

## Oobleck, Slime and Alchemy

What's the Wow?: You will create quicksand and slime and then you will turn copper into silver followed by gold.

### Procedure:

#### A. Oobleck

1. In a plastic beaker add about 80 mL of corn starch
2. Add enough water to just get the corn starch slightly liquidy (Don't use a glass rod to mix)
3. Try to punch a scoopula into the mixture quickly or try to remove it quickly. Does it act at all like quicksand?
4. This can be used over and over, but over time it will begin to grow mold.

#### B. Slime

1. Measure out 100 mL of water into a 250 mL beaker. If desired add one or two drops of food coloring to the water solution.
2. Weigh out 5 g of guar gum.
3. Add to the water and stir with a glass-stirring rod until dissolved. (About 2 min).
4. Add 5 mL of 4% aqueous borax ( $\text{Na}_2\text{B}_4\text{O}_7 \cdot \text{H}_2\text{O}$ ) solution to the colored guar gum solution. Stir vigorously using a glass-stirring rod until the mixture has gelled. (About 2 min).
5. Store in a zip-lock bag to keep it from drying out if you want to take it with you.

#### C. Alchemy<sup>1</sup>

**Safety Note: The base used in this lab is very corrosive and should be handled cautiously.**

1. Get three pennies and clean them to a shine using steel wool. Try not to gouge them with the cleaning pads...buff them. Be sure they are clean and dry before you go on.
2. Set the hotplate at medium high.
3. Put 25 mL of 6M NaOH (sodium hydroxide) into a 250 mL Pyrex beaker.
4. Put 25 g of powdered zinc into the NaOH.
5. Place the beaker on the hot plate and warm it up.
6. With the tongs, place two of the pennies on top of the zinc and watch them turn silver (zinc coated)!
7. With tongs, take the silvered pennies out and rinse in cold water. Dry the pennies.
8. Place one of the silvered pennies on a hotplate surface and watch it turn gold (brass)!
9. Plunge it into cold water, dry and you are done!

**Waste: Scrape the wet zinc solution into the large labeled beaker in the hood.**

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<sup>1</sup> Adapted from [http://whs.wsd.wednet.edu/Sci/Lorenson/GoldPenny/cu\\_2\\_brass\\_1.html](http://whs.wsd.wednet.edu/Sci/Lorenson/GoldPenny/cu_2_brass_1.html)