Egg Dyeing Basics

Dyeing Eggs For All Ages and Abilities

Dyeing eggs are a fun part of Spring activities around our house. If you want to dye eggs as well, you may find you're wondering why egg dyeing works the way it does, if there are other ways to dye eggs, or how to improve your egg dyeing abilities. You've come to right place!

Shaving Cream Dyed Eggs for Younger Kids

STEP 1

Gather the followng items from your pantry or workshop.

1. A pan for each person
2. Can of foamy shaving cream
3. 2-4 colors of food coloring
4. A knife or fork for mixing
5. Boiled or wooden eggs - as many as you like!
6. Disposable gloves for all the hands
7. Lots of paper towels or an unimportant towel
8. An egg carton or holder for your masterpieces

9

STEP 2

Fill the bottom of the pan with shaving cream.

STEP 3

Crisscross different colors of dye throughout the foam, then swirl gently with a knife or fork.

STEP 4

Place one egg in the foam and swirl it around until it's covered.

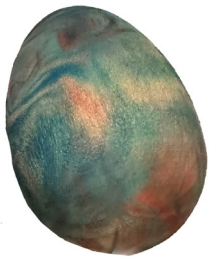
STEP 5

Allow it to sit for a few minutes covered, then wipe the foam off with a towel or paper towel.

NOTE:
If you're concerned about your skin being dyed, now is the time to put on your gloves.

STEP 6

Let the new beautiful egg sit and dry for 10-15 minutes.



Enjoy your tie-dyed masterpieces!

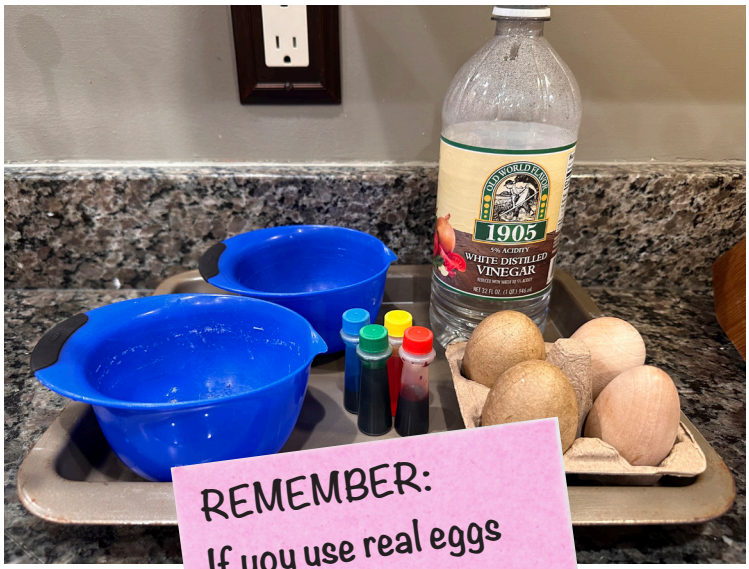
Water vs. Vinegar: An Egg Dyeing Story

Dyeing Eggs Experiment for Older Kids

STEP 1

Gather the followng items from your pantry or workshop.

1. Two small plastic dying bowls
2. 1 cup vinegar
3. 1 cup water
4. Food coloring - one color (you will use 10 drops)
5. Two boiled eggs
6. Disposable gloves for all hands involved
7. Paper towels
8. Two strips pH testing paper (optional)



REMEMBER:
If you use real eggs for this experiment, you need to boil them for about 20-25 minutes first.

STEP 2

Add 5 drops of food dye to each bowl. Make sure you add the same number of drops to each bowl.

STEP 3

Use your pH paper (if desired) to test pH of each bowl and compare.

STEP 4

Place one egg in each bowl and let it sit for 1 minute.

STEP 5

Remove from the bowls and compare eggs

STEP 6

Determine which solution dyed your eggs the best and think about why.

Art Meets Science!
Dyeing Eggs in Different Substances

WHY THIS WORKS

Chemically, shaving cream is a special mixture called a "colloid." It is also classified as a "foam." The air bubbles within the foam help to contain the acidic dye, but also help swirl the colors into beautiful tie-dye designs.

Eggs have a calcium carbonate shell, which is very basic and rather porous. What does that mean? Basic refers to the pH, which is a measurement of the amount of hydrogen ions in a solution (pH=the power of hydrogen). The scale for measuring pH is from 0-14, where 0 is the most acidic and 14 is the most basic a substance can be; water is neutral at 7. So, eggshells would have a higher pH than water, making them basic. What's the problem with this? Well, dyes that you use to make dyed eggs are acidic and they work better in an acidic environment. If you dye boiled eggs in vinegar (which is acidic) rather than water, the dyes will adhere better to the eggshell, giving you brighter colors.

The term porous simply means there are pores, or small holes, that allow for the exchange of gasses when there are baby chickens inside. Carbon dioxide leaves the shell and oxygen can enter the shell. The large end of a chicken eggshell has more pores than the smaller end, about 7000(!), so it's not uncommon to dye an egg with no cracks in it and notice that the inside of the egg has turned the color of your dye. And that usually occurs on the larger end. See if you observe the same thing in your boiled eggs after you dye them, in vinegar, of course.

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CONSERVATION TAKE:
WHY IS THE POROSITY OF EGGS IMPORTANT, AND HOW DOES IT AFFECT ME?

Have you ever heard of DDT? It stands for Dicholorodiphenyltrichloroethane, and it's even more dangerous than it is long. DDT was used as an insecticide to control mosquito populations. In a time when malaria was killing millions of people, DDT seemed like a miracle insecticide, but we later learned that it was causing developmental abnormalities and disease in humans. Rachel Carson was a marine biologist and conservationist in the 50s and 60s. She wrote a book called Silent Spring, published in 1962, that explained how DDT enters the food chain, accumulates in the fatty acids of organisms, and then causes catastrophic ecological damage on a very broad scale. One major impact was observed in the thinning of bird eggshells. Research showed that DDT affected the accumulation of sufficient calcium in eggshells, making the shells so thin that they would break in the nest under the parent's weight. Long term, this was resulting in declining bird populations worldwide. As a result, the US banned the use of DDT in 1972. Some countries around the world still use DDT to control insect populations.

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