NASA’s BEST Activities
Beginning Engineering, Science and Technology
Curriculum for Engineering Clubs for Grades K-2, 3-5 & 6-8

Electronic Professional Development Series
Session 2
http://userpages.umbc.edu/~hoban/BEST

Delivered by Brittany Hamolia
University of Maryland, Baltimore County

Supported through NASA Exploration Systems Mission Directorate
Today’s Session

• Review NASA’s BEST Activities
• Review Engineering Design Process (EDP)
• EDP Step 2: Imagine
• EDP Step 3: Plan

Materials required for today’s session may be found on the web at
http://userpages.umbc.edu/~hoban/BEST
NASA’s BEST Activities

Beginning Engineering, Science and Technology

• 12 activities for each set of grade levels
  – K-2
  – 3-5
  – 6-8

• Lunar theme
  – NASA returns to the Moon with LRO, launch planned for April 2009
  – Planning for human exploration around 2020

• “The Journey Begins Now” - video
  http://userpages.umbc.edu/~hoban/ePD/videos/journey.wmv
Review: Engineering Design Process

The Engineering Design Process

Ask → Imagine → Plan → Create → Improve → The Goal

Engineering is Elementary
www.msp.org/ela
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Review Context

Design and build a satellite to

• Orbit the Moon
• Take high resolution pictures for the purposes of:
  – Landing site selection
  – Search for Lunar Ice
    • Looking in dark places:
    • Permanently shadowed regions of craters at the poles
Video 3: Imagine

- [Link](http://userpages.umbc.edu/~hoban/BEST/ePD/videos/3-imagine_caption.mov)

- Keep in mind that although the video talks about launching the satellite (Activity 2), you will also design and build it as in Activity 1.
Imagine: Discussion

- Students have great imaginations
- Let them *soar*
- Now it’s *your* turn!
  - What instruments will you choose?
  - Why?
  - What considerations do you have in connecting the satellite to the rocket?
Materials

Review materials for this activity (Bring next week)

• For satellite
  – General building supplies (cotton, cardboard, glue, etc)

• For instruments
  – Individual pieces, we have used candies, coins

• For rocket assembly
  – Balloons, tape, etc.
Engineering Design Process: Plan

- Video 4: Plan
  
  - Very important step
  
  - What are some of the reasons why?
  
  - Now it’s your turn, start sketching!
    
    - Satellite with instruments
    
    - Rocket assembly
Next Session

- Email your sketches to Brittany.L.Hamolia@nasa.gov
- Bring materials for building
  – See list of materials
NASA’s BEST Activities

Beginning Engineering, Science and Technology

- Project Information
  - susan.hoban@nasa.gov

- Electronic Professional Development
  - Brittany.L.Hamolia@nasa.gov

- BEST Materials
  - http://userpages.umbc.edu/~hoban/BEST