New York City Community School Districts 21 and 22

Magnet Schools Assistance Program Grant Application (2016–19)

Project Narrative

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COMPETITIVE PREFERENCE PRIORITIES

COMPETITIVE PRIORITY #1: NEED FOR ASSISTANCE (5 POINTS)

(A) The Secretary evaluates the applicant's need for assistance under this part, by considering the costs of fully implementing the magnet schools project as proposed.

New York City (NYC) is considered by many to be an epicenter for arts, culture, tourism, and finance. It is also home to more than 1.1 million public school students, who together are served by the 1,800 schools of the New York City Department of Education (NYCDOE). The NYCDOE comprises 32 community school districts located across the city's boroughs, spanning from areas of high poverty and unemployment to the wealthiest parts of Manhattan and Brooklyn. Despite the extreme wealth among New Yorkers, the poverty rate of public school children is 76.5%. The student population is ethnically diverse; 40.5% of students are Hispanic/Latino, 27.1% are African American, 15.5% are Asian, 14.8% are White, and 2.1% represent other ethnicities. Additionally, 12.5% of students are English language learners (ELLs) and 18.7% qualify as students with disabilities.

In preparation for the 2016–19 funding cycle, the NYCDOE conducted an initial feasibility study to determine those communities within our city that presented the most compelling need for reducing minority group isolation and at the same time provided fertile terrain for seeding an MSAP initiative. Community School Districts 21 and 22, which are working as a consortium for the MSAP grant, met these two primary criteria. The D21-22 consortium is requesting a total three-year grant in the amount of $11,550,000 from the Magnet Schools Assistance Program to convert five schools (four elementary schools and one middle school) into whole-school magnet programs. All five schools are experiencing high degrees of minority group isolation of Hispanic and/or African American students, ranging from a low of 15 percentage points above the district-

wide average to a high of 50.4 percentage points above the district-wide average at the same educational level. Collectively, the five schools serve a total of 2,601 students in grades pre-K–8.

The planning process for the development of theme-based magnet programs is well under way, but an infusion of resources provided by MSAP is required to bring these unique educational programs to fruition and support efforts to provide more diverse learning environments for the students attending these schools. Funding from the MSAP will support the following mission-critical initiatives.

- **Designing and implementing exciting and rigorous educational opportunities at the elementary and middle school levels that will attract the population of families we are trying to recapture**

Curriculum development around the magnet themes will revitalize the curriculum, making it more attractive to a diverse population of students and families, and will enable magnet school students to meet challenging academic standards. D21-22 has requested funds to provide sufficient time for magnet school teachers to engage in curriculum development activities both during and after school, which will be guided and supported by the full-time, MSAP-funded Curriculum Specialist and full-time Outreach and Technology Coordinator as well as an array of external partners. The site-based, MSAP-funded Magnet Resource Specialists, in collaboration with classroom teachers and other school-based staff, will develop, enhance, and strengthen the magnet themes at their schools, including developing or modifying theme-related enrichment and curricular materials to be aligned with NYS P-12 CCLS, the Next Generation Science Standards (N)GSS, the New York City STEM Framework and Scope and Sequence in Science and Social Studies, and the NYC Blueprint for the Arts.

- **Carrying out aggressive, targeted, and multimodal outreach campaigns to inform**

parents of the schools' innovative and rigorous academic offerings

Aggressive and targeted outreach and recruitment, designed using best-in-class communication and dissemination strategies, will be used to promote awareness of the magnet program offerings in order to attract a more diverse population of families than is currently attending the proposed D21-22 magnet schools. Serving as the linchpin of the voluntary desegregation strategy, both district- and school-based staff, with support and guidance from the MSAP Project Director, will engage in numerous activities (e.g., development of promotional materials, establishment of relationships with the local press, creation of a strong social media presence, formation of linkages with community-based organizations) throughout the project period to inform families about D21-22's magnet schools. In our experience, this initial investment in PR and communications strategies pays off once the excitement about the schools builds and word of mouth can substitute for fee-based advertising. Moreover, the Magnet Project Director will work closely with staff from the Superintendents' Offices, the Borough Field Support Centers, and the NYCDOE's Office of Student Enrollment to ensure that the magnet programs designed and implemented are fully accessible to all students in these buildings, including those who have special needs.

- **Designing and carrying out rigorous and sustained PD for magnet school staff on theme- and evidence-based teaching and learning practices to support systemic reform efforts**

A strong and targeted PD program must be implemented to improve teaching and learning practices among D21-22 educators and equip them with the skills and knowledge to incorporate innovative and effective educational methods and practices into classroom instruction. Specifically, MSAP funds will be used to support partnerships with educational organizations

that bring specific expertise in the instructional practices that will be fostered across the five proposed magnets, including **OMNiLEARN** (support for developing curriculum aligned to the NGSS); the **Buck Institute for Education** (support for effective and sustained implementation of PBL); the **City Technology Project at the City College of New York** (PD to integrate science, literacy, and art into the elementary and middle grades through a focus on engineering design); **Education Closet** (curriculum development and support for STEAM strategies); and Maria Pacheco from the **Education Alliance at Brown University** (strategies for building cultural competence, with a focus on ELL learners). In addition, each school has a PD plan to support the implementation of its individual program design and build a solid foundation for program sustainability beyond the grant period.

- **Developing and sustaining collaborations to support student enrichment activities**

Collaborations with community partners serve to supplement, deepen, and expand the opportunities students have to engage in authentic, hands-on activities in real-world settings. In addition, these partnerships can allow the schools to tap a resource network of volunteers and corporate supporters that are vital for sustaining the magnet programs after the initial infusion of federal funding. As evidenced by the letters of support in the Optional Attachments and the site-based budgets, as well as descriptions provided in the Quality of Project Design section and the response to Competitive Preference Priority 4, each magnet school will establish or expand collaborations with a variety of outside organizations to enhance curricular offerings for students both during and beyond the school day. Exposure to the kinds of enrichment experiences these partnerships can offer (including field trips, distance learning activities, and elective courses) gives students attending high-poverty, MGI schools opportunities they would not ordinarily get either at home or in school.

- **Providing the necessary district-level coordination to ensure effective and efficient coordination of MSAP resources in the service of the project's objectives and performance measures**

The core team that will spearhead the implementation of the D21-22 MSAP initiative is a seasoned group of NYCDOE staff members who have mounted several successful MSAP projects across the city. They will bring this expertise to the D21-22 project, if it is awarded (see the Quality of Key Personnel section for details). This team, headed by the full-time Project Director, will ensure that all of the proposed magnet school activities are proceeding on schedule and in accordance with program guidelines and will be responsible for meeting with magnet school staff on a regular basis (the roles and responsibilities of the team are described in detail in the Quality of the Management Plan section). The MSAP project design is complex and multifaceted; coordination of this interdistrict program would be impossible in the absence of this core team.

In addition, MSAP funds will permit a comprehensive formative and summative evaluation of the project over its lifespan. D21-22 will engage the services of an external evaluation firm that has a 25-year history of evaluating MSAP initiatives in NYC as well as in districts across the country, and so brings to this effort a deep understanding of and commitment to the core principles of magnet school programming. This evaluation will provide timely, objective, and strategic feedback to the MSAP planning team and the school planning teams so that they are able to make midcourse corrections to improve the delivery of program services, which in turn will enhance the impact of the program on staff and student outcomes.

(B) The Secretary evaluates the applicant's need for assistance under this part, by considering the resources available to the applicant to carry out the project if funds under the program were not provided.

In 2006, the advocacy group Campaign for Fiscal Equity (CFE) successfully argued that the state's school finance system underfunded NYC public schools, prompting the NYS legislature to pass the State Education Budget and Reform Act of 2007, which committed the state to more than $7 billion in increased school funding, to be phased in over the course of four years. About $3 billion of this was to be directed to schools in NYC, with the rest going to schools elsewhere in the state. While there have been increases in state funding to the NYC public schools over the last nine years, by all accounts the state has failed to meet its constitutional obligation to "ensure a sound basic education to all children of the State." The most recent budget passed by the NYS Legislature included a general increase in state education aid, but it fell $800 million short of what the Assembly and many advocates had hoped for. In fact, the sums dictated by the CFE lawsuit would have required an infusion of nearly $4.5 billion. Among the big winners were charter schools, which were slated to receive $430 more per student; in addition, the rule requiring New York City to help some charter schools pay rent will become permanent. Moreover, up to $175 million of this aid will be directed toward turning struggling schools into "community schools," a school improvement strategy favored by NYC Mayor Bill de Blasio.

At the city level, there are also "big winners" in the K–12 budget landscape. In addition to a significant expansion in the number of Community Schools (an additional 128 schools, including the transformation of 94 Renewal Schools into Community Schools), among the most significant initiatives to receive an infusion of dollars are the full-day pre-K for all four-year-olds, an expansion of after-school programs for middle school students, and reforms that were included in

the recently negotiated UFT contract (i.e., Model and Master Teacher positions).

Of particular relevance to this grant is the Administration's Equity and Excellence initiative, launched in September 2015. Designed to provide a foundation for every student in every school to help prepare them for success in college and future careers, the initiative features universal literacy, algebra for all, AP for all, college access for all, computer science for all, district charter learning partnerships, and Single Shepherd (a guidance initiative focused on students in grades 6–12 in two community school districts).

(C) The Secretary evaluates the applicant's need for assistance under this part, by considering the extent to which the costs of the project exceed the applicant's resources.

The commitment of the two Community Superintendents to—and the Chancellor's endorsement of—the modifications to the Voluntary Desegregation Plan and to the implementation of the interdistrict magnet program is evident. This support notwithstanding, the costs of fully implementing the D21-22 magnet program as designed exceed the available resources. Given the fiscal climate within New York State and New York City and the budgeting priorities described above, D21-22 would be hard-pressed to implement the magnet program as designed in the absence of a grant from MSAP. Importantly, the average per-pupil expenditure associated with the implementation of the magnet program is $4,440 in excess of the standard per capita allocation per student.

(D) The Secretary evaluates applicant's need for assistance under this part, by considering 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 school project impacts on the applicant's ability to successfully carry out the approved plan.

The communities in which the five proposed magnet schools are located are experiencing high levels of MGI. However, it was determined through a rigorous feasibility study carried out by the NYCDOE that there is potential within and across these two community school districts to move the needle on student diversity with an infusion of human and fiscal resources, such as those afforded by a federal magnet grant. The most recent research carried out by desegregation experts is clear that in the absence of a magnet program intervention, NYC public schools will likely continue to become more and more segregated (Kucsera & Orfield, 2014).

As highlighted in Section A of this CPP narrative, MSAP funding is directly aimed at creating compelling, appealing, and innovative learning environments with state-of-the-art technology, proven instructional methods, and a culture of entrepreneurialism within the NYC public school system that will cause parents who are not currently sending their children to these schools to stand up and take notice. The five school communities included in this application are ready, willing, and able to accept this challenge, but they cannot bring the vision of the magnet programs to fruition without a significant infusion of resources. MSAP is the only funding source at the local, state, or federal level that promotes the twin principles of equity and excellence in education.

COMPETITIVE PRIORITY #4: PROMOTING SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS (STEM) EDUCATION (0 to 5 points)

Projects that are designed to improve student achievement (as defined in this notice) 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.

Research indicates that one of the best ways to build interest in science, technology,

engineering, and math (STEM) among children and adolescents—and especially students from racial and ethnic minority groups—is to provide hands-on applications of STEM learning (Ilumoka 2012; Hayden et al., 2011). These types of programs, which may include extracurricular clubs, competitions, or activities during the school year as well as summer bridge and research opportunities, have proven to increase student engagement and motivation to pursue STEM fields (Maton et al., 2009). Building interest in STEM is a fundamental component in preparing students to persist in STEM postsecondary and career opportunities (Hayden et al., 2011). These opportunities are especially important in schools that are minority group isolated because they can serve to help increase representation among racial and ethnicity minorities in STEM fields. These groups, which generally include African American and Hispanic students, as well as female students, are considered underrepresented in STEM due to lower rates of participation than their White, Asian, and male peers (National Science Foundation, 2013).

The NYC Tech Talent Pipeline, a $10 million public-private partnership, was created in May 2014 to define employer needs, develop and test training and education solutions to meet these needs, and scale solutions that work throughout the city's largest systems, delivering homegrown talent for 21st century jobs across the City. In February 2015, the City established the Tech Talent Pipeline advisory board, which is comprised of 25 high-level tech executives—including AT&T New York President Marissa Shorenstein, Fred Wilson of Union Square Ventures, and Chris Hughes of Facebook and the New Republic—who help advise the NYCDOE on its STEM offerings.

STEM plays a critical role within the CSD 21-22 schools and across all NYCDOE schools, as City schools Chancellor Carmen Fariña has made boosting STEM opportunities one of her top priorities. To accomplish this, NYCDOE has established new community and industry

partnerships, dramatically increased STEM offerings, and expanded supports for students, teachers, and schools around implementation of STEM-based learning. In 2015, NYCDOE released the department's new STEM Education Framework, an evidence-based tool that provides a structured approach for schools seeking to organize and develop the implementation of a STEM initiative whose results are repeatable. It includes a readiness checklist of structures, criteria, and systems and is not intended to be judgmental or evaluative. The architecture of the Framework is presented as a structure of domains, indicators, and criteria to support the evolution of a school's initiative over time. The Framework is designed to work alongside other data and qualitative tools to help schools develop a STEM culture that integrates well with a school's existing instructional mission and vision, while shifting the disciplinary paradigm from multidisciplinary and interdisciplinary toward instruction and learning that is ultimately transdisciplinary.

As part of its commitment to working with school leaders and teachers to build their capacity in and develop a shared understanding of high-quality STEM education, the City launched the STEM Institutes in 2015, a three-year professional learning initiative. Through generous support from partners—the General Electric Foundation and Computer Science for All—the STEM Institutes provide professional learning opportunities to schools in their efforts to identify and develop a STEM focused approach to learning that supports student achievement and reduces the achievement gap. The third STEM Institute, which was recently completed over three days in April 2016, aimed to help teachers: develop a shared understanding of the important features of STEM and computer science education; develop an awareness of approaches to STEM and computer science education; build their leadership capacity to support STEM and computer science education within their school communities; and begin to build partnerships with other

schools with similar interests to support their STEM and computer science initiatives. During the training, teams of two to three teachers engaged in hands-on, interactive sessions in robotics, computer science, urban gardening, engineering, solar energy, and design thinking. This institute also featured the Apple Professional Leadership (APL) track for principals who wished to develop or enhance their vision of how technology can be used to enhance learning. This session for school leaders used Challenge Based Learning, an engaging, multidisciplinary problem-solving approach. Participating principals identified initiative goals, explored a model for managing change, and developed plans for ongoing engagement and measuring effectiveness. Staff from the D21-22 magnet schools will participate in these institutes to build their STEM content knowledge and pedagogy starting in Year 1 of the grant.

The NYCDOE has also established numerous new partnerships with local businesses and utilized local resources to create customized, sustainable STEM programs that connect schools to their surrounding communities and help prepare students for careers in the STEM fields. A notable example of these efforts is a partnership with AT&T, which is funding NYC STEM programs with a $1.6 million grant to NYCDOE. In addition, NYCDOE has teamed up with partners such as Cornell Tech and Google to offer summer coding conferences for students.

In developing authentic experiences in the new magnet programs, CSD 21-22 will tap into the wealth of resources provided through NYCDOE, and the City at large, to expand and enrich STEM learning opportunities for student and teachers. Additionally, CSD 21-22 will expand and develop new partnerships with STEM organizations specifically to provide authentic experiences for students and teachers related to the new magnet themes. These experiences will include curricular and extracurricular activities that are designed to engage learners (students and teachers) with practitioners from STEM disciplines to promote real world understanding. Each of

these partnerships is described below.

Partnerships to Enhance STEM Learning

A key component of the magnet programs across the five sites is a strong instructional focus on problem-based learning to engage students in hands-on research, experiments, and activities to develop solutions to real-world issues. Table 1 presents the five school's proposed magnet themes and a description of how these themes are aligned with and will result in authentic STEM learning for students.

Table 1. CSD 21-22 Magnet Theme Alignment with STEM Priority

District	School	Theme	STEM/STEAM Alignment
22	PS 198	Applied Learning in Arts and Engineering	Students will engage in STEAM learning through a robust, interdisciplinary, arts-infused curriculum and PBL in engineering and artistic design
22	PS 245	Art and Science	The school will implement a STEAM-infused thematic curriculum with an emphasis on life science, visual and performing arts, and inquiry-based learning
22	IS 240	STEM	Thematic instruction will be delivered through trans-disciplinary STEM-focused units of study and use of multimedia technologies
21	PS 90	Environmental Science and Community Wellness	Science and Technology instruction will be fused with an appreciation for the arts and an emphasis on engineering design. Instruction will be fused with environmental science, Green STEM, and community based service

District	School	Theme	STEM/STEAM Alignment
			learning projects.
21	PS 121	Applied Life Sciences	Students will be immersed in botany, zoology, and marine biology through interdisciplinary units and student-directed inquiry projects

The following partnerships will provide opportunities for students to learn STEM content and methodology through PBL and gain a stronger understanding of real-world STEM concepts and applications. District partners are presented first, followed by school partners.

District Partners

Big Idea Week: One of the partners that will be supporting the five D21-22 schools in providing STEM-based enrichment is Big Idea Week (BIW). The mission of BIW is to "connect communities to light the imaginations of students and inspire them to be the next generation of makers and doers." To accomplish this goal, BIW pairs students with volunteer mentors—local STEM, media, and design professionals from companies such as Facebook, Etsy, MakerBot, and Tech Insider—to collaborate on weeklong, immersive, entrepreneurial projects. These projects provide students with unique opportunities to develop 21st century skills, and interact with local professionals in the STEM fields. BIW will collaborate with D21-22 school- and district-level magnet staff to recruit mentors and provide resources to support BIW programming at the schools. This includes the BIW project-based curriculum that will expose students to 21st-century careers and standards-aligned skills, from critical thinking and creativity, to collaboration and communication. Throughout the week, students will practice researching, writing, and public speaking within a real-world, STEM-based context. By encouraging students

to see the world through the eyes of an entrepreneur as problem solvers, risk takers, and innovators, the BIW projects will build students' curiosity and confidence and give them the tools to bring their own ideas to life. Through this partnership, students will also have opportunities to complete hands-on engineering and robotics courses that will expose them to engineering, architecture, and physics concepts within a lab setting.

The Buck Institute for Education: The Buck Institute for Education (BIE) supports schools in implementing effective PBL instructional practices. BIE will provide the five D21-22 schools with rigorous professional development, in the form of training and coaching, on how to design and implement PBL activities that engage and motivate students. BIE will help bring coherence to PBL practices and support the creation of school-wide processes and structures to support PBL and STEM education.

School Partners

Marquis Studios: Marquis Studios is a nonprofit organization providing arts-in-education services to more than 100 NYC schools. Marquis Studios will partner with three of the CSD 21-22 schools (PS 90, PS 121, and PS 245) to provide STEAM enrichment through active student participation and experiential learning. Marquis Studios will provide the schools with residencies that integrate hands-on arts activities with standards-aligned instruction of STEM-related subjects such as botany, zoology, and marine biology. For example, their Scientific Illustration residency promotes the philosophy of artists such as Darwin and Audubon with an emphasis on detailed observation through life drawing. In this program, students are taught to observe details and render them accurately without any embellishment of the imagination. The practice of Scientific Illustration promotes fine drawing skills, exposes students to aspects of biology and botany, and introduces the idea of the artist’s role as an observer rather than interpreter of reality.

Marquis Studios will also offer Parent/Child workshops that will enhance family engagement in STEAM learning. These activities will focus on a variety of visual art projects mixing Art and Science. All activates will be facilitated by professional teaching artists with backgrounds in STEM-related areas, such as architecture, engineering, and the life sciences.

NY Sun Works: PS 121 will partner with NY Sun Works, a non-profit organization that develops innovative science labs and integrated educational curriculum in urban schools. NY Sun Works will provide students at PS 121 with STEM-focused learning and enrichment through its Greenhouse Project Initiative. As part of this project, NYSW will install a low impact, hydroponic greenhouse at the school, providing students with year-round access to complex physical systems that will foster the development of critical thinking skills. In addition to leading PS 121 in designing and installing the onsite greenhouse facility, NYSW will supply the school with the NYSW curriculum, which includes hands-on pedagogy that encourages student practice of scientific inquiry methods and field study, as well as all materials needed to implement the project.

New York Aquarium Wildlife Conservation Society: PS 90 will partner with the New York Aquarium to provide students with hand-on, inquiry based STEM learning experiences through their Community Conservation Connections program. Students will have opportunities to engage in STEM enrichment activities such as Science-based inquiry activities, up-close encounters with animals, field trips to the aquarium, and schoolwide events at the aquarium.

New York Hall of Science: PS 90 plans to partner with the New York Hall of Science (NYSCI), NYC's premiere hands-on science and technology center, to provide students with engaging, interactive STEM enrichment. NYSCI will provide the school with a variety of onsite

and offsite activities, including field trips to NYSCI, which will support and enhance STEM learning and increase students' exposure to and interest in STEM-related career fields.

Bricks 4 Kidz: The mission of Bricks 4 Kidz is to teach principles and methods of engineering to students using LEGO bricks. Through a partnership with Bricks 4 Kidz, PS 90 will receive The Bricks 4 Kidz curriculum, which utilizes lesson plan "play" kits, complete with supplies and instructions that allow children to take a creative and fun activity and then explore the implications of math, science, and art as related to the activity. The Brick 4 Kidz curriculum will be implemented as part of an after-school LEGO club. This activity will help participating students develop a number of skills, including: sequencing, fine motor skills, spatial/relational thinking, organizational skills, social/emotional skills, teamwork, and cooperation.

Beam Center: IS 240 will partner with the BEAM Center, a STEAM education organization that integrates art, design, science, and engineering with traditional academic objectives to support student pathways to career and higher education. The BEAM Center will collaborate with the school's teachers, administrators, and community partners to provide technology-integrated projects and workshops, STEM and design/art-based enrichment, and youth mentorship. Students will develop skills in physical computing, carpentry, ceramics, textiles, video, programming, and design which will help them prepare for a life of continual learning and meaningful work.

Engineering is Elementary: Through a partnership with Elementary is Engineering (EiE), PS 90 and PS 198 will receive support for STEM integration through a research-based, standards-driven, and classroom-tested curriculum that integrates Engineering and Technology concepts and skills with elementary Science topics. Each of the 20 EiE units include four lessons that reinforce one elementary Science topic, focuses on a specific field of engineering, and

engages students in problem-solving activities. As each unit is set in a different country around the world, it integrates STEM learning within a global perspective. EiE will support STEM integration by collaborating with PS 90 and PS 198 to identify the engineering units and experiences that are most closely aligned to their needs and goals.

Partnerships to Enhance STEM Teaching

The following partnerships will help strengthen the capacity of staff at the five grant schools to plan and deliver effective STEM content and methodology. District partners are presented first, followed by school partners.

District Partners

Education Closet: Through a district partnership with Education Closet, the five CSD schools will receive intensive training and support for integrating STEAM into the core curriculum. Education Closet provides consulting services to schools and school districts in developing, implementing, and assessing STEAM approaches to education. These services are provided through their website, EducationCloset.com, as well as through individual consultative services. For the five schools, Education Closet will provide a three-tiered training model over the course of the grant using STEAM as a core strategy for student success in academic achievement. The three tiers of the model are staff development, implementation, and fostering community connections to create a self-sustaining STEAM model. Over the three years of the grant, Education Closet will provide the schools with in-person, hands-on teacher trainings and workshops focused on building staff capacity to integrate STEAM into the Common Core; co-teaching, job-embedded coaching; curriculum and assessment mapping and lesson writing; strategies for partnering with teaching artists and community members to support STEAM learning; and coaching and supplemental support for teaching teams through a virtual training

platform, The Learning Studios. Education Closet will collaborate on an ongoing basis with school and district leaders and magnet specialists to ensure that they are supporting the needs of their staff and will support the schools in cultivating community support and establishing partnerships to support STEAM integration. In the second and third years of the program, the services provided by Education Closet will build upon and reinforce what was provided n the previous years. In the third and final year, supports will focus on sustainability and include assistance in shifting the capacity for extension to school leaders and staff.

Support for CSD 21-22's PBL focus will be provided by **OMNiLEARN**, a Science education program staffed by scientists and teachers that provides in-class, hands-on laboratories for students and staff development to teachers. OMNiLEARN will provide hands-on, project-based Science learning to students at the five CSD 21-22 schools and will be supporting the program through onsite professional development. At the outset of the program, OMNiLEARN will meet with district and school leaders and magnet-funded staff to customize content based on curricula and performance levels. They will then provide teachers with hands-on science workshops to boost teacher literacy, proficiency, and confidence in using science as a hook to teach math and ELA skills. By the end of the day-long workshops, teachers will be comfortable with the content, vocabulary, and equipment, and begin to visualize conducting the labs in their classrooms. Staff development will also be provided through the student Science labs, which will provide teachers with experiential professional development as they learn alongside their students. Teachers will benefit from the labs in three critical areas continuously updated content literacy and equipment proficiency, classroom modeling, and small group experience.

City College City Technology Project: The City Technology team consists of NYCDOE elementary teachers and City College faculty members. They will provide technology-infused

curriculum units on Force and Motion and Energy Systems, aligned with CCLS Standards in Math and ELA and the NYC Science Scope and Sequence and STEM Framework, that address concepts of physical science, engineering and computer science. Staff development will include onsite, job-embedded coaching and modeling.

