

# 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'l Pk. 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](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>
    - Amazing Space <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>
    - Earth View <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>
    - USA Today <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