each school to	N/A 65% 80%	September 30, 2017 September 30, 2018 September 30, 2019
4.5	The percentage of parents at MSAP funded schools participating in focus groups who think that parents and magnet community partners are given opportunities to be	N/A 50%	September 30, 2017 September 30, 2018

	active in magnet planning, implementation, and decision-making will increase at each school to	75%	September 30, 2019
4.6	Beginning in year two of implementation, the magnet theme and instructional model will be incorporated into the School Improvement Plan.	N/A 3 schools 5 schools	September 30, 2017 September 30, 2018 September 30, 2019
Objective 5: To increase percentages of all magnet students, including those from major racial and ethnic subgroups, who score Achievement Level 3 and Above on the statewide assessment in reading/language arts and mathematics.			
5.1 a-c	The percentage of students at Rochelle School of the Arts, Brigham Academy and Daniel Jenkins Academy in each major racial and ethnic subgroup (White, Black, Hispanic) scoring Achievement Level 3 or above on the Florida Standards Assessment in English Language Arts (FSA ELA) at each school will maintain at 90% or above or increase over the baseline established in 2016 by	1% 3% 6%	September 30, 2017 September 30, 2018 September 30, 2019
5.1 d-e	The percentage of students at Combee Academy of Design and Engineering and Polk Polytech Academy in each major racial and ethnic subgroup (White, Black, Hispanic) scoring Achievement Level 3 or above on the Florida Standards Assessment in	N/A Planning 1% 3%	September 30, 2017 September 30, 2018 September 30, 2019

	English Language Arts (FSA ELA) at each school will maintain at 90% or above or increase over the baseline established in 2017 by		
5.2 a-c	The percentage of students at Rochelle School of the Arts, Brigham Academy and Daniel Jenkins Academy in each major racial and ethnic subgroup (White, Black, Hispanic) scoring Achievement Level 3 or above on the Florida Standards Assessment in Mathematics (FSA Mathematics) at each school will maintain at 90% or above or increase over the baseline established in 2016 by	1% 3% 6%	September 30, 2017 September 30, 2018 September 30, 2019
5.2 d-e	The percentage of students at Combee Academy of Design and Engineering and Polk Polytech Academy in each major racial and ethnic subgroup (White, Black, Hispanic) scoring Achievement Level 3 or above on the Florida Standards Assessment in Mathematics (FSA Mathematics) at each school will maintain at 90% or above or increase over the baseline established in 2017 by	N/A Planning 1% 3%	September 30, 2017 September 30, 2018 September 30, 2019

A narrative format of these performance measures can also be found in ***Appendix 7.2***. These are designed to document the project effectiveness with formative and summative measures and a rigorous component that includes surveys. The results of a quasi-experimental research study will also document students' academic achievement as a result of the grant. The specific objectives and their measures can be found in the Evaluation Plan.

The Evaluator will use qualitative and quantitative data from the district and school level. To the extent possible, the Evaluator will use existing data; however, data collection instruments, interview/observation protocols, rubrics, and surveys, will also be developed.

A comprehensive support system is designed to ensure timely achievement of the project objectives and performance measures within the proposed budget. Using a multi-tiered team approach, The ***Gear Up*** team includes positions at the school level, professional technical level, and district administrative level. At the school level, each school will be assigned a Magnet Resource Teacher working within their assigned school to collaborate with teachers through coaching, mentoring and training. This position will work with school administration to review expected project outcomes, including increasing student academic achievement, reducing minority group isolation, assessing professional development, developing Professional Learning Community (PLC) meetings and planning sustainability of the project once MSAP funds are gone via district funding, grant writing and parent and community partnerships. The Magnet Resource Teacher will work with teachers to assess their individual needs, arrange specific trainings, provide coaching and mentoring, assist in unit development aligned with the standards and the school's magnet theme, and coordinate horizontal and vertical planning among teachers. This position will also work closely with parents, community, and business partners to build relationships that last beyond the MSAP project. These relationships include parent volunteers

and community business partnership collaboration with student activities as well as donation of time, services and materials.

Each school will also be assigned a Grants Technician, which works closely with the Magnet Resource Teacher and school administration to monitor the school's MSAP project budget, complete purchase orders for MSAP aligned purchases, arrange professional development, monitor school diversity to adjust the Marketing and Recruitment plan annually, complete the school site visit template for external evaluator visits and develop school Annual Performance and Ad Hoc Reports.

At the district professional technical level, the Senior Coordinator of Operations and Evaluation will work close with the district and school staff and consultants. The Senior Coordinator will oversee the MSAP project budget and monitor school expenses, develop a district marketing plan to assure schools are meeting performance measures impacting MGI, and working with the External Evaluator and project consultants. The Senior Coordinator will complete and submit all Annual Performance and Ad Hoc reporting, collaborating with each school's Grants Technician to gather the necessary information. The Senior Coordinator will review progress toward project performance measures. In addition, the Senior Coordinator will hold Grants Technician meetings quarterly to review progress toward project objectives, financial rules and regulations, individual MSAP budgets, audit compliance preparation, marketing and recruitment plans, parent and community involvement plans, and progress toward strong sustainability plans. The Senior Coordinator will analyze sub group state assessment data, providing reports of each school's progress toward increasing student academic achievement. He/She will hire a district-based Grants Technician to assist with grant related functions. In

addition, a Data Entry Clerk will be hired to provide assistance to all MSAP team members for data collection, data entry, training preparation and planning, filing, etc.

The Senior Coordinator of Curriculum and Pedagogy will work with each school's Magnet Resource Teacher, school administration and district MSAP team to ensure timely implementation of each school's magnet theme. This position will rotate among the five ***Gear Up*** schools, assessing school-level and teacher-level needs, such as coaching, mentoring, curriculum and professional development, collaborative planning and purchases necessary to carry out the magnet theme implementation. This position will monitor each school's progress toward meeting their project objectives for professional development, parent and community involvement, and student academic achievement, as well as work closely with each school's grant writing team to search for grant opportunities for sustainability.

The MSAP Coordinator will assist the Senior Coordinator of Curriculum and Pedagogy at each of the five ***Gear Up*** schools. In addition, this position is responsible for planning and coordinating MSAP professional development. Professional development plans will be revised annually based on an inventory of school and teacher-level professional development assessments. The MSAP Coordinator will work with each school's Magnet Resource Teacher to assure project objectives are met for professional development, parent and community involvement, and academic achievement.

At the district administrative level, the Project Director will oversee the ***Gear Up*** project to ensure timely implementation within the projected budget. The Project Director will work closely with district-level MSAP staff, school administrators and the district's leadership team. ***Gear Up*** Principals' Meetings will be regularly held to review progress toward meeting project objectives and share best practices aligned with project objectives, such as reducing minority

group isolation, building parent and community partnerships, and increasing student achievement while developing a scaffold for struggling students. The external evaluator will visit ***Gear Up*** schools three times each year and provide written feedback detailing each school's progress toward implementation. The Project Director will review the evaluator's feedback with school administration and discuss school specific needs and/or changes to the project. The Project Director will also work with MSAP staff to monitor requests for trainings at the school level, all purchases made with MSAP funds, curriculum development as well as magnet theme implementation at each school. In addition, the Project Director will work closely with the District's leadership team to identify and solve district-level challenges that impact progress toward project implementation. Examples could include school program staffing, master scheduling, operating budgeting, and revisions to the magnet application and enrollment processes to include an effective tool for achieving socio-economic diversity in magnet schools. The Project Director will hire a Secretary to assist with all MSAP project activities.