School Partners

Marquis Studios: To support PS 90, PS 121, and PS 245 in integrating STEAM into instruction, Marquis Studios will provide professional development workshops, job-embedded coaching, and lesson modeling to teachers and other staff as part of their school-based residencies.

Engineering is Elementary: As described, PS 90 and PS 198 will partner with EIE to support STEM integration. As part of this collaboration, EiE will provide professional development workshops and online resources for teachers at the two schools in implementing the EiE curriculum in the classroom.

New York Hall of Science: One of the City's leading providers of in-service training for teachers, will provide various staff development opportunities for teachers, both onsite and offsite, NYHS will support PS 90's implementation of STEM-based learning.

Discovery Education: The mission of Discovery Education is to support schools in implementing digital STEM learning through comprehensive standards-based content and staff development. Through a partnership with Discovery Education, teachers at PS 90 will receive research-based PD to support them in utilizing digital resources and proven instructional practices to enhance authentic STEM learning.

NY Sun Works: PS 121 teachers and magnet staff will receive staff development from NYSW to support implementation of the Greenhouse Project, which was described earlier. These

PD offerings will include training and embedded coaching on the NYSW curriculum, greenhouse operations, and long-term maintenance of the greenhouse facility.

COMPETITIVE 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

In preparation for the 2016–19 funding cycle, the NYCDOE conducted an initial feasibility study to determine those communities within our city that presented the most compelling need for reducing minority group isolation and at the same time provided fertile terrain for seeding an MSAP initiative. Community School Districts 21 and 22, which are working as an inter-district consortium for the MSAP grant, met these two primary criteria. All five schools in the D21-22 consortium are experiencing high degrees of minority group isolation of Hispanic and/or African American students, ranging from a low of 15 percentage points above the district-wide average to a high of 50.4 percentage points above the district-wide average at the same educational level. Collectively, the five schools serve a total of 2,601 students in grades pre-K–8.

With the implementation of the proposed D21-22 magnet initiative, NYCDOE is creating a consortium of magnet districts to expand its efforts to promote racial, ethnic, and socio-economic integration in schools using an inter-district approach (**thereby meeting the Invitational Priority under the Evidence of Promise Competitive Preference Priority**). Students in both districts will have options to pursue rigorous and attractive magnet programs within and across the district boundaries.

Citation 1:

Bifulco. R., Cobb, C. & Bell, C. (2009). Can Interdistrict Choice Boost Student Achievement? The Case of Connecticut's Interdistrict Magnet School Program.

Weblink: http://epa.sagepub.com/content/31/4/323 (full citation is included in Attachments)

Citation Outcomes: This study used a regression analyses and propensity score methods to control for pre-treatment differences in achievement among students who were admitted to one of six magnet schools operated by the Capital Region Education Council (CREC), an interdistrict magnet choice program in Connecticut. The cohort in the study was composed of 886 students who were participated in magnet lotteries for Connecticut's interdistrict magnet programs. Results of the data analyses indicated that after controlling for pre-existing differences, students who were randomly-assigned through the lottery process to interdistrict magnet programs had higher academic achievement outcomes in and reading and math than those who were not selected in the lottery. The study examined the impact on using interdistrict magnet program choice on promoting integration in efforts to improve student academic outcomes. Interdistrict magnet schools provide students from Connecticut's most racially and ethnically isolated areas the opportunity to join less isolated learning environments. Findings showed that interdistrict choice produced positive student achievement outcomes in reading and math.

Relevance to Proposed Project: NYCDOE will use a similar interdistrict process for its proposed D21-22 magnet initiative by providing options for students in both districts to enroll in one of five new elementary and middle magnet programs. The racial and ethnic demographics of students served by the new magnet programs are very different: the two D21 schools experience MGI among Hispanic students and the three D22 schools experience MGI among African American students. The D21-22 magnet initiative is proposing to use a similar interdistrict magnet choice process to expand opportunities for students of different racial and ethnic backgrounds to attend new magnet programs together, in which they will participate in rigorous and engaging thematic curriculum and project-based learning to better prepare them for high

school, college and careers and attain higher levels of reading and math achievement.

In addition to meeting the Invitational Priority for Evidence of Promise, one component of the PD model that will be implemented in the D21-22 magnet initiative meets Evidence of Promise standards. The professional development plan for the D21-22 magnet initiative will provide experiences that are of sufficient quality, intensity, and duration to lead to improvements in teacher practice. D21-22 will provide intensive PD to school leaders, MSAP-funded staff, classroom teachers, and other support staff in each school that will equip teachers with knowledge and skills to conduct inquiry-based instruction and facilitate student and teacher inquiry and reflection in learner-centered environments.

Citation 2:

Heller, J., Daehler, K., Wong, N., Shinohara, M., & Miratrix, L. (2011). Differential Effects of Three Professional Development Models on Teacher Knowledge and Student Achievement in Elementary Science. *Journal of Research in Science Teaching 49(3)* 333-362.

Weblink: http://onlinelibrary.wiley.com/doi/10.1002/tea.21004/abstract (full study is included in Attachments)

Citation Outcomes: This study includes a randomized experiment in six states with over 270 elementary teachers and 7,000 students to examine to compare the outcomes of three strategies for teacher staff development and a no-treatment control group. The three interventions included a total of 24 hours of professional development offered in eight three-hour sessions. The three intervention strategies—Teaching Cases, Looking at Student Work,, and Metacognitive Analysis—were designed to include key features identified in literature on effective PD including: in-depth focus on science content activities that build on teacher knowledge,

opportunities to engage in active learning, alignment to standards-based curricula, substantial duration, and collaboration and collective participation.

To analyze the impact of PD, researchers established baseline equivalence for teachers and students in science content knowledge and demographic characteristics to ensure that the groups were statistically similar. They then administered two tests of science content assessment developed and validated in previous studies. Data for two cohorts of teachers and students were analyzed using hierarchical liner modeling to determine impact of intervention on treatments. Results of the analyses showed statistically significant gains in teacher AND student scores on tests of science content knowledge during the study year and the follow-up year for all three interventions, as well as statistically significant gains in written justification items for teachers and students. Using these findings, researchers concluded that "investing in professional development that integrates content learning with analysis of student learning and teaching rather than advanced content or teacher metacognition alone."

Relevance to Proposed Project: The D21-22 magnet initiative is designed to engage teachers in ongoing PD and active reflection of student work and teacher strategies and processes to positively affect student learning and achievement. The magnet initiative is implementing a three-pronged approach to professional development which will engage all instructional staff across the five schools in more than 50 hours of training in each year of the grant.

Teachers will participate in staff development workshops with STEM partners to be exposed to innovative instructional strategies—the first step in the process. As step two, teachers will look at and review student work carefully using the ATLAS protocol to evaluate elements of student learning. The ATLAS – Learning for Student Work protocol is a tool developed by Eric Buchovecky, and is based in part on the work of the Leadership for Urban Mathematics Project

2015 unanimously adopted by voice vote Resolution Number 453, which called upon the NYCDOE "to officially recognize the importance and benefits of school diversity and to set it as a priority when making decisions regarding admissions policies and practices, creation of new schools, school rezoning and other pertinent decisions and commit to having a strategy in each district for overcoming impediments to school diversity." The Council went further, passing Local Law 59, which amended the administrative code of the city of New York, "in relation to requiring the department of education to report annually on student demographics in community school districts and high schools."

Bolstering the attention that the City Council brought to this issue, in one of his last initiatives as New York State Commissioner, now Education Secretary John King launched the first school integration pilot that expressly focused on using socioeconomic status (SES) as a tool for increasing racial and ethnic diversity. The purpose of the Socioeconomic Integration Pilot Program is to increase student achievement in Priority and Focus Schools by encouraging greater socioeconomic integration in these schools. Following a planning period, the funded schools are expected to develop and implement programs that improve the achievement of low-SES students and attract higher-SES students, including students from other school districts based on interdistrict choice agreement, to voluntarily enroll in the Focus or Priority School. Among the suggested program designs are science, technology, engineering, and math (STEM) programs that include a summer residential experience of no less than one full week at a postsecondary institution; dual-language programs designed to meet the needs and languages of ELLs living in proximity to the school; the School-wide Enrichment Model (Renzulli); career programs based in whole or part at local institutes of higher education (IHEs); themes such as the arts, which include the visual arts, dance, music, theater, public speaking, and drama; and Montessori. While

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these pilots represent a promising step in the direction of promoting greater diversity in NYC and across the state, the initiative's impact is decidedly limited, given the very small number of grants and the limited funding that accompanies them.

In addition to the communities that are implementing the pilots (none of which are in the D21-22 community targeted for this MSAP funding), there are other grass-roots efforts taking hold in several NYC community school districts to help attract a more diverse population of students than is currently attending the schools. It is important to point out that in several of these efforts the impetus for modifying admissions policies is resulting from gentrification trends, which have caused tensions within communities as families struggle to find seats in over-selected schools.

The proposed D21-22 magnet schools are located across five unique neighborhoods that are home to a diversity of racial and ethnic groups. In D21, the target schools are located in Coney Island (PS 90) and Borough Park (PS 121). Coney Island, located in the southern part of D21, has a population that is 57% White, 17% Hispanic, 13% African American, and 13% Asian. Borough Park, located at the northern edge of D21 and adjacent to D22's Midwood area, has a population that is 64% White, 19% Asian, 13% Hispanic, and 2% African American. Despite the diversity of these communities, both of the proposed D21 magnet schools are racially isolated for African American or Hispanic students, meaning the proportion of that racial and ethnic group exceeds the district average for the school level.

The D22 magnet schools are located in three distinct neighborhoods of Flatbush, Flatlands, and Midwood, all of which are located within five square miles in central Brooklyn and to the northeast of the D21 magnet schools. Despite the close proximity of these D22 neighborhoods, the demographics of their residents vary substantially. Flatbush, where PS 245 is located, is

home to the largest West Indian population in the United States; 89% of residents are African American, 7% are Hispanic, and less than 2% are White, Asian, or other. More than half (53%) are foreign born. Just to the south is Midwood, where IS 240 is located, a diverse neighborhood whose residents are 37% White, 36% African American, 16% Hispanic, and 10% Asian. Just under half (45%) of residents are foreign born, from regions that include Eastern Europe and the Middle East. To the east of Midwood is Flatlands, home to PS 198, which is 60% African American, 26% White, 9% Hispanic, and 4% Asian. As with the D21 schools, despite the diversity across these neighborhoods, all three D22 schools have minority group isolation among African American students.

Additionally, approximately 6,700 students attend nonpublic schools located in the same zip codes as the proposed magnet schools. Among these students, more than three-quarters (76.8%) are White, 7.7% are African American, and less than 1% are other ethnicities. The enrollment of substantial numbers of White students in nonpublic schools in D21 and D22 neighborhoods exacerbates minority group isolation in the proposed magnets, but also provides an opportunity to attract a more diverse population of students back to the schools through innovative programming.

Once the districts and target communities were identified, in keeping with New York City Chancellor Carmen Fariňa's goal for schools to become more integrated, the NYCDOE's planning team reached out to the Community Superintendents to secure their interest in pursuing the grant and their commitment to the goals of the MSAP, including its desegregation mandate. The Superintendents' in-depth knowledge of the communities and the schools was critical in identifying candidate schools for the grant. The candidate schools in D21-22 were then invited to an awareness session at which the goals, requirements, and expectations of the MSAP grant were

spelled out. Principals who were interested in participating in the D21-22 grant were then asked to submit a letter of intent to the NYCDOE. All five Principals in the D21-22 grant application embraced the opportunity to use MSAP as a critical lever in helping to further their educational missions and to support the effort to promote greater diversity within the school communities. As a final step, the Superintendents codified their support for the MSAP initiative by signing both the Program Assurances and the memorandum of agreement with the NYCDOE regarding the amended Voluntary Desegregation Plan (see Desegregation Plan and supplementary documentation in Required Attachments).

The D21-22 magnet initiative will convert five schools into whole-school, theme-based magnets. As described in the Quality of Design section, the process for identifying the magnet themes was a collaborative effort within the school communities, with support and guidance provided by the NYCDOE magnet team, a group of seasoned educators and MSAP leaders that has collectively worked with over 100 elementary, middle, and high school magnets throughout the five boroughs of New York City. Emanating from this collaborative and comprehensive planning process, the plans outlined in Table 2 have been launched and will be brought to fruition should an MSAP grant be forthcoming.

Table 2. D21-22 Magnet School Programs

District	School	Theme	Grades Served	Enrollment
22	PS 198	Applied Learning in Arts and Engineering	Pre-K–5	477
22	PS 245	Art and Science	Pre-K–5	312
22	IS 240	STEM	6-8	825

District	School	Theme	Grades Served	Enrollment
21	PS 90	Environmental Science and Community Wellness	Pre-K–5	641
21	PS 121	Applied Life Sciences	Pre-K–5	346

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

One of the best ways to attract a more diverse population of students to the magnet schools is by developing effective and targeted outreach and recruitment strategies. Research suggests that districts should use a comprehensive approach to outreach that includes information centers, direct mailing of literature in multiple languages, and advertisements in a variety of media outlets (Frankenberg & Siegel-Hawley, 2008). Furthermore, when outreach is effective, magnet school choice programs have been successful in achieving greater levels of integration by race/ethnicity as well as level of parental education (Betts, Rice, Zau, Tang, & Koedel, 2006). District 21-22 has developed a multifaceted approach to outreach and recruitment that will include the strategic use of district- and school-level resources to share information about the magnet programs with a diverse group of families and community members through print materials, Web-based and virtual promotion, in-person events, and effective word-of-mouth marketing.

Outreach and recruitment will be a joint responsibility of the MSAP Project Director, the Community Outreach and Technology Specialist, and the individual magnet schools. The Project

Director will work closely with each school to develop and implement targeted and aggressive outreach and recruitment strategies that reflect the unique characteristics of the community. The Community Outreach and Technology Specialist will develop and disseminate district-based promotional materials (e.g., brochures, videos, fact sheets), establish contacts within the local community and the Community Education Council (CEC), oversee the development of a District 21-22 magnet program website, and submit information to local media for the promotion of magnet schools' activities. The Community Outreach and Technology Specialist will also work hand in hand with the school-based magnet staff to develop a robust set of marketing materials and activities to promote their individual magnet programs. Without such targeted outreach, the chances of successfully meeting the desegregation goals that are outlined in the project performance measures would be negligible.

District 21-22's plan to recruit students from different social, economic, ethnic, and racial backgrounds includes the attraction of parents and students from targeted feeder schools and nonpublic schools or schools outside the communities back into the District 21-22 public school system. District 21-22 ensures that its recruitment and outreach for the magnet project will be sensitive and responsive to its diverse constituents and will be fully aligned with MSAP statute and the guidance of the Office for Civil Rights on the voluntary use of race.

A projected timeline of these activities is presented in Table 3.

Table 3. D21-22 Annual Marketing Timeline

Month(s)	Activity	Responsibility Center
October–December	Conduct magnet information sessions, events and open houses; conduct outreach to feeder schools, preschools, libraries, and relevant	Project Director, Magnet Site Coordinators, Community Outreach

Month(s)	Activity	Responsibility Center
	community/cultural organizations; attend District Choice Fairs; disseminate marketing materials; conduct outreach to local media (traditional and online); maintain active presence on social media (Facebook, Twitter)	Coordinator
Early December	Application period begins; parents submit applications	Magnet Site Coordinators, Principals, and school-based staff
Mid-December –February	Parents continue to submit applications; continue to conduct outreach efforts, dissemination of marketing materials, school tours, social media posts, and marketing to local media (traditional and online)	Magnet Site Coordinators, Community Outreach Coordinator, Principals
March	Placement offers distributed	District, NYCDOE
March–April	Continued outreach as necessary, pending available seats	Project Director, Outreach and Tech Coordinator
April	Preregistration process begins as parents accept offers	Magnet Schools
May–August	Late applications accepted; late offers made; continued outreach as necessary, pending available seats	Magnet Schools

School-based recruitment for the magnet schools will be especially important because the students, teachers, administrators, and parents are the individuals who best know the schools and can best advertise them. The Magnet Site Coordinator at each school will develop a school-based marketing and outreach plan to build on the activities and strategies that are conducted by the district. Targeted marketing will focus on D21-22 families choosing private school options, community service agencies, faith-based organizations, and private daycares and preschools. Open Houses and showcases of student learning will be conducted for the families and community members; paper and electronic informational flyers and brochures will be shared with families in neighboring feeder schools (including daycares and preschools for the four elementary schools); and presentations will be made by magnet staff and students at feeder schools and community events such as block parties and fairs. Furthermore, each school will develop a magnet page on the school's website to highlight student and teacher achievements in the magnet program and to share information about the magnet theme and related family resources. The schools will also develop magnet program Facebook pages and Twitter accounts to share information with families in real time.

Key strategies in reaching a diverse population of families will be the development of strong community partnerships and dissemination of information to prospective families at community-based locations, such as libraries, faith-based organizations, youth centers, play gyms, and recreational facilities, as well as through local governmental offices. In their efforts to disseminate information to "hard-to-reach" parents and families, the Magnet Site Coordinators will receive support from the Borough and District Family Advocates in both districts. These staff members work closely with the school communities, including families, School Leadership Teams (SLTs), and Parent Associations (PAs)/Parent-Teacher Associations (PTAs).

Additionally, each school will work with district staff and the NYCDOE Translation Unit to ensure that they have access to resources to provide verbal and written information about the programs with native speakers of languages other than English. Each school will also work to recruit native speakers of languages other than English from their staff, parent, and local communities to interact directly with parents so that they feel welcome in the school buildings and understand the information that is shared.

The school-specific outreach and recruitment efforts that will be carried out by the magnet schools are outlined in Table 4.

Table 4. School-Based Outreach and Recruitment Strategies

PS 198	▪ Distribution of informational flyers and brochures to local residents and businesses ▪ Presentation and outreach at daycare centers, preschools, charter schools, and elementary schools in diverse neighboring communities of Ditmas Park, Ditmas Park West, Prospect Lefferts Gardens, and Midwood
PS 245	▪ Distribution of informational flyers and brochures to local businesses and residents and advertisements in the local newspaper ▪ Presentations and outreach at Cortelyou Early Childhood Center, Cortelyou Academy, Get Set Day Care, St. Mark's Head Start Program, Brooklyn Central Ascend Charter School, and Dream Charter School
IS 240	▪ Distribution of flyers and brochures to businesses in Park Slope, Windsor Terrace, and Ditmas Park ▪ Advertising in local publications *Kings Courier* and *Canarsie Life*, on local TV station Channel 12 Brooklyn, and on local radio stations ▪ Presentations and outreach at local elementary schools (PS 217 and PS 139)

PS 90	▪ Distribution of informational flyers and brochures to residents and businesses in Ditmas Park and Park Slope ▪ Social media outreach on Facebook, Instagram, and Twitter and on local websites, including Ditmas Park Corner and Park Slope Parents
PS 121	▪ Distribution of informational flyers and brochures to local residents and businesses ▪ Advertising on the school website and local media outlets, including newspapers *The Brooklyn Bean*, *Home Reporter*, *The Brooklyn Spectator*, and *Brooklyn Daily Eagle* and local TV stations Channel 12 Brooklyn and New York 1

(2) ***The Secretary determines the extent to which the applicant demonstrates 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.***

The District's aggressive outreach and recruitment plan, in concert with an equitable, efficient, and race-neutral student selection process (described in the Selection of Students Competitive Preference Priority 3, Table 5 in Desegregation Plan attachment), will ensure that the District 21-22 magnet schools attract and enroll an increasingly diverse population of students and families over the three-year project. However, there is ample evidence to suggest that attracting a diverse student body does not in and of itself guarantee that students of different backgrounds, once enrolled in magnet schools, will develop positive interactions in the absence of educational and structural strategies known to foster positive intergroup relationships and to support all learners to succeed in the magnet program (Bifulco, Buerger, & Cobb, 2012). Some important strategies identified in the literature for promoting positive interactions between

Within the learner-centered environment, a focus on **project-based learning** (PBL)—in which students learn through research and applied learning—is additionally important in encouraging the development of higher-order thinking skills beyond those used in a typical learning environment as "students learn to work independently and take responsibility when they are asked to make choices. The opportunity to make choices, and to express their learning in their own voice, also helps to increase students' educational engagement" (Buck Institute for Education, n.d.). Cooperative work and team learning have a strong and consistent positive effect on relationships between culturally diverse students (Colbert, 2010). A 2012 study, for example, found that students who had higher-quality interactions with peers from other racial groups reported having more positive academic environments and more positive attitudes toward other groups (Bifulco et al., 2012). As described in the Quality of Project Design section, magnet partners Big Idea Week (BIW), OMNiLEARN, and the Buck Institute for Education (BIE) will support the five schools in their efforts to integrate PBL opportunities into instruction by providing immersive learning experiences, staff training, resources, and expertise.

(3) The Secretary determines the extent to which the applicant demonstrates how it will ensure equal access and treatment from eligible project participants who have been traditionally underrepresented in course or activities offered as part of the magnet school, e.g., women and girls in mathematics, science, or technology courses, and disabled students.

New York City Department of Education's Policy on Equal Access

It is the policy of the NYCDOE to provide educational opportunities without regard to race, color, religion, creed, ethnicity/national origin, alienage and citizenship status, age, marital status, disability, sexual orientation, and gender (sex), and to maintain an environment free of

unlawful harassment, including sexual harassment, and retaliation. This policy is in accordance with Title VI and Title VII of the Civil Rights Act of 1964, as amended; Title IX of the Education Amendments of 1972; Section 503 and Section 504 of the Rehabilitation Act of 1973, as amended; the Americans with Disabilities Act of 1990, as amended; the Civil Rights Act of 1991; and the New York State and New York City Human Rights Laws.

District 21-22's Policies to Ensure Equal Access and Treatment

District 21-22 adheres unconditionally to the nondiscrimination practices of the New York State (NYS) and NYC Departments of Education and ensures equal access and treatment for all of its students in all curricular and extracurricular programs. The polices to ensure equal access and treatment are also fully aligned with guidance provided by the U.S. Department of Education (USDOE) Office for Civil Rights on the voluntary use of race to achieve diversity and avoid racial isolation in elementary and secondary schools (U.S. Department of Education Office for Civil Rights and U.S. Department of Justice, 2011).

The District 21-22 magnet schools will be whole-school programs that provide all students with opportunities to participate in rigorous, theme-based instruction and enrichment activities. As described in Table 5: Selection of Students—Competitive Preference Priority 3 (included with the Desegregation Plan attached), the NYCDOE will use a race-neutral student selection process to enroll new students from outside the schools' attendance zones. District 21-22 ensures that all communications with parents and community members about the magnet program and activities will be provided in multiple languages to reach a diverse population. Furthermore, participation in magnet activities will *not* require financial contributions from students or their families.

District 21-22 also believes that the District and schools must take a proactive role in providing adequate supports and resources to ensure that all students can attain high levels of achievement, including those who have traditionally been underrepresented in courses or activities that will be offered as part of the magnet school programs. An essential component to ensuring equal access and treatment is setting high standards that all students are expected to meet, regardless of their gender, racial, or ethnic background; educational needs; or income level. It is recognized, however, that some students have greater difficulty in meeting these standards when they are confronted by certain academic, social, or emotional challenges.

This section describes some of the major efforts the proposed magnet schools are making to ensure equal access and treatment. **These efforts demonstrate that District 21-22 is in full compliance with Section 427 of the U.S. Department of Education's General Education Provisions Act (GEPA).** This proactive approach to ensuring equitable access to and participation in the magnet schools initiative provides additional support for students with special learning needs, including ELLs, students with disabilities, and struggling learners, and offers guidance support for all students.

As detailed in the response to Competitive Priority 4—Promoting STEM Education, the NYCDOE has launched a citywide initiative to assist all schools in adapting its newly minted STEM Framework. All five schools in the D21-22 magnet initiative will be implementing content-based themes and instructional approaches in alignment with this STEM Framework to ensure that all students, including females and students of color, have access to these critical learning experiences.

Support for All Students in Science, Technology, Engineering, and Math Courses

District 21-22 also believes that the District and schools must take a proactive role in providing adequate supports and resources to ensure that all students can attain high levels of achievement, including those who have traditionally been underrepresented in courses or activities that will be offered as part of the magnet school programs. An essential component to ensuring equal access and treatment is setting high standards that all students are expected to meet, regardless of their gender, racial, or ethnic background; educational needs; or income level. It is recognized, however, that some students have greater difficulty in meeting these standards when they are confronted by certain academic, social, or emotional challenges.

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Support for All Students in Science, Technology, Engineering, and Math Courses

Underrepresentation of girls and racial and ethnic minority groups in STEM fields and courses of study is well documented by research (Chen & Thomas, 2009). At the same time, literature highlights the advantages to pursuing these fields, both in terms of employability and future earnings, as well as the cognitive benefits that STEM brings to all aspects of education (Malcolm & Webster, 2014; Reed & Berry, 2006). For these reasons, strategies that support participation among all groups of students, including both those who are traditionally underrepresented in STEM and groups who participate more frequently, is of utmost importance to providing equitable access and opportunities. Research and literature have highlighted effective strategies for promoting participation in STEM among all groups: community outreach and recruitment for STEM experiences; use of collaborative learning opportunities, hands-on learning experiences, and differentiation of instruction; and employing strategies actively designed to negate stereotypes, such as inclusive examples and including instructors from a diversity of backgrounds.

