



## Erupting Pumpkin

Stem Activities



Ages: 9-12



Less than 30 minutes



Grownup needed



Concoct a spine-chilling mixture that makes vomiting fun! With just a few simple kitchen ingredients, you can make your pumpkin "vomit" sticky, colorful foam, adding a touch of spooky fun to science!

### Materials Needed

Pumpkin  
Vinegar (120ml)  
Baking soda (1 tablespoon)  
Dish soap (20ml)  
Food coloring  
Carving knife  
Tray  
safety goggles



### Step-by-step tutorial

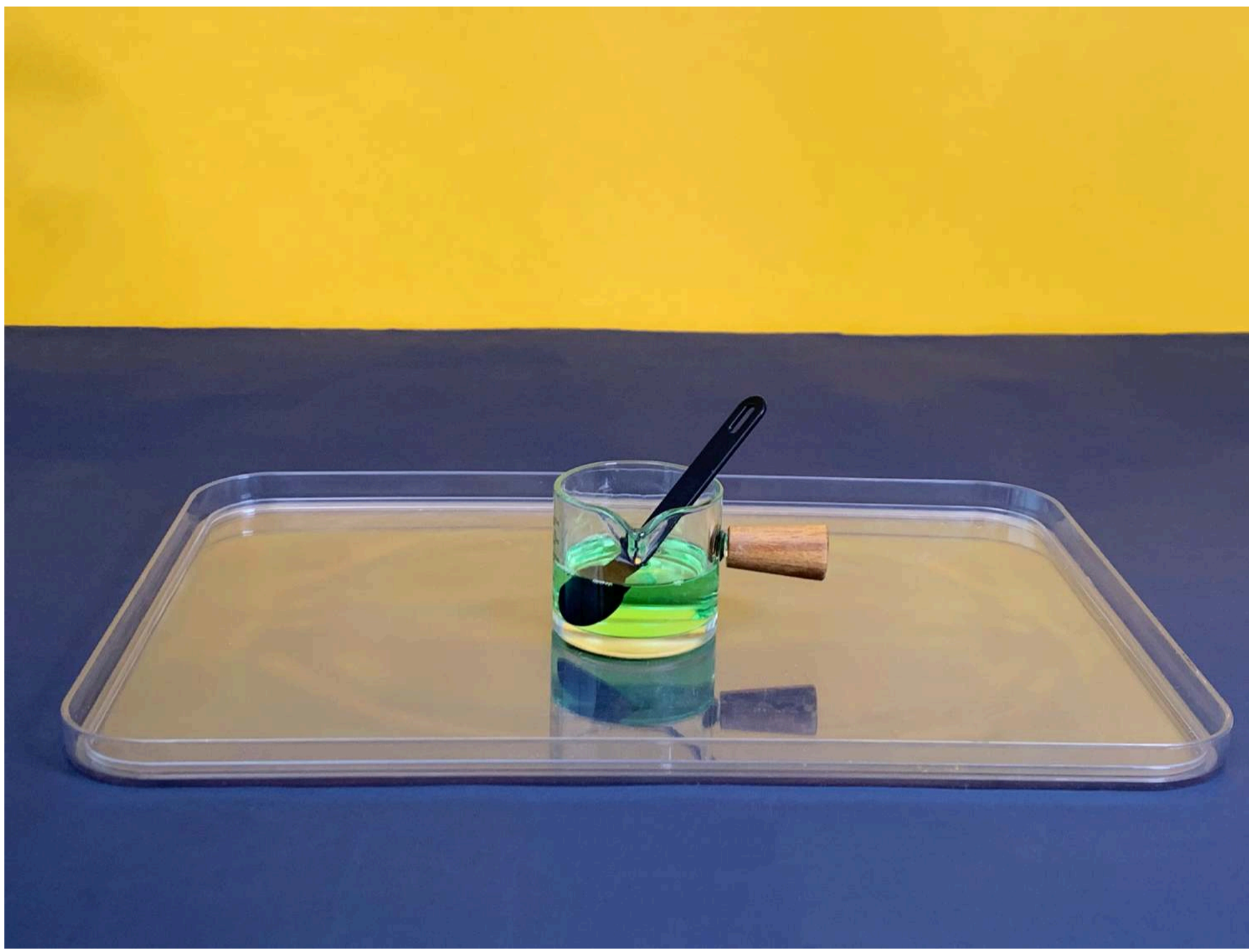
#### Step 1

First, we need to carve the pumpkin. Cut a 8-10 cm hole in the top of the pumpkin, then carve out the eyes and mouth (this step may require adult assistance).



#### Step 2

Put on your safety goggles, it's experiment time! Add 20ml of dish soap and food coloring to 120ml of vinegar, and mix well.



#### Step 3

Pour one tablespoon of baking soda into the pumpkin.



#### Step 4

Quickly and carefully pour the mixture from step 2 into the pumpkin. Then, watch the pumpkin start to bubble! Keep experimenting! Try doubling the recipe or continue the experiment using jack-o'-lanterns with smaller or larger holes.



#### The Science Behind It:

This involves an acid-base chemical reaction. When baking soda (an alkaline compound) mixes with vinegar (an acidic compound), a chemical reaction occurs, producing a large amount of carbon dioxide - the bubbles we see. Adding dish soap makes the foam even richer. The gas produced by citric acid and baking soda forms a porous structure in the dish soap (liquid), increasing the number of bubbles and causing them to seep out, producing more and longer-lasting foam. The amount of different ingredients used in the experiment can change how your pumpkin produces foam. Try using more or less baking soda and vinegar, or more or less dish soap, and see how these changes affect the pumpkin's foam!