THE EFFECT OF SUBSTANCE QUANTITY ON THE ABSORPTION OF THERMAL ENERGY

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Goal

Determe if the change of temperature is the same when an equal amount of thermal energy is applied to different quantities of a liquid.

- 1. What is the independent variable in this lab?
- 2. What is the dependent variable in this lab?

Hypothesis

I think that _____

because

Materials

- 50-mL graduated cylinder
- · wash bottle of distilled water
- 2 100-mL beakers
- hot plate
- · 2 thermometers

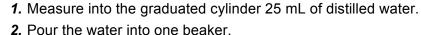
- · ring stand
- 2 thermometer clamps or 2 universal clamps and perforated cork stoppers
- · stopwatch or watch
- 2 glass stirring rods

Procedure









- Measure into the graduated cylinder 50 mL of distilled water.
- **4.** Pour the water into the second beaker.
- 5. Place the beakers on the hot plate.
- **6.** Secure the thermometers to the ring stand with the clamps.
- **7.** Ensure the bulb of each thermometer is submerged completely in water and not touching the beaker.
- **8.** Record the temperature of the water in each beaker.

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10. Stir the water in each 11. Heat for 5 minutes.	e to a medium setting and the beaker regularly with the e. Record the temperature way materials.	e glass stirring rod.	
Results			
Record your results in th	e table below. Give the tal	ble a title.	
itle: Volume of water (mL)	Initial temperature (°C)	Final temperature (°C)	Temperature change
(IIIL)	(0)	(0)	(0)
1. Does the water in ea	ch beaker at the start hav	e an equal amount of the	ermal energy?
Explain your answer	ch beaker at the start hav		
1. Does the water in ea Explain your answer 2. What form of energy	is transmitted from the ho	ot plate to the water in ea	nch beaker?
1. Does the water in ea Explain your answer 2. What form of energy 3. Does the water in ea Explain your answer	is transmitted from the ho	ot plate to the water in ea	nch beaker?

Name:	Group: _	Date:	
6. What are the possible sou	irces of error in this lab?		
7. How could you improve th	e protocol for this lab?		
Conclusion			
1. Complete the following se	ntences:		
a) Temperature change _		an appropriate meas	sure of thermal energy.
b) When samples of the s	same liquid are exposed to	the same amount of t	thermal energy, the
temperature change de	epends on		
2. Was your hypothesis conf	irmed or not? Explain your	answer.	
Application			
To reheat the water in a child's of boiling water. Which contain Explain your answer.			•