



Aerospace Education

Summer 2010

News

Inspiring Students To Excel

Space Shuttle: End of an Era

"I think the Space Shuttle is worth one billion dollars a launch. I think that it is worth two billion dollars for what it does. I think the Shuttle is worth it for the work it does."

Pete Conrad (Apollo era astronaut - deceased)

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In 1981, the Space Transportation System (STS) began a career that has spanned almost 30 years of accomplishing many tasks that have enhanced the quality of life on Earth. We have watched as the brave men and women who have flown on the shuttle have given us many "teachable moments" as educators. From awe-inspiring liftoffs to majestic touchdowns, we have witnessed the talent and ingenuity of our nation's engineers, scientists, and technical workers at their best. We have been reminded of the team effort it takes to accomplish seemingly impossible missions.

Consisting of three main components (the orbiter, external tank, and two solid rocket boosters), the STS has provided a way for astronauts and payloads to get into space and to visit the International Space Station (ISS) for servicing and resupply. Five Space Shuttle orbiters have been built as part of this program - *Columbia*, *Challenger*, *Discovery*, *Atlantis*, and *Endeavour*. Another orbiter, *Enterprise*, was built for testing purposes. Of these orbiters, two have been lost in flight - *Challenger*, during ascent in 1986 and *Columbia*, during re-entry in 2003. The loss of

fourteen brave and dedicated men and women accompanied these disasters, reminding us of the sacrifice these space pioneers were willing to make.

The future of space transportation is in question. The current fleet of orbiters will retire in 2011. A new commercial space transportation system is being pursued by many companies, including Boeing. What will the future of space travel look like? It is an exciting time for young people interested in space travel, yet the potential benefits of continued space exploration will benefit all mankind taking us to the stars and beyond.



Inquiry related to Space Shuttle: End of an Era:

1. About how many years has the space shuttle been in service?
2. What is the name of the orbiter that was built for testing purposes?
3. Which two orbiters were destroyed in flight?
4. Research one of the possibilities for future space transportation and share with your class.

Aerospace Education News
Aerospace Education News is the official aerospace education quarterly publication of the Civil Air Patrol at CAP National Headquarters, Maxwell Air Force Base, Ala.

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If you have news, events, or ideas we might consider for the newsletter, please submit them electronically to jstone@capnhq.gov.



Aerospace Education Member (AEM) Spotlight ...

Jeff McCormick, GA



What does it feel like to ride in the backseat of a Blue Angels F/A-18B aircraft? Ask Jeff McCormick, Headmaster of Vidalia Heritage Academy in Vidalia, Georgia. Jeff was chosen as the Key Influence Rider (KIR) for the recent local Blue Angels air show in Vidalia. The U.S. Navy selects people who influence youth in a community to ride with the Blue Angels. Jeff said, "I was fortunate to be nominated, wrote a narrative concerning why I wanted to fly with the Blue Angels, took a physical, and the Navy chose me to participate."

What led Jeff McCormick to this moment? It started with a love of aviation. Growing up, Jeff remembers how

"It's all because of the Civil Air Patrol activities and the ACE Program that I personally got to realize a dream and pass that experience on to our students."

--- Jeff McCormick

he and his brother would make play cockpits of Apollo 11 or Apollo 12 spacecraft. The dream was to fly or be part of the space program. However, the closest he got was jumping out of airplanes in the U.S. Army.

Later, Jeff McCormick had a career in the ministry and lived near MacDill AFB in Tampa, Florida, where a lot of the young men in his church were involved in Civil Air Patrol or the Air Force. This was his first introduction to Civil Air Patrol. After Jeff left the ministry, he became the Headmaster of Vidalia Heritage Academy and started looking for something his students could do that would involve them in aviation and space, as well as develop them into patriotic citizens. The answer was the CAP ACE (Aerospace Connections in Education) Program for grades K-6. Jeff became an Aerospace Education Member (AEM) and signed his school up for the ACE Program. This unique program had what he had been looking for to motivate and excite his students.

