Science Enrichment Program in Satellite Imagery
Waters Middle School Summer Program July 16 through Aug 2
Sponsored by NASA and Elizabeth City State University

Coordinators:
Dr. Shepherd
Mon./Tues. Teachers: Lakeisha Mundon & Sherrye Pollard & Ms. Dozier
Wed./Thurs. Teachers: Aileen M. Seshun (Not available for Mon. & Tues.), Lakeisha Mundon, T. Dozier, & Sherrye Pollard

Schedule:
Mon. thru Thurs. - 8 AM to 3 PM (1 hour lunch)
Friday students are to do research in library on careers, aviation, remote sensing, & satellites

Week One
Mon Digital Cameras and PowerPoint
Tues Digital Cameras and PowerPoint (Maybe capture some aviation images to put in a ppt presentation as an intro for AeroZone)
Image Scavenger Hunt (Aviation)
Wed AeroZone and IMAX fieldtrip to Virginia Air and Space Museum
Thurs Special websites, gliders, aviation, & career info
Fri Library assignment on Careers (No class meeting) (Maybe research aviation & science careers, look for images, check imagery sites. Write a short report on a career you would like, a special image & why it was chosen for a ppt presentation, & which imagery site(s) are considered most appropriate for student's own interests.)

Week Two
Mon Digital Cameras and PowerPoint
Tues Digital Cameras and PowerPoint
Image Scavenger Hunt (Weather & Careers)
Wed Echo the Bat Satellite Imagery Training (Light & Electromagnetic Spectrum)
Thurs Echo the Bat Satellite Imagery Training (Remote Sensing)
Fri Library Assignment on Careers (No class meeting)

Week Three
Mon Digital Cameras and PowerPoint
Tues Digital Cameras and PowerPoint
Image Scavenger Hunt (Remote Sensing & Satellites)
Wed Complete coverage of preceding topics
Thurs Closing program and field trip

Three Final Projects
Share with whole class & visitors on final day of summer school (if possible)

- **Experiments** - Take home info sheets, practice, demo in class as explain results
- **PowerPoint presentations** - Careers, Aviation, Satellite Imaging, Remote Sensing
- **Scavenger Hunt Image Collections** on the topics
Science Enrichment Program in Satellite Imagery

Week One

Wed  Aerozone and IMAX Fieldtrip - Virginia Air and Space Museum

- Welcome, Introduction of goals for 3 weeks
  - PowerPoint presentations (choose a topic from Av, Sat, Career)
  - Scrapbook - (articles from newspapers, magazines, web, class, etc.)
- Intro to aeronautics at school before bus to VASC - Use First Flight Centennial Commission & Civil Air Patrol (CAP) materials
  - Show Peanuts video (was shown on Tuesday by Ms. Mundon)
  - Learn to Fly (basics of flight & parts of an airplane & cockpit controls)
- Leave for VASC - AeroZone & IMAX
- Return to school
  - FAA Aviation Activities
  - Mini Book of Logic Puzzles (form 2 teams)
- Review what learned at VASC & correlate with FFCC materials
  - Explain assignments for Friday (aviation & career research for ppt & murals)

Thurs  Continue Intro to Aviation & Begin Intro to Echo the Bat

- Review yesterday's activities at VASC & correlate with FFCC materials
- Aviation Activities (presented as homework with a slide to be created in ppt depicting what gleaned from CAP materials or from NASA Career book)
  - Exploring Flight Careers Book - Fun Activities
  - Nat'lPk. Service Wright Brothers poster, First Flight Centennial Commission lithograph
  - Career teaching Packets (poster, activities, stories): Wright brothers, General Aviation, Amelia Earhart, Charles Lindberg, Dr. Goddard (ideas for Friday assignment)
- Aviation Websites
  - Plane Math http://www.planemath.com
  - K-8 Aeronautics http://wings.ucdavis.edu
- Echo the Bat Satellite Imagery Training (Light & Electromagnetic Spectrum)
  - Read story http://imagers.gsfc.nasa.gov
  - Form 4 teams
  - Play Echo Adventure Game
  - Cover activities in Teachers' Section (see Echo Manual) Pixels / Light / Spectrum /
  - Wavelengths / Primary colors / Satellite intro
  - Optical illusions
- Review notes in Teachers' Section about satellites
- Make 4 planets out of clay & decorate (in teams)
- Waters YBTS website - do activities shown
- Show IR video
  - The Space Place http://spaceplace.jpl.nasa.gov/spacepl.htm (Spacey Things to Do - the IR Matching game)
- Supporting websites
  - Exploratorium http://www.exploratorium.edu/exhibits/f_exhibits.html
- Explain assignments for Friday (aviation & career research for ppt)
Week Two