In addition to hiring positions to work on this project, consultants recognized as experts in their fields will be contracted. Retired magnet school principals will be hired as consultants to work with each of the ***Gear Up*** principals as mentors. These retired principals will assist with the planning and implementation of the magnet theme as it relates to the program objectives. They will assist the Principal with identifying specific teachers and/or grade levels that require additional training and assistance, provide feedback to the Principal on observable implementation of magnet systemic reforms, such as maximizing academic learning time, anchoring and focusing student learning to the learning goal, cooperative learning strategies, gradual release of responsibility, differentiation for variety of learners, summarizing strategies and embedded formative assessment, and non-fiction writing across the curriculum. They will

provide assistance and coaching to the Principal in the transition from a zoned school to a magnet school in the areas of recruitment, enrollment, parent nights and sustainability, and technical assistance in the areas of unit planning and development, implementation of professional development in the classroom, revision and assessment of magnet standards, and identifying potential business partners, mentors, community organizations and additional stakeholders to support the magnet program.

David Gregory of Gregory & Denby Associates is a nationally recognized leader in Change Management and Personalized Learning Model. Mr. Gregory will be contracted with to provide services and professional development, such as implementation of a Personalized Learning Model, Change Management training, rebranding and marketing, and guided workshops in building capacity for change. Mr. Gregory's team will provide onsite visits with each school. He will build out a personalized professional development plan using an online platform, provide training and personalized coaching, coordinate visits to national implementation model personalized learning, assist with visioning, strategic plan development, and change management implementation.

Maree Sneed is a partner at Hogan and Lovells with an extensive background in representing school districts in desegregation legal issues. Maree has provided regulatory advice to clients and litigated cases for clients in state courts as well as federal, district, and appellate courts. Maree and her team worked on two important Supreme Court cases involving school districts — *Schafer v. Weast* and *PICs v. Seattle School District No. 1*. Maree has also represented school districts in Office for Civil Rights (OCR) and Department of Justice (DOJ) investigations and negotiated voluntary resolution agreements. Ms. Sneed will work with the Project Director as well as the school district's attorney to develop a student selection plan that addresses the

challenges Polk faces in determined the best method of measuring socioeconomic integration. Ms. Sneed was instrumental in the development of Polk's student selection plan in 2010, has worked closely with the district's legal team as well as co-presented the plan to the district's school board for approval.

Brenda Bartholomew has a long history with the Polk County School Board that dates back to the original desegregation lawsuit and the settlement that led to Polk County's desegregation court order and eventual unitary status. Ms. Bartholomew also served as the Senior Director in Polk's Department of Planning, Assessment, Accountability and Evaluation. She will be contracted with this grant to provide her expertise and knowledge to analyze progress toward meeting MGI and increased academic achievement project objectives. Ms. Bartholomew will review and analyze data submitted for the Annual Performance and Ad Hoc reports and will attend each evaluation site visit for the five schools. She will assist with training in the areas of reporting, compliance monitoring and preparation for evaluation site visits. Ms. Bartholomew will work with the Center for Research on Education Outcomes (CREDO) at Stanford University, California to collected district-level and school-level data necessary to conduct a quasi-experimental design study.

The Center for Research on Education Outcomes (CREDO) at Stanford University, California will be contracted to design, conduct and report a quasi-experimental design to determine the effectiveness of the Personalized Learning Model in increasing student achievement in the five ***Gear Up*** schools. "CREDO was established to improve empirical evidence about education reform and student performance at the primary and secondary levels. CREDO supports education organizations and policymakers using reliable research and program evaluation to assess the performance of education initiatives. CREDO's valuable insight helps

educators and policymakers strengthen their focus on the results from innovative programs, curricula, policies and accountability practices (http://credo.stanford.edu)." The quasi-experimental design study is explained in greater detail in the Quality of Evaluation Plan.

Alissa Hardy will be contracted as a Financial Consultant to monitor all MSAP revenue and expenditures in the District's SAP system. Ms. Hardy has provided these same services for the MSAP 2013 project. Ms. Hardy ensures that all expenditures are spent according to the approved project budget, assist with approved project amendments, and track each specific expense recorded in SAP by each school and district office.

To further assist the schools with successful implementation of the ***Gear Up*** project, three demonstration sites have been selected to mentor and coach the teachers and administration at the five project magnet schools. Lawton Chiles Middle Academy will partner with three magnet schools, Rochelle School of the Arts, Polk Polytech Academy and Daniel Jenkins Academy. Winston Academy of Engineering will partner with Combee Academy of Design and Engineering, and Lincoln Academy will partner with Brigham Academy. Greater detail about these partnerships is described in the ***Quality of Project Design*** section.

(2) How the applicant will ensure that a diversity of perspectives are brought to bear in the operation of the proposed project, including those of parents, teachers, the business community, a variety of disciplinary and professional fields, recipients or beneficiaries of services, or others, as appropriate.

Parental involvement and decision-making. We will further engage and support our underrepresented students by increasing parental involvement. We believe that active parental involvement will increase participation of students in STEM and advanced academics, and allow

us to provide support holistically, taking in consideration the needs and values of each family. To implement innovative programs proposed, ***Gear Up*** will actively engage parents and community in decision-making through building the capacity and a culture of partnership and collaboration. The goal of the parental involvement program at each campus is to encourage collaboration between the students, parents, schools and community to improve the quality of education for the students through diverse ways in which parents can contribute to the school and community. We framed our parental involvement in research reported by Hanover Research.

HANOVER KEY FINDINGS	GEAR UP IMPLEMENTATION
Effective engagement of diverse families begins with understanding the local structural, attitudinal, and cultural barriers to their participation.	At each site we will collect and analyze information about times for meetings and barriers to attendances so that we can address issues that prevent involvement (such as child care, transportation, language proficiency etc.). Our goal is to create opportunities and supports for each parent to be actively involved.
Educators must build cultural competency at both systemic and individual levels, so that all families feel welcome in all events and engagement opportunities.	Training for cultural and socioeconomic diversity to build competencies needed to create a welcoming environment for all parents. For example, school teams will attend Eric Jensen's "Teaching and Engaging with Poverty in Mind" workshop that includes family involvement strategies.
Effective schools seek to encourage diverse families' participation in general as well as	Parents will be provided a variety of ways to become involved, that will take into consideration their cultural backgrounds, needs, time, transportation and work schedules. By providing different types of involvement

in targeted involvement opportunities.	opportunities, all parents will be able to actively participate, even if they have significant barriers to participation. For example, we will provide activities that parents can do at home to support teachers (such as helping with organizing materials or bulletin boards), for families of diverse linguistic background as mentors and translators for new families, child care for major events, and activities on Saturdays for working parents
Families often need basic information about the education system.	We will provide parent information sessions on various aspects of our school system and planning for their child's future. This includes targeted recruiting and assistance with application to our magnet schools, sessions on accessing community resources, high school and post high school planning and various sessions on helping their child with school and homework.

Implementation of parental outreach will be based on Epstein's Types of Parental Involvement and standards developed by Dr. Epstein and the National PTA, with activities and outreach planned at both district and school levels. Involvement will include.

1. Parenting: Help all families establish home environments to support children as students.
    - ✓ Parent education and other courses or training for parents (e.g. English as a second language, family literacy).
    - ✓ Family support programs to assist families with services and resources

- ✓ Information at transition points to elementary, middle, and high school.

2. Communicating: Design effective forms of school-to-home and home-to-school communications about school programs and children's progress.

