



AGES 8+

**SCIENCE  
ACADEMY**

# SQUISHY BALL LAB GUIDE BOOK



**⚠️ WARNING— CHOKING HAZARD**

Children under 8 years can choke or suffocate on uninflated or broken balloons. Adult supervision required. Keep uninflated balloons from children. Discard broken balloons at once.

**⚠️ WARNING—** This set contains chemicals that may be harmful if misused. Read cautions on individual containers carefully. Not to be used by children except under adult supervision



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## SAFETY INFORMATION

- Squishy Ball Lab is a safe and non-toxic activity kit when used as directed. However, like most activities, this product can be dangerous if used in the wrong way.
- Before starting the activities, carefully read the safety information in this manual. Please keep the safety information for reference.
- Put any leftover materials in the garbage, not down the sink.
- Wash your hands after completing the activities.
- Store the kit out of reach of small children.

# WHAT'S IN THE KIT?



- |   |                             |    |                     |
|---|-----------------------------|----|---------------------|
| 1 | Plastic Jar with Lid        | 9  | Blue Glitter        |
| 2 | 50ml Beaker                 | 10 | Silver Glitter      |
| 3 | Water Soluble Glue Base (5) | 11 | Laboratory Gloves   |
| 4 | Corn Starch (2)             | 12 | Stirring Sticks (6) |
| 5 | Activator Solution (4)      | 13 | Small Bowl          |
| 6 | Funnel                      | 14 | Colored Pom-Poms    |
| 7 | Balloons (6)                | 15 | Liquid Coloring (3) |
| 8 | Purple Glitter              | 16 | Colored Beads       |

# WHAT IS THE SQUISHY BALL LAB ALL ABOUT?

## INTRODUCTION

The science behind concocting squishy balls all lies in the production of polymers. A polymer is a very big molecule made up of a pattern of many small molecules layered together. There are both naturally occurring and man-made polymers that we encounter every day. Some examples of man-made polymers include paper, plastic - like the plastics in plastic bags and toys - and even chewing gum! Natural polymers include silk, wool and the protein in the food we eat.

Polymers are unique because they are often dense, strong and flexible. In this kit, the flexibility of polymers is apparent as you squish and stretch your slimy squishy balls.

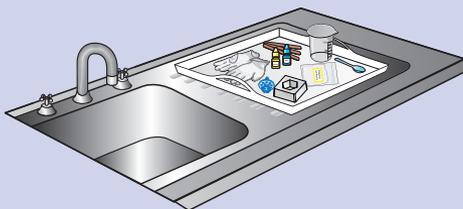
You will get to act as a chemist as you mix and mash your ingredients and observe the viscosity of the various ingredients in this kit. A viscous solution has a consistency that is thick, sticky and semifluid. When you mix the special activator into your glue base, the two chemicals react to create a squishy viscous slime. After you conduct your experiments you have a finished product that lets you squeeze your stress away!

# SETTING UP YOUR LAB

Complete the following activities to prepare for your experiments.

## PROTECT YOUR WORK STATION

In order to make these squishy stress balls, the experiments require gooey materials that can create a mess! Before using the kit, set up a work station in a protected space away from any valuables that may get wet or stained. Protect your work space with a tray, sheets of plastic or newspaper. Make sure your station is clean and uncluttered. Work close to the sink so you can easily wash your lab tools by hand. However, dispose of all leftover material in the garbage – not down the drain.



## GET YOURSELF READY

This kit includes a pair of gloves that should be worn while completing all experiments to keep your hands protected from the coloring. If your hands do come into contact with the color, it is safe and non-toxic and will just need to be washed a few times to remove the color. We suggest wearing a lab coat, old shirt or protective apron to avoid staining your clothing while creating your slimy sensory creations.



### WARNING

**DO NOT** put the lab molds and tools in the dishwasher. They will distort.  
Wash by hand in warm, soapy water.

### STORAGE

**These squishy stress balls are made for squeezing, but you should take extra care to leave them in a safe place. Keep away from direct sunlight to avoid any deterioration and avoid contact with sharp objects. Keep your finished creations on a smooth surface that can be cleaned. Note that the slime could seep into carpet or other textiles.**



# SENSORY BEAD SQUISHY BALL

1

Take one bag of the Glue Base and add all 84ml to the clean mixing bowl.



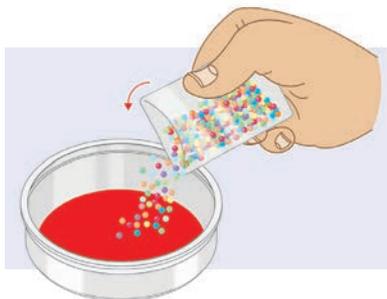
2

Choose one of the colors of liquid coloring. For our version, we chose red. Add 5 drops of red coloring to the mixing bowl and use the stirring stick to stir until combined.



3

Pour half the bag of small plastic beads into the bowl. Mix well to combine the beads with the colored Glue Base.



4

Choose two of the colors of glitter. We chose purple and silver. Use the dry end of the stir stick to scoop from the bag. Add two scoops of each glitter color to start. You can add more if you want your ball to be more glittery, just make sure to save enough glitter for the other experiments. Mix until the glitter is evenly distributed.



5

Take one bag of the activator; and slowly add all 20ml to the mixing bowl.



