

# Simple Science Experiments



Experiments that will thrill,  
amaze and intrigue your  
budding scientist!

A packet put together by Liesl at [TheHomeschoolDen.com](http://TheHomeschoolDen.com)

# Experiment I: Egg-speriments

## Can you make an egg float in water?

Materials: Egg, Salt, 2 Cups, Water

What to Do: Put plain water in one cup and put water and lots of salt in the other cup (stir in salt until it won't dissolve any more)



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**Try this:** Put an egg in the middle of your palm. Squeeze it. Can you break it? The egg's shape protects it and if the experiment works right, you should be able to squeeze with all your might without breaking the egg.



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**Softening the eggshell:** Place an egg in vinegar and notice all the air bubbles coming out of this egg. Explain that the egg shell is porous. This lets the growing embryo get oxygen. But since it is porous it can let things through — like acid (vinegar), acid rain and pollutants. You might want to talk about DDT (how eagles nearly became extinct)— and how poisons, pesticides and so forth can harm the animal populations.

**Do this:** Soak an egg in vinegar for an entire day/night. See if the egg becomes soft and pliable and try squeezing the egg into a smaller container.



# Experiment 2: Fireworks – Exploding Colors

## Fireworks in Milk

This experiment investigates surface tension. In this milk experiment, we watched as dish washing soap broke the surface tension of the milk and sent dye racing away.

So, here's what we did:

- 1) Pour a small pitcher of milk onto a plate
- 2) Place 1 drop of each color — red, yellow, blue and green
- 3) Dip a Q-tip into dish washing soap
- 4) Place the Q-tip gently in the center of the plate between the 4 colors and hold it there for 5-10 seconds. (The milk should rush to the side of the bowl.)

Next you can continue altering the surface tension, dipping the dish-soap covered Q-tip in various spots in the milk.



## Fireworks in Water and Oil

First, we placed two tablespoons of oil in a pitcher, added drops of food dye (red, yellow, blue), mixed them lightly and poured the oil on top of the water.

This time we kept getting a muddy brown mixture so we adjusted our process a bit adding 2 tablespoons of oil to the water, then adding a few drops of dye. We were impatient when they didn't drop through and used a toothpick to burst the color balls of dye—to some spectacular results! The kids loved popping the dye balls and watching the colors explode into the water!



## Fireworks in Shaving Cream and Water

We took shaving cream, sprayed it on top of a bowl of water and dripped a bit of food dye and water onto the shaving cream. As the water/dye was heavier than the cream, it slowly made its way down and created exploding bits of color in the water. You might want to have your child use an eye dropper to squeeze drops of water/dye (or paint/dye) onto the shaving cream.



## Experiment 3: Dissecting Owl Pellets

This was such a HUGE hit at our house that I had to put this in the list! Order an owl pellet (I ordered one from [Nature Watch](#) but you can google them and find them for roughly \$2.95. I suggest you get the large size.) Let the kids dissect the pellet and have the determine what bones they have found. You can find a [bone sorting chart](#) online.



# Experiment 4:

## Where Do Germs Grow in Your House?

Germ Experiment: I saw this germ experiment on [Homeschool Share](#) and we had to give it a try. The experiment called for gelatin, sugar and petri dishes. We didn't have petri dishes so used paper cups and covered them immediately with glad wrap in lieu of a cover.

- Boil 1/2 cup of water
- Add 2 tsp of sugar and 2 tsp of unflavored gelatin
- Stir until dissolved. Spoon into the cups (I had about 1 cm or 1/4 inch of gelatin in each cup.)
- Cover immediately with Glad wrap to keep it clean and as uncontaminated as possible.
- Chill for 24 hours



The next day: Label each cup. Then go around the house with cotton swabs and choose areas to collect germs. Take a swab of the area. Rub the swab gently on the top of the gelatin. We chose to swab the following: the **toilet**, a **door knob**, **nothing** (as a control), a **plant**, the **kitchen sink**, the **inside of LD's mouth**.



You can find [our amazing results here](#).





# Experiment 5: M&M Color Mixing

Pour water into a white screw top lid. Add four M&Ms: one each of red, yellow, green and blue.

Make a prediction. What do you think will happen when the colors meet?



The kids predicted the colors would mix, but as you can see they didn't. We talked about the fact that there was equal pressure from all sides as if we had our palms out and were both leaning a little bit toward each other.

When the colors meet, they will form a solid line (at least at first until the water is disturbed, someone eats an M&M; or until enough time passes. This is because the sugar is dissolving off all of the M&Ms. Where the food dye meets, the concentration of sugar is the same and the sugar/food dye will stop moving outward.

## Science Activity

### Toothpick Raft

Have your kids make a toothpick raft. I put out small, short Popsicle sticks, toothpicks and glue and let the kids at it! We let the rafts dry for two days to be sure the glue was completely dry.

Have the kids see how many pennies their raft can hold before tipping.



## Experiment 5: Yeast Blows Up a Balloon

In this experiment you need:

2 tablespoons water

1 teaspoon sugar

1 package of yeast

Pour it into a small bottle and place a balloon over the top. Wait, watch and observe!



## Experiment 6: Particle Attraction

This is a simple lesson that shows how particles are attracted to each other. Just have them drop paper into still water (don't blow or move the water around) and watch the bits of paper move toward one another.

We used bits of paper from my comb binder, but any small pieces should work. I've heard that you could also substitute talcum powder or baby powder, but we did not try this.



## Experiment 7: Indian Corn Experiment

Place Indian Corn in dish of water. Keep it watered. Watch it grow!



## Experiment 8: Plant Absorption

Place celery or a carnation in water with a bit of food dye in it. Leave it for 8-12 hours and see how the dye got absorbed into the plant.



## Experiment 9: Make a Volcano

Make a paper mache volcano and set it off with vinegar and baking soda! This is always a hit with the kids. We do it at least once a year!



## Experiment 10: Bubble Bomb

Wrap baking soda in a small tissue and hold it in the corner of a ziplock bag with vinegar in it. Make sure the bag is tightly sealed, then let the baking soda pack fall into the vinegar. As it mixes the bubble bomb will explode!





## Experiment II: Brush Your Teeth!

Place eggs into various liquids. We used grape juice, coffee and soda. Leave it for 6-8 hours. Then come back later, observe the egg and then brush the egg with a toothbrush and toothpaste.



## Experiment 12: Build the Earth from the Inside Out

We read about the layers of the earth and looked at the Montessori layers of the earth cards from [Free Montessori](#). As we read about each layer, we colored playdough and added a new layer. We started with a small sphere. We kept adding layers until the ball was covered by the crust. Then we sliced it open to observe all of the layers of the earth.