   - ✓ Portfolio Conferences with every parent at least twice a year.
   - ✓ Language translators to assist families as needed.
   - ✓ Regular schedule of useful notices, memos, web sites, emails, phone calls, newsletters, and other communications.

3. Volunteering: Recruit and organize parent help and support.

   - ✓ School/classroom volunteer program to help teachers, administrators, students, and other parents.
   - ✓ Parent room or family center for volunteer work, meetings, and resources for families.
   - ✓ Annual survey to identify all available talents, times, and locations of volunteers.
   - ✓ Volunteer opportunities from home to engage families who lack transportation or have demanding work schedules

4. Learning at home: Provide information and ideas to families about how to help students at home with homework and other curriculum-related activities, decisions, and planning.

   - ✓ Information for families on skills needed for students in all subjects at each grade
   - ✓ Information on homework policies and how to monitor and discuss schoolwork
   - ✓ Information on summer learning opportunities
   - ✓ Family participation in setting student goals each year and in planning for next educational step (***Appendix 7.3*** for sample parent curriculum-related workshops)

5. Decision making: Include parents in school decisions, developing parent leaders and representatives.

    - ✓ Active PTA/PTO or other parent organizations, advisory councils, or committees for parent leadership and participation.
    - ✓ Networks to link all families with parent representatives
    - ✓ EdCamps on important topics and issues
    - ✓ Climate and decision making surveys

6. Collaborating with the community: Identify and integrate resources and services from the community to strengthen school programs, family practices, and student learning and development.

    - ✓ Information for students and families on community health, cultural, recreational, social support, and other programs/services.
    - ✓ Information on community activities that link to learning skills and talents, including summer programs for students.

This approach fits into the framework outlined by the Hanover research report.

To afford parents, teachers, and the community more opportunities for decision-making and involvement, each ***Gear Up*** site will offer workshops and informational sessions on a variety of topics of interest to families of enrolled students and topics specific to the community. Some will be aligned to the school magnet theme and some related to the ways parents can help their child at home. Parent advocacy workshops will be offered by the Parent Teacher Organization to discuss important issues affecting schools such as legislation or school funding. Magnet school

teachers will collaborate with parents and community in development of multicultural programs, outreach and activities. Parent-Teacher Organizations (PTO) will offer a means to develop strong family-school-community partnerships.

School Advisory Councils (SAC) are charged by the Florida DOE with writing annual School Improvement priorities. They publicize and evaluate the School Improvement Plan, support implementation, and review the School Budget. By state policy, the councils reflect the demographic makeup of each school, and membership is reviewed annually by the School Board. Information about these opportunities will be provided to all parents in their language.

Each ***Gear Up*** school has numerous community business partners that assist with needs of the school, staff, and students. The business partners are located near the ***Gear Up*** school and normally have or have had students attend that school. It is important for local businesses to continue to support the academic growth of each of the ***Gear Up*** schools. These business partners are invited and encouraged to be part of the SAC and PTO committees where they have a voice in the decision making process. These business partners will be the spring board to enhance and stimulate real STEM experiences. The ***Gear Up*** schools will continue to seek local business support and ensure the business partner's involvement through communication as the program evolves at their site.

(d) Quality of Personnel

(1) The project Director is qualified to manage the project.

Project Director: Carolyn Bridges, Senior Director, Office of Acceleration and Innovation, has served as the Project Director for the past two MSAP cycles. The 2010 cycle served eight magnet schools and 2013 cycle served five magnet schools. In her role as Senior Director, Mrs. Bridges also oversees programs in 17 magnet and choice schools as well as all accelerated programs. Mrs. Bridges will devote 83% of her time to the ***Gear Up*** project.

Mrs. Bridges sat on the original biracial community desegregation committee that crafted our first magnet schools in 1991 leading to Polk's unitary status. She is a former middle school Teacher of the Year and has been recognized as one of Polk County's outstanding administrators. She has served as a curriculum specialist who holds a B.S. in Elementary Education from Southeastern University and a Master's Degree in Educational Leadership from the University of South Florida. She served as an Assistant Principal and Southeastern University adjunct instructor. Under her leadership, Polk County School District was awarded the National Association of Charter School Authorizers' 2009 Award of Excellence. She served as the President of the Florida Association of Charter School Authorizers for seven years. Mrs. Bridges has completed a variety of International Baccalaureate training, including head of schools; areas of interaction; and integration of technology. Her administrative experience includes successful management of numerous government grants, and she is an expert in all aspects of accountability and audit procedures, human resource management, resource

deployment, contract management, legal and ethical issues, public relations, and all levels of protocols.

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

Carla McMullen, Senior Coordinator of Operations and Evaluation, has worked with magnet and choice schools for the past 17 years, as well as charter schools for 14 of those years. She has vast experience in management, budgeting, evaluation, and oversight of choice programs. For the past three years, Mrs. McMullen has overseen the budget, evaluation and operations for the 2013 MSAP project cycle. She has developed strong protocols for each of the school-based magnet resource teachers to follow and has provided on-going training to ensure compliance with all state and federal regulations for grant management. Mrs. McMullen has worked closely with the magnet Principals, key MSAP staff and district leadership to ensure successful implementation of the current MSAP project. She has a Bachelor's Degree in Management from the University of South Florida and a Master's Degree in Management from the University of Phoenix.

Mijana Lockard, Senior Coordinator of Curriculum and Pedagogy, has worked for the Polk County School District for over 20 years and in the past seven years has been involved with curriculum development for the MSAP grant sites, first as a site based resource and later as a district STEM/ STEAM Resource Teacher. She has developed and implemented an integrated STEM curriculum and presented STEM frameworks and units of study at national conferences, including IB Conference of Americas and National Science Teacher Association (NSTA). Her expertise include technology integration, curriculum development, Fabrication lab curriculum and support for teachers and resource teachers implementing programs. Mrs. Lockard is a National Board Certified Teacher. She served as a member of the NSTA steering committee for

the NSTA STEM K-12 Expo and is currently holds a chair position with NSTA's technology Integration Committee. She instructs other teachers throughout the state for the Florida Center for Instructional Technology at the University of South Florida in its Master Digital Educator Program, and nationwide as the Microsoft Innovative Teachers Trainer and Oracle Education Foundation's Project-Based Learning facilitator. She is a trainer for development of Common Formative Assessments and Authentic Performance Assessments used within STEM units of study. She has garnered national and state awards from Siemens "We Can Change the World," Toshiba Exploravision, Disney Planet Challenge, Microsoft Innovative Teacher, Inspiration Software, Best Buy, and the Disney Teacheriffic Award, and she has presented at the state and national venues.

Candy Amato, Coordinator, Candy Amato has worked with the Polk County School system for 21 years. During her tenure she has served as a middle school classroom teacher with a concentration on the core classes of reading, language arts, and math. As a classroom teacher she served as an active member of the school's leadership team, yearbook advisor, and middle grades team department chair. Upon completion of her Master's degree from Nova Southeastern University, she became a member of Polk County's Assessment Department. She has served as a school site assessment coordinator and spent seven years as the direct contact for Polk County Schools for all state and district mandated assessments. In this role Ms. Amato was the liaison between the state and the district and had the daunting task of communicating state policies to schools for implementation. She just recently joined the Office of Acceleration and Innovation as the Teacher Resource Specialist of Professional Development. In this role she will continue to use her strong leadership and communication skills to assist our magnet schools to ensure maximum student growth.

Individual Principal Bios and Resumes, as well as for others mentioned in this project can be found in ***Appendix 8.1***. In addition, job descriptions for each of the key leaders of this project can be found in ***Appendix 8.2***.

