06-07 Radiation ***Name: _____***

Objective:

- Observe the relationship between color and heat radiation.

Materials:

- Radiation bottles filled with water (white, silver, black)
- Thermometers
- Heat lamp

Procedure:

1. Heat lamps emit infrared and visible light radiation which you feel as heat. You will observe the temperature of water in three different colored bottles in front of a heat lamp.
2. Predict which bottle will absorb the most heat and which will absorb the least heat.
    a. Most: _____
    b. Least: _____
3. Without spilling the water, measure the temperature of each of the three bottles and record it in the table.
4. Place the bottles in front of the heat lamp so that they are approximately the same distance from the lamp and have the same surface area exposed to the light.
5. After 10 minutes, check the temperature of the water in the bottles.
6. After 10 minutes, check the temperature of the water in the bottles.
7. After 10 minutes, check the temperature of the water in the bottles.
8. Which bottle absorbed the most heat? _____
9. Which bottle absorbed the least heat? _____
10. Does this agree with your prediction? _____
11. Does this agree with the book? _____
    a. If not, where might the error come from? _____
12. Why are emergency blankets silver instead of black? _____

Time	White Temp	Silver Temp	Black Temp
0 min			
10 min			
20 min			
30 min			