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## **Bubble Solution (recipe can be multiplied)**

### Equipment

- clean, empty plastic bottle(s) with lid(s)
- measuring cups
- measuring spoon

### Ingredients

- ½ cup (240 ml) Dawn dish soap
- 4 cups (1 liter) water
- 4 tablespoons glycerin (60 ml)

### Procedure

1. Pour the ingredients in a clean plastic bottle with lid on.
2. Let the mixture sit for at least 24 hours before using.
3. Shake gently before using.
4. The secret to a great bubble solution is to let it age, but not too long.
5. In humid climates, bubble solution may ferment. Do not use if there are floating particles in the solution.

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## **Colored Sand (recipe can be multiplied)**

### Equipment

- 1 cup measuring cup
- 1 tablespoon
- small bowls
- wooden or plastic stirring spoons
- cookie sheets, plastic trays, or low-sided cardboard boxes lined with foil
- funnel
- plastic zip lock bags or clean, empty plastic bottle(s) with lid(s)

### Ingredients

For each cup of sand:

- 1 cup fine silica sand
- 1 tablespoon water (in humid climates, use about ½ this amount of water)
- red, yellow, green, blue, or other food coloring

### Procedure

1. Put 1 cup of the sand in the bowl.
2. Add some of the required food coloring. Create your own color combinations.
3. Add 1 tablespoon water (about half this amount in humid climates) and stir.
4. Add the remaining food coloring.
5. Stir until the color is consistent and even and lumps have been removed.
6. Pour the sand on to a cookie sheet (or a low-sided cardboard box lined with foil) and spread evenly
7. Let the sand dry for 15 minutes then stir and redistribute with the spoon. Sand will dry a slightly lighter shade than when damp. Times may be longer in humid climates.

8. Let the sand dry (in bright sun if possible) for another 15 minutes or until sparkly and dry (in humid climates this may require a few days). Stir frequently.
9. Pour the sand into a bowl after it is completely dry.
10. Pour the sand from the bowl into the funnel which is inside a zip lock bag or plastic jar.
11. Seal the zip lock bag or plastic bottle.

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## **Flubber (recipe can be multiplied)**

### Equipment

- measuring cups
- measuring spoons
- two plastic or metal mixing bowls
- plastic zip lock bags or clean, empty plastic jar(s) with lid(s)

### Solution A ingredients

- 2 cups white glue
- 1 ½ cups warm water
- food coloring
- glitter (optional)

### Solution B ingredients

- 4 tsp borax
- 1 1/3 cups cold water

### Procedure

1. Mix each solution separately.
2. Then pour Solution B into Solution A and stir gently.
3. Keep in sealed plastic zip lock bag or plastic jar.
4. Do not allow Flubber to get moldy.

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## **Bouncy Balls (recipe can be multiplied)**

### Equipment

- measuring cups
- measuring spoons
- plastic bowl
- microwave
- plastic bowl or metal bowl
- stirring spoons
- plastic zip lock bags or clean, empty plastic jar(s) with lid(s)
- plastic knife or scissors

### Solution A ingredients

- 1 tbsp borax
- 1/2 cup warm water

### Solution B ingredients

- 2 tbsp white school glue
- 1 tbsp cornstarch
- food coloring (optional)
- glitter (optional)

### Procedure

1. Solution A: Add borax to warm water and stir.
2. Solution B: In a second container mix glue, cornstarch, food coloring and glitter.
3. Mix each solution separately, then pour Solution B into Solution A and stir gently.
4. Be sure to stir in the glue stuck to the edge of the bowl.
5. Form into a cylinder with dry hands, and use a paper towel to remove excess water.
6. Store and seal in plastic zip lock bag or plastic jar to prevent it from drying out.
7. If making larger batches, divide with a plastic knife or cut with scissors.
8. Do not allow balls to get moldy.