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

In Polk, because of the rigor of their assignments, magnet school teachers are not assigned, but voluntarily apply to schools that fit their philosophy of education. ***Gear Up*** teachers will agree to complete a total of 60 hours annually in professional development, including five hours each in the following categories: magnet theme strands, magnet-identified "best practices," core content instructional programs, socio-economic and cultural diversity, using technology for instruction to help promote the school and to advance its theme and instructional approaches.

According to the district Certification Office Handbook, "All teachers must hold or be deemed eligible (by a Florida Statement of Status of Eligibility) to hold a valid Florida certificate for full-time teaching. Teachers must hold certificates covering subject/s required by *Florida Course Code Directory* for their teaching assignments." In-field certification includes a state-mandated endorsement in teaching English Language Learners (ELL). From year to year the Polk district has had a success rate as high as 97% placing teachers in the fields for which they are certified and meet the state definition of highly qualified.

Gear Up will strive to recruit teachers who hold advanced degrees, dedicated years of experience, and/or have a strong commitment and vision to the grant and the school they will serve. A program evaluation from the mid-1990s found that teachers who applied at Polk's magnets were looking for opportunities for creativity, and that they were inspired by curriculum

development challenges to seek graduate degrees at about three times the rate of teacher's districtwide.

In addition, key mentor teachers at demonstration magnet schools will work closely with each of the ***Gear Up*** magnet schools throughout implementation of the project.

Reginald Patterson, Fabrication Lab Teacher – Reginald Patterson is the digital design and Fabrication Lab teacher at Lawton Chiles Middle Academy. Mr. Patterson helped to install the first Fabrication Lab in Polk County's middle magnet schools, and has worked closely with teachers throughout the installation and implementation of two additional Fabrication Labs at two middle magnet schools. Mr. Patterson has worked with Fabrication Lab teachers to develop curriculum and lesson plans as well as provide additional training on Fabrication Lab equipment. He has done extensive curriculum development and project design to infuse the Fabrication Lab concepts into the grades 6 - 7 curriculum to prepare the grade 8 for the real-world application that is the Fabrication Lab. He holds a Bachelor of Science degree in Mechanical Engineering and has career experience in quality engineering and management.

Holly Wallace, PYP Coordinator – Holly Wallace is the Primary Years Programme (PYP) IB Coordinator for Lincoln Avenue Academy, Polk County's first elementary magnet school seeking PYP authorization. Ms. Wallace has been instrumental in Lincoln Academy's request for Candidacy and application for IB Authorization, with their authorization visit scheduled for September 2016.

Rebecca Wiggins, STEM Lead Teacher – Rebecca Wiggins has a Bachelor of Science in Elementary Education from Florida Southern College and a Master of Science in Educational Leadership from Nova Southeastern University. She is certified in Elementary Education K-6, Middle Grades Integrated Curriculum 5-9, all levels of Educational Leadership and has ESOL

Endorsement. As an educator for the last twelve years, Ms. Wiggins has had a vast array of experiences. She began her teaching career as a third grade teacher at Bartow Elementary Academy, one of Polk's first magnet schools. She then taught sixth grade math when transferring to Ft. Meade Middle Senior High School for six years. Ms. Wiggins has also served as the Title I Program Facilitator at Winston Elementary and later as the STEM Lead Teacher when Winston became a magnet school through the 2013 MSAP project. Ms. Wiggins has assisted classroom teachers in developing mathematics instruction and remediation strategies.

Resumes for each of the above mentioned personnel as well as other supporting personnel working closely with each of the proposed magnet schools may be found in ***Appendix 8.1***.

(e) Quality of Project Evaluation

Introduction

Outside evaluator reduces bias and ensures the integrity of data and reports. DKH Consulting Services, Inc. collaborated with the Polk County Schools to prepare of this application. DKH's president, Dr. Deidra Honeywell is the lead evaluator on all projects and has 1) extensive experience evaluating, designing, and implementing state and federally funded projects, 2) over 45 years of progressive educational experience, and 3) is working on, has worked on, or has led 24 MSAP project evaluations (13 school districts in eight states,12 of which were DKH contracts). Dr. Honeywell collaborates on the development and implementation of DKH evaluation plans with DKH Associate, Dr. C. Walker, Ph.D. in measurement and evaluation.

This evaluation plan includes objectives and performance measures, each measure including annual quantitative benchmarks supported by quantitative and qualitative data. Data is collected directly by the District and/or by the evaluators, but all of it is analyzed off-site in DKH offices by trained evaluators furtherer contributes to objectivity. Multiple data sources (eg. Interviews, questionnaires, focus groups, walkthroughs, & classroom observations)are used to assess the same objective, providing cross-checks on the evaluation findings and further increasing validity.

DKH designed evaluation plans use a modified CIPP (Context, Input, Process, & Product) Model, recommended for educational projects and based on the work of Stufflebeam and McKee, Western Michigan University (2012.) The CIPP is a framework for guiding formative and summative evaluations of projects and program used by many evaluators including contracted or mandated external evaluators worldwide for large and small, long-term and short-term evaluations. Applications of the model include various disciplines including education.

As noted by Dr. Stufflebeam, "evaluation's most important purpose is not to prove, but to improve." This philosophy aligns with DKH's, which defines evaluation as a functional activity that can be used to assist, stimulate, and support efforts to strengthen and improve programs. The CIPP Model is also be used to identify programs or services that cannot be improved and should, therefore, be terminated. Eliminating unworthy activities supports improvement efforts, helping organizations free-up resources and time for more worthwhile projects.

(1) The extent to which the methods of evaluation provide for examining the effectiveness of project implementation strategies.

DKH develops comprehensive MSAP evaluations that include formative and summative approaches and use a variety of data collection and analysis strategies, resulting in both quantitative and qualitative data. To ensure that a magnet program model is significantly impacting student achievement, the study must confirm the fidelity of model implementation.

Fidelity of Implementation: This component is monitored on three dimensions – method, frequency and support. Annually, a two-person team makes three site visits to each school site and/or participates in project training. This team includes Dr. Honeywell and a DKH associate or consultant with expertise in the themes included in the project; for example, E. Ranieri, DKH associate who has worked with DKH since 2008 has expertise in mathematics and other STEM components. In preparation for the visit, the site-based leadership team completes a template developed by DKH and aligned with the objectives and performance measures of the project. At site visits, evaluators, the project director, and site-based staff discuss the completed template and current implementation progress. Activities conducted during site visits include, but are not limited to: attending training sessions; collecting a variety of data on professional development (attendance records, topics covered and alignment with grant objectives, follow-up support,

frequency of use of new strategies) conducting school walkthroughs; visiting classrooms; holding focus groups with teachers, students, administrators, or parents; interviewing stakeholders; monitoring development of theme-related ***Gear Up*** curriculum; and conducting classroom observations to document the implementation of new instructional strategies and the use of magnet curriculum units. Protocols and/or rubrics are used for all data collection activities.

At the end of the site visit, the evaluators informally discuss findings with those administrators and/or supervisors directly involved with the magnet program. Within two weeks, formative evaluation reports are generated based on data collected and observations made during site visits. These reports include commendations on areas of strength as well as recommendations, and are summarized by school. ***Gear Up*** project director will share the reports with the individual school's leadership team, meet with school staff and discuss how they will respond to the recommendations. For the next site visit, the school staff includes responses on its report. The evaluators review the school responses during the subsequent visit and monitor their application in the implementation process. Project implementation strategies are reviewed and adjusted depending on the complexity recommendations and based on leading indicators,

(2) The extent to which the methods of evaluation include the use of objective performance measures that are clearly related to the intended outcomes of the project and will produce quantitative and qualitative data.

