



**CALIFORNIA STATE SCIENCE FAIR
2009 PROJECT SUMMARY**

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Project Title
Determining The Combustibility of Household Paints

Abstract

Objectives/Goals
What types of paints would be best used on a home from preventing combustibility?

Methods/Materials
Procedure: 1. Paint craft sticks with 4 selected paints 2. Let craft sticks dry for 24 hours 3. Ignite the torch 4. Clamp the wood on the apparatus 5. Turn the stop watch on, wait patiently for the wood to combust 6. End the stop watch when the craft stick starts to combust 7. Record observation/information

Materials: 1. Birch craft sticks 6"x3/4"x1/16" 2. Exterior semi-gloss house paint Exterior flat house paint 3. Interior semi-gloss house paint 4. Interior flat house paint 5. paint brush 6. stop watch 7. Oxy-acetylene torch 8. Testing apparatus 9. Black marker 10. Cardboard 11. Clamps 12. Screwdriver

Results
The Exterior semi-gloss combusted, on average, 60 seconds slower than the Interior semi-gloss. The Interior semi-gloss combusted faster than the Exterior semi-gloss, the average time was 3:21 minutes. The Exterior flat was faster than Interior flat to combust. The average time for Interior flat was 2:18 minutes. The plain craft sticks burned the fastest, the average time was 1:03 minutes.

Conclusions/Discussion
After completing my investigation I found that my hypothesis was incorrect for semi-gloss and my hypothesis for flat household paint was incorrect also. My original hypothesis for combustibility stated that semi-gloss paint has more oil and I thought oils catch on fire quick. My hypothesis for the flat household paint was that it would take longer to combust than the semi-gloss. My hypothesis for Exterior flat was incorrect. The lowest: 0:36. The highest: 2:15. Out of the 15 trials. Interior flat worked best out of the 15 trials I tested. My hypothesis for Interior flat was incorrect. Interior flats lowest time was 1:31 and the highest was 2:51 out of the 15 trials I tested. My hypothesis for Exterior semi-gloss was incorrect. The lowest: 3:00. highest: 6:01. Out of the 15 trials I tested. Exterior semi-gloss was best from out of all 5 variables. Paint tested was light based. My hypothesis for the Interior semi-gloss was incorrect. Interior glosses lowest: 2:00. Highest: 4:03. I learned that the Exterior semi-gloss is the least flammable and that the Exterior flat was the most flammable. Also I learned by putting paint on wood prevents the combustion on homes.

Summary Statement
Determining the combustibility of household paints.

Help Received
My older brother supervised testing; Mother helped with supplies.