

Name: _____

Class/Period: _____

Teacher: _____

Project Title:

GETTING THE MOST LIGHT FOR YOUR MONEY: Which Type of Candle Burns the Longest?

PART 1: INTRODUCTION & DESCRIPTION

1. My project is about:

My project is about testing three different types of candles to see which one lasts the longest. The candles I tested are a paraffin wax candle, a beeswax candle, and a carnauba wax candle.

2. My project is important because:

This project is important for people who do not have electricity and do not have a lot of money. Candles are often used for light, and people want to choose the candle that lasts the longest. This helps people use their available resources wisely and save money.

3. Description:

I will light three different types of candles that are the same size and measure how long each candle burns. I will record the time it takes for each candle to burn until it goes out. I will compare the results to see which candle lasts the longest.

PART 2: QUESTION & HYPOTHESIS

4. My Science Question is:

How does the type of candle wax affect how long a candle burns?

5. My Hypothesis:

I think that **if** the candle is made of carnauba wax **then** it will burn longer than the paraffin wax and beeswax candles because carnauba wax burns more slowly because it has a higher melting point.

PART 3: VARIABLES

What is a variable?

A variable is anything that can change in an experiment. Scientists change one thing, measure what happens, and keep the rest the same to make the test fair.

6. Independent Variable (What I change): The type of wax (paraffin, beeswax, or carnauba oil)

7. Dependent Variable (What I measure or observe): The amount of time each candle burns

8. Constants (What stays the same):

- The size of each candle
 - The length of the wick
 - The room where the candles are burned
 - The time the candles are lit
 - The melting point of each wax (Paraffin 115-154 F, Beeswax (144-149 F, Carnauba 180-187 F)
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PART 4: MATERIALS

9. Materials List:

- Paraffin wax candle
 - Beeswax candle
 - Carnauba wax candle
 - Stopwatch or timer
 - Ruler
 - Fireproof surface
 - Notebook and pencil
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PART 5: METHOD/PROCEDURE (Steps)

10. How I will test my hypothesis:

1. Place all three candles on a fireproof surface.
 2. Measure the height of each candle to make sure they are the same size.
 3. Light the paraffin candle and start the timer.
 4. Record the time when the candle burns out.
 5. Repeat steps 3 and 4 for the beeswax candle.
 6. Repeat steps 3 and 4 for the carnauba oil candle.
 7. Record all data in a table and compare the results.
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PART 6: DATA COLLECTION

11. What data will I collect? I will collect the time in minutes that each candle burns. I will also record observations such as flame size and smoke.

12. How will I record my data?

☒ Table ☐ Chart ☒ Graph ☐ Drawings ☒ Written observations

PART 7: RESULTS & CONCLUSION (After the Experiment)

13. Results:

The carnauba wax candle burned the longest, followed by the beeswax candle. The paraffin candle burned for the shortest amount of time.

14. Conclusion/Discussion:

- **Was my hypothesis supported?** ☒ Yes ☐ No
- **What did I learn?**

I learned that the type of candle wax affects how long a candle burns. Carnauba wax candles last longer and may be better for people who need light for a longer time or need to save money by buying a quality product.

15. What would I change or improve next time?

Next time, I would test more candles of each type and repeat the experiment more than once to make the results more accurate.

PART 8: PROJECT **NOTEBOOK** CHECKLIST

- ☒ Title Page (Project title, name, class, date)
- ☒ Table of Contents
- ☒ Introduction & Description
- ☒ Abstract (The abstract is a summary. It concisely sums up the Method, Results, and Conclusion.)
- ☒ Science Question
- ☒ Hypothesis
- ☒ Variables (Independent, Dependent, Constants)
- ☒ Materials List
- ☒ Procedure / Steps
- ☒ Visuals: Data Tables, Charts, Graphs, photos or drawings
- ☒ Observations and Notes (dated)
- ☒ Results
- ☒ Conclusion & Discussion
- ☒ References (do not use URLs for references)