This mixed method evaluation plan is written in accordance with the notice inviting applications for the Magnet School Assistance Program for fiscal year 2016 (CFDA Number: 84.165A). As described in the notice, the MSAP has six purposes. These purposes have been grouped, by USDE, into three major categories; Desegregation and Choice, Building Capacity, and Academic Achievement. See the following charts for the Measurement Frameworks.

Measurement Frameworks					
A. Outcome	**B. Indicators**	**C. Measure of Change**	**D. Data Collection Methods**	**E. Data Sources**	**F. Frequency of Data Collection**
Desegregation and Choice Long-Term Outcomes					
Objective 1: To eliminate, reduce or prevent minority group isolation in the targeted schools without negatively impacting feeder schools.					
Minority group isolation (MGI) is reduced.	Increased enrollment of target subgroups	Decrease in percentage of identified group in total enrollment	OCR Enrollment tables for target schools & District	District data office	Annually - with multiple checks on demographics of applicant pool throughout the application period.
Increased number of applications	Number of applications	Number of applications increase annually	District reports on number of applications	District MSAP magnet office	Annually - with multiple checks on demographics of applicant pool throughout the application period.
Well-developed plan for ensuring diversity in classes & extracurricular activities	Plan in place, annual monitoring required	Data indicate classes and activities reflect the diversity of the school	Review plan and demographics of classes and activities	Written plan, class lists, and lists of participants in extracurricular activities.	Annual review of plan. Review of class and extracurricular lists three times/year.
New magnet schools do not negatively impact feeder schools	New students come from a variety of schools and placements do not increase MGI at feeder schools	Changes in enrollment by subgroups at feeder schools is < 2 percentage points	OCR Enrollment tables for feeder schools and placement records for each magnet school	District data office	Annually, plus close monitoring of applicant pool and student placement
Building Capacity Long-Term Outcomes					
Objective 2: To design and develop innovative educational methods and practices that promote diversity, increase choice and ensure students gain 21st century skills. **Objective 3:** To provide professional development for magnet school teachers related to implementing high-quality educational programs, increasing achievement for all students, improving instructional practices, and ensuring program sustainability. **Objective 4:** To ensure parents and community members are actively involved in project planning, implementation, and decision-making.					
More innovative, challenging, engaging instruction.	Teachers and administrators are well trained and are utilizing best instructional practices.	Change in percentages reporting that instruction has improved	Surveys of stakeholders (SurveyMonkey), observation protocols, focus groups, formative evaluation reports, and professional development records.	Teachers, students, parents, magnet coordinators and project leadership.	Three site visits and annual collection of data

Building Capacity Long-Term Outcomes - Continued					
A. Outcome	**B. Indicators**	**C. Measure of Change**	**D. Data Collection Methods**	**E. Data Sources**	**F. Frequency of Data Collection**
Fully developed & implemented magnet curriculum	Frequency of teachers using integrated, theme related curriculum lessons	Change in the number and quality of integrated magnet theme-related curriculum units developed for all grade levels and stored in an electronic format that allows editing	Review of curriculum documents, review of online storage, surveys of stakeholders (Survey-Monkey), observation protocols, focus groups, formative evaluation reports, and curriculum development records.	Online data storage, teachers, students, parents, magnet coordinators & project leadership.	Three site visits and annual collection of data
Parents & community partners are involved in implementation & decision-making	Parents & community members on campus, in classrooms, participating in magnet leadership team	Change in percentages of parents, school staff, & partners reporting involvement in implementation & decision making	Surveys of stakeholders (SurveyMonkey), focus groups, formative evaluation reports, and parent/community involvement records.	Teachers, parents, and magnet coordinators.	Three site visits and annual collection of data
IB programs are authorized	Appropriate steps taken annually to prepare for authorization	Schools implementing IB are authorized before end of grant	Review of applications and letters submitted to IBO and reports and letters sent to the school by IBO	Copies of pertinent documents from district and/or schools	Updates at three site visits and annual collection of data
Academic Achievement Long-Term Outcome					
Objective 5: To increase percentages of all magnet students, including those from major racial and ethnic subgroups, who meet state proficiency targets in reading/language arts and mathematics.					
Increased percentages of students in major ethnic and racial subgroups scoring at Level 3 or higher in ELA	Percentages at Level 3 or higher increase for subgroups	Percentages at Level 3 or higher increase by at least six percentage points	Official state proficiency data will be analyzed by subgroup	State Dept. of Ed Website and District data office	Once a year. benchmark testing can be reviewed to determine trend data
Increased percentages of students in major ethnic and racial subgroups scoring at Level 3 or higher in mathematics	Percentages at Level 3 or higher increase for subgroups	Percentages at Level 3 or higher increase by at least six percentage points	Official state proficiency data will be analyzed by subgroup	State Dept. of Ed Website and District data office	Once a year. benchmark testing can be reviewed to determine trend data

This plan is based on the project's desired outcomes and performance measures and includes formative and summative evaluation. The plan will determine how effective each magnet program is at meeting its primary goals (reducing minority group isolation, building capacity and increasing student achievement). Evaluator and District identified five project objectives, directly aligned with major purposes of the Magnet Schools Assistance Program. Each objective has aligned project performance measures and an annual benchmark. Annually, actual data will be compared to the appropriate benchmarks; the outcomes of these comparisons determine the extent to which the magnet schools meet their objectives. In Annual and Final Performance Reports, data for the GPRA Program Performance Measures will be reported in appropriate MSAP charts and tables and Project Performance Measures will be addressed in the ED 524B template provided by the USDE. 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 (***Appendix 9.1***), DKH produces formative, summative (APR and Ad Hoc) and final reports over the project period. DKH believes that formative evaluation is crucial to the success of a project. It measures the degree of implementation fidelity, frequency of students' exposure to new theme-related activities and magnet curriculum units, and teachers' use 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 cannot be correlated with project supported reform efforts.

Summative evaluations provide information on the extent to which the magnet schools attain their project objectives and performance measures. These results are summarized in each Annual Performance Report (APR) and/or Ad Hoc Report and supported by relevant data. In addition, GPRA data are 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 measures were developed for each objective and each defines annual quantitative targets.] Annually, reports will address each school individually and results will be presented to school administrators and district staff at the end of the grant year. In addition, DKH evaluators keep a table summarizing annual performance on each performance measure by school, indicating whether the target was attained. These summaries are updated annually and used to review progress and help identify areas for improvement. Based on data review, summative reports include recommendations for improvements and, when appropriate, implementation plans adjustment.

