



Future Scientist Fun Patch

It's science time! This patch kit gives girls a small dose of what science is all about! This fun patch kit includes coloring pages of famous women in science including Marie Curie who won two Noble Prizes for her experiments in radioactivity, Jane Goodall, a scientist who has studied Chimpanzees for many years and Dr. Mae C. Jemison the first African American Woman to enter space (video links about these amazing women are below)!

This kit includes a number of experiments: The **Sink or Float** experiment lets girls see what objects in their homes would sink or float and the **S'mores Lab** teaches girls about physical and chemical changes of matter. Girls can also make **Homemade Slime** and do a **Lava Lamp Experiment** to get hands on with science!

Girls can work virtually with their troop or do activities on their own!

Once activities are completed, email Teresa at the GSSNV Shop to purchase patches at: tramirez@girlscoutsnv.org. Include how many patches you would like to order along with the patch name:

Science Fun

We would love to see what you are doing! Adults can send photos to: customerservice@girlscoutsnv.org, we may post on our social-media channels!

Use the links below for more Science Fun!

[Chemical Change Crash Course Video](#)

[The Genius of Marie Curie](#)

[Facts about Dr. Mae C. Jemison Video](#)

[Into the Forest with Jane Goodall Video](#)

[How Fluid Can Climb Upward-Slime](#)

Jane Goodall



Jane Goodall is a scientist and anthropologist who has studied chimpanzees for many years. She has devoted her life to protecting and conserving wildlife and animals.



Marie Curie



Marie Curie was one of the first scientists to conduct experiments with radioactivity. She won two Nobel Prizes for her research.

BE SURE AN ADULT IS HELPING WITH THIS EXPERIMENT!



MAKE AN EASY LAVA LAMP

Learn how to make an easy lava lamp with this fun science experiment. Use simple household items such as vegetable oil, food coloring, Alka-Seltzer and a bottle to create chemical reactions and funky balls of color that move around like a real lava lamp

What you'll need:

- Water
- A clear plastic bottle
- Vegetable oil
- Food coloring
- Alka-Seltzer (or other tablets that fizz)
- Paper Towels or newspaper, this might get messy!

Instructions:

1. Pour water into the plastic bottle until it is around one quarter full (you might want to use a funnel when filling the bottle so you don't spill anything).
2. Pour in vegetable oil until the bottle is nearly full.
3. Wait until the oil and water have separated.
4. Add around a dozen drops of food coloring to the bottle (choose any color you like).
5. Watch as the food coloring falls through the oil and mixes with the water.
6. Cut an Alka-Seltzer tablet into small pieces (around 5 or 6) and drop one of them into the bottle, things should start getting a little crazy, just like a real lava lamp!

7. When the bubbling stops, add another piece of Alka-Seltzer and enjoy the show!

What's happening?

The oil and water you added to the bottle separate from each other, with oil on top because it has a lower density than water. The food coloring falls through the oil and mixes with the water at the bottom. The piece of Alka-Seltzer tablet you drop in after releases small bubbles of carbon dioxide gas that rise to the top and take some of the colored water along for the ride. The gas escapes when it reaches the top and the colored water falls back down. The reason Alka-Seltzer fizzes in such a way is because it contains citric acid and baking soda (sodium bicarbonate), the two react with water to form sodium citrate and carbon dioxide gas (those are the bubbles that carry the colored water to the top of the bottle).

Adding more Alka-Seltzer to the bottle keeps the reaction going so you can enjoy your funky lava lamp for longer. If you want to show someone later you can simply screw on a bottle cap and add more Alka-Seltzer when you need to.

Experiment courtesy of: sciencekids.co.nz



Sink or Float

The **density** of an object determines whether it will **sink or float** in another substance. An object will **sink** if it is more dense than the liquid it is placed in. An object will **float** if it is less dense than the liquid it is placed in.

Get a large bowl of water and some items from around the house. Make a prediction if each object will sink or float and record your observations:

ITEM	PREDICTION	OBSERVATIONS

BE SURE AN ADULT IS HELPING WITH THIS EXPERIMENT



HOMEMADE SLIME RECIPE

This slime recipe comes together so quickly and only takes 3 main ingredients (plus food coloring if desired). Have fun with it!

INGREDIENTS:

- 8-ounce bottle Elmer's white school glue
- 1 1/2 – 2 Tablespoons contact saline solution, more as needed
- 1 Tablespoon baking soda
- Food coloring, optional

INSTRUCTIONS:

- **Add glue and food coloring to bowl.** Squeeze the bottle of glue into a bowl (photo 1). Add your food coloring if desired and stir until combined. Then mix in baking soda (photo 2).
- **Mix in saline solution.** Add 1 1/2 Tablespoons saline solution and mix until combined (photo 3). If it's too sticky, add 1/2 Tablespoon more solution at a time. The more you add, the thicker it'll be. The less you add, the slimier it'll be (see texture in photo 4).

- **Knead the slime.** Using your hands, knead the slime until it holds together. It will be wet and gooey at first, but just keep kneading until it all comes together.
- **Store slime.** Store slime in a container with lid, or in a zip top bag. The slime is best to play with on a place mat.

TIPS FOR MAKING SLIME

- Use plastic bowls and spoons to make clean up easier.
- Make sure to get the color correct before adding the saline. It's harder to mix in when it begins to thicken.
- For thicker slime, add more saline solution. For a slimier texture, add less saline.
- Slime is best to play with on a place mat, plastic tablecloth or even a trash bag.
- Add in extras like glitter, scented oils or even mini styrofoam balls.
- Recipe makes about a cup of slime and can be doubled or tripled.
- If you have long hair, make sure to put it into a pony tail. If a little slime gets in your hair, simply rub some coconut oil or olive oil on top and comb it out.

Recipe courtesy of: iheartnaptime.net

BE SURE AN ADULT IS ASSISTING YOU WITH THIS EXPERIMENT!



S'mores Lab

Step A: Examine your graham cracker, marshmallow, and chocolate.

1. Describe the physical properties of each ingredient.

Graham Cracker	Marshmallow	Chocolate

Step B: Break your graham cracker in half.

2. Describe what happened.

3. What kind of change took place? How do you know?

Step C: Roast your marshmallow.

4. Describe what happened.

5. What kind of changes took place?

Step D: Put your S'more together.

Step E: Eat your S'more.

6. What kind of change is taking place as you chew?

7. What kind of change is taking place as you digest the S'more?

PHYSICAL CHANGE VERSUS CHEMICAL CHANGE

A physical change is the change of matter that occurs without changing the chemical composition of matter

Usually reversible

New products are not formed

Some changes occur when heating or cooling is done

Changes have no effect on the chemical bonds of molecules of a substance

A chemical change is the change of chemical composition of matter

Usually irreversible

New products are formed

Changes always involve absorption or release of energy

Have a direct effect on the chemical bonds of molecules in a substance