Heat Energy and Temperature Rise **Name: _____**

Introduction: When we heat something up, we are transferring heat energy into it and its temperature rises. However, if we provide equal masses of different substances with the same amount of energy, will the temperature rise by the same amount?

Aim: To determine if the type of substance influences how much its temperature rises when a given amount of heat energy is supplied.

Equipment: electric hot plate, 2 100mL beakers, 2 thermometers, stopwatch.

Substances to be Tested: water, vegetable oil.

Method:

1. Pour 35 mL of water into one beaker and 38 mL of oil into another. (38 mL of oil has the same mass as 35 mL of water.)
2. Record the initial temperature of the two liquids.

Initial Temperature of Water: _____°C
Initial Temperature of Oil: _____°C

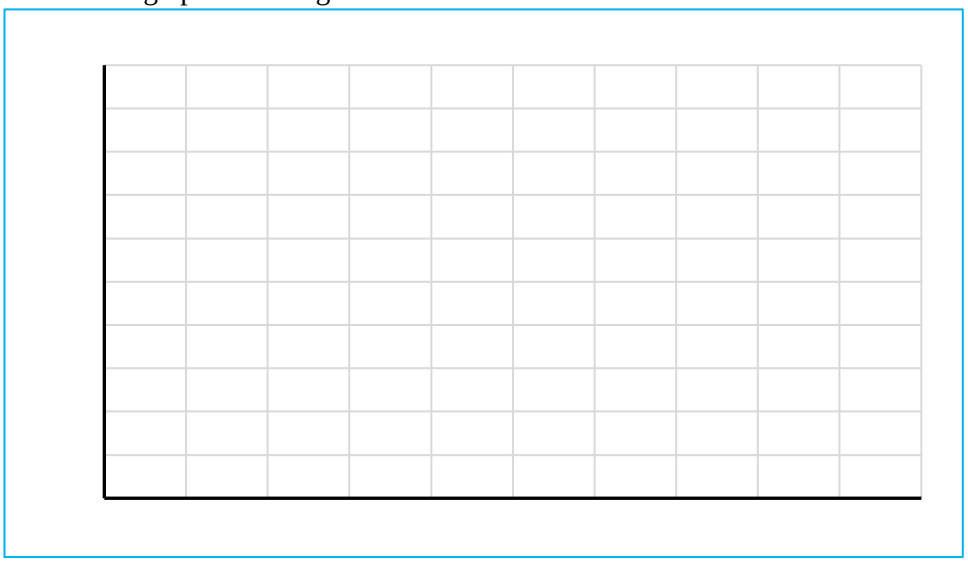
3. Place the two beakers in the centre of a hotplate and record the temperature of each liquid every minute for 10 minutes.
4. As soon as either of the liquids reaches 80°C, turn off the hotplate. **DO NOT** continue heating past 80°C.
5. Complete the prac write-up while the equipment cools and then pack it away.

Results:

	Temperature (°C)	
Time (min)	**water**	**oil**
0		
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
overall temperature change		

Questions:

1. Draw a graph of the results with temperature on the y-axis and time on the x-axis. Label the axes and give the graph a heading.



2. Draw a labelled diagram.

3. Comment on the difference in the rate of change of temperature of the water and of the oil and on the overall temperature change that occurred.

_____

_____

_____

_____

Water and oil have different "specific heat capacities". It is this concept that will explain the results of your experiment today…