A final report is written at the conclusion of the project and 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. These data are reported either in the school GPRA Table or addressed using the ED 524B format, provided by the USDE. In addition, the report includes MSAP tables and Section C – additional information. The annually updated data summaries provide an overview of the progress of each school on its performance measures and are very useful in preparing the final report. 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. Information in the final report may influence

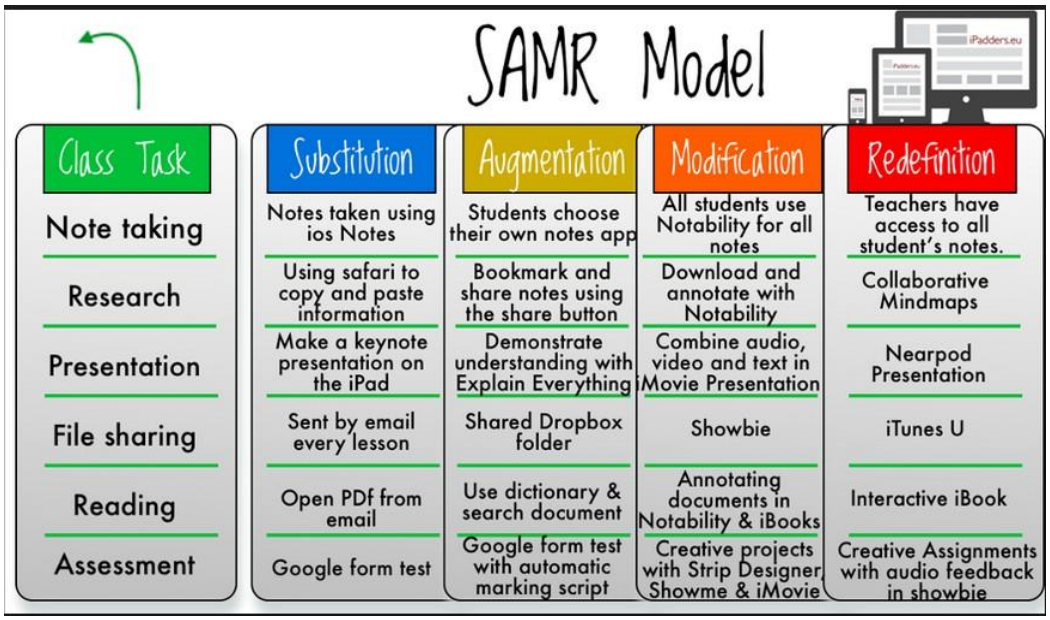
future evaluations, interventions, and decisions on the effectiveness of the magnet programs. Findings will be shared with school and district personnel and an executive summary will be distributed to parents and the community.

Methodology: A mixed method approach, offering the opportunity to address the evaluation information using a combination of quantitative and qualitative methods from multiple data sources will be used to conduct the evaluation. Since these methods complement each other and provide important cross-checks on the evaluation findings through triangulation, this method assures dependable feedback. Consequently, the evaluation will be able to determine the value of the target magnet programs in a comprehensive way, providing direction for their improvement.

Fidelity of Implementation: This component is monitored on three dimensions: method, frequency and support. For details on this component, see the response in item (1). Sampling: Participants for the focus groups and implementation team interviews will be selected using purposeful sampling with maximum variation. This type of sampling allows evaluators to intentionally select individuals from different races/ethnicities who can provide necessary information from different perspectives. This process promotes diversity through the inclusion of participants from minority groups represented in each school's population. Parent and student focus groups will include approximately 7 people, representative of a school's demographics, socio-economic status, and zoned/out-of-zone (enrolled through application) students.

Participants for the questionnaires will be selected according to the following guidelines. All instructional staff in the target schools and grades are asked to participate in the questionnaires. A stratified sample of parents and students (grades 3 & above) will be selected to participate in questionnaires at each site. This sampling method ensures representation from different strata, such as racial groups, grade levels, and socioeconomic levels, from the participating schools.

Classroom observations at each ***Gear Up*** school will be scheduled at each site beginning in the year 1 of program **implementation.** As part of its implementation plan, each school will identify a list of expected 'best practices' based on its magnet theme and observers will monitor instruction for those strategies. In addition, observers will be monitoring teacher and student use of technology, for example one measure might be teacher/student use of technology at level 2 or higher as defined in the Substitution, Augmentation, Modification, Redefinition (SAMR) Model. Observers will use a rubric to record teacher and student behaviors relative to magnet instructional expectations.



When focus groups are not scheduled during a visit, the evaluators will conduct two to three (depends on length of visit) classroom observations per school per site visit. When conducting parent or student focus groups, the evaluators will only observe in one or two classrooms. To be observed, a teacher must be implementing a magnet lesson that is theme-related and part of a curricular unit developed for the school as part of its MSAP funding. Observations are scheduled so that the evaluators arrive at the beginning of a lesson and they last between 20 and 30

minutes. Classrooms will be randomly selected from a list of available possibilities. Over the span of the grant, evaluators will observe in as many magnet classrooms as possible.

Data Collection and Analysis Methods: Several methods of data collection are being proposed to address the information requirements of a MSAP grant. Those include: (a) questionnaires, (b) focus groups, (c) interviews, (d) classrooms observations, (e) review of school records (e.g., enrollment, applications) and (f) review of district data (e.g., tests scores). Data will be collected directly from participants and from existing records at the participating schools and/or the school district. Data collection instruments will be aligned with project objectives and performance measures. These data collection instruments will be designed by the external evaluator and will be revised and edited in collaboration with MSAP project management. Standardized sets of questions and observation rubrics will be developed by DKH in collaboration and project management. DKH has an account with SurveyMonkey, which will be used to deliver online questionnaires to participants. Other data will be gathered by the evaluation team.

The following data collection instruments will be developed for this evaluation plan: student, parent, and staff questionnaires, protocols for interviews with school/district personnel; protocols 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 questionnaires will include items that relate to specific objectives and performance measures. After the first year of the project, questionnaire items will be reviewed to determine whether items need to be modified. In order to compare results from year to year, only minor modifications that do not change the meaning of the item but rather clarify it, would be appropriate. Using standard sets of

questions, as part of interviews and focus groups protocols, allow evaluation team members to collect data from different sources and keep consistency across these measures. 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 multiple choice items, including Likert-type scale response options, among others, 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 data collection.

Quantitative Data: A wide range of quantitative data will be collected for the MSAP evaluation. These include, but are not limited to, the following data elements that will be obtained, for the most part, from the participating schools and school district. The data will include (a) demographic information about the schools, students, and staff, (b) enrollment by grade and race for the district, ***Gear Up*** sites, and feeder schools, (c) impact of magnet enrollees on feeder schools, and (d) students by subgroups who score at the proficient or above level on Florida assessments in reading/language arts and mathematics. Also, data will be gathered through a) questionnaires to obtain information from staff, teachers, parents, and students and b) standardized rubrics for classroom observations will provide additional data. The quantitative analysis will be addressed both, descriptively and inferentially. Descriptive statistics (e.g., means, median, mode, standard deviations, and frequency distributions/percentages, percentage change) will be computed for the total group of participants as well as disaggregated by relevant characteristics/schools, as needed. Inferential statistics (e.g., t-test), if needed, will be estimated

as well. The data will be analyzed using SPSS, a software package used for statistical analysis. Outcomes from these analyzes will be included in the MSAP Annual Performance and Ad Hoc Reports and used for program improvements.

Qualitative Data: Data will be gathered through focus groups, interviews, open-ended items on questionnaires, and classroom observations. Results will be transcribed, organized, and checked for accuracy and may be entered into a qualitative software package such as, HyperResearch. The analytic procedures will comprise the exploration and codification of this data to generate themes representing the findings and the interpretation of these findings as the final step. The qualitative input collected from members of a school's magnet implementation team will be used to validate and expand the quantitative results.

Quantitative and qualitative evaluation results will be combined to cross-check inferences on the effectiveness of a MSAP-funded model and its magnet theme approaches. Information collected for DKH evaluations provides program accountability data, which may suggest the success of the magnet program model at each participating site. These outcomes may suggest the advisability of replicating these programs in other settings. Site visits allow for the identification of leading indicators and serve as the primary monitoring mechanism. Annual reports provide monitoring opportunities and additional data that are used for continuous project improvement.

