

Craters of the Moon

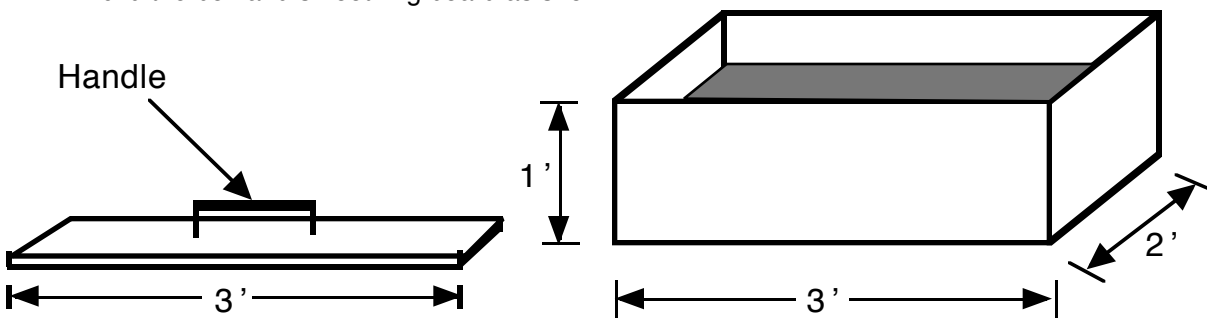
Copyright© 1999 by Bob Martino
www.perkins-observatory.org

Here's a fun and messy activity that the kids will love. In it, you will show how craters are formed on the Moon, as well as other planets. It should cost less than \$25.

Materials:

- High-powered slingshot (available at most sporting goods stores)
- Several large pieces of gravel (available in your local driveway)
- A sturdy wooden box with no top, roughly 3' long by 2' wide by 1' deep- About 35 pounds of white flour (buy the cheap, generic kind)
- Something to smooth out the flour (A 3' length of 1x6 lumber with a handle works well)
- Tempera powdered art paint (from the art room), or some used photocopier toner
- A flour sifter
- Safety goggles (Your school's shop class rooms or science labs should have these already)
- A spackle knife with a wide blade

Build the box and smoothing board as shown:



Fill the box with flour, about halfway full. Use the board to smooth the flour. Don't try to compress it. It doesn't have to be perfectly smooth.

Sprinkle the tempera paint or copier toner over the surface of the flour using the sifter. Try to get a thin, even coat, just enough to cover the flour. Or, you can mix used photocopier toner with a little bit of extra flour to get a light or medium gray mixture, and use this instead of the paint. It's much less expensive and looks more like the lunar surface. However, it is messier.

Now, you're ready to make craters. Put on the safety goggles. Make sure the students stand way back! Select a good sized piece of gravel. With the slingshot, shoot it into the flour. The harder you pull back on the slingshot, the better the effect will be. With practice, you should get some nice craters with ejecta rays, just like the big lunar craters, Tycho and Copernicus.

To prepare the box for more craters, Scrape up as much of the darker surface material as you can using the spackle knife. don't worry that some of the white flour comes up with it. Keep this material to sprinkle on top of the flour again later, perhaps mixing in a small amount of toner or paint to darken it up. You won't be able to get all of the darker powder up, but that's OK. Do the best you can, then stir the flour in the box to mix it up and make the remaining dark stuff disappear. Now, smooth the flour using the board, sprinkle the surface, and you are ready to go again!

NOTE: Keeping around a large box of flour is sure to eventually attract mice and insects. You should make a lid to fit the box snugly to keep out the mice and as many insects as possible. However, eventually you should expect the flour to get infested with bugs. When this happens, just toss the flour and get some more. Flour is cheap!