



Springfield Public Schools

MAGNET
SCHOOLS
ASSISTANCE PROGRAM

*Excellence and Equity
through
Magnet School Innovations*

An Overview of Springfield's
Magnet Schools Assistance Program
2007-2010

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Federally Supported Magnet Schools

2007 - 2010

Springfield has been awarded an unprecedented fifth consecutive, three-year Magnet Schools Assistance Program (MSAP) grant from the U.S. Department of Education. Over the course of the next three years, this MSAP grant will bring in *over 10 million dollars* to the following five city schools:

- **Brookings School:** *Museum Studies and Expeditionary Learning*
- **Gerena PreK – 5:** *Montessori and the Arts*
- **The Renaissance School:** *Grade 6-12 Expeditionary Learning and the Arts*
- **STEM Middle (STEMM):** *Science, Technology, Engineering and Mathematics*
- **The New Springfield High School of Science and Technology:**
21st Century STEM Teaching Lab with Academies in
 - ◆ **Biomedical Science, Biotechnology and Forensics**
 - ◆ **Information Technology and Film/Media Technology**
 - ◆ **Engineering**
 - ◆ **Math and Finance**

The Magnet Schools Advantage:

Intensive Support for Teaching and Learning:

Each school will become a **teaching laboratory school** through partnerships with local colleges and universities as well as professional organizations such as Expeditionary Learning and the College of St. Catherine's Montessori certification program. College partners will provide both content-specific professors as mentors for teachers as well as teacher-interns to enhance delivery of research-based teaching practices. Mini courses taught by college professors in areas such as biotechnology and forensics will provide rich opportunities both for Sci-Tech students and teachers, as they hone their content-area knowledge and instructional skills.

Hands-on Learning:

Students learn by doing. Each of these magnet schools is designed to enable students to make the critical connections between school and real life through meaningful and relevant courses of study. These experiences will be fully supported by community business and college/university partners who are eager to help our students enter the local workforce prepared to make a significant impact.

Magnet Schools Assistance Program

Goals and Objectives:

The Magnet Schools Assistance Program was established to help school districts reduce or eliminate minority group isolation in elementary or secondary schools. Our magnet themes have been designed, based on substantial input from parents and community members, to attract a diverse group of students interested in unique approaches to learning (such as Expeditionary Learning or Montessori) or highly focused areas of study (such as the STEM academies at Sci-Tech or our new STEM Middle Academy). Magnet programs support and supplement the curriculum by providing a common lens through which children master knowledge, while interdisciplinary teaching enables students to make connections across content areas.

The main objectives of the MSAP grant are:

- 1. The elimination, reduction, or prevention of minority group isolation in elementary and secondary schools with substantial portions of minority students, which shall include assisting in the efforts of the United States to achieve voluntary desegregation in public schools.*
- 2. To develop and implement magnet school projects that will assist local education agencies achieve systemic reforms, and provide all students the opportunity to meet challenging State academic content standards and student academic achievement standards.*
- 3. The development and design of innovative educational methods and practices that promote diversity and increase choices in public elementary and secondary schools and public education programs.*
- 4. Courses of instruction within magnet schools that will substantially strengthen the knowledge of academic subjects and the attainment of tangible and marketable vocational, technological and professional skills of students attending such schools.*
- 5. Improvement of the capacity of local education agencies, including through professional development, to continue operating magnet schools at a high performance level after Federal funding for the magnet schools is terminated.*
- 6. Ensuring that all students enrolled in the magnet school programs have equitable access to high quality education that will enable the students to succeed academically and continue with postsecondary education or productive employment.*

Elias Brookings Magnet School

Museum Studies through Expeditionary Learning

Museum study engages students by stimulating their own curiosity and excitement about new vistas and worlds beyond their previous imagination. Brookings will refine their present Magnet Museum program by working with Expeditionary Learning Schools in the delivery of curriculum.

Museum Studies: At Brookings, the curriculum is oriented around “big idea” projects in which teachers plan units or lessons around common, overarching school themes that are integrated with specific curriculum at each grade level. Working closely with museum educators from the Museums at the Quadrangle, teachers build lessons around museum collections, and in the discipline and craft of exhibitions and displays of student work, ultimately leading to student products that are presented to families and the community through school-based Exhibition Nights.