Support for Students With Special Learning Needs

D21-22 is committed to meeting the varied educational needs of its student population, including ELLs and students with disabilities.

Services for ELLs. In NYC, **transitional bilingual education (TBE)** programs include language arts and subject matter instruction in the students' native language and English as well as intensive instruction in English as a second language. As the student develops English proficiency using the strengthened knowledge and academic skills acquired in the native language, instruction in English increases and native language instruction decreases. **Dual-language** programs provide half of the instruction in English and half in the native language of the ELLs in the program (e.g., Spanish, Chinese, Haitian Creole). Students of the native language

are taught alongside English-speaking students so that all students become bilingual and fluent in both languages. Freestanding **English as a second language (ESL)** programs provide all language arts and subject matter instruction in English through the use of specific instructional strategies. The NYCDOE's of English Language Learners and Student Support (OELLSS), through its Field Support Liaisons, provides extensive professional development (PD) opportunities for school staff in these models and other evidence-based services for ELL students. For example, the NYCDOE OELLSS has a partnership with Understanding Language at Stanford University that focuses on six key principles for ELL instruction. Understanding Language aims to heighten educator awareness of the critical role that language plays in the new Common Core State Standards (CCSS) and Next Generation Science Standards (NGSS). The long-term goal of the initiative is to increase recognition that learning the language of each academic discipline is essential to learning content.

All NYC schools are required to hold orientations for parents or guardians of newly enrolled ELLs to inform them of the different ELL programs that are available. Support in the native language may be available. In orientations, parents have the opportunity to receive materials about ELL programs in their home language and to ask questions about ELL services (with assistance from a translator, if necessary). At the end of each orientation, school staff collect the Parent Survey and Program Selection Form, which indicates the program that parents are requesting for their child.

The proposed District 21-22 magnet schools currently serve ELL populations ranging from 4.4% at PS 198 to 18.3% at PS 121. The schools are dedicated to meeting the unique needs of their ELL students. Through their school-based inquiry teams, ELL students are targeted for in-class and extended-day interventions and supports. Additional ELL programs and services

provided at the schools are listed in Table 5.

Table 5. Percentage of ELL Students and Programs/Services Available to Serve These Students' Needs in the Proposed Magnet Schools (2015–16)

Schools	% ELLs	Programs and Services to Meet Needs of ELLs
PS 90	15.5%	The school provides supplemental after-school instruction in to ELLs. In addition, the library teacher purchases bilingual texts to meet the needs of ELLs.
PS 121	18.3%	Based on student need, PS 121 offers an after-school supplemental enrichment program for ELL students in grades 1–8 focused on math, English language arts (ELA), and science instruction. Students will also engage in activities designed to improve performance on the New York State English as a Second Language Achievement Test (NYSESLAT).
PS 198	4.4%	The ELL program at PS 198 provides specialized English instruction to help students become proficient in English and meet state academic content and achievement standards in core subjects. Response to Intervention (RTI), a multitiered intervention approach, supports ELL learners.
PS 245	15.6%	The school provides RTI and Academic Intervention Services (AIS) small-group instruction and an ELL program provided by certified ELL teachers. All students placed in the ELL program receive specialized instruction in English using intensive ESL methodology that emphasizes higher-order thinking,

Schools	% ELLs	Programs and Services to Meet Needs of ELLs
		questioning, and discussion.
IS 240	8.3%	The school employs a multipronged approach to support ELL students that includes targeted group instruction by ESL certified teachers, monthly PD for ESL teachers, and workshops for parents of ELL students to engage them in their child's learning.

Services for Students With Disabilities. Under the leadership of the Deputy Chancellor for Specialized Instruction and Student Services, the NYCDOE is making significant improvements in the way it delivers services to students with disabilities. Through the citywide, multiphase initiative *A Shared Path to Success*, students with disabilities entering kindergarten, sixth grade, or ninth grade are able to attend the same schools they would attend if they did not have an Individualized Education Program (IEP), whether that is their local community school or a school of their choice. As a result, all students with IEPs are provided with the greatest possible access to the least restrictive environment appropriate to their needs. The goal of A *Shared Path to Success* is to prepare all students to graduate from high school fully prepared for college, careers, and independent living. In order to further bolster support for these efforts to increase opportunities for students with IEPs to learn alongside their peers, NYCDOE provides extensive PD for general education and special education teachers and school staff to promote an inclusive school culture.

In District 21-22, students with disabilities are eligible for the full continuum of special education services, including instruction in self-contained (12:1:1) classes; Special Education

Teacher Support Services (SETSS) push-in services; Integrated Co-Teaching (ICT) classes and other models of inclusion; and other related services, including speech and language services, counseling, and adaptive physical education. The proportion of students with disabilities at the magnet schools ranges from 16.5% at IS 240 to 26.1% at PS 121. As shown in Table 6, the proposed magnet schools are dedicated to meeting the needs of students with disabilities through various targeted programs.

Table 6. Percentage of Students With Disabilities and Programs/Services Available to Serve These Students' Needs in the Proposed Magnet Schools (2015–16)

Schools	% Students With Disabilities	Programs and Services to Meet Special Education Students' Needs
PS 90	17.4%	The school provides integrated co-teaching classes in K–5 classes. The library teacher purchases texts (e.g., high-interest/low-level reading material) to meet the needs of students with disabilities.
PS 121	26.1%	Using a case conferencing model, student support teams meet weekly to identify students in need of additional support, select the best means of support, develop a support plan with those responsible and invested in the selected student's success (i.e., classroom teachers and families), implement the support plan, and track student progress as the plan is carried out.

Schools	% Students With Disabilities	Programs and Services to Meet Special Education Students' Needs
PS 198	21.2%	Teachers review and revise units of study to include the use of scaffolds and extension activities to address all learners by incorporating appropriately differentiated activities in all classes and providing increased Tier 1 and Tier 2 intervention. All teachers participate in professional learning in how to differentiate instruction in classrooms that contain Special Education students.
PS 245	20.0%	Students with disabilities are supported by a Special Education IEP teacher trained specifically to support Special Education staff needs by leading PD; providing information on IEP mandates, adaptive strategies, and best-approach methodologies; and instructing staff on how to analyze student data and conduct comprehensive needs assessments.
IS 240	16.5%	Special Education students are supported by the school's Special Education Department, which offers self-contained classes and support services for Special Education teachers. The Special Education classes are organized according to single grade levels to the extent possible.

Academic Supports for Struggling Learners. In its commitment to raising achievement for

all of its students, District 21-22 devotes extensive resources to support the achievement of students performing below state learning standards and students who are at risk of not graduating. Several of the proposed magnet schools offer before-school, after-school, and weekend instructional programs to enable students who are struggling academically to get additional support in smaller and more focused learning groups. For example, at PS 121, all teachers administer, assess, and analyze the results of curricula/periodic assessments in order to plan targeted instruction for struggling students by adjusting instructional practices and develop additional supports and strategies. In addition, PS 90 uses the Lexia program and Orton-Gillingham Alphabetic Phonics to support beginning and struggling readers and writers.

Guidance Services. In the event that "high-risk" students are identified, District 21-22 implements several potential intervention approaches to meet their needs, including individual, group, and peer counseling. The goal of these services is to develop students' social and decision-making abilities and establish positive relationships by providing opportunities for them to bond with peers, counselors, parents, school personnel, and the community. Special counseling services are given to Title I–eligible students to support their success in the regular classroom environment. Title I also provides outreach services to families and planning and intervention through the use of pupil personnel committees to support eligible students.

Finally, several schools are implementing the Positive Behavior Interventions and Supports (PBIS) RTI program, which applies a three-tiered system of support (universal, secondary, and tertiary interventions) and a problem-solving process to enhance schools' capacity to effectively instruct all students. School-based behavior specialists provide students with assistance and behavior management, crisis intervention, and other related resources.

All the aforementioned supports for students with special learning needs will ensure that all

students at the proposed magnet schools will have equal access to the same rigorous instructional programs and enrichment and extracurricular activities.

(4) The Secretary determines the extent to which the applicant demonstrates 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.

In addition to pursuing MSAP funding, as noted at the beginning of this section, among the efforts the NYCDOE is implementing to address the intransigent issue of minority group and SES isolation is the NYS-funded Socioeconomic Integration Pilot. As these programs transition from the planning to implementation phase, the D21-22 magnet community will look eagerly to lessons learned and success stories, both at the city and state levels.

Dual-language programs have been used as a desegregation strategy in school districts across the country, and it is for this as well as other educational reasons that the NYC Schools Chancellor is promoting this initiative in New York City. Dual-language immersion (DLI) is an instructional model that integrates native English speakers and native speakers of another language to provide instruction in core subjects to both groups of students in both languages (Howard, Sugarman, & Christian, 2003). The DLI model has gained popularity over the past 15 years, largely due to the growth in non-native English-speaking students in the U.S. public education system, as well as findings from academic studies about the positive impacts of DLI on increasing student academic achievement and promoting linguistic and cultural equity (Alvear, 2015; Sugarman, 2012). For example, extensive research conducted by George Mason University professors Wayne Thomas and Virginia Collier has highlighted the academic and social benefits of DLI, including implementation of high-quality language arts instruction,

support for positive interdependence among students of different cultures, and active school-family partnerships (Thomas & Collier, 2002). Research also indicates that the DLI model has been effective in meeting the academic and language needs of all students and providing equitable educational opportunities that do not emphasize instruction in one language group over another (Grayson, 2012). Among the D21-22 schools, PS 90 started offering a dual-language (English/Spanish) program in fall 2015.

The NYCDOE created citywide gifted and talented programs for elementary school students in 2005, providing accelerated and rigorous instruction for students with exceptional learning potential. Students fill out applications and take admissions tests starting in pre-K, for entering programs as early as kindergarten. Research conducted by New York University found significant disparities between the demographics of students attending these elementary programs and those in nongifted programs. For example, as of 2011, roughly 70% of NYC public school students were Black and Hispanic, while more than 70% of kindergarteners in NYC gifted and talented programs were White or Asian (Lu & Weinberg, 2016).

Significant controversy surrounds the lack of diversity in New York City's specialized high schools, considered the most selective and academically rigorous in the city. Overall, this past year, nearly 27,000 students took the specialized high school exam, and 19% of all test takers were accepted into one of the schools. Just over 3% of African American students and just over 5% of Hispanic students who applied to these high schools were accepted. By comparison, 34% of Asian students and 29% of White students received a seat (Shapiro, 2016).

In an effort to diversify gifted and talented programs and make access to these programs more equitable, the NYCDOE announced that it will be implementing a pilot program that will use multiple measures to identify eligible program students. Students interested in these

programs will not be required to take the screening exams (the Otis-Lennon School Ability Test [OLSAT] and the Bracken School Readiness Assessment [BSRA]). Rather, if a family expresses interest in the program, teachers will complete a checklist and questionnaire that evaluates whether the student is performing above grade level. This selection process will include teacher evaluations of students on a variety of measures, including demonstrated academic performance, attendance, and gifted behavior indicators such as being highly curious, motivated, and a fast learner (Zimmer, 2016; Zimmerman, 2016). Families in these districts will be able to apply to the new third-grade programs in May 2016. Families interested in the citywide gifted programs will still require a score of 97 or above on the screening exams.

(B) Quality of Project Design (35 points)

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

(1) The Secretary considers the manner and extent to which each 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 will increase student academic achievement in the instructional area or areas offered by the school.

In January 2014, the newly appointed Chancellor of the NYC public schools, Carmen Fariňa, unveiled her vision for the NYCDOE, which highlighted three themes: collaboration, communication, and celebration. Fariňa deemed these themes essential to providing quality instruction, promoting professional growth, and, most important, enabling students to achieve academic success. Furthermore, Chancellor Fariňa set forth four pillars that would serve as the road map for the DOE during her tenure: (1) Return dignity and respect to the teaching profession; (2) Improve student achievement by aligning all instruction to the Common Core

standards; (3) Engage parents in every aspect of school life; and (4) Create new collaborative and innovative models within our city and schools. These themes and pillars were then codified in *The Framework for Great Schools*, with the following six elements:

- Rigorous Instruction: Instruction is customized, inclusive, motivating, and aligned to the Common Core. High standards are set in every classroom. Students are actively engaged in ambitious intellectual activity and developing critical thinking skills.
- Supportive Environment: The school establishes a classroom and school culture where students feel safe, supported, and challenged by their teachers and peers.
- Collaborative Teachers: Teachers are committed to the success and improvement of their classrooms and schools. They have the opportunity to participate in PD within a culture of respect and continuous improvement.
- Effective School Leadership: Principals lead by example and nurture the professional growth of teachers and staff, developing and delivering the instructional and social-emotional support that drives student achievement.
- Strong Family-Community Ties: School leadership brings resources from the community into the school building by welcoming, encouraging, and developing partnerships with families, businesses, and community-based organizations.
- Trust: Everyone works toward the shared goal of improving student outcomes, preparing students for success in school and beyond. Across the school community, there is respect. School staff, parents, students, and administrators value each other.

Pillars of D21-22 Magnet Program Design

The D21-22 magnet initiative has been designed so that it is fully aligned with and supportive of the six elements of NYCDOE's Framework for Great Schools. Implementation of

these methodologies will serve to bring the curricula to life in and beyond the walls of the classrooms, helping students to see and make connections across subject areas and apply what they are learning to solve real-world problems in their schools, communities, and the world at large. The goal is for these approaches to be implemented schoolwide, and with all populations of students, by the end of the three-year project period. The D21-22 magnet schools will adhere to these pillars, as described below.

Rigorous Instruction

As stated in its core values, "NYCDOE is committed to doing whatever it takes to ensure that every student learns and succeeds, regardless of race, ethnicity, gender, and socioeconomic status." Yet, many students struggle to meet grade-level standards as measured by state assessments. Furthermore, with the transition to CCSS, students are expected to meet increasingly challenging benchmarks in order to prepare them for college and careers. As a result, the NYCDOE is finding that the proportion of students who meet the standards in English language arts (ELA) and math, as measured on the NYS assessments, is low. Furthermore, data show that there are significant achievement gaps for students by racial and ethnic background, eligibility for free or reduced-price lunch, and students with special needs—namely, students with disabilities and ELLs.

Additionally, the academic achievement of students in the proposed five schools falls below district-wide averages. For example, at PS 90, the proportion of students in grades 3–5 who met or exceeded the standards in ELA lagged the district-wide average by 20.3 percentage points; at PS 121, ELA achievement lagged by 6.7 percentage points compared with the district average. At PS 90, similar differences were seen in math (a 16.6 percentage point difference); no differences were seen in math at PS 121. Additionally, at both schools, there were achievement

gaps between Hispanic students compared with their White and Asian peers in both ELA and math.

In D22, achievement levels for two of the three proposed magnet schools (PS 198 and IS 240) lagged the district averages in ELA (by 13.8 and 12.7 points, respectively) and in math (by 21.1 and 14.1 points, respectively). At PS 245, achievement rates were slightly higher than the district averages. Results of the 2014–15 NYS assessments are presented in Tables 7 and 8. In each table, data are not presented when the number of students in a subgroup is less than 10.

Table 7. Percentage of Students Who Met/Exceeded Standard on NYS Assessment in ELA and Math (District 21)

Student Group	PS 90 Grades 3–5		PS 121 Grades 3–8		D21 Grades 3–8	
	ELA N=267	Math N=269	ELA N=209	Math N=217	ELA N=14,178	Math N=14,115
All students	21.3%	32.3%	34.9%	49.3%	41.6%	48.9%
Asian	-	47.1%	48.5%	67.6%	53.3%	66.5%
American Indian/Alaskan Native	-	-	-	-	39.6%	35.1%
Black/African American	-	-	-	-	19.5%	19.7%
Hispanic/Latino	16.3%	29.3%	26.4%	41.2%	23.4%	27.6%
White	34.7%	50.0%	40.0%	52.6%	50.3%	57.4%
Two or more races	-	-	-	-	47.1%	45.5%
ELLs	-	-	-	-	5.0%	19.9%

Student Group	**PS 90 Grades 3–5**		**PS 121 Grades 3–8**		**D21 Grades 3–8**	
Students with disabilities	-	-	-	19.6%	9.0%	15.6%
Eligible for free/reduced-price lunch	20.4%	30.7%	28.8%	49.6%	34.9%	42.9%

Magnet Schools Assistance Program (2016-2019)

Community School Districts 21 and 22 — Brooklyn, New York

Table 8. Percentage of Students Who Met/Exceeded Standard on NYS Assessment in ELA and Math (District 22)

Student Group	PS 198 Grades 3–5		PS 245 Grades 3–5		D22 Grades 3–5		IS 240 Grades 6–8		D22 Grades 6–8	
	ELA N=230	Math N=232	ELA N=130	Math N=131	ELA N=8,078	Math N=8,208	ELA N=859	Math N=879	ELA N=6,283	Math N=6,267
All students	21.3%	23.7%	38.5%	45.8%	35.1%	44.8%	24.8%	22.0%	37.5%	36.1%
Asian	-	-	-	-	47.9%	61.5%	38.3%	36.7%	57.3%	63.7%
American Indian/Alaska Native	-	-	-	-	38.9%	34.0%	-	-	31.3%	38.7%
Black/ African American	20.6%	23.3%	32.4%	34.8%	23.5%	26.9%	21.3%	17.5%	24.6%	19.7%
Hispanic/ Latino	-	-	42.6%	59.3%	24.8%	34.1%	25.3%	16.2%	29.5%	26.2%
White	-	-	-	-	48.4%	64.5%	20.0%	32.1%	50.7%	51.5%

Magnet Schools Assistance Program (2016-2019)

Community School Districts 21 and 22 — Brooklyn, New York

Student Group	PS 198 Grades 3–5		PS 245 Grades 3–5		D22 Grades 3–5		IS 240 Grades 6–8		D22 Grades 6–8	
	ELA N=230	Math N=232	ELA N=130	Math N=131	ELA N=8,078	Math N=8,208	ELA N=859	Math N=879	ELA N=6,283	Math N=6,267
Two or more races	-	-	-	-	50.0%	54.1%	-	-	-	-
ELLs	-	-	-	-	6.6%	17.7%	-	-	3.8%	18.9%
Students with disabilities	-	-	-	-	8.5%	17.4%	-	-	6.8%	7.0%
Eligible for free/reduced-price lunch	19.0%	21.3%	38.3%	45.5%	29.3%	38.8%	24.3%	20.6%	32.9%	31.6%

In 2015, NYC Mayor Bill de Blasio announced that one of the goals of his time in office is to increase the number of eighth-grade students who are prepared for algebra. As part of this effort, NYCDOE recently launched the *Algebra for All* initiative, which will increase the number of schools offering rigorous math instruction, including algebra, and centralize fifth-grade math at selected schools. Through this initiative, which the NYCDOE will scale up throughout the city over the next five years, school leaders will receive math-specific training and math teachers will receive grade-specific training, more common planning time, and access to an online forum to discuss math instruction with colleagues. One of the proposed magnet schools, IS 240, will be sending three of its teachers to training in the summer of 2016. Participating schools must guarantee all eighth graders the option to take algebra and ninth-grade algebra I and get at least five hours a week of math instruction by 2017–18. The logic behind increasing access to algebra, according to the city, is that research shows students who pass the subject by the end of ninth grade are more likely to graduate high school and college (Gamoran & Hannigan, 2000; Klepfer & Hull, 2012; Lee, 2012). In addition, 75 schools are participating in another branch of *Algebra for All* to "departmentalize" math in fifth grade. Principals at these schools will designate selected fifth-grade teachers to take on the central math role for their grade. This approach is supported by researchers who have found that the quality of math instruction improves when taught by a teacher with demonstrated expertise in this content area, especially since many elementary-level teachers are not excited about math or do not feel prepared to teach it (Condie, Lefgren, & Sims, 2014).

Today, preparing students for college and careers means equipping them with skills that will help them adapt and excel in any learning or workplace environment they encounter. These skills include those that are often referred to as "21st-century skills" or "learning and innovation

skills," such as creativity, critical thinking, communication and collaboration, information media, and technology skills (Partnership for 21st Century Skills, 2009). Recognizing that this is a pressing need, NYC plans to dramatically increase the number of students that will engage with computer science instruction over the next decade. In the nation's largest effort to increase computer science in classrooms, the city will begin to expand computer science instruction in fall 2016, with the goal of offering it in all schools by 2025. This *Computer Science for All* initiative will expand on a series of smaller efforts to boost computer science in schools that the city has introduced over the past few years, including the launch of a teacher training plan, opening software engineering–focused high schools, and adding AP computer science courses to high schools.

The development of noncognitive skills is critically important to ensure college- and career-readiness. Studies have shown that success goes beyond intelligence, and that a child's character in areas of "perseverance, curiosity, conscientiousness, optimism, and self-control" matters more (Tough, 2012). When applied to academics, these noncognitive skills can help reduce disparities in achievement and educational attainment based on race, SES, ethnicity, and gender (Farrington, et al., 2012). However, research also suggests that low-income and minority students may encounter challenges in developing such character traits because they do not have the social support that more affluent students may have to keep them on the path to higher education and success in a career (Strauss, 2012). The D21-22 magnet programs will provide expanded opportunities for all students to participate in curricular and extracurricular experiences that will foster valuable college- and career-ready skills and expose them to new ideas and prospects.

The D21-22 magnet program will provide each student in the five magnet schools with a

rigorous educational experience that

- stems from a content-based theme that is unique to and draws on the strengths of the individual school communities;
- promotes the development, implementation, and refinement of interdisciplinary thematic curricula mapped to city, state, and national standards;
- embeds into teaching and learning research- and evidence-based instructional strategies that have been shown to promote high levels of student achievement and the attainment of noncognitive skills critical to students' college and career readiness; and
- demonstrates the effective use of state-of-the-art technology to connect students to each other as well as to peers and mentors around the globe.

Each of these components of rigorous instruction is described in the paragraphs that follow. The individual magnet school descriptions that follow this overview illustrate how they will come alive in the five school communities selected to become magnets.

Each proposed magnet school will develop an **innovative, theme-based program** that provides rigorous instruction and enrichment activities to all students that are not available in other schools in the two districts. The magnet themes will be infused into core subject curricula through the development of interdisciplinary curriculum units and lesson plans to provide enhanced, rigorous, and engaging learning opportunities for all students. While the content areas of focus may vary across the five schools (e.g., applied life sciences, global conservation, leadership development, the arts, engineering), a common thread that connects all of the magnet school designs is their emphasis on science, technology, engineering, mathematics, and in some cases, the arts (STEM or STEAM). Furthermore, all of the thematic units will be mapped to and supportive of the Common Core standards as well as the NGSS.

The NYCDOE is committed to working with schools to build their capacity in and develop a shared understanding of high-quality STEM education. To support these efforts, the city created the STEM Framework, a tool that provides a structured approach for schools seeking to organize and develop the implementation of a STEM initiative whose results are repeatable. It includes a readiness checklist of structures, criteria, and systems and is not intended to be judgmental or evaluative. The architecture of the Framework is presented as a structure of domains, indicators, and criteria to support the evolution of a school's initiative over time. The Framework is designed to work alongside other data and qualitative tools to help schools develop a STEM culture that integrates well with a school's existing instructional mission and vision, while shifting the disciplinary paradigm from multidisciplinary and interdisciplinary toward instruction and learning that is ultimately transdisciplinary.

In tandem with the development, refinement, and replication of the schools' thematic curricula—and in support of their implementation—teachers will have opportunities to hone their practice and expand their **repertoire of research- and evidence-based instructional strategies**. The strategies that will be featured in the magnet programs are highlighted in the following; the plans to offer PD and coaching in these strategies are described in Section 3.

Project-Based Learning is an innovative approach to education that focuses on creating student-centered learning that supports "deeper learning through active exploration of real-world problems and challenges" (Pellegrino & Hilton, 2012). While there is no firm definition of PBL, researchers and practitioners agree upon a set of essential components of a PBL approach. First, PBL units or lessons should be motivated by a driving question or problem to be solved. Second, PBL curricula target significant learning goals (Krajcik & Shin, 2014), and last, PBL units should use hands-on experiences to promote learning (Condliffe, 2015) and be conducted over a

period of time in order for students to delve deeply into research (Parker, et al., 2013). Researchers agree that if PBL is designed effectively, it produces significant benefits to students' learning, including promoting construction of knowledge, cultivating student engagement, providing scaffolding for student learning, encouraging student choice, and supporting student collaboration (Condliffe, 2015).

One of the partners that will be supporting the five D21-22 schools in their efforts to integrate PBL opportunities into instruction is **Big Idea Week** (BIW). The mission of BIW is to "connect communities to light the imaginations of students and inspire them to be the next generation of makers and doers." To accomplish this goal, BIW pairs students with volunteer mentors—local STEM, media, and design professionals from companies such as Facebook, Etsy, MakerBot, and Tech Insider—to collaborate on weeklong, immersive, entrepreneurial projects. These projects provide students with unique opportunities to develop 21st-century skills and interact with local role models, while working collaboratively with their peers in a PBL model.

BIW will collaborate with D21-22 school- and district-level magnet staff to recruit mentors and provide resources to support BIW programming at the schools. This includes the BIW project-based curriculum that will expose students to 21st-century careers and standards-aligned skills, from critical thinking and creativity to collaboration and communication. Throughout the week, students will practice researching, writing, and public speaking within a real-world, STEM-based context. By encouraging students to see the world through the eyes of an entrepreneur—as problem solvers, risk takers, and innovators—the BIW projects will build students' curiosity and confidence and give them the tools to bring their own ideas to life.

