***Glitter Hush/Calm Down Bottles***

**Materials Needed:**

* 20 oz or less clear jar or bottle with screw on lid (non- breakable & wide-mouthed is best)
* hot water
* clear glue
* mixing bowl
* whisk
* liquid watercolor, food color or Kool-aid (optional)
* glitter
* dish soap (3-4 little drops depending on size of container)

**Proportions:**

Since all bottles are different sizes, this recipe is given in proportions instead of specifics. If your calm down bottle does not work with these proportions, the troubleshooting guide at the bottom will help you figure out how to save your bottle. Allow for a little bit of room at the top in case you need more water or glue. If you have to add more, you should be able to shake it at that point and have it blend easily.

This calm down jar is made with about 20% glue, 80% water, and as much glitter as desired.  So for a 10 oz jar/bottle, you’d use 2 oz of glue and 8 oz of water. For a 20 oz jar/bottle, you’d use 4 oz glue and 16 oz of water.

**Process:**

**Step 1:**Using a whisk, combine the hot water and the thick, *viscous* glue in a mixing bowl. Whisk until the mixture is uniform; usually the glue takes a little bit of work to get the clumps all out. You can leave the solution clear or you can add liquid watercolor, food coloring, or even Kool-Aid at this point. Using a funnel if needed, pour the mixture into the jar or bottle.

**Step 2:**Add the glitter - 1 color or more than one.  If you do use more than one color, don't be surprised if they settle out at a slightly different rate, due to size or *density*.  Put the top on and let your child shake the jar.

**Step 3:** You will notice that some of the glitter remains floating on the top due to the *surface tension* of the water.  Carefully add 3-4 drops of liquid dish soap to the top of the jar (I recommend an adult do this part) and shake the jar again.  You should see the glitter distribute much more evenly.

**Step 4:**If, with further shaking, your bottle still isn’t functioning quite right, see the troubleshooting guide below. After your bottle is just the way you like it, let it cool without the lid.  Once it has cooled, put the lid back on and secure it with hot glue or super glue. You don’t want this all over the white living room rug!

**Troubleshooting Help**

*The glitter is not moving*. If this happens to you, then you have put in too much glue. Pour the mixture into a large bowl and add more hot water then whisk away. Pour it back into the jar once it’s as fast as you would like.

*My solution is globby and clumpy.* In this case, you need to blend all the ingredients together more. Sometimes vigorous shaking can help with this. If it doesn’t, you need to warm the solution because the water was not warm enough. Pour the solution into a saucepan on very low while stirring regularly for about five to ten minutes. You’ll see the different parts become more uniform, and then you’ll know it’s done. Pour it back into the bottle when it looks blended.

*My glitter falls too fast.*If you want your glitter to stay afloat a little longer, add some more glue to your bottle. That will slow the process down with very little effort.

*The glitter collects at the top.* If your glitter collects at the top, a few drops of dish soap should help.

**What's Happening?**

There are three scientific concepts at play here: surface tension, viscosity and density.

***Surface tension***is the cohesive force on the surface of the water that causes the water molecules to cling together.  This creates both the typical circular shape of water droplets as well as a slightly more energized plane, or a surface "film", in which little things (like bugs or leaves or glitter) can walk or float.

***Viscosity*** is a measure of how resistant a fluid is to flow.  An easy way to think about it is how "thick" the liquid is at a given temperature.  (Note that temperature does affect viscosity - think about what happens to the glue when you combine it with the hot water!)  Some examples of liquids with high viscosity are corn syrup, honey and motor oil.  Some examples of liquids with low viscosity are water, vinegar and milk.

***Density***is a measure of how much matter ("stuff") is in a given volume ("space").  Materials that are more dense than water will sink to the bottom, and materials that are less dense than water will stay at the top.  If you were to add a little salt to your bottle, you would increase the density of the solution.  This would make the density difference between the glitter and the solution smaller and slow down the glitter even further.

**Credits:**

 <https://preschoolinspirations.com/6-ways-to-make-a-calm-down-jar/>

<http://mommaowlslab.blogspot.com/2012/02/science-thursday-glitter-jars.html>