Latent Heat Student Worksheet



Part1:

In this part you are given a thermometer, heater, ice, beaker and a stop watch.

1. Perform an experiment to measure the temperature of ice as it melts down until it evaporates. Record the temperature and indicate the state of matter every minute throughout the process.

2.	Draw a relation between time and temperature. Make sure that you indicate the state of matter on the diagram as well.
3.	Is the law of conservation of energy satisfied through all the phases of the experiment? Explain.
4.	Analyze the different stages of the experiment. Where do you think the heat is consumed?
5.	Suggest an equation which best represent the graph you obtained indicating the factors that affect the <i>heat energy when a change of state occurs</i> . (Hint: the heat energy absorbed by the ice will increase as time passes)
6.	Suggest an equation which best represent the graph you obtained indicating the factors that affect the <i>heat energy when NO change of state occurs.</i> (Hint: the heat energy absorbed by the ice will increase as time passes)

	Part 2:
In	this part you are given the following devices, try to use them wisely!!
Thermometer, heaters, beaker, water and a piece of coin.	
7.	If we heated a cup of cold ocean water and the whole ocean water of the north pole so they both reach a specific temperature which of them do you think would absorb more heat energy to reach that temperature? Simulate the situation with an experiment to answer the question.
8.	Why is the cheese in a pizza hotter than its crust even though they are coming out from the same oven? Similarly, why is the sand at the beach hotter than the sea when both are heated by the same sun?
	Simulate the situation with an experiment to answer the question.
9.	Compare the change in the temperature of a body when heated by different heat sources, for example with a match and an oven. Will the body reach the same temperature when heated by the two different heat sources? Explain.
	Simulate the situation with an experiment to answer the question.

After answering the questions (7, 8 & 9) go back to question 6 in part 1 and see if would now answer it differently.

Part 3:	
In this part you are given a thermometer, calorimeter and a balance.	
10. What are the following instruments used for? What do they measure?	
Thermometer:	
Calorimeter:	
Scale balance:	

11. Using the devices above, calculate the latent heat of fusion of ice (Hint: remember

to apply the law of conservation of energy).

Part4:
12. Explain why does the temperature drops down after a hailstorm?
13. Explain why does the weather become pleasant in cold countries when the
temperature drops to its freezing point?