Wed  
**Echo the Bat** (Light & Electromagnetic Spectrum)  
- Read story & complete Echo Adventure  
- Cover activities in Teachers' Section (see Echo Manual & Activity Notebooks - Primary colors of pigment & light, Wavestown activity, etc.)  
- Have students demo their 'home' experiments (physics, earth science, astronomy)  
- Do 'Collaboration' activity  
- Christmas lights with refracting glasses & other 'prism' activities

Thurs  
**Echo the Bat** (Remote Sensing)  
- Review & correct activity sheets from yesterday (Wavestown)  
- Cover more activities (Echo location map, calc sheets & bio sheets)  
- YBTS activities (access AMS activity goody box)  
- Supporting interactive websites (see Remote Sensing URLs.doc)  
  - Interpreting IR Imagery  [http://cimss.ssec.wisc.edu/wxwise/satir](http://cimss.ssec.wisc.edu/wxwise/satir)  
  - Amazing Space  [http://amazing-space.stsci.edu](http://amazing-space.stsci.edu)  
  - AstroVenture (careers)  [http://astroventure.arc.nasa.gov/is/fact_sheets.html](http://astroventure.arc.nasa.gov/is/fact_sheets.html)  
  - The Observatorium  [http://observe.ivv.nasa.gov/nasa/education/gis/opening.html](http://observe.ivv.nasa.gov/nasa/education/gis/opening.html)  
  - Earth View  [http://www.fourmilab.to/cgi-bin/uncgi/Earth](http://www.fourmilab.to/cgi-bin/uncgi/Earth)  
- Showed 2 videos **GOES 8** & the **International Space Station**  
- Review what learned today (light, waves, satellites, remote sensing & careers)  
  - Explain assignments for Friday

Week Three

Wed  
**Remote Sensing & complete Aviation topics**  
- Launch rockets - compare with launches of previous week  
- Gliders  
  - Fly gliders & record height, distance, direction  
  - Repeat flights 3 times & take average  
  - Discuss which gliders flew best AND why  
  - Fly all gliders with a minor change & record \( h, dis, dir \)  
  - Note if flight patterns improved or deteriorated  
  - Try to come up with some 'whys & why nots'  
- Work with the packet of lithographs (in teams)  
- Work with YBTS GVAR program (confirm with Melvin)  
  - Review GOES imaging websites (see Remote Sensing URLs.doc)  
  - Introduction to Clouds  [http://www.usatoday.com/weather/wcloud0.htm](http://www.usatoday.com/weather/wcloud0.htm)  
  - USA Today  [http://www.usatoday.com/weather/wfront.htm](http://www.usatoday.com/weather/wfront.htm)  
  - ww2010  [http://ww2010.atmos.uiuc.edu/(Gh)/guides/rs/home.rxml](http://ww2010.atmos.uiuc.edu/(Gh)/guides/rs/home.rxml)  
- Show the video **A Dance of Sea & Sky** - IF time available  
- Clouds & weather - Go outside:  
  - Discuss weather & clouds & the browse appropriate websites  
  - Discuss clouds simply (how to describe without proper name)  
  - Estimate cloud cover  
  - Determine temperature outside  
  - Record all information  
  - Return inside  
- Cloud Bingo or Dice  
- Complete all final projects / Practice if time permits
Thurs  
Closing Program and Field Trip (???)
- Recap for parents & guests
  - Explain Echo the Bat as our background (springboard to Remote Sensing)
  - Deliver PowerPoint presentations
- Have students show their PowerPoint presentations & any reports, etc.
- Present certificates to students