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## FORUM

### ***LEARNING TAKES FLIGHT '93: AWARD-WINNING EDUCATORS USE AVIATION TO SPARK STUDENT ACHIEVEMENT***

Frank G. Mitchell

Nine teachers from six states were chosen as 1993 winners of the General Aviation Manufacturers Association (GAMA) annual Award for Excellence in Aviation Education. The award honors grade school and high school teachers who bring general aviation into the classroom, either as a specific topic of discussion or as a teaching tool.

Most of the winning projects included activities spread over an entire semester or school year. From each winning entry, two or three of the most original or vivid ideas were selected for this article. Enough detail was included so that another teacher can take the ideas and develop his or her own teaching activity. Another intent of this article is to show that aviation-related themes work for all ages and kinds of learners. A summary of the award winners follows.

#### **BILINGUAL STUDY OF AIRPLANE FLIGHT AND MODEL AIRPLANES**

(Grades K-3)

Kennedy Elementary School

Keizer, Oregon

Nancianne Horton

The class studied parts of the airplane, aviation history, how airplanes fly, and aviation vocabulary in Spanish and English. After lessons on the above, each child made a folder paper airplane, a paper space shuttle, a paper X-30, and then invented a paper airplane model. Following these activities, books and stories were shared, along with filmstrips and videos. Finally, the children worked in groups of four to make snap-together airplanes and spacecraft models, which were hung in the room and used as demonstrations about aviation. Reports were given in English and Spanish.

#### **UP, UP, AND AWAY WITH IMAGINATION**

(Grades K-3)

Walnut Street Elementary School

Toms River, New Jersey

Barbara Moreau

A before-school program for the summer and a school-year classroom program using an aviation theme

were developed. Subjects covered included aviation history, aerodynamics, parts of the airplane and uses, and careers in aviation.

A series of lessons was included in a booklet titled *Up, Up, and Away*, which included a vocabulary game for each lesson, to be presented on a chart in class.

The unit is integrated with all other class subjects, and guest speakers from the community visit the class to talk about model building, personal experiences in aviation, and hot air balloons.

Family nights involve the local Experimental Aircraft Association chapter in helping the children make wing tips. Three other family nights concentrate on making rockets with the children and then launching them on another evening.

The National Guard lands a helicopter on the school playground and lets the children sit in it and learn about it.

The children are also taken to the local airport on Aviation Awareness Day, which includes an air show and airplane display.

During the summer, an aerospace week is conducted at a child-care center, where several of the activities taught during the year are used with equal success with pre-school children.

*Learning Takes Flight '93*

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**AWESOME AIRCRAFT**

(Grades 4-6)

Magnolia Woods Elementary

Baton Rouge, Louisiana

Estelle L. Stockett

In a unit integrated with science, math, language, and art subjects, students in pairs build and fly a wooden model airplane, recording distances during three trial flights. Class discussion evaluations are held and students are allowed to modify their models, explain their modifications, and fly them again. Awards are given for the greatest improvements. Added study includes naming airplane parts and terms and using correct terminology to explain principles of flight, relating them to the design of their airplane.

**AEROSPACE**

(Grades 4-6)

East Elementary School

New Richmond, Wisconsin

Pat Allegar

The basic idea of the unit was to explore aerospace as "anything that goes into the air." With that definition, students in three classes started their study by learning about parts of an airplane, building kites, and constructing boomerangs, paper rockets, and paper airplanes. A guest speaker discussed cryogenics and the class also visited an airport. The study concluded with students constructing and launching a model rocket, and working in teams to package an egg in a carton to prevent it from breaking when dropped from an airplane during an actual flight. Twenty of 34 eggs packaged by the students survived the drop due to a variety of creative ideas.

**ACCELERATED LEARNING THROUGH AEROSPACE**

(Grades 7-9)

Coulterville Greeley School

Coulterville, California

Robert G. Reinhardt

Aviation, aerospace, and technology were used to accelerate the development of all academic learning skills in a series of learning activities. The building and launching of model aircraft and solid fuel rockets, the

manipulation of aircraft and engine parts, computer design and testing of aircraft, the use of sophisticated computer flight simulators, and actual flight instruction in a trainer airplane were used to stimulate learning.

**HIGHWAYS IN THE SKY**

(Grades 7-9)

Twin Spruce Junior High School

Gillette, Wyoming

Toni C. Brown

This unit was flexible in terms of time spent in interdisciplinary activities related to general aviation source material. Class teams were assigned travel problems to solve using state aeronautical charts and highway maps. Skills were developed in map reading, applying mathematics in comparing travel options, and communicating effectively to build team efficiency. Trips on the ground were compared to trips taken in general aviation aircraft, covering aspects such as cost, time, and distance. A variety of travel situations were used to extend the team activities to several class sessions.

**PROJECT B.L.A.S.T.-O.F.F.**

(Grades 7-9)

Mill Road School

Northfield, New Jersey

Linda Szypula and Mary Anne Devine

The seventh-grade class returned from its holiday break in January to find a classroom with a black ceiling covered with stars representing the constellations, aircraft mobiles hanging from the light fixtures, walls covered with aerospace paraphernalia, a portable planetarium, and an aircraft flight simulator just waiting to be tested.

The previous summer the teachers created an Aerospace/Aviation curriculum unit titled Project B.L.A.S.T.-O.F.F. (Breakthrough in Learning Aviation, Space, Technology, Occupations, Flight, and Fliers). The 125-page unit explores the solar system, history of aerospace, airports, careers in aviation, heroes and heroines of aviation, types and uses of airplanes, how airplanes fly, instruments and navigation, parts of an airplane, and weather.

The goal is to create an aviation-aware society that comprehends the importance of aviation to the

community, state, nation, and world. A portable planetarium, Star-Lab, was used to teach about the planets in cooperation with the nearby Federal Aviation Administration Technical Center. A flight simulator was also used to teach students to successfully read and understand the various cockpit controls in interactive learning flights.

#### **AVIATION/AEROSPACE ELECTIVE COURSE**

(Grades 10-12)

Kinnelon High School

Kinnelon, New Jersey

David H. Karre

This full-year survey course for high school students provides a single discipline that applies in a practical and motivational way the academic areas of science, mathematics, history, geography, health, and English. Students are given "flight" instruction on the IBM PC and

ATC 510 simulators. Special projects such as NASA's INSPIRE are integrated to add practical experience. Aircraft CAD development is coupled with the technical drawing class. Students who desire discovery flights or actual instruction can take them after school or on weekends.

Speakers from the airlines, the FAA, and military and college aviation programs regularly visit the class to explain their areas of expertise in aviation and aerospace. Students are required to pick a topic in aviation/aerospace and give an oral/written research report. The interdisciplinary approach to this course is paramount. Math, science, history, vocational education, career education, English, and the arts are phased into the course throughout. For example, math teachers in trigonometry will work wind triangulation, time, distance, and speed problems with students to illustrate the importance of math.□

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**Frank G. Mitchell** has been involved in aviation education for 30 years. He directs Beech Aircraft Corporation's aviation education programs and marketing training programs for the Beech retail distribution organization. He also serves as chairman of the General Aviation Manufacturers Association and University Aviation Association Education Committees.□

Teachers interested in submitting programs for the award should write to the General Aviation Manufacturers Association, Education Office, 1400 K Street NW, Suite 801, Washington, DC 20005, or call: (202) 393-1500.

Want more aviation education ideas? GAMA lists several in the brochure "Activities and Resources to Use in General Aviation Teaching Units." For counselors, GAMA publishes a "Career Brochure" that gives an overview of general aviation careers. You can ask for them by writing to the General Aviation Manufacturers Association, Education Office, 1400 K Street NW, Suite 801, Washington, DC 20005.