

Name _____ Date _____ Period _____



COMPARING LIGHT BULBS

INTRODUCTION: In this lab, you will design an experiment to compare the illumination provided by different light bulbs.

PROBLEM:

Which types of light bulbs provide the best illumination?

MATERIALS:

- A variety of incandescent light bulbs that can fit into the same lamp or socket
- Medium-sized cardboard box prepared as a light box
- Meter stick
- Scissors
- Tape
- Light socket or lamp (without shade)
- Wax paper
- Plain paper

PROCEDURE:

1. Examine the different bulbs. What is the power (watts), light output (lumens), and life (hours) for each bulb. Predict which light bulbs will be the brightest?

2. How will you test your prediction?

3. What kinds of incandescent light bulbs will you use?

4. What variables will you keep constant?

5. What variables will you change?

6. Review the plan. Will your procedure help you find an answer to the problem?

7. Ask your teacher to check your procedure.

8. Before you repeat the steps for a second light bulb, look back at your procedure. How could you improve the accuracy of your results?

9. Test the illumination of the rest of you light bulbs.

DATA TABLE:

Bulb Nbr	Brand Name	Power (watts)	Light Output (lumens)	Life (hrs)	Cost (dollars)	Distance from Bulb to Light Box (cm)

ANALYSIS AND CONCLUSION:

1. How does the distance between the bulb and the hole B affect how easily you can read the secret letter?

2. Based on your observations, what can you infer about the illumination provided by each bulb?

3. Which bulb gave the most illumination? _____

4. How did your results compare with your prediction? _____

5. What did you learn that you did not know when you made your prediction?

6. What factors affect the illumination give by a light bulb? _____

7. Based on your results, do you think that the most expensive light bulb is the best?