The **Buck Institute for Education** (BIE), a mission-driven nonprofit organization, supports teachers, schools, and districts in implementing effective PBL opportunities in all grade levels

and subject areas through its high-quality PBL instructional practices and products. For teachers, BIE offers PD on how to design, assess, and manage projects that engage and motivate students. For the grant schools, BIE will help bring coherence to PBL practices and support the creation of schoolwide processes and structures to support PBL. BIE will provide the five grant schools with rigorous PD, in the form of training and coaching, to support the effective and sustained implementation of PBL across grade levels and subject areas.

Support for D21-22's PBL focus will also be provided by **OMNiLEARN**, a science education program that has been providing in-class, hands-on laboratories for students across the country since 1992, and has worked in pre-K–12 classrooms in NYC schools for the past decade. The philosophy of OMNiLEARN, which is staffed by scientists and teachers, is that students love active, exciting learning. OMNiLEARN helps teachers leverage the inherent enthusiasm of children through hands-on, differentiated science labs as a means to strengthen state-mandated math and ELA performance indicators.

OMNiLEARN will provide D21-22 schools with everything they need to deliver these dynamic, interdisciplinary, PBL science lab activities, including supplies, equipment, assessment materials, and experienced OMNiLEARN instructors who will set up and assist in the activity. The instructor will visit schools and provide district-wide PD over the course of the school year to train teachers and lead students through a series of labs customized to the students' grade level and curricula. OMNiLEARN will also provide a bridge from the lab to the classroom. Through relationships with working scientists at some of the country's foremost laboratories, it continually update its lab protocols and equipment to reflect the current scientific climate.

Through a partnership with the **City College City Technology Project**, the D21-22 schools will receive curriculum and PD materials designed to integrate science, literacy, and art in the

elementary and middle grades through a focus on engineering design. The City Technology team consists of NYCDOE elementary teachers and City College faculty members. They will provide technology-infused curriculum units on force and motion and energy systems—aligned with the Common Core Learning Standards (CCLS) in Math and ELA and the NYC Science Scope and Sequence and STEM Framework—that address concepts of physical science, engineering, and computer science. Services, which will be tailored to meet the instructional needs of all learners at the five schools, will also include classroom materials, classroom visits (including modeling of instruction), and family workshops based on the curriculum units.

Finally, **Education Closet** provides consulting services to schools and school districts in developing, implementing, and assessing arts integration and STEAM approaches to education. These services are provided through their website, EducationCloset.com, as well as through individual consultative services. As an organization, Education Closet has provided meaningful, research-based support to schools and districts that are committed to improving student performance through integrating the arts with intention and committed focus. It regularly hosts over 3,000 educators from across the world in dynamic semiannual online conferences for arts integration and STEAM. Additionally, it provides direct consulting in arts integration and STEAM both to assist school districts in turning around low-performing schools and to provide support for magnet school awardees.

Programs that teach students technology skills are especially important in low-income and minority neighborhoods where young people have less access to computers or the Internet at home (DeBell & Chapman, 2006). Students from homes with limited access and use of technology are at a disadvantage for completing technology-based tasks and often miss out on educational opportunities that require the use of technological resources (Kim & Bagaka, 2005).

In addition to the technology applications that will be developed through the partnerships described above, a key resource to the D21-22 magnet schools will be the full-time Outreach and Technology Specialist, who will work with each school community to support the integration of state-of-the-art instructional technology supplies, equipment, and applications into their instructional programs.

Effective School Leadership

As described in the Quality of Personnel section and evidenced by their résumés attached to this proposal, the Principals of the D21-22 magnet schools are skilled, experienced instructional leaders who have been entrusted to lead the magnet initiative in their respective buildings. Magnet training for principals will come from the experienced Project Director, as well as Magnet Schools of America (MSA) and USDOE conferences. Each Principal will participate in regular progress meetings with the D21-22 Project Director, as well as group meetings with the other magnet Principals to share best practices.

Supportive Environment/Trust

As described earlier in this section, NYCDOE's research-based Framework for Great Schools identifies a supportive environment and trust as two of the key elements of high-quality, effective schools. According to the Framework, supportive schools are environments where students feel safe both in and around the school building and while they travel to and from home; the culture of the school is such that students push one another and consider doing homework and paying attention in class to be important; teachers work closely with students who may have missed class or are falling behind; and teachers explain things in a different way if a student does not understand something in class. In order to increase the supportiveness of NYC schools, NYCDOE has improved school-based behavioral supports and mental health services by

enhancing PD for guidance counselors; emphasizing and expanding training in progressive discipline, restorative justice, and social-emotional learning; and expanding the school-based free lunch program to include all eligible middle school students, thereby reducing free lunch stigma.

According to the Framework for Great Schools, a trusting school environment is one where teachers listen to student ideas and incorporate them into their instruction and are able to comfortably share their feelings, worries, and frustrations with other teachers and principals in order to maintain mutually trusting and respectful relationships with other teachers and families. Recognizing the importance of fostering trusting school environments, the NYCDOE continually seeks input and feedback from families, teachers, and principals to understand their needs and strive toward the shared goal of improved student achievement.

Strong Family-Community Ties

Consistent with the citywide philosophy on parent involvement, D21-22 recognizes that schools, families, and community members share responsibility for the education of all students. To support the goals of the District and schools to effectively educate all students, schools and parents must work as knowledgeable partners. Parents, teachers, and administrators in the District work together through the SLTs, PA/PTAs, Presidents Councils, Title I Parent Advisory Councils, and other formal and informal groups and organizations to ensure that all students meet high standards in safe, nurturing environments. Furthermore, each school in D21-22 has an on-site Parent Coordinator who is responsible for promoting parent engagement by creating a welcoming environment in the school, supporting parent leadership activities, expanding parent involvement activities, and helping resolve parent issues and concerns.

In addition to establishing strong ties with the parent community, the D21-22 magnet initiative has brought together a robust set of community partners that have expressed their

commitment to support the various facets of the magnet program design, including curriculum development and enrichment and PD and coaching. In some instances, schools will continue or expand existing linkages with community partners as their work aligns well to the scope of the magnet program. Most schools have begun the process of reaching out to new local, regional, and national organizations that would bring specific expertise to the magnet project design. In all cases, the MSAP project team will work with the schools to ensure that the services proposed will add value to the school community and to the magnet program, that costs are in alignment with NYCDOE and USDOE fiscal and contracting policies and practices, and that the efforts of all outside partners are coordinated to avoid duplication or fragmentation of services.

Individual Magnet School Program Designs

Each school selected to participate in the magnet initiative engaged in a broad-based, collaborative planning process in developing its magnet program. To structure the process, each school established a magnet planning team composed of teachers, administrators, staff developers, and parents and carried out several school-based planning activities to solicit the input of all key stakeholders in the design. Schools were provided with copies of several tools that were developed by the NYCDOE to guide the teams through the planning process. These tools include a school-based program design worksheet, a budgeting worksheet, a template for program partnership descriptions, a template for letters of support, and signature pages for gathering support from school staff and parents. The school-based teams met individually with the district planning team several times during the planning process to provide updates and get feedback and support in designing their programs. A detailed description of each proposed magnet school program is provided in the section that follows.

PS 90—Edna Cohen School

Magnet School for Environmental Studies and Community Wellness

Located on Brooklyn's famous Coney Island, PS 90 is situated a few hundred steps away from the Atlantic Ocean and from renowned world-fair-styled sculptures. The elementary school, which serves a population of 641 students in grades pre-K–5, is also located near the New York Aquarium, the oldest continuously operating aquarium in the United States. The school's unique location will enable PS 90 to study Coney Island's natural ecosystem and manmade engineering and architectural marvels though an inquiry-based environmental approach to teaching and learning. The school has several existing partnerships in place that will support the implementation of its chosen magnet theme. For example, the school currently partners with **Studio in a School**, **Enrichment Through the Arts**, and **Marquis Studios**. Through the grant, the school will seek to expand the role of these partners to include STEM-related enrichment and learning opportunities for students.

In order to provide the opportunity for all students and teachers to be exposed to the theme across all three years of the project, the school plans to develop and implement an interdisciplinary thematic curriculum, as follows:

- Year 1: The school will develop one unit for all grade levels.
- Year 2: The school will develop an additional unit per grade level and add an engineering challenge for each grade level.
- Year 3: The school will develop two additional units per grade level, including one or more engineering challenges for each grade level.

To frame and guide the magnet curriculum and provide clear learning objectives, the school

has developed essential questions for each grade, a sample of which are presented in Table 9.

Table 9. Sample Essential Questions, by Grade

Grade	Essential Questions
K	1. How do we observe and describe objects and the physical properties of objects? (Example: on the beach and the boardwalk) 2. How can we support living and nonliving things? 3. How do plants and animals respond to environmental changes?
1	1. How are animals alike and different? 2. How does seasonal change affect temperature and weather conditions over a period of time in Coney Island?
2	1. How do different materials affect the makeup of the Earth? 2. What causes objects to move?
3	1. How do simple machines help us in our daily lives? 2. What scientific principles are used in the construction of the Steeplechase, Wonder Wheel, Roller Coaster, a stadium, and an aquarium? 3. How can we best inform the community about creating and sustaining wildlife, pollinator, and food habitats in urban and suburban NYC communities?
4	1. How does the use of electricity and magnetism affect our world? 2. How do the properties of water affect living things and the natural environment? 3. How do natural events affect our world? (Example: An in-depth study of Hurricane Sandy and it's devastation to Coney Island)
5	1. What are the processes that help shape the land?

Grade	Essential Questions
	2. How can we use patterns to predict changes on the surface of the Earth? 3. How do key forces and events shape a community and nations? 4. How do scientists investigate the natural world? Why inquire? 5. How are ecosystems vital to life?

The thematic curriculum will be fused with an appreciation for the arts that are unique to Coney Island. A plethora of artistic works defining and reshaping Coney Island can be found in novels, songs, poems, films, photographs, and paintings over the course of two centuries. Students will complete a yearlong design project of a gallery similar to the ones found in the recent multimedia Brooklyn Museum exhibit "Coney Island: Visions of an American Dreamland." For example, second-grade students will integrate their unit of study of "New York Then and Now" with community walks to locations noted in the exhibition. They will use the information found on their visits, as well as the resources of various NYC museums, to create an exhibition that includes photographs, interactive posters, timelines, student-generated artwork, poems, and family histories of past and present experiences.

Students will use the engineering design process to design a structure, artifact, or product for the future Coney Island, which will be displayed in the exhibition. For this project, students will conduct research at Luna Park, one of the amusement parks on the Coney Island Boardwalk, to study gears and how they are used in engineering devices to change the speed, torque, and direction of a power source. Finally, students will develop their writing and researching skills to create text panels for the exhibit and their communication skills to act as docents and tour guides on the day of the exhibition debut. PS 90's computer lab and on-site garden will be key

resources for the teachers to use in the engineering design process. Through the magnet grant, the school will create a new science lab and install mini-labs in all classrooms.

At PS 90, magnet enrichment will consist of monthly field trips (e.g., to the New York Aquarium, Teddy Roosevelt Sanctuary, Audubon New York, New York Conservation Society, New York Hall of Science Museum, and Brooklyn Museum), bimonthly assemblies featuring expert guest speakers, and elective classes that extend and support the curriculum. The school will expand upon existing enrichment classes—currently offered to grades K–5 students on a weekly basis—in LEGO, chess, nutrition, visual arts, and gardening. As mentioned, current partners Studio in a School, Enrichment Through the Arts, and Marquis Studios will continue to provide these enrichment classes, which will be offered during the school day.

In addition, out-of-school time, theme-based enrichment will be provided through an extended-day program. Currently, 165 students participate in the PS 90 extended-day program. Through magnet funding, the school will increase that number threefold. The extended-day program will consist of magnet clubs in math, conservation, design and engineering, LEGO (facilitated by Bricks for Kids), and the Luna Park History Project Club. Students will self-select into the clubs of their choice, and most clubs will be offered by grade level to ensure that the content and experiences are age appropriate.

In addition to the aforementioned partners, the school will be supported by **Aussie Digital School Solutions/Generation Ready** and **Discovery Education**. Aussie Digital School Solutions/Generation Ready will lead two professional development series, *inMath* and *Technology*. These trainings will be provided to staff throughout the three years of the grant and will consist of monthly PD sessions on topics such as developing and implementing interconnected, inquiry-based units; differentiating math and technology instruction; and

connecting math and technology to real-world contexts that build upon community resources. Discovery Education will provide PD that focuses on its digital textbook series and supporting classroom teachers in using digital resources to enhance learning. The school will also partner with various universities, community-based organizations, and technology companies, including the Rensselaer Polytechnic Institute, the New York Institute of Technology, Brooklyn College, the Coney Island Cyclones baseball team, Google, and Microsoft.

PS 90 will provide various opportunities for parent engagement in the magnet program. Parents will serve on the school's Magnet Advisory Council, which will be composed of 12 parents (two per grade) and will meet monthly to provide input on the magnet program (including curriculum, after-school programs, field trips, student presentations and forums, and the hiring of new staff). The school will also hold monthly educational lectures and town hall meetings to inform parents of theme-based activities and provide forums for parents to weigh in on program decisions. Parents will also be invited to monthly Family Fridays at which parent coordinators and staff will inform parents about the magnet program, activities, and events. Parent surveys will be distributed throughout the year to encourage parents to express their ideas, questions, and concerns about program decisions.

PS 121—Nelson A. Rockefeller

Magnet School of Applied Life Sciences

PS 121 will become the Magnet School of Applied Life Sciences. The life sciences comprise the fields of science that involve the scientific study of living organisms—including microorganisms, plants, animals, and human beings—as well as related topics, such as bioethics. PS 121, which serves 346 students in grades pre-K–8, is located in the small, geographically

isolated neighborhood of Mapleton, located in south-central Brooklyn. With the exception of a cemetery and a small public park that is currently under renovation, Mapleton lacks public green spaces. As a result, students at PS 121 have minimal exposure to living organisms or opportunities to learn from urban ecosystems.

Furthermore, PS 121 staff are concerned that there are limited experiential, science-based learning opportunities for their students, particularly at the elementary level. Since 2014–15, PS 121 has provided selected eighth-grade students with the opportunity to take a credit-bearing Living Environment Regents course. This course—which will be a requirement of all eighth-grade students in the third and final year of the grant—includes a lab component during which students engage in inquiry-based learning through hands-on interaction with living organisms. Since the school began offering this course, staff at all grade levels have become increasingly aware of the benefits of these types of learning experiences for students and have sought to expand hands-on, interactive activities grounded in the life sciences. For example, the school regularly engages students in planting projects and has installed aquariums and terrariums in the science classrooms. It is for these reasons that PS 121 seeks to develop and implement a schoolwide, interdisciplinary magnet theme focused on the applied life sciences.

Students in the Magnet School of Applied Life Sciences will be immersed in the areas of botany, zoology, and marine biology, which will serve as subthemes. PS 121 staff will develop interdisciplinary units of study that will incorporate these magnet themes across content areas, including math (e.g., observation and measurement), science (e.g., health and nutrition), ELA (e.g., literature relating to life sciences), social studies (e.g., the impact of government policy on living environments), and visual arts (e.g., patterns, color, and shapes in nature). Units of study will be aligned with the NYS Common Core State Standards (CCSS), the NYC Science Scope

and Sequence, and the Next Generation Science Standards (NGSS).

For example, in their study of the Western Hemisphere, fifth-grade students will learn about geography and physical features of the land and how it has changed over time. The unit will focus on the Brazilian rain forest and the effects humans have had on it, such as the depletion of flora and fauna due to urbanization, farming, and mining. With support from the **Brooklyn Botanic Garden** and through research, multimedia resources, and various primary source materials, students will act as environmentalists, investigating the ecosystem of the Brazilian rain forest, including how it provides valued products and medicines we depend on in our daily lives. As a culminating project, students will work in groups to collect data on different aspects of environmental impacts and create a public awareness campaign on the importance of saving the rain forest in order to sustain life on Earth.

In addition, through student-directed inquiry projects, students will identify bioethical problems in their community and their world and apply what they have learned in the classroom to devise solutions to these challenges. Students in the elementary grades will focus on school-based environmental challenges, and students in grades 6–8 will expand their focus to community-based challenges. Students may create projects focused on improving local sustainable food sources, educating the community on pollution, or advocating for expanding green space. Through the exploration of such issues, students will become actively engaged in environmental issues and work toward creating a healthier world.

To provide new on-site venues for hands-on learning and enrichment, PS 121, with support from **Sun Works**, will transform two classrooms into Life Science Centers (one each for elementary and middle school grades) where diverse living environments and organisms will be accessible to students for research and applied learning. The labs will contain terrariums,

aquariums, hydroponic growing stations, equipment for studying microscopic organisms, and technology for planning and engineering solutions for sustaining and studying life of all kinds. Additional Life Science Centers will be created in the outdoor space around the school building, including educational greenhouses. In the first year of the project, the school will create a large (24x16 feet) greenhouse and will add two smaller greenhouses (18x12 feet) in Years 2 and 3. The three greenhouses—which will be located in fenced-in areas across the school grounds—will each have distinct climates and will provide students in all grades with multiple areas for simultaneous learning.

Extended-day enrichment opportunities will be provided to further immerse students in the life sciences theme. For example, after-school stewardships in horticulture, ichthyology, and zoology will extend learning and provide real-word applications for theme-based knowledge and skills. Three separate stewardships will be offered for grades K–2, 3–5, and 6–8. Students in grades K–2 will gain fundamental knowledge on maintaining the labs—for example, learning how to clean fish tanks. Older students will mentor younger students, preparing them to care for and sustain the labs. In addition, PS 121 currently has a School's Out New York City after-school program for students in grades 6–8, led by the Neighborhood Improvement Association (NIA). The NIA will support PS 121 in designing and implementing theme-based after-school enrichment opportunities, including the stewardships.

As noted, PS 121 will partner with several organizations—including Brooklyn Botanic Garden, Sun Works, and Marquis Studios—to support implementation of the theme across the school. Through these partnerships, the school will have access to professional experts in the life sciences who will provide training and curriculum development support and guidance to staff and theme-based learning and enrichment opportunities to students. Additional partners, such as

the **Prospect Park Zoo** and **Central Park Conservancy**, will enable PS 121 to offer field trips to world-renowned centers for botany, zoology, and marine biology and invite experts to the school to speak to students and staff.

PS 121 will be committed to engaging parents in theme-based learning throughout the school year. The school's hydroponic lab and gardens will provide year-round crops that can be used in family events. For example, with help from Sun Works, the school will host family healthy eating workshops that take place directly after harvest. During these events, students will provide their parents with tours of the hydroponic labs and gardens, answer questions about their gardening work, and learn how to prepare healthy meals using vegetables and herbs grown in the gardens.

PS 198

Magnet School for Applied Learning in Arts and Engineering

PS 198, an elementary school located in the East Flatbush section of Brooklyn, serves 477 students in grades pre-K–5. Through the magnet grant, PS 198 will be transformed into the Magnet School for Applied Learning in Arts and Engineering, providing students with opportunities for STEAM learning through a robust, interdisciplinary, arts-infused curriculum.

Art can be interpreted differently based on a person's experiences and emotions, and for the artist, it does not necessarily have any usable meaning. Design, however, is more concrete. It must be comprehended and understood, and it can be taught and learned. Engineering and design projects are collaborative and aim to solve problems or provide information. PS 198 will work with students to find that "in-between area" where art, engineering, and design live. The school will create units of study that not only align to current standards but also incorporate engineering

and artistic design through project-based learning (PBL) in a way that is purposeful and motivating. PBL engineering and artistic design projects will tackle real-world problems that are connected to core subject areas, such as science, math, ELA, and social studies, but also encapsulate creativity and innovation. Along with this project work, the school will focus on traditional arts, such as music, theater, dance, and visual arts (e.g., painting and sculpture) to help buoy the "form" side of invention and design, and to inspire a culture of creativity, beauty, and aesthetics that will support the magnet theme. The school's two dedicated science classrooms, an outdoor science classroom, and a dance and movement room will serve as key resources to the magnet program.

In partnership with **Marquis Studios**, **Sankofa Global Project**, **Engineering Is Elementary**, and **Learning Through an Expanded Arts Program (LEAP)**, PS 198 will develop a program that teaches students standards-aligned content by engaging them in hands-on, minds-on artistic design projects that connect to both their intellect and their creativity. These partners will support theme integration, particularly in the first year of the program, through PD, job-embedded coaching, and curriculum development support for staff as well as thematic enrichment and instruction for students.

An example of a possible artistic design/engineering transdisciplinary project is an Earth Day Sustainability and Recycled Materials Arts and Design Expo. All students will participate in this project. Students in grades pre-K–2 will learn the importance of reducing, reusing, and recycling as they create arts and crafts projects out of recycled materials (e.g., milk cartons, cardboard boxes, Popsicle sticks, paper lunch trays). They will use the school's newly created or revamped makerspaces or STEAM clusters to design and "engineer" these items using the engineering design process (EDP). Teaching artists and classroom teachers will serve as guides and assist

students through the EDP and development of their projects, which may include sculptures, collages, or paintings on recycled paper. These students will also perform dances, songs, and skits at the expo that focus on recycling and not littering. Older students (grades 3–5) will design simple machines, spring fashions, and art (e.g., sculptures, mosaics, Alexander Calder–inspired mobiles) out of recycled materials. They will work in small groups to invent something that the school or community needs, and then use the EDP and the school's makerspace or STEAM clusters to support them as they design and build them. Students will use Google SketchUp or other 3-D modeling software to create architectural designs for structures or houses that are sustainable and environmentally friendly. They can use Scratch or other free online programming tools to create interactive stories, games, or designs that participants can view or try out during the expo.

ELA connections will be made as students create advertisements and flyers to promote the expo, informational brochures to distribute at the event, and signage to post at the event. Students will practice speaking and listening skills as they answer questions about their displays or serve as docents during the event. Social studies connections will be made as students learn what it means to be civic-minded community members. Younger students will collaborate to develop ideas for Earth-friendly school rules and practices, and older students will research local organizations and legislation that promote sustainability efforts. These activities are aligned with the New York City–mandated early childhood curriculum on community and third- through fifth-grade curriculum on law and government.

Students at each grade level will have opportunities to participate in theme-based enrichment during the school day. Partners Marquis Studio will provide arts enrichment; LEAP will help to create a TEKintellect Lego Robotics program; Engineering Is Elementary will provide hands-on

literacy and engineering units; and Sankofa Global Project, whose mission is to increase the number of women and people of color in STEAM fields, will collaborate with teachers to provide STEAM activities.

The school will implement an after-school program that will allow students to continue to learn and develop their STEAM skills. Students will have the opportunity to work closely with teaching artists, as well as their classroom teachers, through participation in magnet clubs in Lego Robotics, science, drama, dance and movement, and visual art. The clubs will be facilitated by school-based staff with experience in these theme-related areas. Furthermore, **Band for Today** will teach students how to play instruments of their choice as part of the after-school program.

Parents will be engaged in the magnet program through various opportunities. PS 198 will continue its month-long Families as Learning Partners parent engagement activity, which allows parents to spend the first hour of the school day on the third Friday of the month in their children's classroom. The school will use this platform to involve parents in theme-based learning and garner their support for the program. Additional magnet parent engagement activities will include Parent Tinker Days, which will provide hands-on STEAM and robotics exercises for parents; assemblies featuring expert speakers; community showcases of student work; and student music and dance performances. Furthermore, the school will host multiple informational meetings each year to ensure that parents are informed about all aspects of the magnet program, as well as parent-child workshops to help parents understand the connection between the arts and academics.

IS 240—Andries Hudde

Magnet School for STEM

IS 240 will become the Magnet School for STEM. Located in the Midwood neighborhood of South Brooklyn, IS 240 serves 825 students in grades 6–8. Thematic instruction will be delivered throughout the grades through transdisciplinary STEM-focused units of study, which will be developed by staff with support and guidance from school-based magnet specialists in science and technology. The units will be aligned with the NYS Core Curriculum for Science and the NYC Scope and Sequence, but will expand upon the required concepts and skills to provide rich, real-world learning experiences. Each unit topic will be investigated using text, Internet sources, trips, speakers, and experiments. Students will work within various media to explore STEM content, including broadcasting (e.g., weather, present-day science discoveries), theater (e.g., presenting biographies of scientists), and video (e.g., documenting the findings from scientific experiments). The school will purchase the Dare2Dream Leadership Guide, which will be used schoolwide to foster students' leadership skill development.

An example of a thematic unit that would be implemented in Year 1 of the program with eighth-grade students is an in-depth, cross-curricular study of genetics. In science class, students will learn about the components of DNA, extract DNA from plants, and construct DNA models. As part of ELA instruction, students will read scientific articles on the latest discoveries in the area of genetic diseases and learn how to create an annotated bibliography. Theme-based math instruction will incorporate genetic data, which students will review, organize, and present in graphs and charts, while also constructing a DNA database. Connections to social studies will be made through the study of areas of the world that have benefited from the latest advancements in

the field of genetics as well as areas that have suffered due to lack of such advancements.

A partnership with the **Beam Center** will facilitate technology-infused art projects that are aligned with the magnet units of study. Beam Center, based in Brooklyn and serving all of New York City, is the 501(c)(3) outgrowth of a collaborative building program at New Hampshire's Beam Camp, founded in 2005. Beam Center's core programs are based on the belief that knowing how to use tools, how something works, how to finish something, and how to work together contributes to the formation of a healthy and reflective social and individual identity. **Teq**, an educational technology and professional development company, will provide training for teachers in how to best infuse technology into the STEM units of study.

