Moon Model

For hundreds of years, the moon has captivated the imagination and intellect of people from many generations. One of the most famous, Galileo Galilei, was an Italian astronomer credited for some of the first detailed sketches of the moon’s surface. Previously considered a smooth sphere, Galileo determined the moon was actually covered with many lunar mountains and craters. In this activity, students will learn about the surface of the moon through Galileo’s sketches, and use this information to create a model of the moon.

Materials

- Galileo’s sketches of the moon (included below)
- Glue
- Pencil
- Oatmeal
- Bag of black beans
- Construction paper
- Cardboard (cut 11x8 inches for each student)

Background Information

A. Astronomical Tools

Binoculars – a hand-held device consisting of a series of lenses and prisms, used to magnify objects so that they can be better seen from a distance, and looked at through both eyes.

Telescope – a device which uses lenses, mirrors, or a combination of both, to create a larger image of a far away object. There are many types of telescopes, including reflecting and refracting, and these are usually mounted on a tripod and viewed through one eye.
B. Moon Features

Maria – the dark spots on the moon, consisting of large flows of basaltic lava. These regions are smooth and flat plains with very few craters.

Highlands – the lighter spots on the moon, consisting of older hilly regions of various heights and numerous craters.

Craters – the various sized depressions on the moon’s surface resulting from impacts and collisions between the moon and objects such as asteroids and comets.

Regolith – a mixture of fine dust and rock debris, made by meteor impacts, which cover the majority of the surface of the Moon.

Directions

1) Show images of the moon to students, and have them come up with characteristics to describe it.
2) Compare their descriptions to Galileo’s sketches of the moon, and discuss with students some of the features that can be seen with the help of astronomical tools (i.e.: a telescope or binoculars).
3) Using Galileo’s sketches, each student can draw their own picture of the moon and the features they would like to highlight, using the template included below.
4) After drawing, have each student pick items they would like to add to their drawings and create a more realistic 3-D texture of the moon’s surface.
5) Paste the drawings to cardboard for more stability.
6) Have each student apply glue to their moon drawings to keep on any oatmeal, beans, or construction paper they use to represent the moon’s features.
7) Let the moon models dry for a couple of hours before moving.
Features of the Moon’s Surface

Full moon from space:
Dark areas = Lunar Maria
Light areas = Lunar Highlands

Astronauts visit the moon’s surface:
Buzz Aldrin’s footprint in regolith.

Daedalus Crater:
Diameter of large crater = 58 miles
Galileo’s Sketches of the Moon
Draw the Moon in 3D!

(Galileo’s Sketch of the 1st Quarter Moon)