The curriculum offered Jeff's students aerospace lessons that were fun and STEM- (Science, Technology, Engineering, and Mathematics) based while adding the components of character development and physical education. All three subjects carry an aerospace theme so the learning is consistent. Jeff McCormick's 120 students are all taking part in the program. The older students became mentors for the younger students and helped with experiments. Jeff says, "It's been a tremendous blessing to watch some of the kids who might not excel

in some things really come alive when aircraft, space, flight, and astronauts have been introduced to them. It's just been great to watch their response to ACE." The Blue Angels experience has brought the aviation lessons in Jeff McCormick's school to life. The students see what can happen if you pursue your dreams. The example that Jeff is setting is one that will last forever in his students' memories. As Jeff said about his once-in-a-lifetime experience, "This has been a phenomenal experience for me and my students. It gives you a new appreciation for what they (the military) do, especially in a combat experience." The whole experience was because an educator interested in aviation and space sought out the Civil Air Patrol to provide the lessons and motivation he was looking for to make his school unique and his students exceptional. We applaud Jeff McCormick and Vidalia Heritage Academy for having the "right stuff" to make this wonderful program work for them.



From left: Blue Angels #7 pilot, Lt C.J. Simonsen, Jeff McCormick, and Jeff's students after the Blue Angels flight.



Aerospace Education Officer (AEO) Spotlight.....

Lt Col Russell Garlow, Director of Aerospace Education for Washington Wing CAP



Lt Col Garlow and cadets with model rockets.

Lt Col Russell Garlow has loved aviation since his first visit to an airport when he was young. Not only did he love the aviation experience, but he also became interested in drawing the airplanes and has become a self-driven aviation artist. These talents and interests were natural for him since his mother is an accomplished artist and his father is an engineer. Besides art and airplanes, he has other activities that keep him busy. Lt Col Garlow is the Director of Aerospace Education (DAE) for Washington in Civil Air Patrol; is working toward his Master's Degree from Embry-Riddle Aeronautical University; is a volunteer member of the Museum of Flight Education Leaders Advisory Board (ELAB); is an active Big Brother in the Big Brothers/Big Sisters Program; and is a team member and outreach educator for the North American Eagle Land Speed Project. Lt Col Garlow really knows what the concept of volunteering is all about!

In his professional life, Lt Col Garlow is with Boeing as a Customer Quality Support Representative, sup-

porting the delivery of 777 aircraft for Emirates and Turkish Airlines. Lt Col Garlow also holds an Airframe and Powerplant license from the Federal Aviation Association (FAA) and has a Bachelors degree in Professional Aeronautics from Embry-Riddle Aeronautical University. Among his CAP accomplishments, Lt Col Garlow has helped Washington Wing earn the Region AE Mission Award in 2004 and second place nationally in 2008. He lives in the Stanwood area of Washington state and is married to Didi (also a CAP volunteer).

Lt Col Garlow's main objective for his CAP Aerospace Education Program in Washington is to make the Washington Wing of CAP the best possible program while instilling the crucial importance of getting young people interested in education and careers in the aerospace sector. He has seen first hand the "brain drain" in the industry and tries to impart the importance of this contribution on the country and on the cadets' future choices. Congratulations to Lt Col Garlow for his outstanding volunteer spirit – we are glad he chose to spread his talents and commitment to CAP!

“My overriding objective in my duties as DAE, over and above making WA WG AE the finest program possible, is to instill the crucial importance of getting young people interested in education and careers in the aerospace sector.”

---Lt Col Russell Garlow



K-6 Aerospace Connections in Education (ACE) Program - And the Winners Are....

The reality that aerospace education not only educates, but inspires, motivates, and engages participants is what makes CAP's ACE Program for grades K-6 an outstanding program wherein all participants are winners. Whether it is the student whose curiosity is sparked, whose interest is piqued, whose dream is ignited, whose ideas and skills soar to new heights; or the teacher whose knowledge is expanded, whose instruction is enhanced, whose classroom is a flurry of questions and excitement; or the principal whose support and enthusiasm leads his/her school on a path of exploration and discovery, the ACE Program propels its participants "onward and upward." After a full year of formal program implementation beyond the two-year prototype phase, the 2009-2010 academic year has proven to be an "ACE Success," from lift-off in October until the end of the year, when accolades are given to high performing schools and persons.

set for the ACE Program and epitomizes the exact purpose of the CAP ACE Program - *inspire, engage, excite, and ignite!*



D.J. Hadden (shown above with Headmaster Jeff McCormick and his teacher) is a 5th grade student at Vidalia Heritage Academy in Vidalia, Georgia. D.J. told his Headmaster, as they kicked off their ACE Program, "This is what I've been looking for my whole life!"

standing teacher in the ACE Program since it began in 2007 and continues to shine as an exemplary aerospace educator and motivator for her students and her peers.