Magnet instruction will also include an environmental studies component that exposes students to the benefits of using green technology for energy efficiency and provides them with an opportunity to learn composting through a partnership with the **NYC Compost Project**. Through this project, which is hosted by Big Reuse, New York City's only nonprofit retail outlet for salvaged and surplus building materials, students will learn about how composting can help beautify parks, gardens, and lawns and will create a compost bin in the school garden using food scraps from the cafeteria. A tour of the Big Reuse compost site in Brooklyn and trip to the Brooklyn Botanical Garden will enhance students' understanding of the benefits of composting in their environment. To learn about energy-efficient living, students will visit passive houses throughout New York City, including large apartment buildings on Roosevelt Island. Passive houses are ultra-low energy buildings that require little energy for heating and cooling, which reduces their ecological footprint. As part of this activity, students will research building materials and designs to understand the efficiency of the homes, calculate the energy costs of a passive house versus a traditional residential building, and build a model of a passive house

using a laser cutter that the school will purchase using magnet funds. The environmental focus of the program will also be supported by **Solar One** and **City Kids for Farming**, among others.

To ensure that IS 240 students are proficient in STEM-related content and are prepared to continue their study of these topics when they enter high school, all incoming sixth graders in September 2016 will be expected to take the Integrated Algebra and Living Environment Regents before they graduate. As these classes are typically taken by students in high school, IS 240's phasing in of this requirement for all graduates will be a unique offering, and one that is likely to be attractive to parents.

Students will participate in field trips throughout the school year to theme-related centers of learning, such as the New York Aquarium, the American Museum of Natural History, the Brooklyn Botanical Gardens, and Harlem DNA. A collaboration of the NYCDOE and the DNA Learning Center (DNALC) at Cold Spring Harbor Laboratory, Harlem DNA Lab draws on the DNALC's long experience in translating current biological research into hands-on learning activities and establishing teaching centers worldwide. Since its founding in 1988, the DNALC has provided experiments for over 325,000 students from the New York metropolitan area during field trips, in-school instruction, and DNA summer camps. In addition, the school will host assemblies for students featuring guest speakers who are STEM experts, including authors of scientific publications and prominent women and minorities in the STEM fields.

Students will also be provided with theme-based enrichment during out-of-school time. A magnet after-school program will provide enrichment activities such as an advanced Excel/Access course facilitated by a computer teacher, a video production club facilitated by a technology teacher, and a DNA or solar system model-building activity facilitated by a visual arts teacher. The school will partner with **Chess in Schools** to develop students' critical thinking

and problem-solving skills and help them to "think before they move." In addition, **Puppetry in Practice** will facilitate theme-based, multimedia learning activities (e.g., stop-motion animation and claymation).

In addition to recently updating its technology equipment and resources, the school has several existing spaces that will be used to support theme integration, including computer labs, a science lab, and a botany room in which students grow plants that are transferred to an on-site outdoor garden each spring. IS 240 has also designated a large classroom that will serve as a magnet resource room for all staff. This room, which is equipped with a Smart Board and laptop, will be used to store magnet books, equipment, and supplies and will serve as a site for theme-based PD.

Various opportunities for parent engagement in thematic activities will be provided by the school. Throughout the school year, parents will be invited to theme-based student presentations, parent workshops, magnet fairs, field trips, and assemblies featuring guest speakers. To ensure that all parents have a voice and are engaged in magnet decision making, the school will survey parents at least once each year and will facilitate discussions about the magnet program during school leadership team and parent association meetings. Parents are also invited to Tuesday afternoon workshops, during which teachers provide an overview of the curriculum, instruct parents on how they can assist their children, and inform parents of the latest trends in education. The school plans to enhance these workshops through the magnet program by inviting the parents to the lab and modeling instructional practices that their children are involved in during the day.

PS 245

Magnet School for Art and Science

Through the magnet program, PS 245 will be transformed into the Magnet School for Art and Science. PS 245 is located in the neighborhood of Flatbush, Brooklyn, and serves 312 students in grades pre-K–5. The school is located near several institutions of note, including Prospect Park and Brooklyn College. PS 245 will develop and implement a thematic curriculum in the arts, with an emphasis on science and visual and performing arts. Science will provide a lens through which students will observe and explore the living world and engage in inquiry, while the arts will serve as a conduit by which students will be able to express their understandings and communicate their feelings about that world.

The thematic curriculum will allow students to venture outside the confines of the school to explore and discover life science in their own backyard. Students will then return to the school to engage in art and design projects to demonstrate their knowledge. For example, students will visit nearby Prospect Park, where they will observe plants and animals in their natural habitats. They will also visit Prospect Park Zoo and the nearby Brooklyn Botanic Garden. These sites will serve as laboratories and centers of research for the PBL units of study. Table 10 presents some examples of the thematic units that will be developed for each grade, all of which are aligned to NYC Science Scope and Sequence.

Table 10. Thematic Units, by Grade

Grade	Unit	Examples of Thematic Activities
1	Animal habitats	Creating pet observation journals, designing habitats, creating interactive animal posters using Glogster or other online resources,

Grade	Unit	Examples of Thematic Activities
		creating stop-motion animation animal films
3	Energy	Viewing onion cells under a microscope, designing and constructing models of cells, creating movement pieces and skits that use drama and/or dance to demonstrate the process of converting food and light into energy for living things
5	Ecosystems	Conducting an in-depth study of an issue that affects ecosystems in the Western Hemisphere using art, media, and design projects that explore the causes of the issue, the environmental effects, the impact of humans, and possible solutions

To further support implementation of the theme, PS 245 will create an art and science lab where students will work individually and in groups to create hands-on projects that are tied to the thematic curriculum.

Marquis Studios and **the Brooklyn Botanic Garden** will support implementation of the thematic curriculum by providing instruction and enrichment to students and job-embedded professional development and curriculum development support to staff. Residency and training activities will focus on strategies for developing and implementing theme-based projects, such as creating different types of fossils, designing hand pollinators, building model cells, writing and performing plays, adapting a book to a play, and creating 3-D and multimedia projects. Additionally, students will take field trips to the New York Aquarium, the American Museum of Natural History, Prospect Park Zoo, local farmers' markets, and the Flatbush Food Co-op, located just a few blocks from the school. Teachers will also learn how to integrate existing

technology into new PBL units and into the daily lessons to enhance student learning.

The enrichment activities provided during out-of-school time will build on and extend the thematic curriculum. For example, after-school activities will include building a school greenhouse or garden and designing a model of a heart valve based on the students' study and dissection of a pig's heart. The school will also partner with the **Genovesi Environmental Center** for class trips and lessons conducted at the center. The Genovesi Environmental Center is a 7,000-square-foot learning center located in the Bergen Beach section of Brooklyn; it is home to over 200 living organisms, four learning labs (flora, fauna, STEM, and biotechnology labs), an outdoor learning space with a pond habitat, and a greenhouse laboratory. The center will provide PS 245 with experiential environmental science programs for students and teachers at all grade levels. Program titles include *Hydroponics*, *Aquaculture and Aquaponics*, *Wildlife Forensics*, *Our Five Senses*, and *Fantastic Frogs*.

PS 245 is well equipped with facilities and equipment that will support integration of the magnet theme, including a science lab, an art studio, and a small outdoor space behind the school, which will be used to provide students with outdoor learning. Magnet funding would allow the school to transform its science lab and art studio into a STEAM studio or makerspace studio where students can engage in pop-up makers projects, design challenges, and experiments.

PS 245 will provide various opportunities to engage parents in thematic learning and decision making about the program. The school will host several informational sessions for parents throughout the year to inform them of program activities, and parents will be given the opportunity to provide feedback during those sessions. The parent coordinator will also serve as a resource to families, and all informational sessions and written correspondence related to the program will be translated into Spanish, the native language of many PS 245 parents.

(2) The Secretary considers 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 (e.g., State educational agencies, teachers' unions) critical to the project's long-terms success; or more than one of these types of evidence.

Commitment to Magnet Project

As evidenced in the first section of this proposal, there is widespread support for the D21-22 magnet initiative, stemming from the highest level of the NYCDOE down to each of the proposed magnet schools. Table 11 shows the number of parents and staff in each school who expressed support for the magnet program (these support forms are provided in the Optional Narrative Attachments). Should D21-22 be awarded an MSAP grant, the momentum and excitement that was generated during the proposal development phase will be leveraged in support of program implementation.

Table 11. Number of Parents and Staff Who Signed Support Forms for the Magnet Programs

School	Parents (N)	Staff (N)
PS 90	201	77
PS 121	14	19
PS 245	149	3
PS 198	50	52
IS 240	108	61

Capacity-Building Strategies to Support the Sustainability of Magnet Programs

Built into the D21-22 magnet program design—and funded by the MSAP grant—are numerous activities that, starting from Day 1 of grant implementation, will help to establish a solid foundation for the sustainability of the five magnet programs. These activities include (1) developing and refining innovative, thematic curricula; (2) offering extensive PD and support to magnet teachers and school leaders; (3) building strong and lasting collaborations with outside partners; (4) working with parents to enhance their decision-making roles; (5) designing and implementing formative evaluation tools to measure the programs' progress as they mature; and (6) providing staff from the magnet schools to disseminate and share lessons learned from magnet implementation. These capacity-building activities, which are described throughout this application and are summarized in the following, will provide a fertile environment in which the successful project components will continue to flourish after federal magnet funds expire.

Curriculum Development. Over the three-year grant period, with the support of MSAP-funded partnerships, school-based Magnet Resource Specialists, and the district-based Curriculum Specialist and Outreach and Technology Specialist, the D21-22 magnet schools will develop and disseminate theme-based curricular materials and course sequences for use by classroom teachers, cluster and specialty teachers, and staff working in extended-day and extended-year programs, thereby increasing the schools' capacity to meet current and emerging student instructional needs. These curricular products, which will be developed by each school over the course of the project, will contain standards-based goals and objectives, activities, resources, and assessments that are tied to each school's magnet theme and will serve as an important vehicle for sustaining the magnet programs beyond the funding cycle.

Professional Development and Support for Teachers. The comprehensive PD initiatives

will enable staff at each of the magnet schools to develop and implement evidence-based instructional strategies that will transform their classrooms into innovative and effective learning environments. The MSAP Project Director and Site Coordinators will arrange opportunities for teachers to share the skills and knowledge learned through PD with their colleagues in workshops, intervisitations, cross-school conferences and meetings, and study groups, as well as through digital media. Additionally, the Magnet Site Coordinators and Resource Specialists at each school will use established structures for planning and collaboration with key staff within the school—such as inquiry teams, professional learning communities (PLCs), and grade-level teams—to support effective implementation of the magnet program.

Enhanced Decision-Making Roles for Parents. D21-22 is strongly committed to developing collaborative and supportive relationships with parents, and that commitment extends to the magnet program. As part of the planning phase for this proposal, each of the D21-22 magnet schools conducted outreach to its parent communities to disseminate information and mobilize support for the program (evidence of parental support for the magnet programs is documented in the parent sign-off sheets that each school has collected and is summarized in Table 11).

The schools will provide opportunities for parents to expand their role through participation in a wide variety of magnet-related parent involvement events. As discussed in the individual magnet program descriptions, each magnet school has already begun developing such activities. The schools also plan to establish school-based magnet parent advisory committees to ensure that parents have an opportunity to play a meaningful role in magnet planning. Additionally, each school's Site Coordinator will facilitate monthly meetings with the school-based Parent Coordinator in an effort to strengthen the school's capacity to support and empower parents.

Continuous Improvement Process. D21-22 will implement a process of continuous improvement that incorporates real-time data, feedback from various stakeholders, and rigorous research to test, refine, and scale the models and practices that define the magnet programs. Continuous improvement will be achieved through an iterative cycle that includes six steps: goal setting, testing models of innovation, timely and regular feedback, monitoring and measuring quality of inputs, information sharing, and opportunities for ongoing corrections. The cycle will be repeated continuously throughout and beyond the grant term to spur ongoing innovation.

The Project Director will work closely with the five Site Coordinators and other magnet staff and in conjunction with teachers and administrators to complete continuous improvement of activities. For example, the Magnet Resource Specialist will meet regularly with teachers to obtain formative feedback on their experiences with the magnet program. The school-based magnet team, in collaboration with school administrators, will use teacher feedback as well as feedback obtained from other key stakeholder groups (e.g., parents, students, and program partners) to identify ineffective practices and implementation challenges and inform midcourse corrections to program activities. Feedback on implementation best practices will be shared among and within the five schools through cross-school magnet meetings, school-based PLCs, and other collaborative forums.

A program evaluation is a key mechanism supporting the continuous improvement process. As discussed in the Evaluation Plan, the evaluation is to be carried out jointly by the project staff and the project evaluator and is designed to gather formative and summative findings on program implementation and outcomes in order to ensure that project activities are being carried out as planned and to address challenges or issues as they arise.

Business and Industry Partnerships. The D21-22 magnet program will also leverage a

strong network of local business and industry partners to support the implementation of the magnet programs, both in the initial period and on an ongoing basis. One example of such a partnership is Big Idea Week, an organization that will be providing the D21-22 schools with STEM enrichment to support their thematic programs. The mission of BIW is to "connect communities to light the imaginations of students and inspire them to be the next generation of makers and doers." To accomplish this goal, BIW pairs students with volunteer mentors—local professionals from companies such as Facebook, Etsy, MakerBot, and Tech Insider—to collaborate on weeklong, immersive, entrepreneurial projects. Big Idea Week started as a collaboration between the Dumbo Business Improvement District (BID) and Alex Rappaport, a co-founder of Brooklyn-based education company Flocabulary. With funding from a city initiative called the BID Challenge, they set out to develop a program that would build a bridge between Dumbo startups and PS 307, a local elementary school. With the help of the Dumbo BID and Flocabulary's curriculum team, the project brought together an all-star crew of STEM, media and design professionals and launched the inaugural Big Idea Week in May 2013. The program returned to PS 307 in 2014, and expanded to 19 schools in NYC by 2016, including all NYC funded magnet schools. In this most recent iteration, Big Idea Week engaged 80 mentors to reach approximately 1,000 NYC students. Big Idea Week gives the NYC tech and design industry an opportunity to take social responsibility more seriously, and give back to their local communities in a meaningful way.

Dissemination Strategies. D21-22 will use a wide variety of strategies to disseminate lessons learned and best practices in magnet implementation. These activities will use well-established networks at the district level as well as national and virtual venues to support institutionalization and contribute to the knowledge base of effective magnet practices.

The monthly meetings of school-based magnet staff convened by the Project Director will provide an invaluable opportunity for the magnet schools to discuss implementation experiences, challenges, and effective practices with their peers and to share the curricular products that have been developed. In addition, the Project Director and other district- and school-based magnet staff will actively participate in USDOE and MSA-sponsored conferences throughout the three-year project period to learn about the experiences of magnet districts and schools across the nation and to share best magnet practices from D21-22 in these venues.

Finally, the District will capitalize on its information technology structure to support the project's dissemination goals. The D21-22 magnet schools will use the various virtual collaboration vehicles that have been established or endorsed by the NYCDOE, including Ning and Moodle, to support and enhance schoolwide professional learning about theme integration. A magnet website will be developed as the overarching umbrella to unite the five schools in their endeavors and will facilitate communication and information sharing between the schools, parents, and the larger community. The website will include information about each school as well as student- and teacher-generated materials, such as a blogging site for sharing information and for teacher and student collaborations; lesson plans and student work products, including multimedia projects; PD opportunities and resources; links to specific subject-related resources; links to the websites of all partners involved in the grant; and student-created public service announcements, advertisements, and posters that show the types of activities and partnerships that each magnet school has cultivated.

Recognizing the potential for increasing the diversity of its public schools, NYCDOE has successfully pursued a number of magnet grants that provided seed funding for schools to convert into whole-school magnets. Some of the examples of schools that are sustaining their

magnet programs are:

- **PS 100—The Magnet School of Multimedia and Communication in CSD 21**—Funded in 2004, this school has a functioning broadcast studio where students produce shows and broadcasts. They continue to implement the thematic curriculum, which includes courses in journalism and video making.
- **PS 119—The Magnet School for Global and Ethical Studies in CSD 22** was funded in 2007 and has sustained their magnet program for almost 10 years. The program culminates each year in an annual schoolwide Magnet Expo showcasing students' theme-based project work. Over the years, the annual Expo has been attended by the Chancellor of NYCDOE, the CSD 22 Superintendent, District and field office support staff, parents, community members and other CSD 22 schools.
- **PS 257—The Magnet School for the Performing Arts in CSD 14** was funded in 2010. PS 257 continues to implement a schoolwide magnet program. The students at this school perform at various public venues and the school band has been featured in several publications.
- **MS 421—West Prep Academy in CSD 3** is a middle school with the theme Youth Voice, Youth Media. The school, which received MSAP funding in 2010, continues to implement its thematic curriculum. The school has received grants from iZone and the Center for Arts Education to support sustainability and, in 2016, they implemented a new PBL class titled Become a Recording Artist where students take on the role of music producer.
- **PS 185—The Early Childhood Discovery and Design Magnet School in CSD 3** has sustained its early childhood engineering and robotics theme since 2010. They continue to implement an Engineering Design-themed curriculum created in partnership with Marina

Bers of DevTech Research at Tufts University.

Multiyear Financial and Operating Models to Sustain Magnet Programs

In June 2015, the NYCDOE's Division of Finance issued the *Fair Student Funding & School Budget Resource Guide*, which is designed to enable principals and their SLTs to closely align their schools' fiscal initiatives to the principles set forth by the Schools Chancellor. The Guide presents the Fair Student Funding formula, which includes four categories: foundation (a fixed sum of $225,000 for all schools); grade weights (based on student grade levels); needs weights (based on student needs); and enhanced weights for students in "portfolio" high schools. These weights reflect objective criteria that can be applied evenly across all NYC schools, support schools with students with the greatest needs, and provide transparency in the levels of funding available to all schools.

Currently, every school creates its own educational strategies within a context of accountability for the performance of its students. The school's budget reflects decisions of the SLT (composed of administrators, teachers, and parents) within the context of state and federal mandates, collective bargaining agreements, and the Chancellor's initiatives. Performance-driven budgeting (PDB) decentralizes the fiscal decision-making process by enabling principals, teachers, other staff, parents, and community members to implement the goals outlined in their schools' Comprehensive Education Plans. Galaxy 2000, a software tool, was developed from the experiences and recommendations of school and district personnel to carry out the principles of PDB.

Once the MSAP grant has expired, schools have the flexibility under PDB to absorb positions and other expenditures that are critical to sustaining the magnet program, should this be the decision of the SLT. It is our goal that the MSAP grant will serve as a lever for the strategic

realignment of fiscal, technological, and human resources within each school community such that magnet programming can be easily sustained at the conclusion of the funding cycle.

As detailed in the Management Plan, each school is planning to commit significant in-kind personnel and other-than-personnel resources to promote the development of whole-school magnet programs. Funding for these come from federal, state, and local funding sources that typically have been awarded on an annual basis and may be expected to continue. However, it should be noted that in some cases, federal, state, and local funds for education programs are not guaranteed from year to year and are subject to discontinuation or reductions. Provided in Table 12 is an overview of the multiple funding streams coming from city, state, and federal sources into the five proposed magnet schools and how these resources are aligned to the MSAP objectives.

Table 12. Sources of Federal Funding for D21-22 Magnet Schools in 2015–16

Funding Source	Purpose	Alignment to MSAP Objectives
Attendance Improvement Drop-out Prevention (NYSED)	To improve school attendance rates and reduce dropout rates	Student Achievement
IDEA (USDOE)	To ensure that students with disabilities receive the early intervention, special education, and related services that they are entitled to	Equity of Access

Magnet Schools Assistance Program (2016-2019)

Community School Districts 21 and 22 — Brooklyn, New York

Funding Source	Purpose	Alignment to MSAP Objectives
Title I (USDOE)	To ensure that all children have a fair, equal, and significant opportunity to obtain a high-quality education and to reach, at a minimum, proficiency on state academic achievement standards and assessments	Equity of Access, Student Achievement, Building Capacity
Title IIA, B (USDOE, NYSED)	To improve teacher quality through PD	Building Capacity
Title III (USDOE)	To expand the capacity of schools to serve low-income students by providing funds to improve and strengthen their academic quality, institutional management, and fiscal stability	Equity of Access, Building Capacity
State Legislative Grants	To expand school and classroom libraries and provide instructional materials	Student Achievement
21st Century Community Learning Centers (NYSED)	To establish community learning centers that provide academic enrichment opportunities during nonschool hours for children, particularly students who attend high-poverty and low-performing schools	Equity of Access, Student Achievement

(3) The Secretary considers the extent to which the training and 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.

Research on effective teacher PD suggests that training should be intensive, supportive, engaging, content-specific, and aligned with school improvement goals. Intensive PD is often defined as ongoing and for duration of at least 14 hours (Yoon, Garet, Birman, & Jacobson, 2007). A meta-analysis of nine experimental studies of teacher PD found that the duration of a program was positively associated with changes in teacher practice and student learning (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009). In fact, one study found that mastery of new teaching skills requires, on average, a minimum of 20 instances of practice (Joyce & Showers, 2002).

PD strategies that provide job-embedded support through coaching are highly effective in providing opportunities for teachers to implement and master new skills (Knight & Cornet, 2007; Truesdale, 2003). Furthermore, expert demonstration of a new skill through modeling has proven to be an effective technique for teacher learning (Desimone, Porter, Garet, & Yoon, 2002; Snow-Renner & Lauer, 2005). It is equally important that teacher PD be highly engaging and applicable to instruction—for example, by employing varied approaches such as reading, role playing, classroom observations, and discussions—to help teachers see and make direct connections to their own teaching practices (Garet, Porter, Desimone, Birman, & Yoon, 2001; Yoon, Garet, Birman, & Jacobson, 2007).

Research also suggests that teachers benefit more from PD that is directly tied to discipline-specific concepts that they can easily apply in their own classrooms (Darling-Hammond, Wei, Andree, Richardson, & Orphanos, 2009), and that discipline-specific PD has been shown to have

strong positive impacts on student learning (Blank, de las Alas, & Smith, 2007). Lastly, PD has been shown to be more effective in improving teachers' knowledge and skills when it is integrated into a wider set of opportunities for teacher learning and development (Garet, Porter, Desimone, Birman, & Yoon, 2001).

NYC Commitment to Talent Development

As part of NYC's strong commitment to developing teacher talent, the City is implementing *Advance*, a system of teacher evaluation and development. The system was designed to provide teachers with both accurate feedback on their performance and the support necessary to improve their practice, with the goal of improving student outcomes to ensure all students graduate college- and career-ready. Though *Advance* was formally established on June 1, 2013, in alignment with the NYS Education Department's education law 3012-c on teacher and school leader performance reviews, its design was informed by three years of pilot work in NYC's schools. *Advance* uses multiple measures to provide teachers, school leaders, and families with a more accurate understanding of teacher effectiveness than ever before. Through *Advance*, all teachers receive an assessment of their practice using Charlotte Danielson's 2013 Framework for Teaching; multiple classroom observations by their principal or other administrator; review of up to eight artifacts or documents demonstrating their efforts to plan and prepare instruction and participate in their professional community; feedback on all observations and artifacts of teacher practice; and, for teachers in grades 3–12, student feedback via the Advance Student Survey.

School support systems in place throughout the NYCDOE will be used for PD to increase student achievement. Schools will receive PD and transactional supports from their Borough Field Support Centers (BFSCs) across a number of areas, including the following:

- teaching and learning—instructional practices, academic policy

- business services—budget, human resources procurement, payroll
- operations—school foods, transportation, facilities
- student services—guidance, school climate, crisis/safety, health and wellness
- special education—instructional practices, implementation of Shared Path to Success
- ELLs—instructional practices, compliance, program development

Comprehensive Approach to Magnet School Professional Development

The proposed D21-22 magnet schools will need to provide a concentrated program of PD for teachers and school leaders to prepare them for effectively meeting the student achievement needs of their magnet students. Research studies have underscored the fact that, due to the array of educational, social, and cultural challenges confronting magnet schools, PD is of paramount importance (Ben-Ari & Strier, 2010). In fact, studies have found that student diversity often comes as a challenge for the teaching workforce, which is largely women and White. Many teachers do not have experience working or living in diverse environments, which makes it difficult for them to help prepare students for working with diverse groups (Robinson & Clardy, 2011).

NYCDOE and D21-22 are committed to identifying effective and innovative methods of delivering customized PD and support services to staff in order to better enable them to develop and implement high-quality instructional programs. As outlined in the performance measures in the Quality of Project Evaluation, each school will provide 50 hours or more of magnet-related PD to at least 25% of instructional staff and school leaders in Year 1 of the grant, 50% in Year 2, and 100% by the end of the grant period.

D21-22 will provide ample means for the staff of the magnet schools to acquire the knowledge and skills needed to design, implement, and sustain innovative educational methods

and practices. These include on-site support from the MSAP-funded Project Director, Curriculum Specialist, Outreach and Technology Coordinator, and the school-based Resource Specialists. In addition, the District will collaborate with colleges and universities and community-based organizations and will offer district-wide institutes for principals, staff developers, teachers, and other members of the school community.

