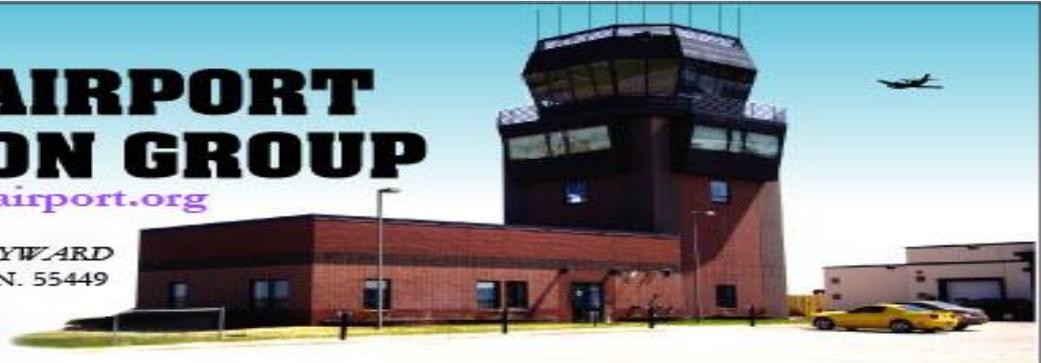


BLAINE AIRPORT PROMOTION GROUP

www.aneairport.org

TAKING YOUR AMBITIONS SKYWARD
8891 Airport Road C-2, Blaine MN. 55449



THE EDUCATION COORDINATOR • MAY 8, 2014



WHY STEM? What is it?
STEM is an acronym for Science, Technology, Engineering and Mathematics. On January 31, 2006, United States President George W. Bush announced the American Competitive Initiative.

The United States National Academies expressed their concern about the declining state of STEM education in the United States. Its Committee on Science, Engineering and Public Policy developed a list of 10 actions federal policy makers could take to advance STEM education in the United States to compete successfully in the 21st Century.

THE TOP THREE RECOMMENDATIONS WERE TO:

1. Increase America's talent pool by improving K-12 science and mathematics education;
2. Strengthen the skills of teachers through additional training in science, math and technology;
- and 3. enlarge the pipeline of students prepared to enter college and graduate with STEM degrees.

STEM programs will implement higher cognitive skills for students and enable them to inquire and use techniques used by professionals in the Science, Technology, Engineering and Mathematical fields. STEM fields include an exhaustive list of disciplines that bring STEM education to all students rather than only the gifted programs. In 2012 President Obama renamed and broadened the "Mathematics and Science Partnership" to award grants to states for improving teacher education in these subjects.

In 2010 The Blaine Airport Promotion Group proposed a vision statement that would include programs to help develop a healthy airport through the

diverse community of businesses, general aviation and airport staff developing the potential of KANE airport. From this beginning a plan was developed to engage businesses on the airport to support the STEM initiative and invite schools to use the airport as a resource by providing tour and workshop programs for Aerospace related extensions to the schools classroom studies. This program has provided over 3500 K-12 student visits to businesses at the Blaine airport giving students a first-hand view of a completely operational airport, learn from professionals and historians and develop skills related to Aerospace technologies.

A June 2010 Airport Economic Impact Study, by the University of Minnesota reported that Minnesota's airports contributed more than \$12.1 Billion to the state's economy and provides 165,000 jobs that produce 6.4 Billion in taxable labor income. Minnesota's small and medium airports produce approximately \$184 Million in taxable labor income.

Jobs are waiting to be filled by qualified graduates with STEM degrees. "You do the math" Jessica produced the left portion of the artwork as a thank you card to the Blaine airport on 11/21/11. Jessica will soon enter college and the job market with confidence.

