

# 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

**UMBC**

# 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

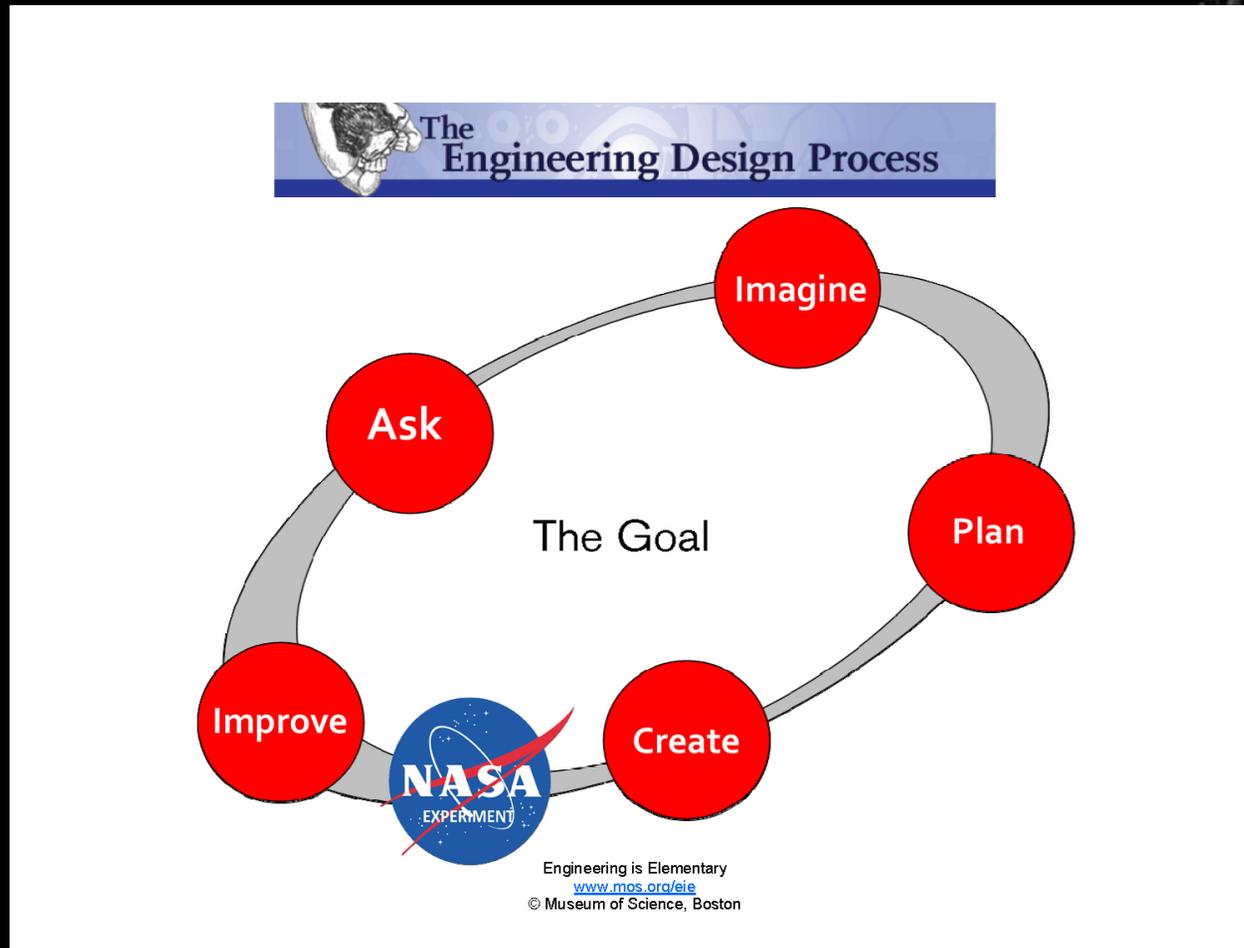
## *Beginning Engineering, Science and Technology*

- 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>



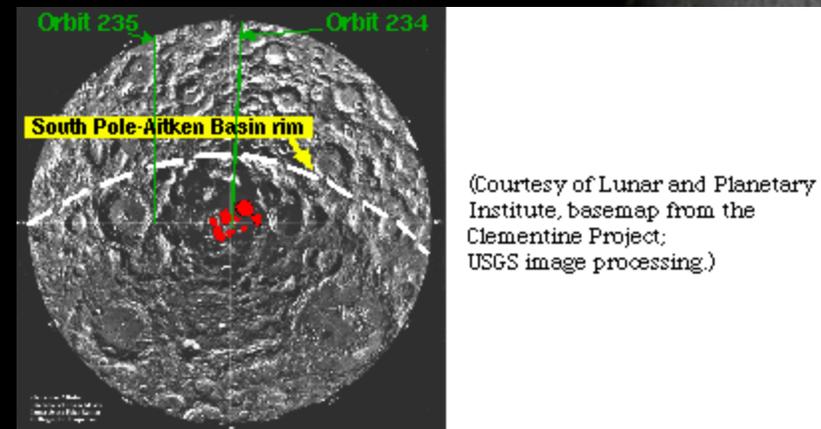
# Review: Engineering Design Process



# 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



# Engineering Design Process: Imagine

## Video 3: Imagine

– [http://userpages.umbc.edu/~hoban/BEST/ePD/videos/3-imagine\\_caption.mov](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**

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

- 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](mailto: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](mailto:susan.hoban@nasa.gov)
- Electronic Professional Development
  - [Brittany.L.Hamolia@nasa.gov](mailto:Brittany.L.Hamolia@nasa.gov)
- BEST Materials
  - <http://userpages.umbc.edu/~hoban/BEST>

