



MENSA® FOUNDATION

Educational Programs

Harrowing Halloween Handicrafts!

Overview

This series of educational programs was designed to simultaneously entertain and challenge gifted youth in their time outside of the school setting; however, the activities may be easily shared and enjoyed by older people as well. Programs may be scaled up or down depending on number of attendees, desired level of complexity, etc. Sample materials are included with most plans.

The Educational Programs series was developed by Lisa Van Gemert, M.Ed.T., Gifted Youth Specialist for the Mensa Foundation. If you have questions or comments about these programs, please email giftedchildren@mensafoundation.org.

Introduction

Science and Halloween are perfect companions, and most of the ideas below can be done with common household items. Our scientifically spooky ideas include:

- making slime
- making paper bleed
- creating mad scientist bubbling jars
- making edible fake eyeballs.

Supplies

- washing soda (sodium carbonate)
- straw
- clear gel glue
- food coloring
- Borax powder
- Goldenrod paper
- ammonia
- safety glasses (use these for any of the activities involving liquid)
- inexpensive aquarium pump, tubing, T-valve
- plastic bugs and body parts
- grapes
- additional common household items as noted in individual activities.



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Make It Scary!

Select the items you would like to make and gather the ingredients.

Slime

Materials:

- Borax powder
- cup
- spoon
- 8 oz. bottle of gel glue
- food coloring (optional)
- measuring cup



Directions:

- Pour the glue into a mixing bowl and fill the bottle with water. Shake the bottle to try to get the glue that stuck to the bottle to mix in, and then pour the water into the bowl with the glue. Stir well. Note: if you can only find the 5 oz. size bottle of glue, that's fine, just use less of the borax mixture later.
- Add food coloring to glue/water mixture, if you want the slime a particular color. Just a drop or two will do the job. Gel food coloring bottles come in neon, which makes for some cool slime.
- Measure $\frac{1}{2}$ cup warm water, pour into a cup, and add a teaspoon of borax powder. Stir it up, but don't panic if the borax doesn't all dissolve. It's okay if there is still borax on the bottom of the cup.
- Stir the glue/water mixture, and slowly pour the borax in. You don't need to add all of it; the more borax you add, the thicker the slime. If you add enough borax mixture, you will get almost a putty-like texture. If you want slimy slime, you won't need all of the borax mixture.
- Once you feel it turning into slime, you can use your hands instead of the spoon.
- You can store this in a ziplock baggie or an airtight container.

Notes:

- Don't eat this!
- Be careful with the borax; it's caustic to skin.
- You've just created a polymer, which is a material that is like both a solid and a liquid at the same time! It's because the molecules chain themselves together and can stretch and bend.
- This is also called a non-Newtonian fluid because Newton said that it was temperature that determined the viscosity (liquidness) of a liquid, but the viscosity of this is changed by other factors (as you saw as you added more borax solution).
- You can make ink imprint into your slime by laying it on newspaper or other water-based ink.



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Bleeding Paper

Materials:

- Goldenrod paper (it must be true Goldenrod, not Galaxy Gold. You may need to purchase this at a science or educational supply store.)
- ammonia
- washing soda
- cotton ball
- spray bottle
- bowl
- water

Directions:

- Mix the ammonia with some water in a bowl. Pour some into the spray bottle. Set the bottle aside.
- Dip a cotton ball in regular water and wipe it on the paper. Nothing interesting happens.
- Now, dip the cotton ball in the ammonia water and wipe it on the paper. The paper will turn red. It will turn back to yellow over time (see Notes below).
- Spray your hand with the ammonia/water mixture in the spray bottle and slap it on the paper. You will get a “bloody” handprint on the paper.
- Mix the washing soda with water, dip a cotton ball into the mixture, and wipe on the paper. It will not disappear (see Notes below).
- Place your hand in the washing soda mixture and slap onto the paper.

Notes:

- This works because the Goldenrod paper has a dye in it that is a base indicator. Ammonia and washing soda are bases. Carbon dioxide in the air is a mild acid that is strong enough to react with the ammonia and neutralize it, making the paper change back to yellow. However, carbon dioxide is not a strong-enough acid to neutralize the washing soda, which is a stronger base than ammonia. Try different acids to see what works best to turn the paper yellow again (lemon juice, vinegar, etc.).
- Try testing other common household liquids to see if any of them are bases (if they are, they'll turn the paper red).
- If you have a white candle laying around, rub the wax on a piece of the paper to make words or pictures, and then wipe over it with one of the liquid mixtures. A secret message will appear!



Mad Scientist Bubbling Jars

Materials to make four jars:

- 4 large jars (like for pickles or other commercial-sized food containers)
- small aquarium pump with two airflow outlets
- tubing
- 2 T-valves
- 4 aquarium air stones (optional)
- food coloring
- fake bugs, body parts, or any other gross-looking science-y things



Directions:

- Fill the jars with water and add different food coloring to each jar.
- Connect a piece of tubing a couple of inches long to one of the airflow outlets.
- Attach a T-valve to the tubing. Attach a piece of tubing about 15 inches long to each end of the T-valve. Repeat with the other airflow valve.
- Attach an aquarium air stone (optional, but makes it work better) to the end of each tube and place in the jar.
- Add your fake bugs, body parts, or other gross things (these are easy to find at dollar or Halloween stores).

Notes:

- You can make a more simple “specimen jar” without the pump, tubing, T-valve, and air stones. Just place spooky stuff (even vegetables work – the more twisted and gnarly, the better) in jars of various sizes, fill with colored water, and seal.
- Use rubber cement to attach labels to the jars. You can find free printable labels here: <http://freeprintablefun.org/2008/09/free-printable-halloween-potion-bottle.html>.
- Add a few grounds of coffee to clear water to make it look murky.
- Paint the jar lids with black spray paint to look more uniform and scarier.

Edible Eyeballs

Materials:

- Grapes

Directions:

- Carefully peel the grapes and place in a bowl. They look like eyeballs! Label them “Eyeballs” to help people identify them.