ACE Coordinator of the Year

Megan Tucker, a 4th grade teacher from Kenwood Elementary School in Fort Walton Beach, Florida, has been an AEM for four years but this was the first year she participated in the ACE Program. Megan's organized and detailed records of her school's ACE participation along with her enthusiasm, confidence, knowledge and planning, helped make the ACE Program a very rewarding experience for her school. (Shown below with her principal, Alan Lambert.)



ACE Students of the Year



Abby Burditt, a 6th grade student at San Jose Catholic School, in Jacksonville, Florida, exceeds the goals



ACE Teacher of the Year

Carla Chin, a 6th grade teacher from San Jose Catholic School in Jacksonville, Florida, has been an out-

ACE School of the Year

Part of the Okaloosa County School System in Florida, Kenwood Elementary School executed the ACE Program above and beyond expectations. With almost 30 classroom teachers, the principal, additional faculty members, and a little over 550 students participating, the school certainly took the program and themselves to new heights. (Shown below at ACE kick-off) -----Cont. on page 5





Aerospace Education Notes.....

(Ace article continued from page 4)

2010 ACE Finale

The CAP K-6 ACE Program continues to make strides as a unique program for both CAP and youth organizations across America. Meeting the societal and educational challenges to provide rigorous academic relevance, improve character development, and increase physical fitness for young people makes the ACE program a stellar point of light for our country.

At the conclusion of the first formal year beyond the two-year prototype phase for the ACE Program, about 250

teachers and approximately 6,200 students at 63 educational sites in 23 states reaped the benefits of the program during academic year 2009-2010. Additional academic lessons for each grade level curriculum guide, as well as a new online registration and completion process, enhanced the program's efficacy. On a scale of 1-5, with 5 being the best possible score, program assessment data continues to be high with an average score of 4.3. Positive results from schools with strong administrative support for an entire school's ACE participation are particularly rele-

vant in predicting continuity and success for future years.

For more ACE Program information, to include sample lesson plans, check out the ACE link at www.capmembers.com/ae. If interested in becoming an ACE classroom or ACE school, please send an inquiry to ace@capnhq.gov. To view complete article, go to http://www.capvolunteernow.com/todays_features.cfm/cap_honors_top_aerospace_connection_in_education_achievers?show=news&newsID=8133.

TOP Flights Inspire Educators

CAP Teacher Orientation Program (TOP) Flights have had tremendous success in many wings that have participated. Teachers who take the flights are excited, rejuvenated, and motivated about teaching (especially aerospace-related subjects).

One example of the success of TOP Flights comes from the AZ WG where Lt Col Pete Feltz is the Director of Aerospace Education and has a tremendous right-hand man in Maj Phil Hubacek. These two gentlemen worked with AZ Air Force Association to send TOP Flights soaring in AZ WG. Comments made by teachers from Anthem K-8 School that participated in these flights showed how they felt about this opportunity.



Teachers receive certificates after TOP Flight

"All of the personnel involved in our flight experience were the utmost professional and made sure that we not only enjoyed the flight but learned something in the process."

--Tracy Huemoeller (3rd grade teacher)

"I was excited about aerospace before, but after meeting with the Civil Air Patrol and having the opportunity to fly with them, my desire has exponentially increased and I look forward to taking this learning back into the classroom."

-- Celeste Devine (3rd grade teacher)

"There's nothing quite like flying. And there's nothing quite like flying a teacher to help her begin to realize the myriad connections between flight and the curriculum she teaches."

-- Liz Kinsey (4th grade teacher)



1Lt Doug Henderson explains how Cessna's ailerons work to teacher, Maura Neill

AE Reminders.....

• To sign up for the Aerospace Education Excellence (AEX) program, go to e-services and fill out the online application. The 2010-2011 year starts October 1 of the current year and ends September 30 of the following year. Even if you do not complete the program you may still sign up to participate the next year. However, if you complete the program you receive a unique plaque for your unit/classroom and a certificate for each participant. Go to www.capmembers.com/ae and find out more.

• If you are an Aerospace Education Member and have not taken a Teacher Orientation Program Flight for this fiscal year, please let Judy Stone (jstone@capnhq.gov) know of your interest and she will put you in touch with the person in your state who can make the flight happen.

Answers to front page story on Space Shuttle:

1. The Space Shuttle has been in service for nearly 30 years.

2. The orbiter that was built for test purposes was called Enterprise.

3. The two orbiters destroyed in flight were Challenger and Columbia.

4. Answers will vary.



CURRICULUM CORNER.....K-4

TOYS IN SPACE WITH BUZZ LIGHTYEAR...



