



# DIY Air Force Activities:

## Phases of the Moon



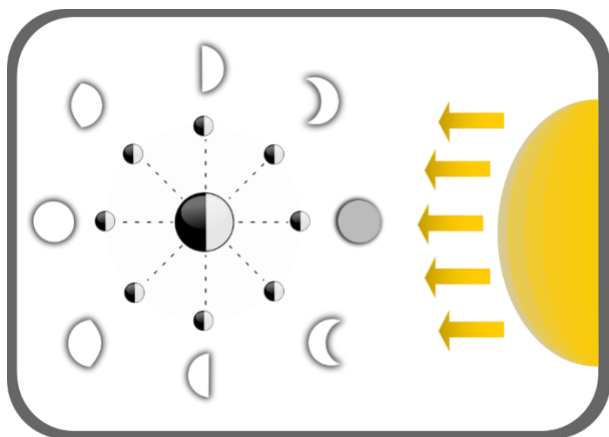
### Materials:

- cream filled cookie sandwiches (preferably chocolate)
- butter knife
- construction paper
- crayons (yellow, blue, and green)

The moon is the earth's natural satellite. It revolves around us as we revolve around the sun! The Moon is the only place in the universe outside our own planet that humans have set foot upon. It is the brightest, largest object in the night sky! The moon does not actually produce light, however, but reflects the light of the sun. It does not change shape either; we see the same face of the moon all the time. The phases (appearance or state in the cycle) we observe depend on where the moon is with respect to the sun and Earth (see image on left). What we observe is actually the result of the moon's orbital motion around the Earth! Following the directions below you will use delicious cookies to map out the lunar phases.

### Directions:

1. Gather 10-15 cookies (you may need extra in case one breaks)
2. Gently twist the cookies apart **(a)**. It is best if you separate them so that all the cream is on one half **(b)**.
3. Use a butter knife to cut the cream into the desired moon phase shape.
4. Carefully scrape off the excess cream.
5. Follow the diagrams to the left and on the back and make a cookie for each phase of the moon.
6. On a piece of construction paper, draw a small image of the earth in the center, and on the edge to the right draw a large semicircle in yellow to represent the sun.
7. Arrange your cookies according to the moons position at that phase.



### Air Force Associations:

The US Space Force was founded on December 20<sup>th</sup> 2019. It is a branch of the US Air force formed with the purpose of protecting the US and allied interests in space. Rhea Space Activity, a Washington-based space technology and policy startup, is leading a project to create the field of "lunaspatial intelligence" (LUNINT). Their goal is the collection of intelligence data on activity in cislunar orbit and in the moon's surface for the Department of the Air Force.

<https://www.airforcemag.com/emerging-lunar-intelligence-field-to-shape-space-ops/>

Step 1:



Step 2 a:



Step 2 b:



Step 3:



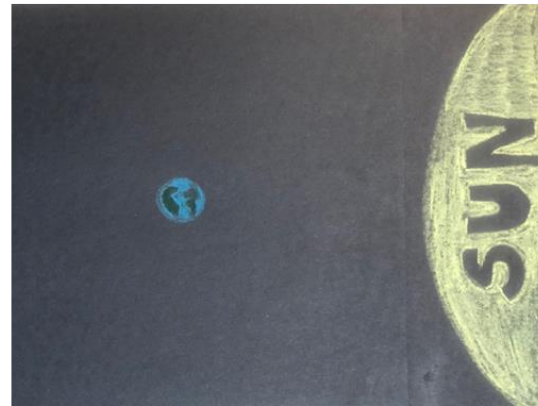
Step 4:



Step 5:



Step 6:



Step 7:



The moon's orbit affects the tides as well as providing a stabilizing effect on the Earth, which contributes to our relatively stable climate. The Earth and Moon's rotations are so in sync that we only see one side of the moon at all times! For even more fun, keep your own lunar calendar. For 30 days go outside and observe the lunar phases yourself. Note the date and draw the phase in your notebook. The name of each phase is listed for you below.

New Moon

Waxing Crescent

First Quarter

Waxing Gibbous

Full Moon

Waning Gibbous

Third Quarter

Waning Crescent