6

Use the stir stick to combine the activator with the glue. Stir until all of the liquid is combined. The mixture will become thick and slimy.

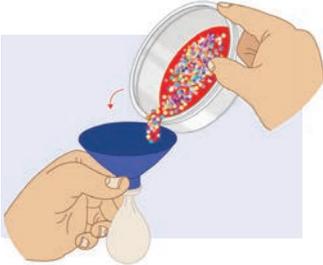


# COSMIC SQUISHY BALL

- 7** Take one of the balloons and connect it to the funnel.



- 8** Pour the thick slime mixture into the funnel. Use your fingers and the stir stick if necessary, to push the slime mixture into the balloon.



- 9** Every so often, use your hand to help pull and move the slime into the balloon. Keep pushing and squishing until all of the squishy slime is in the balloon.



- 10** Carefully squeeze out any excess air and tie the end of the balloon to fasten. This can be a bit tricky - an adult's help might be necessary.



- 11** Your sensory bead squishy ball is now ready to use and enjoy!

- 1** Take one bag of the Glue Base and add all 84ml to the clean mixing bowl.



- 2** Choose one of the colors of liquid coloring. For our version, we chose blue. Add 5 drops of blue coloring to the mixing bowl and stir until combined.



- 3** Choose two of the colors of glitter to create your cosmic mixture. We chose purple and silver. Use the dry end of the stir stick to scoop up the glitter. Add two scoops of each glitter color to start. Mix until the glitter is evenly distributed.



- 4 Take one bag of the activator, and slowly add all 20ml to the mixing bowl.



- 5 Use the stir stick to combine the activator with the glue. Stir until all of the liquid is combined. The mixture will become thick and slimy.



- 6 Follow steps 7-10 from the Sensory Bead Squishy Ball experiment to complete your Cosmic Squishy Ball.



## OTHER FUN SQUISHY IDEAS

Besides the two slimy squishy balls described in the experiments here, we have included a number of other fun ingredients to make creations of your own! Use the pom-poms for soft sensory fun and experiment with the other colors and glitter.

You can even create a Two-Tone Squishy Ball! Simply pour the half of the glue base in one bowl and the remaining half in a disposable bowl of your own. Add your chosen color, glitter and other ingredients. Pour half of the activator into each bowl and stir. Add one color of the slime mixture to your balloon at a time and then have fun squishing away!

# OUBLECK SQUISHY BALL

- 1** Take one bag of the Corn Starch and add all 56g to the clean mixing bowl.



- 2** Use the clean small beaker to measure 25ml of water.



- 3** Choose one of the colors of liquid coloring. For our version, we chose yellow. Add 4 drops of yellow coloring to the beaker of water.



- 4** Slowly add the water to the corn starch and stir slowly to combine.



- 5** If the mixture still seems too dry, add a bit more water at a time until the mixture has turned into a thick viscous liquid called Oobleck.



- 6** Connect one of the balloons to the funnel.



- 7** Pour the oobleck mixture into the funnel. If necessary, use the stir stick to scoop the mixture and push it down into the balloon.



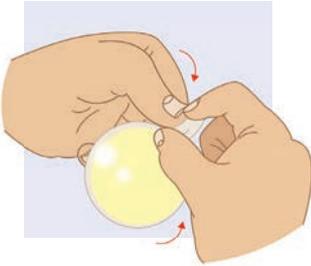
- 8** Use your hand to move the oobleck into the balloon. Keep pushing and squishing until all of the oobleck is in the balloon.



# RELAXATION JAR

9

Carefully squeeze out any excess air and tie the end of the balloon to fasten. This can be a bit tricky - an adult's help might be necessary.



10

Squish and squeeze your Oobleck Squishy Ball to experience the magic of this non-Newtonian fluid!



## FUN FACT!

Oobleck is a unique, non-Newtonian fluid that reacts to changes in pressure rather than changes in temperature. Applying pressure to these unique mixtures increase their viscosity or thickness. When you squeeze your Oobleck Squishy Ball, the pressure of your grip forces the cornstarch particles together and the substance feels hard. Squeeze more slowly this time. Do you notice a difference? When you change the amount of pressure you use, and use less pressure, the substance will feel lighter and more liquid.

1

Unscrew the lid from the plastic jar. Take one bag of the Glue Base and add all 84ml to the clean mixing bowl.



2

Choose one of the colors of liquid coloring. For our version, we chose blue. Add 5 drops of blue coloring to bowl.



3

Add all of the remaining silver glitter that you didn't use to make your squishy balls into the bowl. If you have any leftover blue or purple glitter, those can be added as well.



- 4 Using a clean stir stick, mix the glue mixture until combined.



- 5 Place the funnel onto the top of the jar. Carefully pour the mixture into the funnel. This might be tricky, so place a plate or paper towel under the jar to catch any spills.



- 6 Take the clean small beaker, and measure 60ml of water. Slowly add the water into the jar.



- 7 Continue adding water until the jar is filled to the widest part at the top.



- 8 Screw the lid back onto the jar and tighten closed so that it won't leak.



- 9 Swirl the bottle around a few times to combine the glue mixture with the water.



- 10 Once combined, slowly turn the jar over from top to bottom and observe the glitter running and rolling throughout the jar.



- 11 Feel yourself relax as you watch the mesmerizing motion.



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