

# SCIENCE-Y EASTER EGGS

Smarten up  
your annual tradition  
with three easy,  
educational dye projects.  
Your kids will be  
so wowed, they won't  
even realize  
they're learning!

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photographs by **DANE TASHIMA**



## 1. CREATE NATURAL DYES

**THE EXPERIMENT** Chop up a veggie or use a spice and place it in a pot with water and white vinegar as indicated on this page. Bring to a boil, reduce the heat, and simmer on low for 30 to 45 minutes. Let cool, then strain the dye into a bowl. Place hard-boiled eggs in the dye bath, cover, and refrigerate for a few hours (or overnight for a deeper color). Gently swirl the bowl occasionally for even coating. Remove eggs and let dry on paper towels.

**THE STEM LESSON** Plants are full of pigments (aka colors) that get released as the plants sit in water, resulting in a natural dye.





2. SEND HIDDEN MESSAGES

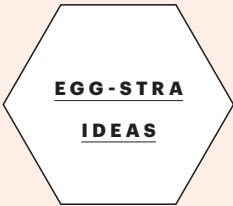
**THE EXPERIMENT**  
Before dyeing, draw or write on eggs with an oil-based marker (Sharpie Oil-Based Paint Marker, \$4; michaels.com). Let dry a few minutes. Then dye your eggs and wait for the messages or illustrations to appear. We don't recommend snacking on these!

**THE STEM LESSON**  
This experiment shows how an oil-based marker resists the molecules in a water-based dye. You can use a wax crayon instead, but the effect won't be as pronounced.

Shh!

Secret Code

Use this resistance technique to surprise your kids. Spell out the location of a hidden treat by writing one letter of the mystery spot on each egg. Have the kids dye the eggs to make the characters appear, then have them figure out what word the letters form.



Three more experiments — no additional supplies required!



- **TIME TRIALS**  
Place an egg in a small bowl of dye made with a ratio of 15 drops of food coloring and 2 tsp. white vinegar to 1 cup of water. Remove the egg after a quick dip. Add a second egg, removing after 30 seconds, then a third, removing after one minute, and so on. Note how the color changes with time.
- **ACID ACTIVITY**  
Make two bowls of the recipe above, leaving out the vinegar (an acidic substance) from one. Place an egg in each bowl for one minute and then compare them. Vinegar attracts dyed water to the egg's protein shell, making it easier for color to stick. FYI: Other acids, like lemon juice, can do this too!
- **SATURATION SOAKS**  
Mix 1 cup water, 2 tsp. white vinegar, and 5 drops food coloring. Submerge an egg in the solution and let sit for one minute. Remove and note the shade. Add 5 more drops of food coloring, then add a fresh egg. Let sit for one minute. Repeat the process, adding 5 drops at a time, to see how the amount of dye intensifies the color of the eggs.

PROP STYLING BY PAM MORRIS.



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3. MAKE VOLCANO EGGS

**THE EXPERIMENT**  
In a small bowl, mix together 2 or 3 Tbs. baking soda, 6 to 10 drops food coloring, and just enough drops of water to get a slightly runny paste consistency. Spoon some baking soda-dye mixture onto an egg. To create the chemical reaction, dribble 1 or 2 Tbs. vinegar over the egg and watch the color bubble down.

**THE STEM LESSON**  
Chemical reactions occur when two or more substances form a new substance. In this experiment, vinegar is added to baking soda, and bubbles are produced. Since something new (the bubbles) is made, a chemical reaction has occurred!

Mix a few colors in separate bowls and repeat the process with each egg for a layered look!