Buzz Lightyear in the microgravity of space aboard the ISS

Objective: Students will learn how the motion of a gravitron on Earth is different than the motion of a gravitron aboard the Space Shuttle and how microgravity and freefall work.

National Science Standards:

- Content Standard B: Physical Science
 - Position and motion of objects
 - Properties of objects and materials
- Content Standard E: Science and Technology
 - Understanding about science and technology
 - Abilities of technological design
- Unifying Concepts and Processes
 - Change, constancy, and measurement
 - Evidence, models, and explanation

Grade Level(s): K-5

Background Information:

The shuttle is falling toward Earth just like you would be if your chair suddenly broke. But the shuttle is traveling so fast that the Earth curves away from it as it falls. If the shuttle were not continually falling toward Earth, its horizon-

tal velocity would send it flying away from our planet. The astronauts are just falling around the Earth without ever reaching the ground (until they slow their speed down and come in for a landing).

So what does it feel like to fall? Imagine jumping off a high diving board. If you sat on a bathroom scale as you fell toward the water, what would the scale read? "Zero", of course. You and the bathroom scale would be falling at the same rate - a weightless situation. Riders cresting over roller coaster hills have the same weightless sensation.

This same effect happens in orbit. The shuttle, the astronauts, and all of their equipment are falling at the same rate around the Earth. So the astronauts and their food, tools, and toys all seem to float in the cabin. If an astronaut were to sit on a bathroom scale while in orbit, it would read "zero" just as it did for the falling diver.

The floating effect of Space Shuttles and astronauts in orbit has been called by many names, such as *freefall*, *weightlessness*, *zero-G* (*zero-gravity*), or *microgravity*. Weightlessness and zero-G are incorrect terms that imply that gravity goes away in space. The term freefall best describes what causes the floating effect. Space scientists prefer to use the technical term microgravity because it includes the very small (micro) accelerations that are still experienced in orbit regardless of the objects falling.

Materials:

- Internet access for video clip from STS-54 (Toys in Space mission) found at <http://aesp.nasa.okstate.edu/ftp/anderson/toysweb/index.htm> - the one titled "Gravitron"
- One gravitron per group of students (no more than 3-4 in a group) (Gravitrons can be located by doing an

internet search for "gravitron toy").

- Student worksheet (see next page) and pencils

Procedure:

1. Ask students how the astronauts get around inside the Space Shuttle and ISS. (They float)
2. Ask how this happens? (See Background Information)
3. Discuss how simple tasks, such as eating and working with tools, is different in microgravity than it is on Earth.
4. Divide the students up into groups of 3-4.
5. Have each group take 10 minutes to experiment with the gravitron. Have them answer #1 on the student sheet.
6. Have students guess what will happen if this toy were played with aboard the Space Shuttle in microgravity. Have the students answer #2 on the student sheet.
7. Show the video clip from STS-54. Have students answer #3 on the student sheet.
8. Tell students to tell how the actual results differed from their hypothesis. Have students answer #4 on the student sheet. (Students have used the scientific method when answering the 4 questions on the student sheet.)

Extra Resources:

- Interactive site for NASA Discovery (STS-128) mission to the ISS with Buzz Lightyear aboard - http://www.nasa.gov/externalflash/Buzz_Lightyear/web/
- Buzz Lightyear's Space Station Mission Logs (video clip) gives a good description of shuttle blast-off: http://www.nasa.gov/topics/shuttle_station/features/buzz_lightyear_dvd.html



Lesson found at:
http://www.nasa.gov/audience/foreducators/topnav/materials/listbytype/Buzz_Lightyear_Toys_in_Space_prt.htm

TOYS IN SPACE

TASK CARD: GRAVITRON

How does a gravitron behave in microgravity?

Space Cadet _____

1 How does a gravitron behave in Earth's gravity (1g)?

2 **HYPOTHESIS**
What do you predict will happen in space?

3 **OBSERVATION**
How did the gravitron behave in space?

4 **CONCLUSION**
From your observation evaluate your hypothesis.

THINK ABOUT IT!
What else spins in space?

Disney - PIXAR

WELCOME HOME, BUZZ!



Disney's space ranger, Buzz Lightyear, returned from space on Sept. 11, 2009 aboard space shuttle Discovery's STS-128 mission after 15 months aboard the International Space Station.

While on the space station, Buzz supported NASA's education outreach program-- STEM (Science, Technology, Engineering and Mathematics)--by creating a series of fun educational online outreach programs. For more, go to http://www.nasa.gov/externalflash/Buzz_Lightyear/web/.



