

Name: _____

Date: _____



“In Hot Water”



Mr. Baxter and Ms. Sheffield both have water bottles they enjoy using to keep their drinking water nice and cold all day long. Mr. Baxter’s water bottle is painted dark blue on the outside, while Mrs. Sheffield’s is dark purple. Both bottles have black lids.

“I really wanted to buy the black bottle instead of the purple one because it looked the best,” Ms. Sheffield explained to Mr. Baxter, “but I was afraid a black exterior would make my water get hot if I left it on the windowsill at GEMS all day.”

“Well,” said Mr. Baxter, “ we know that black absorbs the most sunlight, but I think your water would only heat up if it was actually sitting outside on a bright, sunny day. I don’t think that it would matter if it’s sitting inside on the windowsill. You should have just bought the black one.”

Mr. Baxter and Ms. Sheffield want to do a simple experiment to see if having a black water bottle makes any difference in the temperature of the water if it’s left it on the windowsill all day. How will they determine if their results are related to the water bottle being black or not?

So far you have been given the following materials:

- Clear plastic water bottles with lids (different sizes)
- Flat black spray paint
- Water
- Windowsill
- Sunshine

You **do not** have to use all materials listed. Think carefully about what **other** tools or materials you may need to effectively conduct your experiment. Add any additional materials that you need to the list above.

Create an experimental design plan to see if Ms. Sheffield or Mr. Baxter’s theory is correct about the black bottle.

My Hypothesis:

Variable I will change (Independent Variable):

Factors that I need to keep constant (stay the same)

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Procedure:

How I will measure my results & record my data: