Stomp Rockets – NISEnet

Materials:
- Two plastic 2-liter bottles (collect more for backups)
- Flexible tubing with tornado maker attachment
- Rigid PVC pipe (rocket-rolling guides)
- Colored copy paper
- Scissors
- Clear tape
- Balloon pump
- Make your own Sounding Rocket instructions sheet
- Communication and science tool stickers and info sheet (or colored pencils instead of stickers)
- Sounding Rockets target poster
- Activity and facilitator guides
- Information sheets
- Tips for Leading Hands-on Activities

Resources:

Learning Goals:
- Some rockets carry science tools—not scientists—into space!
- Sounding rockets take quick, low-flying trips into space.
- Scientists use many different kinds of spacecraft to make new discoveries.

Intro (example):
Some rockets carry science tools—not scientists—into space. A special kind of rocket called a "sounding rocket" can be used for quick, low-flying scientific missions into space. We will build and launch our own air rockets to help imagine the challenges and triumphs of engineering spacecraft and launching them into a specific region of the space above our planet. At Poker Flat Research Range the rockets are launched over land and scientists can go pick up their instruments when they return to Earth.

Steps:
1. Follow the step-by-step instructions to make a paper model of a sounding rocket used in space science research.
2. Use the stickers to add a science payload. What research questions will the rocket help you explore? What tools do you need? Add at least one communication tool and one data collection tool to your rocket.
3. To launch, slide your rocket onto the tubing at the end of the stomper bottle. Aim it carefully—be sure to point it away from people! Your rocket should hit the poster in the red arch target—below the satellite but above the weather balloon—at just the right altitude for a sounding rocket. Stomp down with one foot to make it fly!

Reflection (throughout): How far away do you think space is? How long would it take to drive a car straight up until you were in space? Relevance: What are questions you have about space? What kind of payload would you put in your rocket to answer those questions? How would you receive the information back from your payload?

This project was funded under NASA cooperative agreement NNX16AL65A. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Aeronautics and Space Administration.