CURRICULUM CORNER (Grades 5-12).....

Shuttle Drag Parachute (Lesson from NASA's "Adventures in Rocket Science")

http://www.nasa.gov/pdf/265386main_Adventures_In_Rocket_Science.pdf

Objective: Students will test the effects of a drag parachute on a shuttle model and calculate the speed variances.



National Science Standards:

- Content Standard A: Science as Inquiry
- Abilities necessary to do scientific inquiry
 - Understanding about scientific inquiry

- Content Standard B: Physical Science
- Motions and forces
- Unifying Concepts and Processes
- Constancy, change and measurement

Grade Level: 6-12

Background Information:

Drag is the resistance to motion through the air. When the Space Shuttle comes back to Earth, it uses no power once it enters the atmosphere. This 178,000-lb (80,739.44-kg) craft lands by gliding to the ground. The Shuttle is equipped with a special feature called a speed brake to help slow it down. It is really not a brake, but it increases drag to slow the craft. This drag would be like driving down a road in a car and opening both doors. The increased resistance of the open doors drops the speed quickly.

When the shuttle decreases its speed to about 185 knots (343 km per hour, it deploys a drag parachute to

help slow it at an even faster rate. This type of drag parachute is also used on some high-performance jets.

Materials: (per group)

- small shoebox with lid attached or a clean half-gallon milk carton
- round balloon
- one piece of black construction paper
- two pieces of white construction paper
- string or yarn
- one small plastic shopping bag with handles
- tape
- scissors
- stopwatch or watch with a second hand
- yardstick, rulers, or meter stick

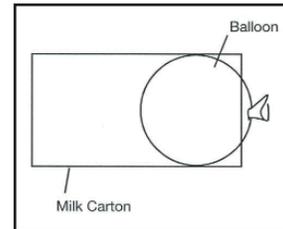
Procedure:

1. Discuss drag force and how it is very important in slowing down the shuttle. (The best way to increase drag is to add space that air has to flow over. A parachute will slow down an object because the air fills it up, and it pulls back in the opposite direction from the air that is filling it. Then, the parachute pulls back on the object to which it is attached. This Action-Reaction is an example of Newton's Third Law of Motion.)

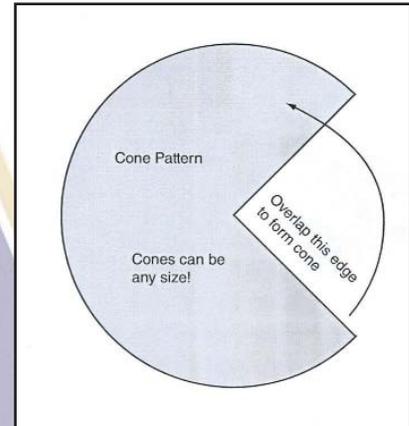
2. Divide the class into groups of 3-4 students per group. Hand out the student sheets and allow students time to follow the directions while you observe their progress.

3. Students in each group should take a small shoebox or a half-gallon milk carton, and punch a hole in one end with a pencil.

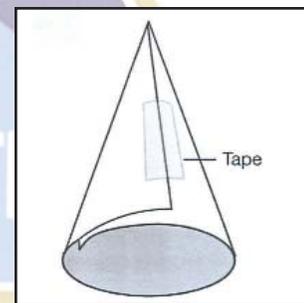
4. Students then place a balloon inside the shoebox or carton, and pull the open end through the hole. See the diagram following diagram. This will be the back of the Shuttle.



5. Tell students to make a nose cone for the shuttle using the black construction paper. See the pattern below.



6. Students should form the cone as shown in the following figure.

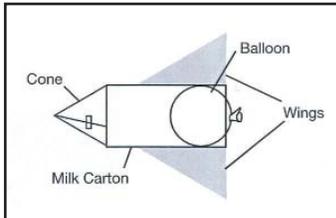




Shuttle Drag Parachute (cont.) Grades 6-12

7. Tell students to attach the cone to the opposite end of the box or carton from the balloon. This will be the front of the shuttle.

8. Have students make wings to attach to the sides of the shuttle by drawing two large triangles on the white construction paper, and taping one to each side of the box with the larger end of the triangle positioned at the back of the shuttle. See the following figure.



9. Students should find an area at least 10 ft. (3.05 m) in length for the shuttle to travel on a smooth tile floor (a hallway or a clear area in the classroom).

