



**S.T.E.M. Magnet Academy
at the Cradle of Aviation Museum**

*Focusing on Science, Technology, Engineering
and Math skills for college and careers.*

Cradle of Aviation Museum

What's all the fuss about STEM?

- According to the US National Research Council and the National Science Foundation... “the fields in STEM are collectively considered the core technological underpinnings of an advanced society”...
- They go on to say... “the strength of the STEM workforce is viewed as an indicator of a nation’s ability to sustain itself.”

Cradle of Aviation Museum

The US National Academies expressed their concern about the declining state of STEM education in the United States

- In order for the US to compete successfully in the 21st Century...

Their top recommendations are:

- > Increase America's talent pool by improving K-12 science and math education
- > Strengthen the skills of teachers through additional training in science, math and technology
- > Enlarge the pipeline of students prepared to enter college and graduate with STEM degrees

Cradle of Aviation Museum

The Long Island perspective:

- Harder and harder to get kids excited about science and math
- Competition for their attention keeps increasing...Facebook, Twitter, etc.
- Disconnect between kids and what careers in science and math may exist locally.
- Even bigger disconnect in our under-served communities.

Cradle of Aviation Museum

The STEM Magnet Academy

- Not going to solve all the problems but with a “rubber meets the road” perspective it will try.
- Started in 2008 with the Westbury School District
- Originally designed to help alleviate overcrowding
- Plan is to use the Cradle’s extensive exhibits and educational programs to help illustrate from a real world perspective the theory learned in the classroom
- Long Island has been the home for innovations in technology for over 100 years
- Physics First program was developed where 9th graders will use Physics as the basis for their science studies. Normally Physics is taken in the 11th grade
- 9th graders and 10th graders spend half of their school day at the museum everyday for their classes in Physics, Math, World History, Robotics and Aeronautics

Cradle of Aviation Museum

- The students have consistently scored well on the Physics and Chemistry Regents exams
- 90% the Physics regents as freshman and 100% passing the Chemistry Regents. The norm for 11th graders taking the Physics Regents is roughly 84% passing
- Student population for the program is 100% African-American and Hispanic with a 2 to 1 ratio girls to boys

Cradle of Aviation Museum

The STEM Magnet Academy expands in 2011

- Based on Westbury's success the program has been expanded to include the Uniondale and Freeport School Districts
- Approximately, 200 high school students will be taking classes at the Cradle every day of the school year with a Physics First approach

Cradle of Aviation Museum

The College Connection

- Working with Nassau Community College, New York Tech, Hofstra and Dowling School of Aviation
- Goal is to set up college level courses at the Cradle in Engineering and Aviation related fields
- 11th and 12th graders will have access at a reduced rate

Cradle of Aviation Museum

The Business Connection

- 20 companies along with LIFT have signed up to be STEM Business Partners
- This past year we started taking the 11th grade students on company tours
- Students from Westbury toured companies like Globecom Systems in Hauppauge and Arkwin Industries in Westbury. Met with a variety of engineers and researchers.
- The goal is to expose the students to career opportunities with local technology companies
- Focus is not just on aerospace. Companies will include: High Tech, Renewable Energy, Homeland Security and Biotech
- Company tours, job shadowing, internships and summer jobs

Cradle of Aviation Museum

Where do we go from here?

- We have created STEM Partnerships with several school districts where a series of museum trips and museum outreach are geared towards getting kids excited about math and science at the elementary and middle school level.
- STEM Partnerships focus on creative problem solving and critical thinking exercises.
- The Cradle has been designated as the Nassau County STEM Hub along with Brookhaven National Lab as the Suffolk County STEM Hub.

Cradle of Aviation Museum

Future Plans

- Workforce Development Project
 - > Create a career path for second tier students in technology and manufacturing fields
 - > Work with Nassau Community College and BOCES to create a Manufacturing Engineering program to begin to build the next generation of machinists for industry.
 - > Provides a solution to a growing employment problem and creates new opportunities for kids, who may not be interested in a 4 year college career

Cradle of Aviation Museum

STEM Career Day - April 23rd

- 10th & 11th Graders from all Nassau County Districts.
- Meet with STEM Professionals from over 30 companies.
- Hook up with local Colleges.

Cradle of Aviation Museum

A powerful STEM Partnership

- Cradle of Aviation Museum
- Nassau County
- Westbury School District
- Uniondale School District
- Freeport School District
- Nassau BOCES
- Nassau Community College
- New York Institute of Technology
- Dowling College
- Hofstra
- LIFT
- STEM Business Partners