 What is the energy needed to melt 326 grams of ice and heat it to 100°C? 	
 Determine the energy required to convert 21.1 grams of ice at -6°C to steam at 100°C 	
3. What is the heat transfer involved when you convert 51 grams of water 0°C to ice at -20.3°C?	
4. What is the energy absorbed when you melt 75 grams of ice at -5°C to water at 90°C?	

	The SPECIFIC HEAT OF ICE is the heat
	used to make the molecules in the ice
Q = mCΔT	crystal move faster. They start vibrating
Q = IIICAT	more and break loose of the organized
	structure. This causes the temperature
$C_{ice} = 2.09 J/g^{\circ}C$	to increase.
	<u>What's Happening?</u>
	Speeding up Solid
	Temperature goes up
	The LATENT HEAT OF FUSION is the
Q = mL	energy used to break the attractions
	between the ice molecules. This
	spreads them out. All the energy is
$L_{fusion} = 334 J/g$	going to the molecules being spread
	out, they do not move faster, therefore,
(+) if melting	the temperature does not go up.
(-)if freezing	What's Happening?
()	Spreading out molecules
	Phase Change: Solid \rightarrow Liquid The SPECIFIC HEAT OF WATER is the
	heat used to make the water molecules
Q = mC∆T	move faster in liquid form. This causes
	the temperature to increase.
	What's Happening?
$C_{water} = 4.18 J/g^{\circ}C$	
$C_{water} = 4.18 \text{ J/g}^{\circ}\text{C}$	Speeding up Liquid Temperature goes up
C _{water} = 4.18 J/g°C	Speeding up Liquid Temperature goes up
	Speeding up Liquid Temperature goes up The LATENT HEAT OF VAPORIZATION is
$C_{water} = 4.18 \text{ J/g}^{\circ}\text{C}$ Q = mL	Speeding up Liquid Temperature goes up The LATENT HEAT OF VAPORIZATION is the energy used to break the attraction
	Speeding up Liquid Temperature goes up The LATENT HEAT OF VAPORIZATION is the energy used to break the attraction between the liquid molecules. This
Q = mL	Speeding up Liquid Temperature goes up The LATENT HEAT OF VAPORIZATION is the energy used to break the attraction between the liquid molecules. This spreads them out. All the energy is
	Speeding up Liquid Temperature goes up The LATENT HEAT OF VAPORIZATION is the energy used to break the attraction between the liquid molecules. This spreads them out. All the energy is going to the molecules being spread
Q = mL L _{vaporization} =2260 J/g	Speeding up Liquid Temperature goes up The LATENT HEAT OF VAPORIZATION is the energy used to break the attraction between the liquid molecules. This spreads them out. All the energy is
Q = mL L _{vaporization} =2260 J/g (+) if vaporizing	Speeding up Liquid Temperature goes up The LATENT HEAT OF VAPORIZATION is the energy used to break the attraction between the liquid molecules. This spreads them out. All the energy is going to the molecules being spread out, they do not move faster, therefore,
Q = mL L _{vaporization} =2260 J/g	Speeding up Liquid Temperature goes up The LATENT HEAT OF VAPORIZATION is the energy used to break the attraction between the liquid molecules. This spreads them out. All the energy is going to the molecules being spread out, they do not move faster, therefore, the temperature does not go up.
Q = mL L _{vaporization} =2260 J/g (+) if vaporizing	Speeding up Liquid Temperature goes up The LATENT HEAT OF VAPORIZATION is the energy used to break the attraction between the liquid molecules. This spreads them out. All the energy is going to the molecules being spread out, they do not move faster, therefore, the temperature does not go up. <u>What's Happening?</u>
Q = mL L _{vaporization} =2260 J/g (+) if vaporizing	Speeding up Liquid Temperature goes up The LATENT HEAT OF VAPORIZATION is the energy used to break the attraction between the liquid molecules. This spreads them out. All the energy is going to the molecules being spread out, they do not move faster, therefore, the temperature does not go up. <u>What's Happening?</u> Spreading out molecules
Q = mL L _{vaporization} =2260 J/g (+) if vaporizing (-) if condensing	Speeding up Liquid Temperature goes up The LATENT HEAT OF VAPORIZATION is the energy used to break the attraction between the liquid molecules. This spreads them out. All the energy is going to the molecules being spread out, they do not move faster, therefore, the temperature does not go up. <u>What's Happening?</u> Spreading out molecules Phase Change: Liquid → Gas
Q = mL L _{vaporization} =2260 J/g (+) if vaporizing	Speeding up Liquid Temperature goes up The LATENT HEAT OF VAPORIZATION is the energy used to break the attraction between the liquid molecules. This spreads them out. All the energy is going to the molecules being spread out, they do not move faster, therefore, the temperature does not go up. What's Happening? Spreading out molecules Phase Change: Liquid → Gas The SPECIFIC HEAT OF STEAM is the
Q = mL L _{vaporization} =2260 J/g (+) if vaporizing (-) if condensing	Speeding up Liquid Temperature goes up The LATENT HEAT OF VAPORIZATION is the energy used to break the attraction between the liquid molecules. This spreads them out. All the energy is going to the molecules being spread out, they do not move faster, therefore, the temperature does not go up. What's Happening? Spreading out molecules Phase Change: Liquid → Gas The SPECIFIC HEAT OF STEAM is the heat used to make the steam molecules
Q = mL L _{vaporization} =2260 J/g (+) if vaporizing (-) if condensing Q = mCΔT	Speeding up Liquid The LATENT HEAT OF VAPORIZATION is The LATENT HEAT OF VAPORIZATION is The LATENT HEAT OF VAPORIZATION is the energy used to break the attraction between the liquid molecules. This spreads them out. All the energy is going to the molecules being spread out, they do not move faster, therefore, the temperature does not go up. What's Happening? Spreading out molecules Phase Change: Liquid → Gas The SPECIFIC HEAT OF STEAM heat used to make the steam molecules move faster in the gas form. This
Q = mL L _{vaporization} =2260 J/g (+) if vaporizing (-) if condensing Q = mCΔT	Speeding up Liquid Temperature goes up The LATENT HEAT OF VAPORIZATION is the energy used to break the attraction between the liquid molecules. This spreads them out. All the energy is going to the molecules being spread out, they do not move faster, therefore, the temperature does not go up. What's Happening? Spreading out molecules Phase Change: Liquid → Gas The SPECIFIC HEAT OF STEAM is the heat used to make the steam molecules move faster in the gas form. This causes the temperature to increase.
Q = mL L _{vaporization} =2260 J/g (+) if vaporizing (-) if condensing	Speeding up Liquid Temperature goes up The LATENT HEAT OF VAPORIZATION is The LATENT HEAT OF VAPORIZATION is the energy used to break the attraction between the liquid molecules. This spreads them out. All the energy is going to the molecules being spread out, they do not move faster, therefore, the temperature does not go up. What's Happening? Spreading out molecules Phase Change: Liquid → Gas The SPECIFIC HEAT OF STEAM heat used to make the steam molecules move faster in the gas form. This causes the temperature to increase. What's Happening?

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