District-Level Professional Development Initiatives

The PD plan for the D21-22 magnet initiative will provide experiences that are of sufficient quality, intensity, and duration to lead to improvements in teacher practice. In order to support the transformation of teaching and learning across the five magnet schools, D21-22 will provide intensive PD to school leaders, MSAP-funded staff, classroom teachers, and other support staff in each school. The training will focus on evidence-based instructional strategies that will equip teachers with knowledge and skills to conduct inquiry-based instruction, develop and implement interdisciplinary units, and integrate problem-based learning into learner-centered environments. D21-22 will develop strong and ongoing partnerships with well-respected and qualified organizations, including Education Closet, Buck Institute, and OMNiLEARN, whose staff development programs have proven effective based on practice and research (**see narrative response to Competitive Preference Priority 5 for a description of how the proposed PD model meets the Evidence of Promise standard).**

For the five magnet schools, **Education Closet** will provide a three-tiered training model over the course of the grant using STEAM as a core strategy for student success in academic achievement. This three-tiered model includes staff development, implementation, and fostering community connections to create a self-sustaining STEAM model. In the first year of the grant, Education Closet will provide intensive, hands-on teacher PD in what STEAM is, a

workshop/studio with hands-on strategies, study of weaving together STEAM and Common Core, curriculum and assessment mapping, and lesson writing. It will also cover how to assess STEAM lessons, when it is appropriate to use STEAM, and how to effectively work with teaching artists and community members to support STEAM learning. Second, it will provide coaching and supplemental support for teaching teams through a virtual training platform, The Learning Studios, which all teachers will have access to for all three years of the grant. This platform includes online classes, weekly live online question-and-answer sessions, two online conferences per year, and access to a comprehensive library of templates and resources. Third, Education Closet will collaborate with school and district leaders and magnet specialists on how to support the needs of their staff and on developing schema maps with teachers. Finally, it will offer basic co-development of a beginning group of partners and artists-in-residence to cultivate community support.

In the second year of the program, **Education Closet** will provide training and supports that build upon the first tier and move into implementation with students. Services will include in-person training, co-teaching, and job-embedded coaching for teachers; continued, ongoing collaboration with leadership on targeted PD needs; resources for supporting students through problem-based learning; and continuing support for strengthening parent and community involvement in STEAM integration. In Year 3, staff development supports will focus on sustainability and include assistance in shifting the capacity for extension over to teachers and leaders in the school.

The **Buck Institute for Education** (BIE) will support the D21-22 schools in implementing PBL through staff development on designing, assessing, and managing projects that engage and motivate students. BIE will provide teachers at the five schools with training workshops and job-

embedded coaching and modeling to support the schoolwide implementation of PBL. In addition, BIE will provide resources and protocols for student and teacher reflection and assess teacher instruction and materials.

OMNiLEARN will provide hands-on, project-based science learning to students at the five D21-22 schools and will also be supporting the program through on-site PD. At the outset of the program, OMNiLEARN will meet with district and school leaders and magnet-funded staff to customize content based on curricula and performance levels. It will then provide teachers with hands-on science workshops to boost teacher literacy, proficiency, and confidence in using science as a hook to teach math and ELA skills. During these workshops, teachers will work with new equipment and experience the labs from a student's perspective, and be trained on OMNiLEARN's Math and Reading Investigations (MRIs) and assessment tools. MRIs are teacher resources designed to integrate state math and ELA performance indicators into the lab. The assessment tools give teachers a concrete means with which to evaluate their students. By the end of the day-long workshops, teachers will be comfortable with the content, vocabulary, and equipment and will begin to visualize conducting the labs in their classrooms.

Staff development will also be provided through the in-class labs, which were described earlier. According to OMNiLEARN, one of the primary goals of the in-class lab services is to give teachers a powerful, experiential PD opportunity. Having teachers learn the labs alongside their students benefits teachers in three critical areas: (1) continuously updated content literacy and equipment proficiency, (2) classroom modeling, and (3) small-group experience.

School-Level Professional Development

Each magnet school will implement a coordinated staff development effort for all instructional staff and school leaders to directly support the implementation of the magnet

program. The Magnet Resource Specialists will participate in all PD activities so they can then provide in-classroom support to the classroom teachers and other instructional staff in their buildings. School administrators will monitor the impact of training activities on staff knowledge and skills in order to evaluate their effectiveness. Furthermore, teachers will be encouraged to transmit their knowledge to their peers through turnkey training, co-teaching, and modeling activities in order to build staff capacity in these areas in subsequent years. PD activities will help schools develop systems, protocols, resources, and self-evaluation tools that will be implemented regularly during common planning time, inquiry meetings, and during PDs. The school-based PD plans were presented in the magnet school descriptions that preceded this section.

Continuous support structures for PD will provide opportunities for our teachers to gain exposure to new concepts from educational experts; however, we also understand that to truly have an impact on teaching and learning, PD needs to be an ongoing, job-embedded process. As such, the magnet initiative includes structures to foster continuous learning through support provided by the MSAP-funded Project Curriculum Specialist and magnet Resource Specialists (whose roles are described in the Management Plan and Quality of Personnel) and through effective use of school-based PLCs. The Project Curriculum Specialist will provide ongoing assistance to the magnet staff across each school to implement PD plans that provide support for classroom teachers. The Magnet Resource Specialists will be responsible for providing the support through coaching, co-teaching, and lesson modeling, as well as identifying instructional resources and assisting with curriculum development. The Magnet Resource Specialists will also help facilitate conversations in grade-level and subject-level PLCs about implementation of magnet curricula and instructional practices highlighted through magnet staff development.

During the PLCs, teachers will share best practices, lessons, and curriculum connections that are inquiry- and problem-based in order to create a collection of resources for teachers. The embedded PD will expand teachers' exposure to concepts provided during training and create a culture that fully supports the transformation of teaching and learning.

With the comprehensive plan for PD, we will expose *all* MSAP-funded staff, school leaders, and instructional staff in each of five magnet schools to a minimum of 50 hours of PD in inquiry-based instruction, problem-based learning, and interdisciplinary approaches. As a result, we are confident that teachers and staff will demonstrate increased collaboration in developing and implementing interdisciplinary instructional units of study and improved knowledge, skills, and use of inquiry and problem-based instruction (as outlined in Quality of Project Evaluation).

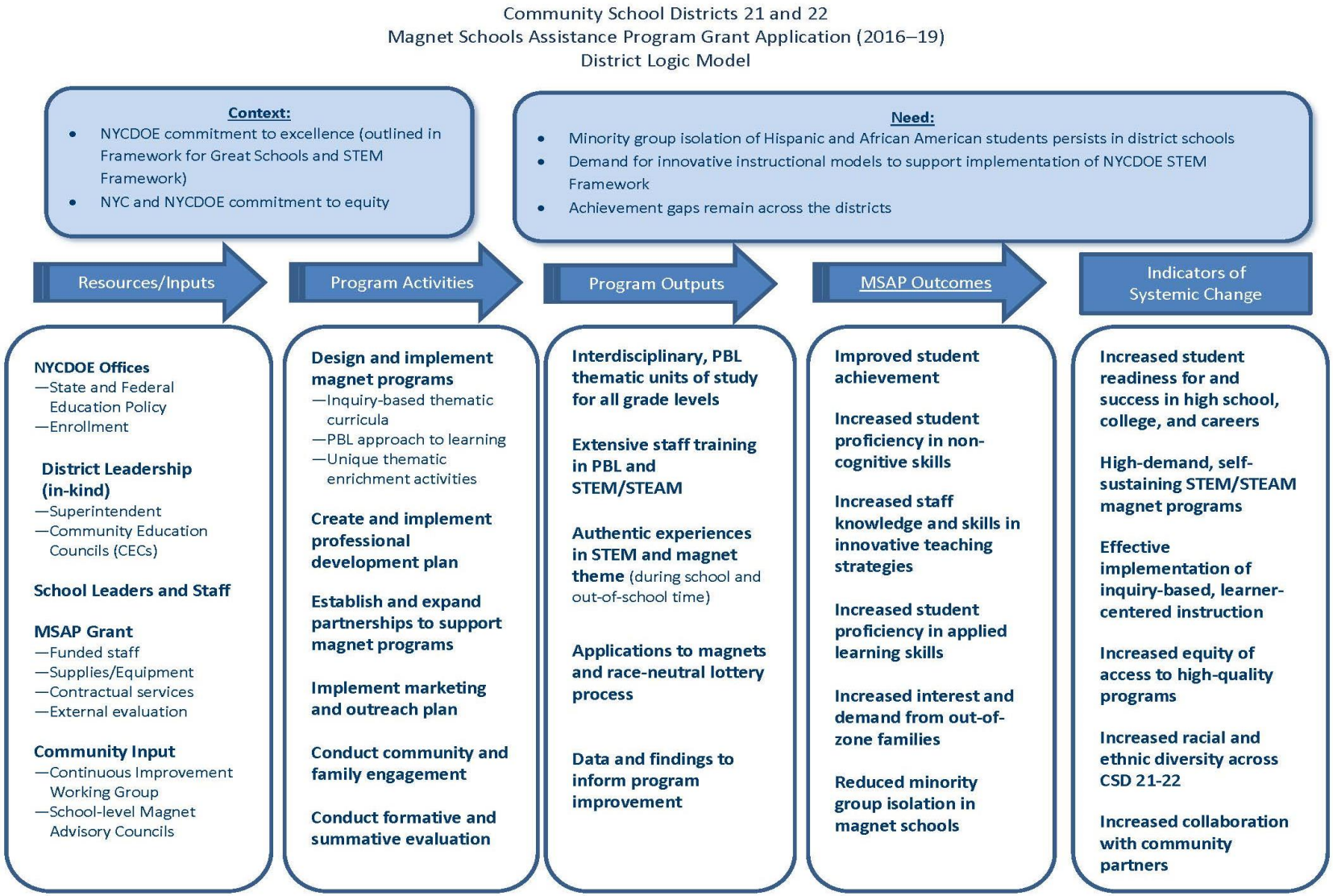
(4) The Secretary considers the extent to which the proposed project is supported by strong theory.

The D21-22 magnet initiative is designed with a strong theory of change that is fully aligned with the NYCDOE's instructional goals and frameworks and will serve to advance the schools' missions to increase equity by raising the academic bar for all students and decreasing achievement gaps. **The theory of change states that by transforming teaching and learning in five new whole-school magnet programs through innovative, inquiry-based programs of instruction with a thematic focus, D21-22 will increase equity of access to programs of choice, help improve academic achievement and other outcomes for all students and staff, and reduce minority group isolation in the magnet schools.**

To support the theory of change, D21-22 developed logic models for the initiative (district level) and each of the magnet schools. This section presents the district logic model and one school-level logic model. The other school-level logic models are included in the attachments.

Magnet Schools Assistance Program (2016-2019)

Community School Districts 21 and 22 — Brooklyn, New York



Magnet Schools Assistance Program (2016-2019)

Community School Districts 21 and 22 — Brooklyn, New York

Community School Districts 21 and 22
Magnet Schools Assistance Program Grant Application (2016–19)
School Logic Model: PS 90—Magnet School for Environmental Studies and Community Wellness

Context:

- NYCDOE commitment to excellence (outlined in Framework for Great Schools and STEM Framework)
- NYC and NYCDOE commitment to equity

Need:

- Proportion of Hispanic students at PS 90 exceeds district average by 33.3 percentage points
- Achievement levels in reading and math at PS 90 lag district averages by 20 and 17 percentage points.

Resources/Inputs

NYCDOE Offices
—State and Federal Education Policy
—Enrollment

District Leadership (in-kind)
—Superintendent
—Community Education Councils (CECs)

School Leaders and Staff

MSAP Grant
—Funded staff
—Supplies/Equipment
—Contractual services
—External evaluation

Community Input
—PA/PTA and SLT
—Magnet Advisory Council

Program Activities

Develop and implement environmental studies and community wellness magnet theme
—Thematic curriculum will be fused with an appreciation for the arts that are unique to Coney Island.

Provide PD on STEAM, project-based learning, and cultural competency

Establish and expand partnerships with local arts and science agencies

Implement marketing and outreach plan

Conduct community and family engagement

Program Outputs

Interdisciplinary, PBL thematic units of study for all grade levels

Authentic experiences in environmental studies and community wellness (during school and out-of-school time)

Extensive staff training
—Workshops/PD
—Coaching and mentoring
—Curriculum development support

Applications from out-of-zone students

Family and community participation in magnet events and Family Fridays

MSAP Outcomes

Improved student achievement

Increased student proficiency in non-cognitive skills

Increased student proficiency in applied learning skills

Increased staff knowledge and skills in innovative and research-based teaching strategies

Increased interest and demand from out-of-zone families

Reduced minority group isolation among Hispanic students

Indicators of Systemic Change

Increased student readiness for and success in high school, college, and careers

High-demand, self-sustaining STEM/STEAM magnet programs

Effective implementation of inquiry-based, learner-centered instruction

Increased equity of access to high-quality programs

Increased racial and ethnic diversity across CSD 21-22

Increased collaboration with community partners

(C) Quality of the Management Plan (15 points)

The Secretary considers the quality of the management plan for the proposed project.

(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

MSAP Project Management Framework

The management plan for the D21-22 Magnet Schools Assistance Program initiative has several core elements that in combination will ensure the success of the project and the attainment of all of the project's objectives and performance measures:

- a leadership and accountability structure in place within the NYCDOE that fosters innovation but holds all instructional leaders in the school system to rigorous performance standards;
- an efficient staffing and management structure for the MSAP initiative within and across D21-22 magnet schools, including reporting and accountability mechanisms to ensure the timely, effective, and efficient implementation of all key MSAP activities;
- a detailed project implementation plan to achieve the project's objectives and performance measures, supported by a reasonable and cost-effective budget and leveraged in-kind resources designed to promote capacity building and sustainability of the project beyond the federal funding period; and
- a continuous improvement process that engages MSAP stakeholders in ongoing feedback, assessment, and refinement of project activities.

A detailed discussion of the four pillars of the project management framework is provided in the following.

Leadership and Accountability Structure

D21-22 are two of the 32 community school districts under the aegis of the NYCDOE. Each is headed by a Community Superintendent who performs the statutory duties for the schools within the District's geographic jurisdiction, including appointing, supervising, and rating principals and approving school budgets. The Superintendent also serves as the liaison to the Community Education Councils (CECs), which replaced the Community School Boards in July 2003. The function of the CEC is primarily advisory in nature, providing critical input on what the community views as priorities and ensuring that parents have a voice in how the NYC public schools are run.

In their leadership and supervisory roles for the two districts that are partnering on this application, the Superintendents will provide guidance and support to the MSAP initiative and will make available to the Magnet Project Director and the magnet schools under their jurisdiction the support of their teams. These include the following constellation of personnel:

- The Principal Leadership Facilitator serves as the Superintendent's primary designee.
- The Field Support Liaison acts as an intermediary between the Superintendent's office and the BFSC. The Field Support Liaison supports schools with any concerns regarding BFSC services and provides guidance on streamlining supports.
- The Family Support Coordinator serves as the point of contact for family concerns.
- The Borough and District Family Advocate works closely with the school community, including families, SLTs, and PAs.

- The Teacher Development and Evaluation Coach ensures that school leaders have the information and support they need to meet the expectations of the Framework for Great Schools through effective implementation of *Advance* and CCLS.
- The Director of School Renewal supervises the implementation of the School Renewal Plan and coordination of supports in districts with Renewal Schools.
- The District Director of Early Childhood Education supports and manages the district-wide implementation of Pre-K programs in district schools. Early Childhood Directors report directly to District Superintendents, and provide direct oversight of district Pre-K centers, where applicable.

The MSAP Project Director will work under the direct supervision of the Senior Advisor to the Chancellor within the NYCDOE Office of State and Federal Education Policy to oversee the programmatic and administrative management of the magnet initiative. The Office of State and Federal Education Policy is housed within the Office of the Senior Deputy Chancellor Dorita Gibson, who oversees the Superintendents and the implementation of various citywide initiatives, including the Equity and Access Initiatives and Policy. The NYCDOE Office of Enrollment, under the Deputy Chancellor for Strategy and Policy, will interface with the MSAP Project Director in matters of student selection and placement.

Project Staffing and Management Structure

Summarized in Table 13 is the proposed staffing structure for the D21-22 MSAP initiative, followed by a detailed description of the roles and responsibilities of these key staff. We believe that this staffing plan provides the optimal infrastructure at both the district and school levels to support the attainment of the MSAP initiative's ambitious objectives and outcomes.

Table 13. MSAP-Funded Staff

Magnet Schools Assistance Program (2016-2019)

Community School Districts 21 and 22 — Brooklyn, New York

Personnel	Number	Level of Effort
District-Level Staffing		
Project Director	1	1.0 FTE
Project Curriculum Specialist	1	1.0 FTE
Project Outreach and Technology Coordinator	1	1.0 FTE
Project Secretary	1	0.5 FTE
School-Based Staffing		
Magnet Site Coordinators	5	1.0 FTE
Resource Specialists	5 2	1.0 FTE .5 FTE

District-Level Staffing. The MSAP Project Director will work directly with the magnet staff and planning teams at each school to ensure that the magnet programs are developed and implemented in alignment with the purposes of the MSAP statute and the approved grant application and that they are using best practices that will ensure that the goals and performance measures of the MSAP initiative are met. In this role, the duties of the MSAP Project Director will include the following:

- recruiting, hiring, and supervising the district magnet staff;
- coordinating regular meetings with magnet school staff and collaborating partners to disseminate pertinent information regarding MSAP guidelines and build a professional support network among school-based staff with similar responsibilities and interests;

- providing workshops and organizing conferences for school and district leaders, BFSC representatives, and teachers on the latest evidence-based practices related to NYS P-12 CCLS, curriculum mapping, technology and arts integration, PBL, cultural competence, and other strategies being piloted by the magnet school programs;
- developing cohorts of teacher leaders, including recruitment teams and curriculum design teams, to ensure the sustainability of the magnet programs well beyond the funding period;
- coordinating district-wide and school-based staff training activities, including those facilitated by outside agencies;
- providing technical assistance to magnet school leadership on all outreach and recruitment efforts, including organizing multimedia advertising campaigns, developing promotional materials (e.g., brochures, press releases), and planning events (e.g., open houses, school tours);
- monitoring the applicant pool and enrollment data for the magnet and feeder schools;
- editing district-wide magnet publications, collaborating on the magnet website, and using social media outlets to support the Districts' marketing efforts;
- developing positive community support for the Districts' magnet programs through public presentations at widely advertised parent workshops, CEC meetings, and other community forums, and supporting the school-based Parent Coordinators in their efforts to increase parent involvement;
- serving as the primary liaison to the USDOE MSAP Program Officer and ensuring compliance with all requirements laid out by the USDOE and the Office for Civil Rights;
- monitoring all project expenditures and providing school staff with technical assistance in

meeting fiscal and budgetary guidelines;

- providing guidance and support to the school-level Magnet Advisory Councils (MACs; described in Section 2);
- overseeing a rigorous and ongoing process of continuous improvement, which will entail convening regular meetings with magnet principals, parents, teachers, students, and project partners to solicit and share feedback on program activities; and
- serving as a liaison to the project evaluator, assisting schools in the collection of required program data and documentation; providing feedback to the evaluator on the evaluation design, instrument development activities, and data collection procedures; preparing required reports; and disseminating results to key stakeholders.

The MSAP grant will be used to support a full-time **MSAP Curriculum Specialist** who will work under the direction of the Project Director. The Curriculum Specialist will be responsible for working with school teams to facilitate theme and systemic reform implementation in each magnet program and ensure that all magnet curricula are fully aligned with NYS P-12 CCLS. In this role, the Curriculum Specialist will perform the following responsibilities:

- collaborate with the schools' curriculum and PD teams on the development and alignment of new magnet theme curricula and train staff in their use;
- serve as a liaison with outside consultants providing on-site training for school staff;
- create and maintain partnerships with community-based organizations and other agencies participating in the project and offering services to families;
- schedule, develop, and participate in PD activities in collaboration with the Magnet Resource Specialists;

- facilitate program development activities related to the magnet themes, reform models, innovative instructional strategies, standards alignment, and program implementation and adjustment; and
- facilitate the Curriculum Mapping Institute and provide support on the Atlas mapping system.

The MSAP **Outreach and Technology Coordinator** will be responsible for planning, coordinating, and implementing a comprehensive magnet outreach program using technology and multimedia resources. This staff member will also support technology integration at the magnet schools, engaging in PD and training activities that incorporate research-based instructional practices and new technology tools into the magnet program. Additionally, the Outreach and Technology Coordinator will work with the Project Director, Curriculum Specialist, school teams, MACs, and others to enhance the effectiveness and impact of the school-based magnet programs as well as the interdistrict initiative as a whole. The specific roles and responsibilities of the Outreach and Technology Coordinator are these:

- developing magnet materials, products, and technology tools such as websites, flyers, brochures, banners, advertisements, and social media items for outreach and recruitment;
- collaborating with the Project Director to develop, implement, and monitor an interdistrict plan for program promotion and outreach and with the Site Coordinators on school-specific plans;
- participating in local, regional, and national conferences to identify best practices in magnet school promotion and the use of instructional technology to support magnet program implementation;

- providing PD and coaching to magnet school staff that results in increased capacity to infuse technology tools, applications, and resources into the thematic curricula and to foster communication and collaboration among schools, parents, and community partners; and
- assisting the Project Director, Curriculum Specialist, and other district- and school-based staff with other aspects of the magnet program, including documentation, evaluation, and compliance monitoring.

Finally, the **MSAP Project Secretary** will support the Project Director on projects related to recruitment, student selection, and preparation of MSAP budgets. The Secretary will maintain all administrative and data files to support program implementation, fiscal monitoring, and the program evaluation. The Secretary will be responsible for communicating with program stakeholders, including families, external partners, and the USDOE, and for assisting the Project Director in scheduling and convening project staff meetings, staff development sessions, and marketing events.

School-Level Staffing. The **magnet school Principals** will be responsible for overseeing the implementation of the magnet programs in their buildings and ensuring that the magnet school planning teams, the SLTs, and the MACs communicate regularly. They will also supervise all teaching staff working either directly or indirectly on magnet-related programs and activities, including the Site Coordinators and Resource Specialists, whose responsibilities are described later in this section, during and beyond the regular school day and year.

At each school, the magnet grant will pay for the salary of a **full-time Magnet Site Coordinator**, who will have major responsibility for all administrative aspects of the magnet program, including budget management, data collection activities, outreach and recruitment, and

family and community engagement. The Site Coordinator will be responsible for sharing information about the magnet program with members of the school community through the development and distribution of magnet program brochures and other outreach materials, speaking with parents and community members, and fostering partnerships to support the program.

In addition, the magnet grant will pay for the salary of at least one **full-time Resource Specialist** at each school, who will have major responsibility for planning, implementing, and refining the magnet instructional program and coordinating all school-based, magnet-related PD initiatives. Although their roles will be customized to the curriculum and instructional needs at each magnet school, in general, the Resource Specialists will be responsible for the following activities:

- working with regular classroom teachers to develop or modify magnet theme-related enrichment materials;
- working with the MSAP Curriculum Specialist to coordinate development of magnet program curricular units and materials;
- assisting the Project Director in providing the teacher training necessary to implement the newly created curricular materials,
- designing and providing theme-based instruction;
- participating in the school's magnet planning committee and MAC;
- meeting regularly with the Project Director to coordinate curriculum development efforts; and
- participating in staff development workshops specific to their core subject area and in magnet-related parent involvement activities.

Throughout the three-year grant, the Project Director will convene group meetings with the Site Coordinators and Teacher Specialists from the five schools on a bimonthly basis. These meetings will be held on a rotating basis at the various magnet schools, which will give staff from across the magnet schools an opportunity to experience their colleagues' programs firsthand. Meeting topics will include, for example, effective strategies for outreach and recruitment, theme-based curriculum development and implementation, resources for PD, successes and challenges of working with outside partners, strategies for engaging hard-to-reach and non-English-speaking parents, and evaluation activities and findings. At each meeting, the Site Coordinators will provide an update of their schools' progress in implementing the various components of the program, share effective strategies, and brainstorm solutions to implementation challenges encountered. Other meeting participants will include the local evaluators, magnet school Principals, and staff members from the BFSCs as needed.

At the school level, in addition to the principals, D21-22 will provide the services of classroom teachers, professional support staff, parent coordinators, and paraprofessionals **at no cost to the grant** to support implementation.

- Classroom teachers will be responsible for providing magnet school students with theme-based instruction, and the out-of-classroom teachers, such as cluster teachers and school library media specialists, will provide direct instruction to students in the areas of the magnet themes at their schools.
- To ensure that students and their families are able to fully participate in and benefit from the magnet school programs, school-based support staff (e.g., guidance counselors, social workers) will offer access to a wide range of social services designed to meet students' health, social, and emotional needs.

- Parent coordinators will play a key role in implementing parent outreach activities and representing the needs and interests of parents on the schools' magnet planning teams and MACs.
- Paraprofessionals will be responsible for assisting the classroom teachers in providing magnet school students with theme-based instruction.

In addition to these personnel resources, each school has existing equipment, supplies, and facilities that will be leveraged to support the implementation of the magnet programs in their buildings. Information about these resources was provided in the individual school descriptions in the Quality of Project Design section.

Project Implementation Plan

D21-22 seeks to achieve four overarching project-level objectives with the MSAP initiative. These objectives are directly aligned with the purposes of the MSAP and the Government Performance and Results Act (GPRA) measures that have been established by the USDOE for the program. This section lists the four grant objectives (and how each is aligned with the program purposes) along with a summary of the magnet program activities that will be carried out (a detailed description of the activities was provided in the Desegregation and Quality of Project Design sections). Following this discussion is a detailed project implementation timeline that includes key activities, responsible parties, and target dates by project objective.

