

Home Scientist Badge

Purpose: Be able to see the science all around you.

Step 1. Be a kitchen chemist

Make your own rock candy from sugar crystal. Gather 1 cup water, 4 cups sugar, food coloring, a jar, and wooden skewers or string. With an adult's help, boil the water. Slowly pour in the sugar, letting it dissolve as you pour. When the sugar won't dissolve anymore and begins building up on the bottom of the pan, add a few drops of food coloring. Pour this liquid into the jar, but don't let any undissolved sugar get into the jar. Put skewers in the liquid solution or tie string to a pencil and place the pencil across the mouth of the jar. Crystals should start to form after an hour! But, if you wait several days or weeks, your rock candy will form large crystals!

Step 2. Create static electricity

Want to see sparks in the dark? Place a couple of dry towels and socks into the dryer. Turn the dryer onto a heat setting, and leave the items in for about 10 minutes. (Don't add any fabric softeners.) When done, check the items to see if they are sticking together. If not, put them back in until they stick. Once they are sticking together, take them out in a pile without pulling them apart and go into a very dark room or closet. Now, pull them apart—did you see sparks? This is positively charged static electricity! The motion of pulling the towels and socks apart breaks this bond and creates sparks!

Step 3. Dive into density

See if you can keep an egg suspended in the middle of a glass! Gather a tall glass, 4 tablespoons salt, 2 cups water, food coloring, and an egg. Mix the salt and 1 cup water in the glass, then add a few drops of food coloring. Mix to dissolve the salt. Then slowly pour the remaining cup of plain water down the side of the glass. You'll see where the plain water meets the salt water with the food coloring. Carefully lower your egg into the glass. The egg should sink until it hits the layer of salt water!

Step 4. Make something bubble up

NOTE: Wear sunglasses or safety glasses for this experiment! Gather a tall glass, 1 cup vinegar, 2–3 tablespoons baking soda, liquid dish soap, food coloring, and (optional) glitter. Place your glass in a spill-proof place. In the glass, pour 2–3 tablespoons (use 3 tablespoons if you have a very tall glass or if you want a larger explosion) and a pinch of glitter. In a small liquid measuring cup, mix 1 cup vinegar, 3–5 drops of liquid dish soap, and food coloring, then gently mix. When ready, pour the vinegar mixture into the tall glass with the baking soda. Ta-da! You should have created a chemical reaction/explosion! Try it again: Adjust the portions of the ingredients and observe what happens.

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Girl Scout Brownies





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Step 5. Play with science

Make a giant bubble blower! Gather cotton string, a large plastic tub or bowl, two plastic straws, 1 cup liquid dish soap, 4 cups water, and 1/2 cup light-colored corn syrup or glycerin. Cut a long piece of string and thread it through two straws. Tie the ends of the string together, then slide the knot into the middle of one of the straws (so it's hidden). You can adjust the size of your bubble blower by making the length of string shorter or longer before tying the ends. Pour the liquids into the tub/bowl and mix. Dip your bubble blower into the tub/bowl. Holding one straw in each hand, slowly spin around. With some practice, you should create huge bubbles!

Congratulations! You've earned the Home Scientist badge!

