



Colorado Science and Engineering Fair

2025 Individual Project Abstract Form

Please print 2 copies of the completed form. Sign both copies, keep 1 for your notebook and submit 1 copy to your Regional Fair Director with your other paperwork.

Title of Project: which pH is most efficient in a hydrogen gas generator

Finalist's Name: Collin Richardson

School and City: Wiggins Middle School

Sponsor's Name: David Richardson

Category: Chemistry

Division: Junior (grades 6 - 8)

Abstract (250 words or less):

The purpose of this project was to find the efficiency of a hydrogen gas generator based on the types of pH water put into it. I hypothesized that the pH that is closest to 7 would be the most efficient because it is more pure than having a lot of other stuff in it.

The experiment involved me taking the pH scale and measuring the water's pH then running them in the hydrogen gas generator finding the efficiency of the generator with the current pH water.

The data collected did support the original hypothesis. My tests show that the pH closest to 7 on the pH scale would do the best. Tap water is what did the best in my experiments with a pH of 7.74, distilled water with 7.82 pH, and fridge water with 8.54 pH.

These findings lead me to believe that since the tap water is the least purified, I think the baking soda I used as an electrolyte actually may have purified it a bit because it shouldn't be the most pure against distilled water and fridge water which are both purified.

I hereby certify that the above statements are correct and the information provided in the Abstract is the result of one year's research. I also attest that the above properly reflects my own work.

Finalist's Signature:

Date:

In addition, all students must complete the ISEF Student Checklist (1A), Research Plan, Approval Form (1B), and Checklist for Adult Sponsor (1), and any other ISEF forms required for this type of project. See the International Rules and Guidelines for form requirements. Return COPIES of all of these forms to your Regional Fair Director with you Finalist Verification/Permission Form. **A signed copy of this form must be included in your notebook.**