Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Lab Partner: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Lab 18: How does heat move?

PURPOSE: Does hot water warm cold water or does cold water cool hot water?

MATERIALS: paper cup with lid, thermometers and clay, foam cup, very warm water and cold water, clock (with a second hand), metric ruler

PROCEDURE:

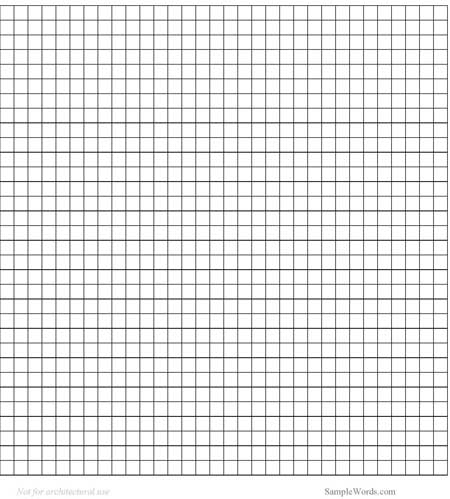
1. Push a thermometer through the lid of a paper cup about 5cm. Use clay to hold the thermometer to the lid.
2. Fill a paper cup with very warm water. Cover the cup with lid from step 1.
3. Measure the temperature of the very warm water. Use a chart to collect your data.
4. Fill the foam cup 1/4 full with cold water. Take the temperature of the cold water.
5. Place the cup with very warm water inside the cup with cold water.
6. Record the temperature reading and watch thermometer every minute. Stop when temperatures are nearly the same.
7. Plot both sets of data from your investigation on the same graph. Use a dotted line for the warm water and solid line for the cold water.

DATA:

|  |  |  |
| --- | --- | --- |
| Time (minutes) | Temperature (°C) | |
| Warm water | Cold water |
| 0 (start) |  |  |
| 1 |  |  |
| 2 |  |  |
| 3 |  |  |
| 4 |  |  |
| 5 |  |  |
| 6 |  |  |
| 7 |  |  |
| 8 |  |  |
| 9 |  |  |
| 10 |  |  |

ANALYSIS:

1. What does your data table show? What does your graph show?
2. Does heat move from a warmer object to a cooler object or from a cooler object to a warmer object? Use your results to support your answer.

[](http://www.google.com/url?sa=i&source=images&cd=&cad=rja&docid=goNoKKwR8lq14M&tbnid=KUMlLdKUne5CFM:&ved=0CAgQjRwwAA&url=http%3A%2F%2Fwww.samplewords.com%2Fgraph-paper-template%2F&ei=xo9RUY_iAoHi4AOn5ICYBw&psig=AFQjCNF9yZJUQqmO5Y3SNfsBbGN-K0N-vA&ust=1364386118100477)