thank you

$$P = \frac{Fd}{t} = \frac{3000 \text{ lbs} \times 1200 \text{ ft}}{1 \text{ min}}$$

$$= 3.6 \times 10^6 \text{ ft-lbs/min} \times \frac{1 \text{ hp}}{3.3 \times 10^4 \text{ ft-lbs/min}}$$

$$= 109 \text{ HP}$$

Horsepower needed to overcome drag:

$$C_{Dw} \approx R_{Dw} = \frac{1}{2} R_{Dw} = \frac{8\pi G T_{Dw}}{c^2}$$

Drag = 350 lbs = thrust (steady-state flight)

$$\text{THP} = \frac{T \times V}{325 \text{ NM-lbs/hr-HP}} = \frac{350 \text{ lbs} \times 120 \text{ KTS}}{325}$$

$$= 129 \text{ HP}$$

$$C_d = C_{d0} + \frac{(C_l)^2}{\pi e AR}$$

Total HP = 109 + 129 = 238 HP

FRIEND OF THE BLAINE AIRPORT
Jessica 11/21/11

You Do THE MATH

STEM = Next Generation Engineers and Scientists

Moon Walkers at Blaine Airport

The AirSpace Minnesota Board of Directors and Honorary Hosts were gathered at the Golden Wings Flying Museum to celebrate the Founding Flyers Society that is dedicated to help new generations “Dream Big” and develop skills needed in pursuit of their dreams.

NASA astronaut, Dr. Buzz Aldrin and NASA astronaut, Dr. Harrison “Jack” Schmitt were featured speakers during the Gala event held among the aviation collection of one-of-a-kind aircraft from the Golden Age of Aviation.

The Blaine airport was a fitting location for this historic gathering. The Golden Wings Flying Museum collection includes NASA’s first aircraft as well as a history of balloon research projects sponsored by NASA and the Office of Naval Research, conducted by Physics Professor Edward Ney of the University of Minnesota. Balloon flights averaged 4-5 per week and were conducted at night to avoid peak traffic on the field and were Civil Aeronautics Administration approved. Over 500 flights covering high altitude research projects were done by the U of M Flight Services. These projects were often in collaboration with astronauts such as Scott Carpenter. Professor Ney conducted research from the small hanger that is currently attached to the Golden Wings Flying Museum.



Blaine High School has taken a Giant Step

The Blaine High School has been providing advanced studies in STEM projects that truly are incredible. The program places an emphasis on product development and team cooperation. These are students that learn STEM with a practical hands-on scientific approach. Leadership under the direction of Principal, John Philips in this STEM initiative will prepare students for a successful future. On April 22, 2014 Curriculum Integration Coordinator, Jennifer Birkmeier, from the Blaine High School coordinated a visit to the Blaine airport for 35 students and staff. At Key Air the students were given a tour of the facilities by

Manager, Mike Lawrence. Mike shared his own experience, challenges and decision making in career development. A DVD was presented as an overview of the development of airports and the advancements made in careers and community relations and economic impact that regional and reliever airport have on their community. Harvey Karth presented statistics supporting the Blaine airport experience.



Airport Manager, Joe Harris spoke during a brief lunch stop in the Golden Wings Flying Museum office. This was an informative presentation on the workings of an airport and the MAC experience and employment opportunities.



At Twin Cities Aviation, Chris Gabiou provided information on general aviation and career statistics for the near future of the aeronautical industry. Paul Perovich shared his personal career history in aviation and concluded his discussion with an aeronautical formula quiz for the students.



Curriculum Integration Coordinator, Kate Watson arranged a tour for 110 second grade students on April 17, 2014 at the Golden Wings Flying Museum. Chris Gabiou and Craig Hass presented a weather related program in the classroom during the three hour visit. Two groups of 55 students were divided into smaller groups for the tour through the museum stopping at teaching stations featuring airplane parts and controlled surfaces by Tom Lymburn, propulsion and Berunillie Principal by Wayne Wayoit, what is a machine by James Mecklenburg, and Map/Chart introduction, by Roger Hansen. Tour guides were Craig Schiller, Harvey Karth and Gene Lange.



WORDS OF THE MONTH:
Cloud Point & Pour Point



Dear Blaine Airport and Museum
I loved my field trip today! I loved your plane and your toys and your weather. The most part I loved is the ball machine and the flying or I like the ball viscom cool and ball viscom. I like your flying plane. Thank you for let us go to your plane.
Sincerely
Kevin