

Problems: Changes of phase and temperature.

- To raise the temperature of 1 gram of water 1°C requires how much energy? _____
- To raise the temperature of 1 gram of ice 1°C requires how much energy? --- _____
- To raise the temperature of 1 gram of steam 1°C requires how much energy? _____
- To melt 1 gram of ice (at 0°C) requires how much energy?----- _____
- To boil away 1 gram of water (at 100°C) requires how much energy?----- _____

1. How many calories are needed to change the temperature of 4 grams of water from 20°C to 25°C?

	#grams	temp. change	heat factor	#cal.
specific heat of water vapor-----				
heat of vaporization-----				
specific heat of water-----				
heat of fusion-----				
specific heat of ice-----				

total calories _____

2. How many calories are needed to change 10 grams of ice at -10°C to water at 10°C?

	#grams	temp. change	heat factor	#cal.
specific heat of water vapor-----				
heat of vaporization-----				
specific heat of water-----				
heat of fusion-----				
specific heat of ice-----				

total calories _____

3. What amount of heat energy is needed to change 2 grams of ice at -4°C to steam at 106°C?

	#grams	temp. change	heat factor	#cal.
specific heat of water vapor-----				
heat of vaporization-----				
specific heat of water-----				
heat of fusion-----				
specific heat of ice-----				

total calories _____