10. Students should place a piece of tape on the floor for the starting line.

11. Have students line the path you want the shuttle to travel with books to help keep it in a straight line.

12. Students will then carefully blow up the balloon as full as possible, and hold the end until ready to release it.

13. Students will place the shuttle on the floor at the starting line.

14. As soon as the students release the

balloon, start the stopwatch or check the watch with the second hand. Have students record the amount of time the shuttle moves on their chart (see at bottom of page).

15. Have students mark where the shuttle stops and measure the distance traveled. Students then record the distance on the chart.

16. Write the following formula on the board. $Speed (in/s) = Distance (in) \div Time (s)$. If using metric rulers, substitute centimeters for inches.

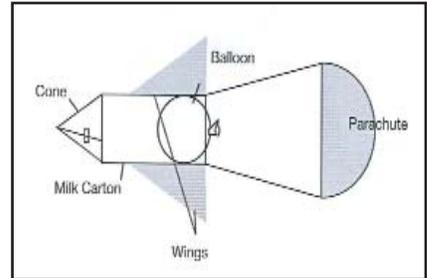
17. Fill in the numbers and complete the formula for calculating speed. Show the class the math, and have students record the speed on their charts.

18. Have each group repeat the test several times. Ask the class why you are testing the shuttle more than once. Explain that an experiment should be tested more than one time to check or verify the results. Many variables can change the outcome. For instance, the balloon may not have been blown up to the exact size it was the first time. Brainstorm with the class for other variables or things that could change the results.

19. Explain to the class that they are going to add a parachute. Ask them what this should do. They should respond that it would slow the shuttle down by increasing drag.

20. Have the students add a parachute

to the back of the shuttle, and repeat the tests again. The parachute (which is the plastic shopping bag with handles) should be attached with string or yarn. See the following diagram.



21. Students should write the information each time on their chart. Calculate the average speed for each configuration.

Extension:

Have the class design speed brakes for the shuttle model. Test their designs. Record information and calculate the speed with speed brakes and a parachute. Discuss the class findings.



Shuttle landing strip

| Space Shuttle Test Chart | | | | | |
|---|---------------|---------|---------|---------|--|
| (Speed (in/s) = Distance (in) ÷ Time (s)) | | | | | |
| Equipment Configuration | Parameter | Test #1 | Test #2 | Test #3 | Average Speed (Test 1 + Test 2 + Test 3)/3 |
| Shuttle | Distance (in) | | | | |
| | Time (s) | | | | |
| | Speed (in/s) | | | | |
| Shuttle with Parachute | Distance (in) | | | | |
| | Time (s) | | | | |
| | Speed (in/s) | | | | |



Shuttle gliding to stop in Earth's atmosphere.



Thank You



Air Force Association!

Air Force Association Partnership

As CAP applauds the Air Force Association each quarter for the many years of financial support to CAP's units and teacher members to perpetuate the AE mission of both the AFA and CAP. Once again, CAP sends appreciation to the AFA for its belief in the worth of CAP's youth development programs. Congratulations to this quarter's AFA/CAP Unit \$250 Grant Winners to complete excellent AE projects and programs as noted below:

- **St Charles Comp Sq**, St Peters, MO - Aerospace Educator Workshop
- **Three Rivers Flight**, Carlsbad, TX - High Altitude Balloon Packaging Experiments
- **Pell City Comp Sq**, Moody, AL - Community Model Rocketry Day
- **Marion County Comp Sq**, Ocala, FL - Rocketry Program with AFA Chapter 136
- **Chicago Comp Sq**, Chicago, IL - AF Academy High School Rocketry Program with JROTC
- **Atlanta Sr Sq with Griffin Cadet Sq**, Griffin, GA - Community Outreach AE Exhibition
- **Flying Castle Comp Sq**, Tinker AFB, OK - Cosmosphere Museum and Rocketry Program

- **Missoula Comp Sq**, Missoula, MT - Robotics Program with Cadets and Local Students
- **Central Florida Comp Sq**, Oviedo, FL - Community Remote Controlled Aircraft and UAV Program
- **Capitol Composite Sq**, Berlin, VT - Cadet Career Exploration FAA Written Exam Program
- **Palm Springs Comp Sq**, La Quinta, CA - Community Connection w/ Rocketry Organization of CA Program
- **Bessemer Comp Sq**, Leeds, AL - Aviation Tours & Aircraft Design Program
- **Cass County Comp Sq**, Harrisonville, MO - Flight Simulator and Career Exploration
- **Ascension Comp Sq**, Gonzales, LA - Middle School Educational Outreach Program
- **Starbase Comp Sq**, Tulsa, OK - Gyroscopic Aviation Program
- **West Richmond Cadet Sq**, Richmond, VA - Rocketry Dimensions Program
- **Hammond Comp Sq**, Hammond, LA - CAP 'n Space Community High Altitude Balloon Program
- **Van Dyke Cadet Sq**, New Baltimore, MI - Rocketry and Air Museum Program