Purposeful Museum Visits: The typical one-day “field trip” is replaced in a Museum school by more purposeful “field-work,” planned by museum educators and classroom teachers who align exhibit and artifact study with specific curriculum targets. Follow-up classroom work entails Internet research, journal entries, letter- and story-writing, interviewing, creating representational models and creating displays for public exhibition.

Academic Focus and Support: Through this newest round of magnet funding, Brookings will coordinate the Museum based studies with Expeditionary Learning Schools, a proven systemic reform *instructional* model that is consistent with the Museum Studies approach. Through this partnership with EL, all teachers at Brookings will participate in top-level professional development with a specific focus on English and Math. Through interdisciplinary, hands-on learning -- the linchpin of both Museum and EL approaches to education – school will become more relevant and meaningful for students.

Teacher Training Lab: As part of the district’s commitment to develop and sustain these unique programs, Brookings will become a training ground for teachers interested in the EL and Museum studies approach. EL school designers will work closely with Brookings and SPS staff to mentor and monitor delivery of instruction as a “curricular whole” through in-depth investigations and learning expeditions. This core of trained teachers will help to build in Springfield a cadre of highly trained EL teachers whose ultimate goal is to help prepare students to enter college and become productive, thoughtful caretakers of their community.

Gerena PreK - 5 Magnet School

Montessori and the Arts

Gerena School will offer the specialized Montessori program and curriculum that integrates the study of mathematics, science, history, geography, English, foreign languages, art, and music. The Montessori program will be phased in over four years, beginning with 12 multi-age classes for students in PreK and K in the 2007-08 school year and expanding through grade 5 by the 2010-2011 school year.

Montessori Program Elements: The Montessori curriculum builds on the continuing self-construction of the child—daily, weekly, yearly—for the duration of the program. Montessori schools are divided into **multi-age classrooms**—“Children’s House” for children ages 3 to 6, “E1” for students in 1st-3rd grade, and “E2” for students in 4th and 5th grade.

The prepared environments introduce an uninterrupted series of learning passages, a continuum in which the role of the teacher is that of a guide or coach, a practice that distinguishes Montessori from other educational approaches.

Independent activity constitutes approximately eighty percent of the work in a Montessori classroom, with teacher-directed activity comprising the remaining twenty percent of the work at all levels. Every aspect of the curriculum involves creative invention and careful, thoughtful analysis. In viewing learning outcomes at each Montessori level, emphasis on *why* and *how* students arrive at what they know is just as important as *what* they know.

Arts at Gerena: Gerena is the only elementary school in Springfield to offer an instrumental music program --instruction in keyboards, strings, percussion and wind instruments. Gerena features a piano lab, a vocal music program and boasts two visual arts teachers who work with students in every grade level, introducing them to the joys of creative artistic expression.

Montessori Teacher Training Lab: Gerena will become the hub for Montessori teacher training in Springfield and Western Massachusetts. University and in-house teacher trainers will develop a program to provide in-service opportunities for Springfield and other aspiring Montessori teachers, thereby developing long-term capacity in the district to sustain delivery of high quality Montessori instruction.

The High School of Science & Technology

21st Century STEM Teaching Laboratory School

To meet the increasing demands of the 21st century for a highly qualified, technologically –skilled work force, Sci-Tech will provide opportunities for students to learn about and work in the highly technical “STEM” fields—Science, Technology, Engineering and Mathematics. Students will enter into courses of study such as biomedicine, biotechnology, engineering, film and media technology and finance, through rigorous math and science classes that will serve as the foundation for engagement in one (or more) of the learning academies:

Biomedical Science, Biotechnology and Forensics

Information Technology and Film/Media Technology

Engineering

Math and Finance

Affiliations with National Organizations:

Sci-Tech will partner with two national organizations in creating the academies above: the *National Academy Foundation* for the work in the Information Technology and Finance academies, and *Project Lead The Way* for the work in the Biomedical Science and Engineering academies. Training provided by each of these organizations will create an instructional model based on project-based investigations that inspire and excite students while at the same time pointing them towards careers in critically relevant 21st century fields.