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## **Glow-in-the-Dark Slime (recipe can be multiplied)**

### Equipment

- measuring cups
- measuring spoons
- plastic bowls or metal bowls
- stirring spoons
- plastic zip lock bags or clean, empty plastic bottle(s) with lid(s)

### Solution A ingredients

- ½ cup Elmer's glue
- 2 tbsp glow-in-the-dark paint
- 2/3 cup hot water

### Solution B ingredients

- 2 tsp borax
- 1/3 cup hot water

1. Mix ingredients for Solution A in a bowl.
2. Mix ingredients for Solution B in another bowl.
3. Add to 2 tablespoons (NOT the entire bowl) of Solution B to Solution A.
4. Then charge the solution by placing under a light.
5. Store and seal in plastic zip lock bag or plastic jar.
6. Do not allow slime to get moldy.

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## **Salt and Cornstarch Clay (recipe can be multiplied)**

### Equipment

- measuring cups
- measuring spoons
- microwave-safe bowl
- microwave
- plastic bowl or metal bowl
- stirring spoons
- plastic zip lock bags or clean, empty plastic jar(s) with lid(s)

### Ingredients

- 2 cups salt
- 2/3 cups water
- 1 cup cornstarch
- ½ cup cold water
- food coloring (optional)

### Procedure

1. Mix cornstarch, cold water, and optional food coloring and set aside.
2. Mix salt and water.
3. Heat 3 to 4 minutes –or- heat in microwave safe bowl for about 1 to 2 minutes, stirring every 15 seconds.
4. Remove from heat and add the cornstarch-cold water mixture.
5. If it is too runny, put back in the microwave for 30 seconds to 1 minute, stirring every 15 seconds.
6. Do not overcook.
7. Store and seal in plastic zip lock bag or plastic jar.
8. Do not allow clay to get moldy.

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## **Traditional Play Dough (recipe can be multiplied)**

### Equipment

- measuring cups
- measuring spoons
- plastic or metal bowl
- cooking pan
- stove
- stirring spoon
- plastic zip lock bags or clean, empty plastic jar(s) with lid(s)

## Ingredients

- 1 cup flour
- 1 cup warm water
- 2 teaspoons cream of tartar
- 1 teaspoon oil
- 1/4 cup salt
- food coloring

## Procedure

1. Mix all ingredients, adding food coloring last.
2. Stir over medium heat until smooth.
3. Remove from pan and knead until blended smooth.
4. When cooled, store and seal in plastic zip lock bag or plastic jar.
5. It will last for a long time, but do not allow clay to get moldy.

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## **Play Clay (recipe can be multiplied)**

### Equipment

- measuring cups
- measuring spoons
- microwave-safe bowl
- microwave
- plastic bowl or metal bowl
- stirring spoons
- wire oven rack or cookie sheet
- plastic zip lock bags or clean, empty plastic jar(s) with lid(s)

### Ingredients

- 1 cup corn starch
- 1 pound (2 cups) baking soda
- 1-1/4 cups cold water
- 1 tablespoon corn oil
- 1 tablespoon food coloring OR 1 to 2 teaspoons paste food color

### Procedure

1. Stir corn starch and baking soda in 2-1/2 quart microwave-safe bowl.
2. Add water, oil and food coloring and stir until smooth.
3. Microwave at HIGH (100%) uncovered, 2 minutes; stir.
4. Microwave 3 to 4 minutes longer, stirring after each minute until mixture reaches consistency of SLIGHTLY mashed potatoes.
5. Turn out onto plate and cover with damp cloth; cool.
6. When cool enough to handle, turn clay onto work surface dusted with corn starch.
7. Knead until smooth and pliable.
8. If not using immediately, store and seal completely cooled clay in plastic zip lock bag or plastic jar.

9. Shape clay as desired by molding into shapes, balls or ropes with hands. Or, roll flat with a rolling pin or press with hands, making pieces of moderate thickness. (Items less than 1/4-inch thick tend to be fragile; very thick pieces often dry unevenly and may crack).
10. Press or etch designs into soft clay.
11. Plan to glue small pieces together (including heads to bodies) rather than press clay shapes together.
12. Air-dry clay overnight on wire racks, turning occasionally for faster and more even drying.
13. To oven dry: preheat oven to 350°F, then turn oven OFF.
14. Place undecorated items on a wire rack on a cookie sheet. Place in oven until oven is cold. Repeat as necessary.
15. Decorate with water color, acrylic paints, markers, colored glue, glitter glue or crayons.
16. Let dry completely.
17. If desired coat decorated items with clear acrylic to seal.
18. Store and seal unshaped clay in plastic zip lock bag or plastic jar in a cool place up to 2 weeks.
19. Knead stored clay until smooth before using.
20. Do not allow clay to get moldy.

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## **Cornstarch Clay (recipe can be multiplied)**

### Equipment

- measuring cups
- cooking pan
- stirring spoon
- stove
- large plastic or metal bowl
- tea towel/cloth
- oven
- plastic zip lock bags or clean, empty plastic jar(s) with lid(s)

### Ingredients

- 2 cups of baking soda
- 1 cup of cornstarch
- 1 cup of water

### Procedure

1. Combine all ingredients in a medium pot and set on stove at medium heat, stir until all ingredients have dissolved.
2. Continue stirring until mixture begins to thicken.
3. Once mixture thickens transfers to a large bowl.
4. Cover with a damp tea towel/cloth until the clay has cooled sufficiently to handle.
5. Begin kneading dough until it reaches a nice smooth, soft texture.
6. If the mixture is a bit dry add a few drops of water, but don't add too much.
7. Re-knead until smooth.
8. Roll dough to approximately 1/4" thickness or slightly less.
9. Cut into desired shapes.

10. Optionally stamp images with or without ink, texturize with fabrics, textured papers/old greeting cards, organic material such as leaves/flowers, fingerprints, etc. Add holes with toothpicks, straws or chopsticks for later hanging.
11. Transfer finished creations to a baking sheet and pop them in a pre-heated oven.
12. Bake at 175° degrees F for about 1.25 hours, then flip and continue for about another 45 minutes.
13. Remove from oven. Let cool, then gently file down any rough edges.
14. These ornaments will look beautiful as they are but can be painted, glittered, written on with Sharpies, details added with nail polish, varnished with clear nail polish, Modge Podge or spray varnish such as, Krylon Crystal Clear Varnish Spray.
15. Store and seal excess clay in plastic zip lock bag or plastic jar.
16. In humid climates clay should be used before it gets moldy.

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## **Microwave Modeling Clay (recipe can be multiplied)**

### Equipment

- stirring spoon
- microwave-safe bowl
- microwave
- towel
- plastic zip lock bags or clean, empty plastic jar(s) with lid(s)

### Ingredients

- 1 cup cornstarch
- 2 cups baking soda
- 1 1/4 cup cold water
- food coloring (optional)

### Procedure

1. In a large bowl, combine all ingredients and stir.
2. Microwave on HIGH for 4-6 minutes or until mixture thickens.
3. Check frequently and stir frequently while microwaving.
4. When mixture is thick, remove it from the oven and cover the top of the bowl with a damp towel.
5. Let sit until cool.
6. Knead like bread dough and work until dough is smooth.
7. Store and seal clay in plastic zip lock bag or plastic jar.
8. Objects or shapes made from the clay can be left out overnight to harden, then painted with tempera or acrylic paint. A coat of clear varnish or acrylic spray will give a glossy finish.
9. In humid climates clay should be used before it gets moldy.

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## **Sand Clay (recipe can be multiplied)**

### Equipment

- shells, cookie cutters, any other modelling tools
- mixing bowl
- mixing spoon

### Ingredients

- 2 cups of sand
- 1/2 - 1 cup of white glue (add slowly until desired consistency is achieved)
- 1/2 - 1 cup of cornstarch

### Procedure

1. Mix the sand and cornstarch together.
2. Then slowly add the glue, and mix together, until it starts to combine.
3. The dough may have a breadcrumb-like mixture. If so, knead it together into a dough.
4. If it feels too dry, add a little more glue, or even a splash of water if the sand is very dry.
5. If it feels too sloppy, add a little more cornstarch.
6. It should have a clay or dough-like consistency.
7. Create shapes using molds or hands.
8. When done, leave them in a dry airy place overnight, or pop in a warm oven (100°C) for 2-3 hours, or until hard, which will depend on dough thickness.

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## **Recycled Crayons**

### Equipment

- oven
- silicon baking mold or muffin tin

### Ingredients

- non-stick spray or vegetable oil
- old crayons

### Procedure

1. Preheat oven to 275 degrees.
2. Remove the wrappers from old crayons.
3. Coat a silicone baking mold or muffin tin with non-stick spray or vegetable oil.
4. Fill the baking mold with the crayon pieces, but avoid using brown, since it saturates other colors.
5. Bake the crayon pieces for 10-15 minutes.
6. If they are not completely melted keep checking on them until they are liquid.
7. Let cool, can be put in the freezer for faster cooling.
8. After they are cooled pop them out of the mold or muffin tin.

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## **Conductive Dough (recipe can be multiplied)**

### Equipment

- measuring cups
- measuring spoons
- stove-safe pan or microwave-safe bowl
- stove or microwave
- plastic zip lock bags or clean, empty plastic jars with lids

### Ingredients

- 1 cup water
- 1 1/2 cups flour (can use gluten free flour; we found that we needed 2 cups of flour rather than 1 1/2)
- 1/4 cup salt
- 3 tbsp cream of tartar or 9 tbsp of lemon juice may be substituted
- 1 tbsp vegetable oil
- food coloring (optional – we used green to indicate “go”)

### Procedure

1. Mix water, 1 cup of flour, salt, cream of tartar (or lemon juice), vegetable oil, and food coloring in a medium sized pot (or microwave safe bowl).
2. Cook over medium heat and stir continuously (if you use a microwave, stir at least every 30 seconds).
3. Mixture will begin to boil and start to get chunky.
4. Keep stirring until it forms a ball in center of the pot or bowl.
5. Once ball forms, place the ball on a lightly floured surface.  
WARNING: Ball will be very hot whether heated on the stove or in the microwave! Allow it to cool for a few minutes!
6. Slowly knead remaining flour into the ball (you may need nearly a cup of flour, rather than just the remaining ½ cup).
7. Store and seal in a plastic zip lock bag or plastic jar.
8. Water from the dough may create condensation. Just knead dough after removing from bag, and it will be as good as new.
9. If stored properly, the dough should keep for several weeks.
10. In humid climates dough should be used before it gets moldy.

“Official recipe:” <http://courseweb.stthomas.edu/apthomas/SquishyCircuits/conductiveDough.htm>

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## **Insulating Dough (recipe can be multiplied)**

### Equipment

- measuring cups
- measuring spoons
- large bowl
- plastic zip lock bags or clean, empty plastic jars with lids

## Ingredients

- 1 1/2 cup flour
- 1/2 cup sugar
- 3 tbsp vegetable oil
- 1/2 cup deionized (or distilled) water (regular tap water can be used, but dough resistance will be lower)
- food coloring (optional – we used red to indicate “stop”)

## Procedure

1. Mix flour, sugar, vegetable oil, and food coloring in a pot or large bowl, setting aside ½ cup flour to be used later.
2. Mix with this mixture a small amount of deionized water, about 1 tbsp at a time, and stir.
3. Repeat this step until a majority water is absorbed by the mixture (our dough was very wet).
4. Knead the mixture into one “lump.”
5. Knead more water into the dough until it has a sticky, dough-like texture (we didn’t need to add more than the specified ½ cup of water).
6. Knead in more flour, until a desired texture is reached (you may need nearly a cup of flour, rather than just the remaining ½ cup).
7. Store and seal in a plastic zip lock bag or plastic jar.
8. Water from the dough may create condensation. Just knead dough after removing from bag, and it will be as good as new.
9. If stored properly, the dough should keep for several weeks.
10. In humid climates dough should be used before it gets moldy.

“Official recipe:” <http://courseweb.stthomas.edu/apthomas/SquishyCircuits/insulatingDough.htm>

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## **Sidewalk Chalk Paint (recipe can be multiplied)**

### Equipment

- measuring cups
- plastic or metal bowl
- food coloring
- squeeze bottles for paint
- spray bottles for vinegar

### Ingredients

- 1/3 c cornstarch
- 1/3 c baking soda
- 1/3 c water
- liquid watercolor paint or food coloring
- vinegar

### Procedure

1. Mix 1/3 cup of water, 1/3 cup of cornstarch, and 1/3 cup of baking soda with each color.
2. Remember that the base of this paint recipe is white, so add enough food coloring to achieve vibrant shades of paint.
3. For easy preparation mix the ingredients in a measuring cup with an easy pour spout to make filling the squeeze bottles an easy task.
4. After painting, spray with vinegar.