• **Grover Cleveland High School Sq**, Ridgewood, NY - Delta Dart Principles of Flight Project

• **Paradise Valley Comp Sq**, Scottsdale, AZ - AE Internet Projection Program

Twenty units in 15 states will impact almost 2,000 young people toward a greater interest in STEM subjects and careers! Congratulations to these units! And, much gratitude to the Air Force Association!

To find out about all the partnership programs between the AFA and CAP, please go to the AFA Partnership link at www.capmembers.com/ae. If you are not a member of a local AFA chapter, you can find information on how to become a part of the AFA's community outreach programs in your area at that same Web site.



AFA Grants help CAP units and classrooms come alive with interesting and exciting STEM-related projects.

The Air Force Association's CyberPatriot III registration is OPEN NOW for High School cadets and students across the nation!

The Air Force Association (AFA) has developed a cutting-edge competition for high school students around the country, CyberPatriot. For the past two years, a division of Air Force JROTC and CAP cadets have competed to determine which organization has the best cyber defense team. This fall, a

second division will be added to the competition--- any high school student team across the nation can compete in CyberPatriot III. The program is quite detailed, but has caught the attention of tech-savvy young people who are interested in learning more about how to use science, technology, engineering and math (STEM) to defend our country from cyber attacks. The AFA's CyberPatriot Web site has all details and information and is found at http://www.afa.org/cyberpatriot/CyberPatriot_FAQ.asp. The CAP site includes a downloadable CyberPatriot

III flyer useful in promoting the program at the unit level to high school cadets: http://www.capmembers.com/cadet_programs/index.cfm/cyberpatriot_2010?show=entry&blogID=171. Registration will end **September 10**, or when 500 team slots from both divisions are filled.





From The Deputy Director's Desk.....Dr. Jeff Montgomery



The 9th annual National Aerospace Education Officer School was recently held from June 23-26 at Pensacola Naval Air Station, Florida. Forty attendees from seventeen different CAP wings were in attendance. Many of the attendees had less than one year of experience in aerospace education. The students spent three days covering the many duties and responsibilities of AEOs at all levels of CAP and also spent much time discussing the many AE programs and products available to the AEOs. Additionally, educational and fun hands-on activities were conducted throughout the course. The attendees joined thousands of spectators to watch the Navy's Blue Angels perform their practice routines. The attendees spent time touring the Naval Air Museum, watching different IMAX showings, and enjoying F-14 simulator rides. Brig Gen Reggie Chitwood, CAP National Vice Commander, was in attendance and participated in the dis-

cussions and the hands-on activities. Having our national CAP leadership take the time to attend this AEO School was much appreciated.

Other regional schools were held this summer with one left to go, the

Great Lakes Region AEO School. This school will be held from August 11-14 at the national Museum of the Air Force at Wright-Patterson AFB, in Dayton, Ohio. For more details, to www.capmembers.com/ae.



AE National Advisor, Lt Col Mike McArdle, instructs AEOs at the 2010 National Aerospace Education Officers School in Pensacola, FL

CAP Loses Dear Friends and Colleagues....



Affectionately and respectfully known to many as "Miss Alice," **Lt Col Alice Noble** passed away June 6, 2010. Kentucky native and GLR staff operations volunteer, Alice was repre-

sentative of what a CAP volunteer embodies....sacrifice and a love for CAP and her country. Having a passion for Operations and Aerospace Education, Alice spent many hours giving of herself and her talents to further the excitement and knowledge of aviation to those with whom she came in contact. Alice will be missed by all the people she touched and those of us who worked closely with her. Her curiosity and desire to learn inspired many. The joy she gained from every experience was evident by her smile and eagerness to share. There was only one "Miss Alice" and she will be a lasting memory in CAP and to all her friends and fellow volunteers.