Project Objective 1: Reduce minority group isolation among Hispanic and African American students in proposed magnet schools. This objective is aligned with the purpose of the MSAP to support the *elimination, reduction, or prevention of minority group isolation (MGI) in elementary and secondary schools with substantial proportions of minority students*.

All five proposed magnet schools meet the NYCDOE's definition of MGI. **Two of the D21-**

22 schools have MGI that will be reduced among Hispanic students, and in three MGI will be reduced among African American students. The MSAP grant will help reduce the isolation of these racial groups by attracting a new and more racially diverse population of students to the schools through the implementation of a multifaceted approach:

- creation of unique magnet themes that will be attractive to students of diverse racial, ethnic, and socioeconomic backgrounds and academic needs and interests *and* that are not available to other public schools in the Districts;
- a strategic, targeted, and aggressive outreach and recruitment plan to be carried out by magnet program staff and by each magnet school in its local and surrounding neighborhoods; and
- a race-neutral student selection process that will ensure equitable access for all students to the magnet programs.

Project Objective 2: Ensure that all students attending the magnet schools meet challenging academic standards and are on track to be college- and career-ready. Objective 2 supports the MSAP purpose for the *development and implementation of magnet school programs that will assist local educational agencies (LEAs) in achieving systemic reforms and providing all students the opportunity to meet challenging state academic content and achievement standards.*

The five proposed magnet schools have not yet been successful in helping all students meet state learning standards. As of spring 2015, in each of the five proposed magnet schools, less than 40% of students met or exceeded the state learning standards in ELA, and fewer than half met or exceeded the standards in math. Additionally, four of the five schools had ELA and/or math proficiency rates lower than the district averages.

The magnet programs will provide new opportunities for all students to meet and exceed the

learning standards by providing a rigorous and enriched theme-based magnet curriculum that will be integrated across core subject areas. The magnet curricula are designed to support, deepen, and expand the curricular frameworks that have been put into place citywide (described in the Quality of Project Design section) and will be fully aligned with NYS P-12 CCLS. In addition, plans for the D21-22 magnet programs will supplement the instructional programs at the schools by incorporating innovative, research-based, and evidence-based instructional approaches to help teachers better address the learning needs of *all* students, including students with special needs, such as ELLs and students with disabilities.

Project Objective 3: Ensure that all students attending the magnet schools benefit from the magnet's educational offerings and have equal opportunities to gain magnet theme-specific value-added skills and knowledge. This objective aligns with two purposes of the MSAP: to *ensure that all students enrolled in magnet school programs have equitable access to high-quality education that will enable them to succeed academically and continue with postsecondary education or productive employment* and to *provide courses of instruction that will substantially strengthen the knowledge of academic subjects and the attainment of tangible and marketable vocational, technological, and professional skills.*

The magnet schools will provide whole-school programs that will expose *all* students to theme-based curriculum and enrichment opportunities. The magnet planning teams understand that the needs and interests of students can vary drastically depending upon the opportunities and experiences they have been awarded prior to enrolling in the magnet schools. Therefore, the programs will align with other services in the schools and across the two Districts to address the needs of students, including learning, language, economic, behavioral, and other needs (see Section A3 for a discussion of programs and services to ensure equal access and treatment). The

instructional staff who provide services to students with disabilities and ELLs at the proposed magnets will participate in magnet curriculum development to ensure that instructional units and materials are designed to meet the learning needs of all students.

Furthermore, through a wide array of district- and school-based partnerships, the magnet program designs incorporate opportunities for students to go beyond the walls of their schools and boundaries of their communities to experience the real-world applications of what they are exploring in school (see the Quality of Project Design section and Competitive Preference Priority—STEM narrative). These enrichment activities, which will be scheduled as part of the regular school day as well as in out-of-school-time programs (including after school and during weekends and summers), will help enhance students' content knowledge, build their repertoire of 21st-century skills (e.g., communication, collaboration, persistence, digital literacy), and serve to close the pernicious opportunity gap that exists between high-poverty, minority group–isolated schools and those serving more advantaged peers.

Project Objective 4: Build the capacity within the magnet schools to provide rigorous, theme-based instructional programs that will help promote choice and diversity in the D21-22 schools. Objective 4 supports two purposes of the MSAP: *improving the capacity of LEAs, including through PD, to continue operating magnet schools at high performance after federal funding for the magnet schools is terminated* and *encouraging the development and design of innovative educational methods and practices that promote diversity and increase choices in public schools.*

D21-22 has incorporated several mechanisms into the design of each magnet school program to increase the capacity of the school leaders, staff, and community to implement high-quality magnet programs and to sustain them after the federal funding terminates. D21-22 realizes that

the MSAP grant provides seed money to develop magnet programs and that these mechanisms must be developed and implemented from Day 1 of the grant in order to prepare the schools with the resources and knowledge to implement and expand the programs after the federal funding period. By creating sustainable magnet programs, D21-22 will increase choice and promote diversity for all students.

The NYCDOE MSAP planning team, in collaboration with the proposed magnet schools, has developed a strong plan of professional and curriculum development to enhance the knowledge and skills of all instructional staff and school leaders in theme-based topics and evidence-based instructional approaches and to develop rigorous magnet curricula and lessons that will be provided to all students (see the Quality of Project Design and Competitive Preference Priority—STEM narrative for detailed descriptions of curriculum and PD activities). District-level efforts to support curriculum and PD will include annual curriculum planning institutes, monthly study groups centered around key research of relevance to the focus of the magnet schools, and ongoing venues to facilitate knowledge sharing across the participating schools and districts. School-level partnerships with outside vendors, including institutions of higher education, arts and cultural organizations, local businesses, and other community-based organizations, will offer training and technical assistance in the specific themes and related instructional strategies being delivered by each school. In addition, all schools will use the mechanisms of PLCs to share best practices with colleagues in their schools and offer peer mentoring.

Continuous Improvement Process

The D21-22 continuous improvement for the MSAP grant will be implemented as a six-step process around a framework of Plan, Do, Check, Act. The Plan, Do, Check, Act framework was developed by W. Edwards Deming as a business model that is frequently applied in education.

The six parts of D21-22's continuous improvement process are (1) goal setting, (2) implementation and testing of program activities, (3) timely and regular feedback, (4) measuring and monitoring quality of investments, (5) strategies to publicly share information, and (6) opportunities for ongoing corrections.

The MSAP Project Director will convene a Continuous Improvement Working Group (CIWG) comprising members of the district magnet team, representatives from the magnet schools (including funded and nonfunded staff), and the external evaluation team to guide and modify the process for continuous improvement as the project develops. The Continuous Improvement Working Group will provide high-level direction to ensure the successful implementation of the grant, including the process of continuous improvement, and will serve as a sounding board for ideas and solutions to critical issues that arise through implementation. As discussed in the section that follows, the magnet program participants—students, families, teachers, and school leaders—will play an integral and active role in the continuous improvement process to ensure that it provides meaningful and timely information. Furthermore, the project's external evaluator will conduct a comprehensive formative and summative evaluation of the initiative to provide external feedback on the implementation and effectiveness of program activities (see the Quality of the Evaluation Plan section for a detailed discussion of the evaluation design).

A timeline showing the key activity benchmarks by project objective, target date, and responsibility center is provided in Table 14.

Table 14. D21-22 MSAP Project Implementation Timeline: Key Activities and Benchmarks by Objective

MSAP Objective 1: Reduce or Eliminate Minority Group Isolation				
Key Activities	**Year 1 Benchmarks 10/16–9/17**	**Year 2 Benchmarks 10/17–9/18**	**Year 3 Benchmarks 10/18–9/19**	**Responsible Parties***
• Create district-wide marketing and outreach campaign that builds on existing DOE frameworks of communications	• Develop templates for marketing materials (e.g., flyers, brochures) for customization by magnet schools	• Disseminate information on new magnet programs district-wide and build community awareness of and interest in magnet programs		PD, OTC
• Design and conduct school-level targeted and multifaceted outreach campaign to profile the new magnet themes	• Develop suite of marketing materials (e.g., flyers, brochures) and establish social media presence for the magnet programs (Facebook, Twitter) • Translate marketing materials into languages spoken by the magnet school parent communities • Use new promotional materials in conducting outreach to feeder schools and other venues	• Disseminate promotional materials, build and expand social media presence, conduct marketing in community locations		SC, OTC, P, D
• Implement a fair, equitable, and race-neutral student selection and placement process	• Receive applications for new magnets, integrate into DOE enrollment process, and run race-neutral selection process for 2017–18	• Increase number and diversity of applications compared with previous year		PD, S, D
MSAP Objective 2: Improve Students' College- and Career-Readiness				
Key Activities	**Year 1 Benchmarks 10/16–9/17**	**Year 2 Benchmarks 10/17–9/18**	**Year 3 Benchmarks 10/18–9/19**	**Responsible Parties***
• Design, implement, and refine thematic curricula	• Develop 1 interdisciplinary unit focused on inquiry and PBL per grade per school	• Refine Year 1 unit • Create 2–3 new interdisciplinary units per grade	• Refine Years 1 and 2 units • Create additional 2–3 interdisciplinary units per grade	CS, RS, PP
• Incorporate research- and evidence-based instructional strategies aligned to CCSS, NGSS, and NYC curriculum frameworks	• Pilot implementation of innovative and effective instructional strategies to support the implementation of the magnet themes in at least half of the grades served by the school	• Expand implementation of innovative instructional strategies to all grades served by the school	• Schoolwide implementation of innovative instructional strategies in all classes and grades	CS, OTC, RS, P

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MSAP Objective 3: Provide Equal Access to Magnet Program Offerings				
Key Activities—	**Year 1 Benchmarks 10/16–9/17**	**Year 2 Benchmarks 10/17–9/18**	**Year 3 Benchmarks 10/18–9/19**	**Responsible Parties***
• Provide staff development in cultural competence for magnet teachers	• Finalize scope of services to provide PD all magnet schools in culturally responsive teaching, including baseline needs assessment, and begin training	• Provide ongoing consultation in culturally responsive teaching to magnet school staff in all magnet schools	• Continue to provide ongoing consultation in culturally responsive teaching to magnet school staff in all magnet schools	PD, P, PP
• Adapt thematic curricula and instructional strategies to meet the needs of ELLs	• Modify the 1 interdisciplinary unit focused on inquiry and PBL per grade per school to meet needs of ELLs	• Refine Year 1 unit • Modify the 2–3 new interdisciplinary units per grade to meet needs of ELLs	• Refine Years 1 and 2 units • Modify additional 2–3 interdisciplinary units per grade to meet needs of ELLs	CS, RS, CT, D
• Adapt thematic curricula and instructional strategies to meet the needs of students with disabilities	• Modify the 1 interdisciplinary unit focused on inquiry and PBL per grade per school to meet needs of SWDs	• Refine Year 1 unit • Modify the 2–3 new interdisciplinary units per grade to meet needs of SWDs	• Refine Years 1 and 2 units • Modify additional 2–3 interdisciplinary units per grade to meet needs of SWDs	CS, RS, CT, D
• Provide enrichment opportunities within and beyond the regular school day to level the playing field for students attending high-poverty, MGI schools	• Finalize scopes of services with all external partners for curriculum enrichment • Begin implementation of enrichment activities	• Refine scopes of services based on feedback • Expand implementation of enrichment activities to serve at least half of the grades served by the school	• Refine scopes of services based on feedback • Expand implementation of enrichment activities to serve all grades	PD, SC, PP
MSAP Objective 4: Build Capacity to Sustain Magnet Programs				
Key Activities	**Year 1 Benchmarks 10/16–9/17**	**Year 2 Benchmarks 10/17–9/18**	**Year 3 Benchmarks 10/18–9/19**	**Responsible Parties***
• Develop and implement a rigorous plan of PD for magnet program teachers	• Draft magnet PD plan for each school that reflects 50 hours of PD for each magnet program teacher	• Revise PD plan based on feedback and evaluation findings • Provide at least 50 hours of PD for each magnet program teacher	• Revise PD plan based on feedback and evaluation findings • Provide at least 50 hours of PD for each magnet program teacher	PD, CS, RS, P, PP

• Conduct school-level processes to share best practices and assess program implementation	• Include magnet as agenda item on all SLT, PA meetings • Establish MAC to bring diverse perspectives to discussion of program status, challenges, and lessons learned	• Include magnet as agenda item on all SLT, PA meetings • Convene 3–4 meetings of the MAC to bring diverse perspectives to discussion of program status, challenges, and lessons learned	• Include magnet as agenda item on all SLT, PA meetings • Convene 3-4 meetings of the MAC to bring diverse perspectives to discussion of program status, challenges, and lessons learned	SC, P, RS, CT, MAC
• Conduct district-level processes to share best practices	• Conduct monthly MSAP meetings to discuss magnet theme and implementation of innovative instructional strategies • Convene bimonthly study groups for magnet school staff • Expand DOE digital platform for collaboration to include new magnet schools	• Conduct monthly MSAP meetings to discuss magnet theme and implementation of innovative instructional strategies • Convene bimonthly study groups for magnet school staff • Expand content of DOE digital platform for collaboration to include materials from all 5 magnet schools	• Conduct monthly MSAP meetings to discuss magnet theme and implementation of innovative instructional strategies • Convene bimonthly study groups for magnet school staff • Expand content of DOE digital platform for collaboration to include materials from all 5 magnet schools	PD, OTC
• Design and conduct a rigorous continuous improvement process to assess program implementation and inform sustainability	• Establish CIWG, convene 2–3 meetings	• Convene 4–6 meetings of the CIWG	• Convene 4–6 meetings of the CIWG	PD, PE

*Responsible parties: PD=Magnet Project Director; CS=Magnet Curriculum Specialist; OTC=Magnet Outreach and Technology Coordinator; S=Magnet Project Secretary; P=Magnet School Principals; SC=Magnet Site Coordinators; RS=Magnet Resource Specialists; CT=Magnet Classroom Teachers; PE=Project Evaluator; CIWG=Continuous Improvement Working Group; MAC=Magnet Advisory Council; PP= project partners; D= Other District staff

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, and others, as appropriate.

Should D21-22 be awarded an MSAP grant, a solid foundation of collaboration, excitement, and momentum that was fostered during the proposal development phase will be leveraged to support the high-quality implementation of the project (highlighted in the Quality of Project Design section). Several mechanisms are built into the project design and management structure that will ensure that a diversity of perspectives are encouraged and incorporated into the ongoing operation and refinement of the magnet project.

Community Education Councils (CECs)

CECs are parent-run deliberative bodies that help to shape educational policies and priorities in their districts. CEC members are parent volunteers who provide hands-on leadership and support for their community's public elementary and middle schools. Each CEC has 11 voting members, including nine parents and two district residents and/or business owners. The CEC also includes one nonvoting high school senior and elected student leader residing in the district who is appointed by the Community Superintendent. Parents from the D21-22 magnet schools will be encouraged to attend CEC meetings and, if interested, to run for positions on these boards.

School Leadership Teams (SLTs)

SLTs are vehicles for developing school-based educational policies and ensuring that resources are aligned to implement those policies. SLTs assist in the evaluation and assessment of a school's educational programs and their effects on student achievement. Three members of

the school community are mandatory members of the SLT: Principal, PA/PTA President, and United Federation of Teachers (UFT) Chapter Leader. The remainder of the team is composed of elected parents and staff members (the SLT must have an equal number of parents and staff). An SLT may also include students and representatives from community-based organizations (CBOs) that work with the school. New York State Education Law Section 2590-h requires every New York City Public School to have an SLT. In addition, Chancellor's Regulation A-655 establishes guidelines to ensure the formation of effective SLTs in every New York City public school.

Magnet Advisory Councils (MACs)

Upon notification of the grant award, each Principal, with support from the Magnet Project Director, will use a wide variety of communication vehicles to inform his or her school community of the school's magnet status and revisit the commitments the school has made to implement the various components of the grant.

The MAC that will be established in each magnet school will be the primary mechanism to ensure that the voices of all magnet stakeholders are heard and heeded on an ongoing basis. Established either as a subcommittee of the SLT or a stand-alone body, the MAC will serve a critical role in ensuring that the perspectives of magnet program and school staff (including the teachers' union), parents, students, and members of the larger school community are taken into account when reviewing the progress of the magnet initiative in each building. As noted above, a representative of the MAC will participate in the CIWG convened by the Magnet Project Director. The charge of the MACs, which will meet on a quarterly basis over the life span of the grant, will be as follows:

- review project updates from the school magnet staff, including challenges, accomplishments, and proposed refinements;

- review formative and summative evaluation data provided by the external evaluator to identify potential issues with meeting performance measures;
- identify NYCDOE, UFT, and Council of School Supervisors and Administrators policies and practices that can be leveraged in support of magnet program goals and those that have the potential to impede program progress, to be flagged to the district magnet team; and
- confer with other D21-22 MACs to share knowledge and help to build a magnet culture and community within the two school districts.

Within three months of the grant award notification, each school will be asked to provide the names and affiliations of the MAC team members to the Magnet Project Director.

While the literature clearly shows the benefits that accrue to students when their parents or caregivers are engaged in school activities, schools serving large numbers of low-income students in challenged communities are often hard-pressed to garner substantial parent involvement, particularly among parents considered "hard to reach" due to a variety of factors (e.g., those who speak a language other than English, those who are forced to work long hours). In addition to the typical parent involvement activities that most schools conduct, each of the D21-22 magnet schools has crafted a parent engagement component specific to the thematic focus of the magnet grant (see school descriptions in the Quality of Project Design section). Ensuring that parents' perspectives are well represented on the MACs, the D21-22 magnet initiative will carry out the following practices, which have been found in the literature to be particularly effective in encouraging parents to serve as decision makers in their children's schools:

- use personalized approaches and phrases to build trust and interest;

- communicate with parents often and with a variety of communication mediums;
- organize smaller events, such as grade-level nights, rather than whole-school events;
- create venues for families to provide input and receive feedback online and in person;
- conduct outreach in community spaces, such as libraries, grocery stores, family recreational events; and
- communicate with parents in native languages and ensure that all school events incorporate bilingual staff members.

Continuous Improvement Working Group (CIWG)

The CIWG was described earlier in this section as part of the project management framework. In support of the work of the CIWG, the project's formative evaluation will be designed to collect feedback from all of the key stakeholders of the magnet grant, including the direct beneficiaries of the services (i.e., teachers, students, and parents) as well as key partners, through a wide range of data collection activities, such as surveys, focus groups, and observations. This feedback will be incorporated into the continuous improvement model described earlier in this section so that the program evolves to meet current and emerging needs.

(D) Quality of Personnel (10 points)

The Secretary reviews each application to determine the qualifications of the personnel the applicant plans to use on the project.

The NYCDOE has assembled an exceptionally well-qualified team to spearhead the implementation of the D21-22 magnet program. Included in the core project team are seasoned staff with direct experience working in and supporting elementary and middle school magnet programs, including all areas of magnet school design, delivery, and assessment. Should this application be funded, the NYCDOE will ensure that the D21-22 magnet project will benefit

from the wealth of knowledge and expertise resident within the system at the central office, district, and school levels in support of MSAP objectives.

(1) The Secretary determines the extent to which the Project Director (if one is used) is qualified to manage the project.

The MSAP Project Director will have programmatic and administrative responsibility for the project and will commit 100% of his time to magnet responsibilities (described in Section 280.31a, 2i). The proposed candidate for the D21-22 MSAP Project Director position is Todd Levitt. Mr. Levitt's dedication to magnet programs in NYC is abundantly clear through his long-standing role as an NYC-based MSAP Project Director, including his current role as Project Director for D28's Magnet Program, a position he has held since 2013. Before this, he served as the Project Director for the D30 Magnet Program (2010–13) and the D20-21-31 Magnet Consortium (2008–10), making him one of the most experienced Magnet Project Directors in NYC. As Project Director, Mr. Levitt has worked with five school districts, 16 schools, and 43 magnet staff and has served as a mentor in guiding others in this position. His myriad responsibilities in this role include oversight of all aspects of the MSAP projects, the promotion of diversity in magnet schools in accordance with District desegregation plans, and the implementation of programming that fosters school choice, builds school capacity, and improves academic achievement.

Mr. Levitt's current position and success in D28 demonstrates his capacity to continue this role in D21-22 and his commitment to the comprehensive and effective implementation of the proposed programs. In addition to his extensive experience as an MSAP Project Director, Mr. Levitt also served as a Magnet Project Planner for D21-22 from 2007–08, providing assistance to the MSAP Project Director in overseeing all aspects of the program. In addition, Mr. Levitt

gained experience leading implementation of a magnet program at the school level when he served as a magnet resource specialist at PS 95 in Brooklyn from 2004–06. In this role, his responsibilities included developing thematic curricula, training staff in multiple intelligences and technology integration, and conducting outreach and recruitment activities to reduce minority group isolation. Mr. Levitt holds certification as a NYS School District Administrator and NYS School Administrator and Supervisor. Mr. Levitt received an MA in educational administration and supervision from Touro College and an MA in elementary education from Adelphi University. Mr. Levitt also serves as a member of the NYC STEAM workgroup. The workgroup was a committee made up of DOE central office leaders, principals, superintendents, business leaders and partners, with the goal of creating STEAM programs and partnerships that will result in diversity and improved academic achievement at targeted schools included in the state Socioeconomic Integration Pilot grant.

(2) The Secretary determines the extent to which other key personnel are qualified to manage the project.

District Leadership

The MSAP Project Director will receive support and guidance from the Superintendent of D21, Isabel B. DiMola, and the Superintendent of D22, Julia Bove (see the Appendix for both of their résumés). Ms. DiMola and Ms. Bove are both skilled administrators and educators with extensive experience mentoring school leaders, training educators, and developing curriculum, in addition to supporting instructional efforts to raise the level of student achievement and close achievement gaps.

Prior to her current position, in which she has served since 2009, Ms. DiMola was a high school Superintendent and Senior Achievement Facilitator for one year, supervising 121 high

schools in Brooklyn and Queens. Previous to that, she served as a secondary school Principal at Richard R. Green High School for Teaching for four years. During that time, Ms. DiMola demonstrated her substantial leadership and management skills by increasing the graduation rate of the school for four consecutive years and was recognized for exceeding the citywide average in the Closing the Achievement Gap score on the school's Progress Report. Ms. DiMola also gained extensive curriculum development experience as an Assistant Principal and Social Studies teacher. As Superintendent of D21, Ms. DiMola oversees 31 elementary, middle, and stand-alone pre-K schools serving over 24,000 students within the district. Ms. DiMola holds an MA in history from Brooklyn College and a certificate in supervision and administration from the College of Staten Island.

Ms. Bove has served as Superintendent of D22 since 2014, overseeing 33 elementary and middle schools serving approximately 26,000 students. Ms. Bove previously served as a Network Leader for seven years, during which she provided instructional guidance and training and recommended school improvement efforts for 23 schools. As former Principal of IS 240—one of the schools included in this proposal—for nearly a decade, Ms. Bove led the effort to transform the school into one of the highest performing in the District, bringing about dramatic improvements in state standardized test scores. Ms. Bove also gained extensive leadership experience as a mentor and coach for newly appointed principals and curriculum development experience as a classroom teacher in math. Ms. Bove holds an MA in math and education and a certificate in administration and supervision, both from Brooklyn College.

Key MSAP District Staff

Working closely with and reporting to the Project Director will be the full-time, district-level, MSAP-funded **Curriculum Specialist**, who will support all five magnet schools through the

design, facilitation, and oversight of curriculum development and thematic integration activities. The Curriculum Specialist will build capacity at each magnet school as curricula and programs are developed over the lifetime of the grant. The responsibilities of this position will include designing and implementing PD on magnet theme curricula and instructional approaches, serving as liaison with magnet school teams and NYC and District staff in all magnet curriculum areas, and creating and maintaining partnerships with community-based organizations and other partner agencies serving D21-22 families. Qualifications for this position will include an advanced degree in education, NYC and NYS teaching licenses (either common branch or a secondary core subject area, e.g., ELA, math, science, or social studies), at least five years of experience as a staff developer/trainer, at least five years of experience in curriculum development and implementation, demonstrated skills in providing differentiated PD, at least five years of experience as a teacher working with students and families from diverse backgrounds, knowledge of all relevant learning standards (including CCSS, NGSS, and NYCDOE Curriculum Frameworks), at least five years of experience incorporating STEM instructional approaches into at least three content areas, and experience as a magnet specialist or in a leadership role in a magnet school. Other desired qualifications include excellent written and verbal communication skills, strong organizational abilities, the ability to manage multiple tasks simultaneously, and the ability to establish and maintain productive working relationships with a range of stakeholders in a multicultural, multilingual setting.

The third key member of the D21-22 magnet team will be the full-time **Outreach and Technology Coordinator**, who will be responsible for planning, coordinating, and implementing a comprehensive magnet outreach program using technology and multimedia resources. This staff member will also support technology integration at the magnet schools,

engaging in PD and training activities that incorporate research-based instructional practices and new technology tools into the magnet program. Additionally, the Outreach and Technology Coordinator will work with the Project Director, Curriculum Specialist, school teams, MACs, and others to enhance the effectiveness and impact of the school-based magnet programs as well as the interdistrict initiative as a whole.