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## **Watercolor Paint (recipe can be doubled)**

### Equipment

- 2 cup (or larger) measuring cup
- mini muffin tin or ice cube tray
- toothpick or popsicle stick

### Ingredients

- 4 tbsp baking soda
- 2 tbsp white vinegar
- ½ tsp Light or Golden Corn Syrup (known as Karo syrup in some countries)
- 2 tbsp cornstarch (known as corn flour in the UK)
- Food colouring

### Procedure

1. In the measuring cup, mix baking soda and vinegar, and wait for fizzing to stop
2. Add corn syrup and corn starch and mix well until corn starch has dissolved.
3. Pour this thick liquid into the wells of a muffin tin or ice cube tray (a double batch of watercolors half-filled 12 compartments of a mini muffin tin).
4. With a toothpick or popsicle stick, stir in food coloring, and mix well for about a minute.
5. Set tray in a warm place to set and dry overnight.
6. When paints are dry to the touch, they're ready to use.

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## **Invisible Ink (recipe can be multiplied)**

### Equipment

- plastic or metal bowl
- stirring spoon
- clean, empty plastic jar with lid
- q-tips
- white paper
- lamp or other light bulb

### Ingredients

- half a lemon
- water

### Procedure

1. Squeeze some lemon juice into the bowl and add a few drops of water.
2. Mix the water and lemon juice.
3. Dip the q-tip into the mixture and write a message onto the white paper.
4. Wait for the juice to dry so it becomes completely invisible.
5. When you are ready to read your secret message or show it to someone else, heat the paper by holding it close to a light bulb.

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## **Salt Glitter (recipe can be multiplied)**

### Equipment

- baking sheet
- storage container with lid
- oven

### Ingredients

- salt
- food coloring

### Procedure

1. Preheat oven to 350
2. Determine how much glitter is needed, and pour that amount into a bowl. you want to make.
3. Add food coloring and mix to get the desired color.
4. Pour onto the baking sheet, one color per batch.
5. Put the pan into the oven for 10-15 minutes to dry the wet food coloring.
6. Remove from oven and allow to cool.
7. Store in an airtight, dry container.

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## **Rock Candy**

### Equipment

- measuring cups
- large heavy metal sauce pan
- long wooden stirring spoon
- clean glass jar (a tall, sturdy one such as a pint or quart canning jar, mayonnaise jar or pickle jar)
- piece of CLEAN cotton string
- popsicle stick, pencil, or skewer
- paper clip
- thick pot holders
- candy thermometer

## Ingredients

- 1 cup water
- 2 cups of granulated sugar
- a few drops of your favorite candy flavoring such as peppermint, cherry or lemon, more drops = stronger flavor (optional)
- a few drops of food coloring, more drops will result in a darker color (optional)

## Procedure

1. Tie one end of the piece of string around the middle of the stick or pencil. Cut the string, if necessary, so that it is a little shorter than your jar.
2. Moisten the string with a little water and roll it in the sugar. Put the paper clip on the end of the string to help it hang straight down. Lay the stick over the top of the glass jar so that the string hangs down inside the jar. The end of the string should not touch the bottom of the jar.
3. Cook the candy mixture. (Here's where you need an adult to help!)
4. Put the cup of water into the sauce pan and heat until it boils.
5. Add 2 cups of sugar to the boiling water while stirring. Keep stirring until the sugar dissolves. (If you have a candy thermometer the temperature of the sugar water should reach 240 degrees Fahrenheit.)
6. Remove pan from heat. If you want to add flavoring or color, stir it in now.
7. Pour the hot mixture into the jar.
8. Let the sugar water sit for a few days where no one will bother it. The crystals will begin to form along the string in a few hours. Let them grow for 3 to 10 days (or more). There are two things that will make the largest crystals:
  - a.) Making a thick sugar water mixture (Be sure you put in the whole 2 cups of sugar, or even a little more.)
  - b.) Letting them grow for more days
9. When you're ready to eat the rock candy, take the candy-covered string out of the jar. Break the pieces apart and enjoy. Store left-over candy in a covered container. (Some adults like to flavor tea or coffee by putting a piece of rock candy in the cup. Maybe you shouldn't use purple coloring if you want to share your candy with them!)

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