The following text provides an abbreviated overview of the five project objectives 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 objectives and performance measures can be found in the Quality of Management Plan.)

Objective 1: Reducing minority group isolation (MGI) in the target schools…Assessment: 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. **Objective 2:** Design and develop innovative educational methods and practices that promote diversity, increase choice, and ensure students gain 21st Century Skills. Assessment: data will be collected on staff use of innovative methods (project-identified best practices) through 1) staff, student, and parent questionnaires/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.

Objective 3: Provide professional development … increasing student achievement … improving instructional practices, and assuring sustainability. Assessment: data will be collected on staff training in best practices through a magnet staff development spreadsheet developed by the evaluators and maintained by the magnet coordinators. Data will be submitted to the evaluators at each of the three annual site visits and the spreadsheet will include information or data on the type and category of training, number of hours offered, and attendance for each teacher. The number of hours attended, by category as well as for all categories, for each teacher will be summed over the school year and compared against the target and the percentage meeting the

target will be calculated. In addition, data will be collected through staff questionnaires, focus groups, walkthroughs, classroom observations (including measures of technology integration using the SAMR scale), three-year staff development and implementation plans, and evaluator review of magnet-developed theme-based units and minutes/schedules of Professional Learning Committee (PLC) 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.

Objective 4: Ensure parents and community members are actively involved in project planning, implementation and decision-making. Assessment: Data will be collected through staff and parent questionnaires, 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.

Objective 5: Increase percentages of students, including those from major racial and ethnic subgroups, who meet Florida proficiency targets in reading/language arts and mathematics. Assessment: 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 achievement by subgroups will be compared to school baseline data and District and State averages. 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.

(3) The extent to which the methods of evaluation will provide performance feedback and permit periodic assessment of progress toward achieving intended outcomes.

As previously described, the evaluators will develop a school report template, aligned with project objectives and performance measures. The school-based coordinator, with input from the principal and other magnet team members, will complete the template 3 times a year and submit the document to the project director. After reviewing the reports, the project director sends them to the evaluation team at least one week prior to the site visit. The evaluators review the reports, noting any questions they have or any additional information needed. At each site visit, the evaluators meet with the magnet site team for at least 90 minutes. During this time, questions are answered, additional details gathered, and suggestions about possible changes or improvements are discussed. Over the course of the grant cycle, school coordinators become more efficient at completing the template, which allows more time to visit classrooms or conduct focus groups. During each school year, one template is used by each school and additional information added for each visit. This ongoing document also includes all of the evaluators' feedback for the year. By the end of the year, the documents are frequently more than 30 pages. At the beginning of each school year, a new template without any previous entries is started. These documents clearly show implementation progress at each school over the funding cycle.

Within two weeks following each site visit, a formative evaluation report for each school is sent to the project director. These reports contain commendations and recommendations for the school and program. Beginning in Year 2, the reports also contain feedback on each teacher observation with input related to specific performance measures, such as instructional and/or student use of technology or teacher use of MSAP identified 'best practices." In addition, the evaluators include statements under two categories: 1) "The teacher is to be commended for" and 2) "The teacher might consider." Once the reports are sent back to the schools, ***Gear Up*** staff share these comments with teachers. When a focus group is conducted during a site visit, that

summary is also included with the school report. Feedback from focus groups is also shared with the school based teams and evaluators may use some of this information as the basis of a commendation or recommendation.

Quantifiable Results: As mentioned earlier, the project has five objectives and 24 project performance measures. 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 both 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 questionnaires; focus group/interview feedback; frequencies and percentages of parent involvement, community involvement, and theme-related instruction; participation of magnet staff in professional development, 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.

A continuous improvement process is 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 a process such as the continuous improvement process 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.

Deliverables: Within two weeks of each site visit, project management will receive 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, as well as recommendations are summarized. At subsequent visits, the project director and school representatives provide updates on recommendations included in the previous site visit report. Annual Performance (May) and Ad Hoc (October) reports are sent to the project manager at least two weeks prior to the U.S, Department of Education due dates. After submission of annual and ad hoc reports, project management and the evaluation team will review results, compare them to expected benchmarks, and identify changes that might be needed to improve future results. When all data is available, the Final Performance Report is submitted to the district – always well within the deadline of three months after the end of the project. As needed, the evaluators will make oral presentations of findings to other district administrators and supervisors interested in project outcomes.

Credentials of Evaluation Planners: In addition to the qualifications previously stated for **Dr. Honeywell**, she has a broad foundation in mathematics and statistics, 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. Her undergraduate education

program and recertification courses included 44 credit hours in mathematics with such classes as Calculus & Analytical Geometry (3 courses), Linear Algebra (2 courses), Modern Algebra (2 courses) and Statistics. Her graduate work included courses titled Foundations of Measurement and Statistical Analysis in Education I, II, & IV. In addition, Dr. Honeywell's doctoral dissertation required a research design and data analysis. In 1999, Dr. Honeywell was credentialed to teach two graduate level research courses for National-Louis University – ESR506: Graduate Research: Interpretive/ Critical and ESR507: Graduate Research: Empirical/Qualitative. Dr. Honeywell has the following degrees from the University of South Florida (USF): BA in math education, MA in gifted education, and a Ph.D. in curriculum & instruction.

Dr. Walker completed her doctoral program at USF in December of 2014, where she specialized in measurement and evaluation. Dr. Walker has significant evaluation experience which includes working on many large federal projects, one of which was for the National Science Foundation. Her current position at USF, as Senior Social and Behavioral Researcher, involves the evaluation of multiple projects housed in the USF College of Behavioral Sciences as well as data analysis support. As part of her work experience she has developed a number of data collection instruments including questionnaires, focus group protocols, interview protocols, and observation protocols. She has worked with both SurveyMonkey and Qualtrics platforms, conducted data analysis using SPSS, SAS, and HyperResearch, and, based on the results of analysis, interpreted data. Dr. Walker has developed multiple evaluation plans, implemented program evaluations, prepared evaluation reports (progress, interim, and final), and provided guidance to stakeholders on using evaluation results for program improvement. A timeline for evaluation services may be found in ***Appendix 9.2***.

Quasi-Experimental Impact Analysis

Stanford University's Center for Research Education on Education Outcomes (CREDO) team is delighted to work with the ***Gear Up*** program initiative, which proposes bold steps to address both racial and socioeconomic historical isolation of students. Through significant effort to recruit a more diverse student body in five magnet schools, the aim is to create richer social and educational experiences for the students who enroll. These experiences, in turn, are both interim outcomes in themselves and are expected to lead to stronger academic outcomes for all student groups. A quasi-experimental impact study will be conducted to ascertain if these aspirations are realized.

Quasi-experimental research designs are used when conditions do not favor pure experimental designs, also called randomized control trials (RCTs). If demand for seats in the newly reorganized magnet schools far exceeded the quantity available, it would be possible to select students by lottery and use the students who were not selected as a control group; since selection would be random, we could assume that the applicants were sufficiently similar that selection by chance divided the pool into equivalent groups on all dimensions. This division by chance would provide the best possible assurance that any differences in studied outcomes between the magnet students and the non-winners were due to the magnet experience and not to unseen or unmeasured differences in the two groups. Unfortunately, it is unlikely in the first years of the program that so many parents would be aware and motivated by the opportunity to support such a study. (Though should those conditions obtain, the Impact study would layer on the non-winner control group to the QE approach described herein.)