Teacher Training Lab:

Sci-Tech will serve as the SPS Teacher Training Lab for math, science, technology and engineering. Experts in the STEM fields—including both district teachers and university partners—will coach and mentor Springfield teachers and offer mini-courses aimed both at preparing Sci-Tech students for success in college and at creating the highest quality teaching and learning environment at Sci-Tech.

“Real World” Exposure and Experience:

Sci-Tech students and teachers will work side by side, both at school and in the field, with experts from Springfield’s business community, notably MassMutual Financial Group, Baystate Medical Center and the Pioneer Valley Life Sciences Institute, all of whom were instrumental in moving this magnet initiative forward.

The Renaissance School (gr. 6-12)

Expeditionary Learning and the Arts

The Renaissance School (TRS) is the product of a partnership forged between the Springfield Public Schools and Expeditionary Learning Schools (“ELS”), to launch one of the first of the small ELS secondary schools to emerge from a national initiative of the Bill and Melinda Gates Foundation. At the heart of ELS’s approach is a set of “Core Practice Benchmarks” that include:

- ◆ **Learning Expeditions**
- ◆ **Active Pedagogy**
- ◆ **Culture and Character**
- ◆ **Leadership and School Improvement**
- ◆ **School Structures**

Expeditionary Learning:

EL is a model for comprehensive school reform that emphasizes high achievement through active learning, character growth and teamwork. Students spend much of their time working on *learning expeditions*, which are “big idea,” broad topics or themes, such as bridges, water quality, the Civil Rights Movement, or the Industrial Revolution. Teachers work together to design these expeditions to align with district initiatives and Massachusetts State Frameworks, and to assess their own work and student work. Structures like “Crew” advisory teams, block scheduling and common planning time make it possible for teachers to collaborate, and for students to do field work outside the school.

The Arts at Renaissance:

The magnet grant provides Renaissance students with unique opportunities to explore learning through the arts, including music, drama, visual arts and dance. The arts will be integrated into learning expeditions and will be featured as available electives for focused study. Artists in residence from the community and beyond will assist magnet resource specialists in continuing to establish the Expeditionary Learning experience at Renaissance as unique among Springfield schools.

Teacher Training Lab:

EL’s extensive professional development program provides teachers with powerful instructional strategies and practices to teach academic subjects from an interdisciplinary, project-based perspective. Teachers at Brookings and throughout the Springfield Public Schools will have the benefit of ELS’ nationally acclaimed teacher training model that includes direct in-the-classroom work by a cadre of “school designers” augmented by rigorous national and regional content-driven seminars.

STEM Middle Academy

Science, Technology, Engineering and Math

Responding to an expressed need on the part of high schools and colleges for a middle school program that prepares students to participate in high-level math and science programs, SPS will create a new Science, Technology, Engineering and Math Middle Academy (STEMM). In September 2008, STEMM will open its doors to the school's first cohort of 100 sixth grade students, growing over the next two years to its maximum capacity of 300 students in grades 6 through 8.

This small middle school Academy will feature an instructional approach that is designed to meet students where they are and lead them through an engaging sequence of high level, challenging academic courses that are articulated with courses offered at Sci-Tech, with its new cluster of STEM-related Academies.

STEMM Course Offerings: In addition to the standard curriculum offered in all of Springfield's middle schools, STEMM will provide students the chance to participate in exciting hands-on courses such as:

- Pre-Engineering
- Project Lead the Way's *Gateway to Technology*
- Forensic Science

Advanced Technology: Magnet funds will provide STEMM with state-of-the-art technology specifically designed to engage students in hands-on work building robots, using forensics to solve mysteries, and gaining the skills to jump right into the advanced programs in Information Technology, Film, Video, Engineering and Biomedical Science that will be the hallmark of the new Sci-Tech STEM 21 Academies.

Teaching Laboratory Initiative: To help make these advanced offerings a reality, STEMM will engage professionals in the fields of science, technology, engineering and math who will serve as mentors and classroom instructors. Joining these professionals will be a cadre of college and university professors and interns with particular expertise in the STEM fields who will:

- ◆ Provide content-specific training for teachers to increase their expertise in curricular areas directly related to the STEM fields;
- ◆ Help develop organized and disciplined instructional and cultural practices;
- ◆ Expose students to the career opportunities that abound in the STEM fields.