Another of CAP's long-standing and dedicated AE professionals, **Dottie Warren**, also passed away this year. **Col Dorothy P. "Dottie" Warren**, CAP, died June 24, just before her July 7th 85th birthday. For over 40 years, Dottie

led the way for female leadership in CAP. In her prime she was the only female on the uniform committee, was the National AE Adviser, worked with the National Staff College, and was the Southwest Region (SWR) Vice Commander. As an educator and pilot in Clifton, TX, Dottie was a proponent of aerospace education for cadets and youth across America. She was a member of the Ninety Nines, Inc. and the International Organization of Women Pilots. At age 68, she was hired as the CAP SWR Director of Aerospace Education; fighting tirelessly to bring aerospace to the forefront in units and schools throughout her region. Dottie was small in size, but powerful in her passion for CAP making many cross-country trips in her personal vehicle to promote the organization she had grown to love. For all who knew and loved Dottie, the little Texas Whirlwind will never be forgotten.



REGION TO REGION

For information on other pertinent dates for CAP Members and Educators, go to our calendar at www.capmembers.com/ae.

NORTHEAST REGION

None for this issue.

MIDDLE EAST REGION

July 12-16

NASA Lunar Institute for Educators - Grades 6-12 - will be held at Goddard Space Flight Center in Greenbelt, Maryland.

<http://education.gsfc.nasa.gov/lunarinstitute/>

September 13-15

The Air Force Association's Air & Space Conference and Technology Exposition will be held at the Gaylord National Resort & Convention Center on the Potomac, in National Harbor, in Maryland.

<http://www.afa.org/events/Conference/2010/>

GREAT LAKES REGION

September 23-26

Lilly Conference- Traverse City Conference titled "Evidence-Based Learning and Teaching" will be held in downtown Traverse City, Michigan.

<http://lillyconferences.com/tc/default.shtml>

SOUTHEAST REGION

None for this issue.

NORTH CENTRAL REGION

None for this issue.

SOUTHWEST REGION

July 9

2010 National Science Teachers Association (NSTA) will offer an exciting, hands-on, three-day institute entitled "Moving Toward Excellence in Elementary Science Teaching" at the JW Marriott Hotel in New Orleans, Louisiana. Conference is August 5-7.

<http://www.nsta.org/conferences/2010/summerinstitute.aspx?lid=hp>

ROCKY MOUNTAIN REGION

July 12-16

The Space Foundation Discovery Institute in Colorado Springs, Colorado, will present two courses entitled "Space Technologies in the Classroom: Robots and High-tech Science" and "Lunar / Mars Exploration and Base Construction." Scholarships are available.

<http://spacefoundation.org/education/node/77>

July 31 - August 4

The Astronomical Society of the Pacific and the Geological Society of American present Cosmos in the Classroom 2010 Conference. The theme is "Earth and Space Science: Making Connections in Education & Public Outreach." This conference will be held at the University of Colorado at Boulder in Colorado.

<http://www.astro.society.org/events/meeting.html>

PACIFIC REGION

July 19-23

The Lewis Center for Educational Research in Apple Valley, California, offers educational training for teachers who want their students involved with the Goldstone Apple Valley Radio Telescope (GAVRT). Online application available!

<http://www.lewiscenter.org/gavrt/opportunities.php>

August 2-4

Techbridge's Summer Institute will be held in Oakland, California. This Institute is a 3-day workshop that gives educator participants strategies and curriculum for inspiring girls in technology science and engineering.

<http://www.techbridgegirls.org/Educators/SummerInstitute/tabid/98/Default.aspx>

August 21

Flight Festival - Celebrating 100 years of Flight in Los Angeles will be held in Glendale, California.

<http://www.flightfestival.org>

August 30 - September 2

Education Alley, presented at the 28th American Institute of Aeronautics and Astronautics (AIAA) Conference and Exposition, will "Discover What's Out There" with students and teachers in the ultimate field trip. The conference will be held at the Anaheim Convention Center in Anaheim, California.

<http://www.aiaa.org/content.cfm?apegid=834>

September 1-4

Civil Air Patrol's Annual Conference & Summer National Board Meeting will be held at the San Diego Marriott Marina in San Diego, California.

<http://www.gocivilairpatrol.com>

October 22-24

California Science Education Conference will be held in Sacramento, California.

http://www.cascience.org/csta/conf_home.asp

Special Events

Coming to a theater near you! CAP members, plan now! - CAP teacher, adult, and cadet members are being offered opportunities for special group discounts and viewings of the new Legends of Flight Imax film that was recently released. To find out more about viewing dates and locations, as well as associated educational curriculum for cadets and students, go to http://www.capmembers.com/aerosp ace_education/general/announcements.cfm.