Instead, assuming a gradual ramp-up to recruitment efforts, a quasi-experimental design will provide "next best" rigor in discerning if the program as designed and implemented delivered on

the expected interim and final outcomes for students. The design proposed for this program will involve the selection and tracking of students attending non-magnet schools who are matched on all available observable characteristics, including prior academic achievement. With such a design, while it is not possible to completely eliminate all possible selection bias in the families who chose magnet schools over those that do not, it is possible to rule out a number of other possible confounds to increase our confidence that we have estimated the comparative difference which is level on all but the possibility of selection bias. By including prior achievement, we position the magnet students in the "treatment" group as having point-in-time equivalent academic endowments as the "control" students, which by extension serves as a proxy for family motivation, investment and support of education. These are considered the prime drivers of selection bias so we can expect that at least some of the bias has been erased.

Selection of Treatment Students. All students enrolled in the five magnet schools in grades 3 – 8 will be included in the Impact Analysis. With advice of the program team, students meeting established minimum periods of enrollment will be included – students with enrollment for shorter periods will be described in the student flows but will not be included in the Impact Analysis.

Selection of Control Students. Choice of control students is a critically sensitive part of the Impact Analysis. This study will employ the Virtual Control Record (VCR) method of creating controls. The VCR methodology has been reviewed by the What Works Clearinghouse and meets their Quasi-Experimental standards with reservations. (The reservations are inherent in any QE design as discussed above.) Further, the method has been rigorously tested by some of the strictest quantitative methodologists in the United States and found to produce empirical estimates of impact that are equivalent to RCT results in both sign and magnitude. (Anna Egalite

and Mathew Anderson, 2016[a]; Devora Davis and M.E. Raymond, 2012; [b] Kenneth Fortson, Natalyia Verbistsky-Savitz et all, 2012.[c])

The approach follows the following steps:

1. We create a pool of potential control students enrolled in the same year in the same grades in non-magnet public schools in the district or in similar districts in which STEM and personalized learning have not been employed.
2. The potential controls are then arrayed by their demographics their participation in subsidized meals, Special Education, or ELL designations, and their achievement on state tests in the prior year.
3. For each student in the magnet schools, up to seven students in the matching pool who match on all the matching factors are selected. To this point the students – magnet and the 1 – 7 non-magnet students look identical on all observables, except one is enrolled in a magnet school and the others are decidedly not. The non-magnet students are considered "twins" to the magnet student.
4. At the end of the academic year, the current year test scores are added to the record. The multiple non-magnet twins' test scores are averaged together – the result is a "virtual twin" with an exact match on profile and prior academics and a measure of current year achievement.

In past studies, matches were found for 82 – 86% of the treatment students in grades 3 – 8, providing exceptional external validity.

Outcome Measures. The Impact Analysis exploits the requirement that all students in Florida public schools in grades 3 – 8 are tested annually with a common assessment of academic achievement. Because we seek to isolate the contributions of schools, we focus on academic

progress of students over a year's time as measured by these tests. For each the magnet students and the non-magnet VCRs we can compute annual gain scores, which are changes in standardized achievement scores computed by year by grade by subject. The outcome measure is the one-year gain on standardized test scores and compares the magnet students' gains against their VCR gains. Since it takes two successive test scores to compute a progress measure, the focus of the study will be on the students in Grades 4 – 8. If the magnet students on average produce larger results that are statistically significant, we would conclude that the program has met its academic objectives.

Other comparative outcomes will also be explored. Progress towards proficiency by the school's exit grade is one such alternative measure. Continued enrollment is another. Finally, the effects of different lengths of time in a STEM personalized learning environment will be examined to test for dosage thresholds.

Data. The Impact Analysis requires longitudinally linked student data, which will be obtained from Polk County and from the Florida Department of Education. For all students, one year of data prior to program implementation will be needed as well as the first three years of the program. (The delay in release of test scores by the Florida Department of Education precludes the study of final year effects within the grant period; if a no-funds extension is possible, we would attempt to extend the evaluation to cover the final year.)

It is possible to obtain the necessary data with no Personally Identifying Information (PII); this is possible through use of a scrambled Student ID. The district of FL-DOE would hold a file that contained the scrambled ID and the real ID so that future years of test data could be

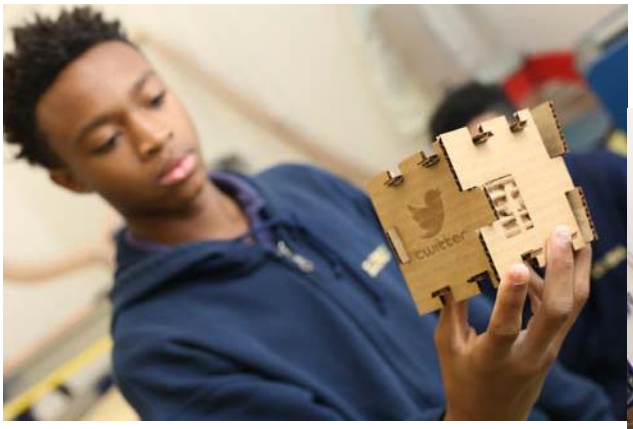
collected and appended to the records. Use of de-identified data eases the requirements for obtaining student-level data. Regardless, the data will be treated as highly sensitive and subject to the strictest level of data governance.

The researcher has extensive experience and success obtaining the necessary permission in Florida and in obtaining the data once permission is granted. However, it must be noted that changes in policies, personnel or preferences to support research are all environmental factors that could adversely affect the ability to secure the data needed for the Impact analysis.

Analysis. Statistic regression techniques will be applied to the data to produce reliable and stable measures of student outcomes that are seen in the magnet schools in this proposed program. In addition to overall program effects, detailed analysis will focus on student subgroup effects, time-in-program effects and differences in trajectory effects. Comparisons across the magnet schools will be considered, depending on the statistical power and Minimum Detectable Effects that are possible. (Recall that recruitment may take a few years to bear results and that we are restricted to Grades 3 – 8 due to state testing policies.) Results will be presented in written and graphic format for early review by program leaders and subject to refinement before the final brief is prepared.

Time Line and Delivery of Analytic Findings of Impact. The first year of the grant will be spent coordinating with program staff and the Implementation Study team to align data collections and to start the data request processes. Data for the Impact analysis will be collected each year and prepped for inclusion in the comprehensive analysis. The Impact Analysis will be a summative study completed in the final year of the grant.

Project Staff. The Impact Analysis will be led by Margaret "Macke" Raymond, Ph.D. Dr. Raymond is the founder and director of the Center for Research on Education Outcomes (CREDO) at Stanford University, a post held since 1999. She has directed over 100 program evaluations in a variety of policy areas, more than two dozen of which have concerned promising programs to improve outcomes for students in U.S. K-12 education. She is a nationally recognized authority in rigorous measurement and analysis of program performance, and a valued thought-partner for several of the large-scale systems initiatives to improve public education in Louisiana, Tennessee, Nevada and the nation in general.



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[b] Davis, D. and Raymond, M. (2012). "Choices for Studying Choice: Assessing Charter School Effectiveness Using Two Quasi-Experimental Methods." Economics of Education Review 31(2): 225-236.

[c] Fortson, Kenneth, Natalya Verbitsky-Savitz, Emma Kopa, and Philip Gleason. "Using an Experimental Evaluation of Charter Schools to Test Whether Nonexperimental Comparison Group Methods Can Replicate Experimental Impact Estimates." NCEE Technical Methods Report 2012-4019. Washington, DC: National Center for Education Evaluation and Regional Assistance, Institute of Education Sciences, U.S. Department of Education, 2012.