#### Prompt—Doghouse Item

Brandi and Jerry did the following controlled experiment to find out how the color of an object affects its temperature.

**Question:** What is the effect of different lid colors on the air temperature inside a glass jar exposed to a lamp?

**Hypothesis:** The darker the lid color, the greater the increase in air temperature in the glass jar, because darker colors absorb more energy.

**Materials:**

glass jar

lamp

four colored lids: black, dark gray, light gray, and white

thermometer

meterstick

stopwatch

**Controlled Experiment Setup**

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**Procedure:**

1. Put the black lid with the attached thermometer on the glass jar.
2. Make sure the starting temperature inside the jar is 24° C.
3. Place lamp 5 centimeters away from the lid and turn on the lamp.
4. After 10 minutes measure the air temperature inside the glass jar and record as Trial 1.
5. Turn off lamp and wait until the air in the jar returns to the starting temperature.
6. Repeat steps 2 through 5 for Trials 2 and 3.
7. Repeat steps 1 through 6 for the dark gray, light gray, and white lids.
8. Calculate and record the average air temperature for each lid color.

**Data:**

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Brandi and Jerry were designing a doghouse. Use the results from the experiment to describe the best paint color for the doghouse.

In your description, be sure to:

* Choose a paint color.
* Describe how that color might affect the inside of the doghouse.
* Use results from the experiment to support your description.

Choose a color:

|  |  |  |  |
| --- | --- | --- | --- |
| * Black | * Dark gray | * Light gray | * White |