PART 9: PROJECT **BOARD** CHECKLIST

- ☒ Title
- ☒ Introduction & Description
- ☒ Question & Hypothesis
- ☒ Abstract or shortened version of Abstract for display board
- ☒ Variables
- ☒ Materials
- ☒ Procedure
- ☒ Data (tables, graphs, photos)
- ☒ Conclusion

Student Signature: _____

Date: _____

Teacher Approval: _____

STUDENT-FRIENDLY ABSTRACT (MODEL)

Abstract

This project tested which type of candle burns the longest. The three types of candles tested were paraffin wax, beeswax, and carnauba oil candles. Each candle was the same size and was burned under the same conditions. The time each candle burned was measured using a timer. The results showed that the Carnauba wax candle burned the longest, followed by the beeswax candle, and the paraffin candle burned the shortest amount of time. This experiment shows that Carnauba wax candles may be the best choice for people who need long-lasting light. If all three candles are the same price and size, the Carnauba wax candle will save people money by burning longer for the same price.

SAMPLE DATA TABLE (MODEL)

Table 1: Candle Burn Time

Type of Candle Burn Time (minutes)	
Paraffin Wax	120 minutes
Carnauba Wax	180 minutes
Beeswax	150 minutes

(Teachers: These numbers are reasonable example values for modeling purposes.)

✓ SAMPLE GRAPH (MODEL)

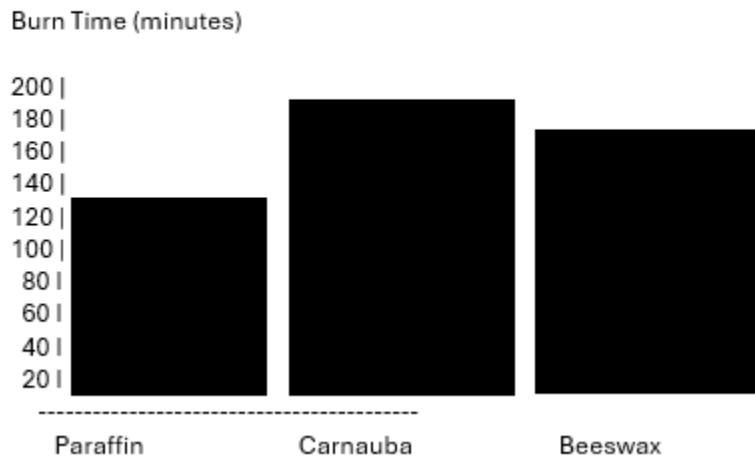
Bar Graph: Burn Time of Different Candles

X-Axis (Bottom): Type of Candle

Y-Axis (Side): Burn Time (minutes)

X-Axis (Bottom): Type of Candle

Y-Axis (Side): Burn Time (minutes)



Key:

- Paraffin Wax = 120 minutes
- Carnauba = 180 minutes
- Beeswax = 150 minutes

📌 *Student Tip:* Carnauba has the tallest bar, which means it burned the longest.



MODEL SCIENCE PROJECT BOARD LAYOUT (TRI-FOLD)

Note: Students may choose their board layout to suit their project. However, each board should address each item in the checklist, regardless of the layout chosen



LEFT PANEL

Title & Introduction

- Project Title
- Introduction & Description (why the experiment matters & How it will be tested)
- Abstract Summary: Short summary of what happened (method, results, conclusion)

Question

- How does the type of candle wax affect how long a candle burns?

Hypothesis

- If the candle is made of beeswax, then it will burn longer than the other candles because it burns more slowly.
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CENTER PANEL

Method

- Variables (Independent, Dependent, Constants)
- Materials List
- Procedure (numbered steps)

Data

- Data Table
 - Bar Graph
 - Pictures (if required)
-



RIGHT PANEL

Results

- Short summary of what happened

Right Panel Continued

Conclusion / Discussion

- Was the hypothesis supported?
- What was learned?
- Why this matters in real life

Abstract

- 4–6 sentence summary of the whole project
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Teacher Tip

This project is especially strong because:

- It connects to **real-world problem solving**
- It practices **fair testing**
- It naturally supports **graphs, data analysis, and discussion**