



## 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: Flicker and Flame: A Showdown of Candle Wax Burn Rates

Finalist's Name: Peyton Walther

School and City: SkyView Academy - Highlands Ranch

Sponsor's Name: Richard Walther

Category: Chemistry

Division: Senior (grades 9 - 12)

Abstract (250 words or less):

The purpose of this experiment is to determine if different types of candle waxes melt at different rates. The hypothesis is that paraffin wax will burn the fastest given its petroleum base and cheap price point. Compared to the other prices, it seems as if this is the lowest quality, making it the fastest to burn. This experiment was conducted using 6 different types of candle wax, all of which are the same color, size and length. Each candle was then set up in a holder to ensure that each is vertical in relation to one another. A cardboard sheet with lines on it was used to compare the candles, however a ruler was used to gather exact measurements. While burning, the candles were observed and their height were measured with a ruler every ten minutes to measure the rate of change over time. After two hours of observations, the results showed that the plain soy candle melted the fastest by far, with the beeswax melting the slowest. However, the beeswax candle was wider than the other candles, by about 17%. With that being said, overall the candles melted at very similar rates, with the exception of the soy candle. These results were very different from my hypothesis. The cheaper candles melted at very similar rates to the expensive wax candles, including the petroleum based candles which melted just as quickly as the others. This experiment showed that soy wax easily melts the fastest, but other than that most candle waxes have very similar burn rates.

*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.**