



# DIY Air Force Activities:

## Marble Print



### Materials:

- shaving cream
- popsicle sticks
- index cards (or paper)
- food coloring
- toothpicks
- plate or tray



Opposites attract! Consider electricity, a positive charge wants to stick to a negative charge. Everything around us is made of chemicals; some of these chemicals are charged. Water has partial charges; that is what gives it such amazing properties. Oils do not; this is one of the reasons oil and water don't mix well.

Things that have charges are called polar chemicals, while things that have no charge are neutral or non-polar. Things that have a charge are more likely to interact with one another than with something that is neutral. For example, paper is made of cellulose, which has a polar chemical structure. Shaving cream is a foam soap with a non-polar chemical structure. Food coloring has a polar structure. Would it be more attracted to the paper or the foam? If you guessed paper you would be correct! The charges are attracted to one another and stick together!

We can use this to our advantage to make unique works of art following the directions below!

1. Spray a pile of shaving cream on to your plate.
2. Drop food coloring of your choice in spots on the shaving cream.
3. Drag a toothpick through to create patterns or images.
4. Press your paper or index card on to the surface.
5. Lift the paper, then gently scrape the excess shaving cream off with a Popsicle stick.
6. Set paper aside and let your artwork dry!

### Air Force Associations:

Colloids are mixtures of gases or small solids dispersed in a liquid. Examples of colloids include milk, foam, and soap! When fighter jets are flown they collect small debris and soot from their surroundings. This soil must be cleaned periodically for the aircraft to continue to perform effectively. In an effort to reduce this cycle time for cleaning, anti-soil treatments were developed by the Air Force. One method that has been employed is the use of a colloidal mixture that keeps debris from collecting on the surfaces of aircraft.