The Outreach and Technology Coordinator will be required to have the following credentials: an advanced degree in education; five years of experience in staff development/teacher training; experience as a Magnet Resource Specialist or in another leadership role in a magnet school; demonstrated ability in facilitating standards-based instructional practices that lead to increased student achievement; five years of experience incorporating instructional technology strategies; experience with website development and graphic design; experience in creating multimedia materials and documents using technology; familiarity with the use of presentation tools and media; experience in working with students and families from different backgrounds; superior organizational skills needed to support a multifaceted magnet program, including maintaining required program records and documentation; demonstrated ability to work as part of a team; the capacity to prioritize and coordinate both school-based and community-based program activities; the ability to be creative, flexible, and project-oriented in a large, grant-funded initiative serving multiple schools; and excellent communication and interpersonal skills suitable for collaboration with all constituencies involved in the program.

School Leadership

All of the Principals of the proposed magnet schools are highly qualified, visionary leaders, eminently capable of implementing the magnet school initiative. The magnet school Principals will oversee the implementation of the program at their buildings and ensure regular

communication between the magnet school planning teams, SLTs, and MACs. Periodically, the Principals will meet as a group to exchange ideas and discuss topics of interest to all magnet schools in the District. In addition, the Principals will have access to the magnet grant website to share and disseminate pertinent materials. Brief descriptions of the skills and expertise of each magnet school principal follow; résumés are included in the attachments to this proposal.

During her seven years as Principal and Lead Teacher of PS 90, Greta Hawking has demonstrated extensive skill in the areas of instructional leadership, staff development and coaching, curriculum oversight, and financial management. Ms. Hawking previously worked as a Lead Teacher and ELA classroom teacher at MS 113 and a French teacher at Far Rockaway High School. She holds NYS certification as a School Administrator and Supervisor, a School Building Leader Certificate from Baruch College, and an MA in curriculum and teaching from Teachers College, Columbia University.

Anthony Mungioli has served as Principal of PS 121 for four years. In that time, he has demonstrated successful school management and instructional leadership, forming several lead teams to build capacity and ensure shared vision among staff; created a comprehensive PLC; developed cyclical curricula; implemented the NYCDOE *Advance* evaluation system, which tracks instructional improvements over time; and introduced a Parent Leadership structure. His previous experience includes four years as Assistant Principal of Brooklyn's SEEALL Academy, which provides a theme-based curriculum to students in grades 6–12, and eight years as a middle school social studies and math teacher. In addition, Mr. Mungioli was a teacher in a magnet school in Gravesend, Brooklyn (PS 95), funded during the 2004–07 cycle. Mr. Mungioli holds NYS certification as a School Administrator and Supervisor and an MA in school administration and supervision from Touro College.

Joy-Ann Morgan has served as the Principal of PS 198 since 2007, and prior to her tenure there, she served as Assistant Principal of a Brooklyn elementary school for seven years. As a school leader, Ms. Morgan has gained considerable experience with instructional leadership and staff development and coaching, for example, facilitating PD in balanced literacy and leading implementation of the Teachers College Reading and Writing Workshop model. Before becoming a school leader, Ms. Morgan was a classroom teacher and library cluster teacher. She holds NYS certification as a School Administrator and Supervisor, an MS in school administration and supervision from Baruch College, and an MS in elementary education from Fordham University.

Erica Williams, Principal of PS 245, has a long track record of serving in school and district leadership positions and supporting students with special needs. Prior to her current position, which she has held since 2013, Ms. Williams served as Assistant Principal of PS 197 in Brooklyn for eight years, during which she was the school's Data Specialist, Supervisor of Special Education, Testing Coordinator, and Safety Liaison. Before becoming a school leader, she served for two years as the Instructional Support Specialist for Special Education for NYCDOE Region 6. In this role, she gained extensive experience in instructional leadership and staff development focused on students with special needs. For example, she designed and facilitated PD and coaching for teachers in inclusive classrooms with diverse learning populations, assisted school administrators in designing PD plans for special education teachers, and worked one-on-one with students identified as "at-risk" using the Wilson Reading System. She previously worked as a middle school dean for one year and a special education classroom teacher for three years. Ms. Williams holds NYS certification as a School Administrator and Supervisor and an MS in school administration and supervision from Touro College.

During her two years as Principal of IS 240 and 10 years as Assistant Principal of IS 259, IS 240 Principal Gina Votinelli has demonstrated extensive skill in the areas of instructional leadership, staff development and coaching, curriculum oversight, and financial management. Ms. Votinelli previously worked as Special Education Evaluation, Program, and Placement Officer for NYCDOE Region 7 for two years and, prior to that, served as a classroom teacher and speech improvement teacher at three Staten Island schools for over a decade. She holds NYS certifications in school district administration and school administration and supervision and is also a licensed Teacher of Speech Improvement in NYS and NYC. She holds three MS degrees: in school administration and supervision from the College of Staten Island, in special education from Adelphi University, and in speech pathology from Brooklyn College.

Key School-Based MSAP Staff

At the school level, the Magnet Site Coordinator will work closely with the school Principal to spearhead the implementation of the magnet program in their buildings. Desired qualifications for the Magnet Site Coordinators include experience with magnet school development and implementation, curriculum development, and staff development and coaching; extensive familiarity with the school and parent community; demonstrated effectiveness in time management and attention to detail; and a demonstrated ability to work well with all constituents of the school community, including students, teachers, and parents. Additional qualifications for the position of Teacher Specialists include a BA or BS in education, NYC common branches or subject area licenses, and at least three years of experience in a magnet school (preferred).

(3) The Secretary determines the extent to which teachers who will provide instruction in participating magnet schools are qualified to implement the special curriculum of the magnet schools.

The principal instructional personnel for the D21-22 magnet initiative will consist of **Magnet Resource Specialists**. The Resource Specialists will be highly qualified[1] individuals who will be appropriately licensed in the subject areas for which they will be assigned, as will all classroom teachers in the five magnet schools. Specifically, the Teacher Specialists will have demonstrated competence in the following areas: instruction of heterogeneously grouped classes consisting of children from diverse ethnic, racial, and socioeconomic backgrounds with varying levels of academic skills; use of various innovative, evidence-based teaching methods (e.g., PBL, arts integration, STEM methodologies) and materials to address the learning styles of different students; development of theme-related curriculum materials that have been effectively used with elementary or middle school students; demonstrated effectiveness in differentiating instruction and in the evaluation of student academic performance, including the use of authentic or performance-based assessment methods within their subject area or specialty; familiarity with implementing culturally competent approaches designed to foster positive and productive interactions among students of different backgrounds; and the ability to work effectively with students, parents, teachers, and administrators. Additional qualifications for the position of Teacher Specialist include an MA or MS in education, NYC common branches or subject area licenses, and at least three years of experience in a magnet school (preferred).

Currently, each proposed magnet school has several staff members who will directly

[1] As defined by the No Child Left Behind Act, teachers who are "highly qualified" must have a bachelor's degree, full state certification and licensure, and demonstrated competency in each core academic subject that they teach.

contribute to the design and implementation of the thematic curricula of the magnet school. Provided in Table 15 are examples of this resident expertise at each school. Should teaching vacancies occur during the lifespan of the magnet grant, the Principal, working with the school-based magnet team and the MSAP project team and following all NYCDOE and UFT contracting rules, will make every effort to recruit a staff member who brings relevant experience as well as a passion for the magnet program on board. There are several tools to help principals manage their staffing responsibilities, including the recruitment of new staff. The Open Market Transfer System is an online tool school leaders can leverage to identify and attract current internal teachers who wish to transfer schools. The New Teacher Finder (NTF) is an online tool to assist school leaders to identify high-quality external teacher candidates who may be a fit for their school. NTF provides an abundance of information on external teacher candidates, including certifications and backgrounds, résumés, and short-answer responses that provide insight on each candidate's communication and problem-solving skills. NTF allows principals to post positions, search for candidates, and cultivate and track candidates via short lists and other tools. In addition, a number of citywide recruitment and networking events are offered throughout the spring and summer by the Office of Teacher Recruitment and Quality.

Table 15. School-Based Staff With Expertise to Support Theme Integration

School	Theme	Staff	Relevant Experience
PS 90	Environmental Science and Community Wellness	Christina Martin, Special Education	In her current role, Ms. Martin develops and delivers daily instruction in English, math, social studies, and science. She previously served as an Eco-tourism Facilitator with the Peace Corps in Guatemala and

School	Theme	Staff	Relevant Experience
		Teacher	was the Director of Guatemalan Initiatives for Global HEED. She has also served as an after-school Art Instructor at Agassiz Baldwin, a nonprofit arts education organization. In this role, she developed and delivered art-based lessons and led field trips to museums and national parks.
PS 121	Applied Life Sciences	Heidi Langeneckert, Visual Arts Teacher	In her current role, Ms. Langeneckert has developed an art curriculum that integrates science and nature content and is aligned with the Blueprint for the Arts, CCLS in Visual Arts, and Expeditionary Learning curriculum. As Director of Natural Wonders Summer Camp in Brooklyn, she designed an interdisciplinary art and nature curriculum and integrated art processes with learning in botany, ecology, and herbal medicine.
PS 198	Applied Learning in Arts and Engineering	Carly DeLuca, Special Education Teacher	Prior to serving as a special education teacher, Ms. DeLuca gained extensive experience as a teaching artist and mentor in theater, dance, music, music production, and visual art. While working at Art Start, she provided arts instruction and mentoring to homeless and at-risk teens and young adults;

School	Theme	Staff	Relevant Experience
			developed curricula for music, art, and theater workshops; and created the EAR (Emerging Artist in Residency) program.
PS 245	Art and Science	Valerie Shoenfeld, Science Cluster and Science Department Head	Ms. Shoenfeld has 13 years of experience as a Science Cluster and 11 years as Science Department Head. She has extensive expertise with developing and delivering transdisciplinary, STEM-infused science curricula at the elementary level. In addition, she coordinated the school's annual Science Fair from 2005 to 2014.
IS 140	STEM	Thaddeus Knouse, Math, Science, and Technology Teacher	Since 2003, Mr. Knouse has served as a middle school math, science, and technology teacher, teaching courses in math (Honors, Mainstream, and Inclusion); earth science (eighth-grade Mainstream and Honors); and computer technology. Prior to teaching, he gained professional engineering experience, serving as a civil engineer for Remington & Vernick and as a software quality engineer for IBM. He holds a BS in civil engineering from Lehigh University.

Within each D21-22 magnet school, the effectiveness of Teacher Specialists and classroom teachers will be evaluated using *Advance*, the NYCDOE's teacher development and evaluation system that considers what teachers do and how students perform. As highlighted in the Quality of Project Design section, the magnet initiative will implement a robust program of PD to build the capacity of the school staff to address the instructional priorities of the school system through the lens of the specialized magnet curriculum, which will benefit the students attending the magnets well beyond the funding cycle.

In conclusion, the combined expertise of district- and school-based staff in fields related to the objectives of the magnet program will ensure the Districts' and schools' effectiveness in making progress in the broad areas of systemic reform embodied in the MSAP statute:

- technology integration, including use of various state-of-the-art technologies and media to support and enhance research-based instructional practices;
- STEM- and STEAM-related content areas, including designing, developing, and implementing classroom instruction and enrichment in these areas and exposing students to careers in these fields;
- working with diverse learners, including students with special needs and ELLs; and
- use of the arts to support, enhance, and extend classroom learning.

(E) Quality of Project Evaluation

The Secretary considers the quality of the evaluation to be conducted of the proposed project.

The D21-22 consortium proposes to retain Metis Associates to conduct the program evaluation of the MSAP grant initiative. Metis is an educational research and evaluation firm that has provided technical assistance and professional support for a wide range of education and human services initiatives for over 38 years. Metis has conducted evaluations of MSAP

initiatives over the past nine MSAP funding cycles for nine community school districts in New York City; Broward County, FL; Baltimore County; Champaign, IL; Orangeburg County, SC; and Beacon, NY. Metis served as the external evaluator for D22's last MSAP grant during the 2010–13 funding cycle. Metis has also conducted system-wide evaluations and audits of magnet and choice programs for several large school districts, including Montgomery County (MD) Public Schools in 2015, Broward County in 2014, Baltimore County in 2013, and Pittsburgh Public Schools in 2008. Final reports for these evaluations have been posted on the districts' websites.

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

The evaluation of the MSAP initiative will be directed by Claire Aulicino, a Senior Associate at Metis. Ms. Aulicino has directed evaluations of MSAP grants over the past five MSAP funding cycles and has served as the lead evaluator for 11 MSAP grants, including D22's grant in 2010–13. Ms. Aulicino will be supported by highly qualified staff and will regularly consult with Metis's Design Consulting Committee on all aspects of the evaluation. The evaluation team will participate in all USDOE Project Directors meetings and will assist NYCDOE in fulfilling all compliance monitoring or other program-related requirements. Ms. Aulicino's résumé is provided in the attachments.

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

The evaluation is designed to assess the implementation of project activities and the extent to which the activities support achievement of the project outcomes and outputs, as articulated in the district and school logic models. The evaluation design includes formative and summative components and uses multiple measures over multiple groups of subjects. Data from all sources will be synthesized and analyzed to maximize precision of outcome information and enrich the capacity of the Project Director and the D21-22 MSAP stakeholders to make informed and timely decisions about program development and implementation.

The formative evaluation will focus on program implementation and assessment of project activities. Ongoing formative feedback will be provided to the Project Director and the school-based magnet teams about the extent to which project activities are being implemented as planned and in line with the intended outcomes. This feedback and data will be critical for ensuring that the project is well positioned to meet its objectives and for developing program adjustments as part of a continuous improvement model. Formative evaluation methods, including documentation reviews, written surveys, interviews, and biannual field observations, will be conducted to answer key questions about the outreach and recruitment strategies being used; how the schools are planning, developing, and implementing the themes and ensuring that all students have access to magnet thematic curricula and activities; the types of staff development being offered and the levels of participation in these; and the collaborations, among instructional staff, within the school community, and with external partners, to support the program.

Summative evaluation activities will be conducted to assess the impact of program evaluation on the intended outcomes, as outlined in the logic models and project performance measures. The summative evaluation methods will include the analysis of data collected through monthly

program implementation logs, stakeholder surveys, enrollment and applicant pools, standardized achievement test scores, and performance-based student assessment data.

(2) The Secretary determines 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 to the extent possible.

This section presents the project performance measures that will be used to assess the extent to which the four project-level objectives that are described in the Management Plan are being met in each year of the grant. It also describes the specific methods that will be used to collect and analyze data to evaluate the impact on each performance measure.

Project Objective 1: Reduce minority group isolation among Hispanic and African American students in proposed magnet schools. The following performance measures will be used to evaluate the extent to which Project Objective 1 is met over the three-year grant period.

Performance Measure 1.1 (GPRA Measure): Through implementation of a whole-school magnet program, each magnet school will achieve reductions in minority group isolation (MGI) among Hispanic or African American students. The proportions of students in the targeted MGI group will be reduced at each school by the following percentages for each year.

	Year 1 (2016–17)	Year 2 (2017–18)	Year 3 (2018–19)
D21 magnets: Reduce MGI among Hispanic students			
PS 90	59.4% to 57.4%	57.4% to 54.1%	54.1% to 51.4%
PS 121	42.8% to 40.5%	40.5% to 37.2%	37.2% to 34.6%
D22 magnets: Reduce MGI among African American students			
PS 198	86.8% to 84.8%	84.8% to 81.8%	81.8% to 79.6%

PS 245	51.0% to 48.9%	48.9% to 46.1%	46.1% to 43.2%
IS 240	62.7% to 60.2%	60.2% to 57.7%	57.7% to 54.1%

Performance Measure 1.2: As a result of ongoing outreach and student recruitment efforts and the development of innovative educational programming, the number of students who apply to each of the magnet schools will increase by 5% in Year 2 and Year 3 of the grant over the prior year, compared with baseline data collected in Year 1.

Evaluation Methods for Project Objective 1: Data to assess Performance Measure 1.1 will be obtained from an annual analysis of student enrollment data from the NYCDOE registers for all active students as of October 1 of each project year. Frequency calculations will conducted by school and grade to determine the number and proportion of students by racial/ethnic group. Data to assess Performance Measure 1.2 will be collected from magnet application data to determine the number of applications by school in each year of the grant. Results from the enrollment and application data will be synthesized with data on outreach and recruitment logs and marketing materials for each school and the Districts to assess the effectiveness of the outreach and student recruitment plans.

Project Objective 2: Ensure that all students attending the magnet schools meet challenging academic standards and are on track to be college- and career-ready. The following performance measures will be used to evaluate the extent to which Project Objective 2 is met over the three-year grant period.

Performance Measure 2.1 (GPRA Measure): At each magnet school, students in each racial/ethnic group, students with disabilities, low-income students, and ELLs will demonstrate measurable improvements in academic achievement in ELA/English. This will be measured by

an increase of four or more percentage points in the proportion of students in each tested grade level who meet the grade-level standards on NYS assessments in ELA (grades 3–8) *in each project year*, and by Year 3, the overall increase will be statistically significant.

Performance Measure 2.2 (GPRA Measure): At each magnet school, students in each racial/ethnic group, students with disabilities, low-income students, and ELLs will demonstrate measurable improvements in academic achievement in math. This will be measured by an increase of four or more percentage points in the proportion of students in each tested grade level who meet the grade-level standards on NYS assessments in math (grades 3–8) *in each project year*, and by Year 3, the overall increase will be statistically significant.

Evaluation Methods for Project Objective 2: The standardized instruments for student assessments include the **NYS assessment** exams that are administered annually to students in ELA and math for grades 3–8. Results for these tests are expressed both in scale scores and performance-level equivalents. Scale scores are equal-interval, criterion-referenced scores that create a continuous scale that extends across grade levels. For each grade, scores are categorized into one of four performance levels: Level 1 (well below proficient), Level 2 (partially proficient), Level 3 (proficient), and Level 4 (excels).

Student achievement results will be derived from performance-level analyses using matched data to calculate the proportions of students in each year who are proficient or excel in higher-learning standards (performance levels 3 and 4). Chi Square tests of independence or other appropriate statistical measures, such as McNemar tests, will be conducted to determine if changes in student achievement occur from one year to the next and if differences in achievement by student subgroup are statistically significant. All analyses will be conducted by school, by grade level, and by student subgroup—including each major racial and ethnic group,

students with disabilities, low-income students, and ELLs—except in cases where the number of students in a category is less than 10 and therefore insufficient to yield statistically reliable information, and/or where the results yield personally identifiable information.

Project Objective 3: Ensure that all students attending the magnet schools benefit from the magnet's educational offerings and have equal opportunities to gain magnet theme–specific value-added skills and knowledge. The following performance measures will be used to evaluate the extent to which Project Objective 3 is met over the three-year grant period.

Performance Measure 3.1: As part of the magnet program at each school, all students (100%) will be exposed to at least one new thematic curriculum unit in Year 1, at least two new thematic curriculum units in Year 2, and at least three new thematic curriculum units in Year 3.

Performance Measure 3.2: Through their participation in the magnet program, the proportion of students in each school who demonstrate improvements in noncognitive skills will increase by 10 percentage points in Year 2 and 15 percentage points in Year 3, compared with baseline data collected in Year 1.

Performance Measure 3.3: Through their participation in the magnet program, the proportion of students in each school who demonstrate improvements in a set of unique, magnet value-added standards and skills will increase by 10 percentage points in Year 2 and 15 percentage points in Year 3, compared with baseline data collected in Year 1.

Evaluation Methods for Project Objective 3: Data to assess Performance Measure 3.1 will be derived from a systematic review of curriculum development and implementation logs and copies of thematic curriculum units. Data to assess Performance Measures 3.2 and 3.3 will be assessed with the administration of authentic student performance assessments that will be developed by the magnet staff at each school in collaboration with district MSAP staff, the

external evaluator, and program partners and based on published literature and research. The assessments will be completed by teachers for each student to measure student attainment of noncognitive skills and unique, magnet value-added skills. The skills will include theme-related content skills and 21st-century or noncognitive skills, such as motivation, persistence, and communication, and will be specific to each school's magnet theme and curriculum. The assessments will be administered in the spring of each project year and analyzed by school, by grade, and by student subgroup using frequencies and cross-tabulations to determine the proportion of students who master the skills in each year. The assessments will be pilot-tested in Year 1 with item analyses and reduction conducted to ensure validity and reliability of the items in measuring the intended outcomes.

Qualitative data to provide contextual information about the implementation of thematic curriculum units at each school and student attainment of magnet value-added and noncognitive skills will be obtained from biannual site visits by the evaluator to each magnet school in each project year that will include class observations and interviews and focus groups with planning team members, teachers, and students.

Project Objective 4: Build the capacity within the magnet schools to provide rigorous, theme-based instructional programs that will help promote choice and diversity in the D21-22 schools. The following performance measures will be used to evaluate the extent to which Project Objective 4 is met over the three-year grant period.

Performance Measure 4.1: To build staff capacity, each magnet school will develop a comprehensive three-year professional development (PD) plan to outline implementation of staff development directly related to the magnet theme and the standards- and evidence-based instructional practices that are outlined in the MSAP grant application. Based on the plans, all

school leaders and instructional staff in each school will participate in 50 or more hours of magnet-related PD in each year of the grant.

Performance Measure 4.2: Through their participation in magnet-related PD, the proportion of teachers in each school who demonstrate an increase in knowledge of the concepts related to the magnet theme and innovative instructional strategies will increase by 10 percentage points in Year 2 and 15 percentage points in Year 3, compared with baseline data collected in Year 1.

Evaluation Methods for Project Objective 4: Data to assess Performance Measure 4.1 will be derived from a review of each magnet school's annual PD plan, school and district PD activity logs, and PD agendas and sign-in sheets. Data to assess Performance Measure 4.2 will be derived from an analysis of responses to an instructional staff survey to be developed by the evaluator in consultation with the school and District MSAP staff, and will be analyzed using frequency and cross-tabulation calculations by school and for the project. The survey will be administered to all instructional staff at each magnet school in the spring of each year to collect data on staff's knowledge and skills in key concepts addressed in the magnet PD, as well as measure awareness and support for the magnet program and their participation in and satisfaction with program planning. The survey will be pilot-tested in Year 1 with item analyses and reduction conducted to ensure validity and reliability of the items in measuring the intended outcomes.

The measurement framework shown in Table 16 will be used to guide the program evaluation. The framework outlines the indicators; measures of change; and the data collection methods, sources, and timeline of the activities that will be conducted to assess progress toward meeting each of the project objectives to be addressed over the three-year MSAP grant. Long-term outcomes, as outlined in the logic model, will be addressed by NYCDOE staff beyond the scope of the grant period.

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

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

Results of the external evaluation will be provided to the Project Director through monthly communications and status updates and biannual summary reports. The evaluator will also provide ongoing informal feedback as data are collected and will participate in the monthly MSAP meetings conducted by the Project Director. Ongoing feedback will ensure that the evaluation supports continuous improvement of the project.

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

Table 16. D21-22 MSAP Program Evaluation Measurement Framework

Outcomes/Outputs (As Per Logic Model)	Indicators	Measures of Change	Data Collection Methods	Data Sources	Frequency of Data Collection
Program Outputs (Short-Term)					
Interdisciplinary, PBL thematic units of study for all grade levels (Performance Measure 3.1)	Implementation of interdisciplinary, PBL thematic units	Proportion of students exposed to thematic curriculum units	Review of program documentation and curriculum, teacher focus, principal interviews, class observations	Curriculum development and implementation logs and copies of thematic curriculum units, observation and interview protocols	Biannually
Staff training (Performance Measure 4.1)	Staff participation in magnet-related PD	Proportion of teachers and school leaders enrolled in grant-related training and PD	Review of program documentation and PD participation data	PD plan, PD activity logs, and PD agendas and sign-in sheets	Annually
MSAP Outcomes (Intermediate)					
Reduced MGI in magnet schools (Performance Measure 1.1)	Proportion of students in each racial/ethnic group compared to total school population	Reduction in the proportion of Hispanic or African American students compared with the total school population	Analysis of the proportion of students by racial/ethnic group enrolled in each school	NYCDOE Official Student Rosters as of September 30	Annually
Increased interest and demand from out-of-zone students (Performance Measure 1.2)	Number of magnet applications submitted for each program	Increase in number of applications submitted for each school	Analysis of number of applications	NYCDOE application data files as of September 30	Annually
Improved student achievement	Student proficiency on state	Increase in the proportion of	Review of student scores on state	NYS assessments in ELA and math	Annually

Magnet Schools Assistance Program (2016-2019)

Community School Districts 21 and 22 — Brooklyn, New York

Outcomes/Outputs (As Per Logic Model)	Indicators	Measures of Change	Data Collection Methods	Data Sources	Frequency of Data Collection
(Performance Measures 2.1 and 2.2)	assessments in ELA and math	students who meet or exceed expectations on state assessments	assessments	(grades 3–8)	
Increased student proficiency in noncognitive skills (Performance Measure 3.3)	Demonstration of noncognitive skills	Increase in proportion of students who demonstrate mastery of noncognitive skills	Analysis of data on student performance assessments, teacher and student focus groups, principal interviews, class observations	Student performance assessments, observation and interview protocols	Annual assessments, biannual site visits
Increased student proficiency in applied and marketable skills (Performance Measure 3.4)	Demonstration of magnet value-added skills	Increase in proportion of students who demonstrate mastery of magnet value-added skills			
Increased staff knowledge and skills in innovative teaching strategies (Performance Measure 4.2)	Demonstration of knowledge and skills related to magnet themes and PD	Increase in proportion of staff who demonstrate an increase in knowledge and skills related to magnet themes and PD	Analysis of staff survey data, teacher focus groups, principal interviews, class observations	Staff surveys, observation and interview protocols	Annual survey, biannual site visits