



EASTERN HANCOCK SCHOOL DISTRICT

Science & Engineering Fair

Sample Science Fair Project

This project is a SAMPLE ONLY and was done by a student last year. Use it as an example and to figure out what YOU want to do for your project!

Question or Problem:

What I want to explore, for example:

“What is the effect of temperature on oil viscosity?”

Hypothesis

What I think will happen in my experiment, for example:

“I think viscosity will decrease as temperature increases.”

Materials

What you need to conduct the experiment, for example:

- Motor Oil
- Graduated Cylinder
- Marble
- Stop Watch
- Heater
- Refrigerator
- Thermometer
- Ruler
- Lab Book
- Masking Tape
- Soap, water, and rags

Procedure

1. On the graduated cylinder, use the masking tape to mark a set height. This is the distance the marble will travel
2. Divide the oil into 9 containers (3 replications for each temperature). Each container should have enough oil to reach the mark on the graduated cylinder
3. Modify the temperatures of the oil checking with the thermometer:
 - a. Cool: 30 degrees Fahrenheit
 - b. Room Temp: 60 degrees Fahrenheit (Control)
 - c. Heated: 90 degrees Fahrenheit
4. The oil is placed in the cylinder to the preset mark. The marble is dropped in and time it takes to reach the bottom is recorded using the stop watch.

Data is recorded in the lab book. The cylinder is emptied, cleaned and dried, and the next sample is evaluated. The order of evaluation was randomized in the replication.

Rep. 1

Cool

Warm

Room Temp.

Rep. 2

Room Temp.

Cool

Warm

Rep. 3

Warm

Room Temp.

Cool

5. Viscosity was calculated using an equation.
6. Create a data table, here's an example:

VISCOSITY

Room Temp. (Control) 8

Cool 12

Warm 4

Warming the oil decreased the viscosity, while cooling the oil increased the viscosity compared to the Control (Room Temp.)

7. Conclusions:

Proving my hypothesis correct, the warmer the temperature the lower the viscosity of the motor oil. This is especially important in engines that operate in both warm and cold environments.