

Name: _____ Date: _____ Pd: _____

LECTURE NOTES:

Matter & Motion

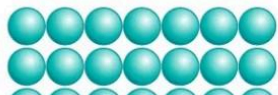


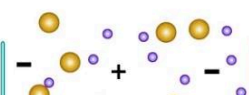
Matter and Motion Lecture Notes

Essential Question(s)	Learning Target(s)

States of Matter

1. What is <u>KINETIC ENERGY</u> ?	2. How would you define <u>INTERMOLECULAR FORCES</u> ?
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Name the following states of matter below based on the arrangement of molecules.

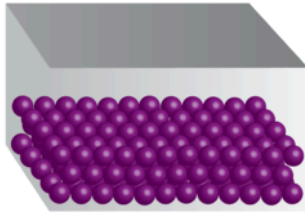
How would you describe the molecular arrangement for each State of Matter?

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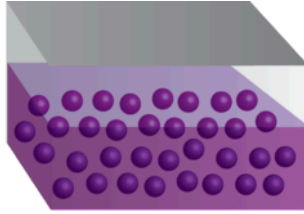
Phase Changes & Energy

Highlight the correct answer... As matter changes from a SOLID to a GAS,

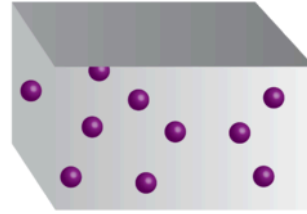
1. Kinetic Energy is **INCREASING** or **DECREASING**.
2. Particle Motion **INCREASES** or **DECREASES**.
3. The Force of Attraction between Particles **INCREASES** or **DECREASES**.



Solid



Liquid



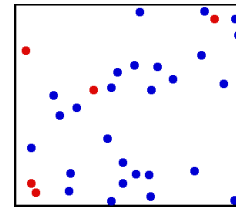
Gas

Highlight the correct answer... As matter changes from a GAS to a SOLID,

1. Kinetic Energy is **INCREASING** or **DECREASING**.
2. Particle Motion **INCREASES** or **DECREASES**.
3. The Force of Attraction between Particles **INCREASES** or **DECREASES**.

Temperature

What is temperature?



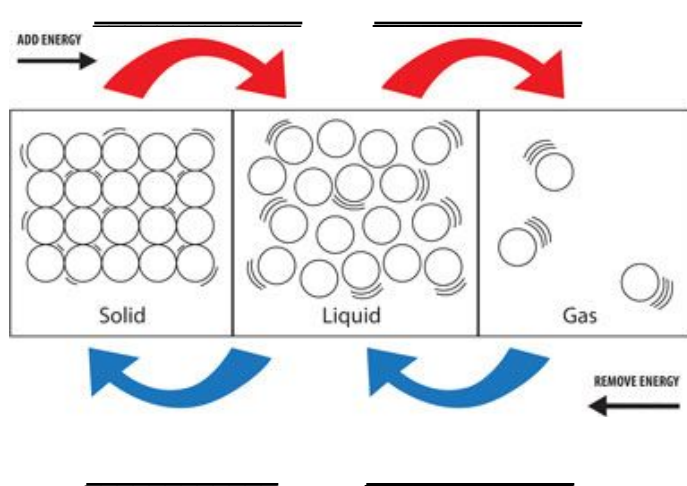
VIDEO: Explain the difference between the speed of the molecules in the hot water and the speed of the molecules in the cold water.

EXPLAIN how an increase in temperature affects the movement of molecules, and what does this reveal about the relationship between temperature and kinetic energy?

Types of Reactions (regards with temperature)

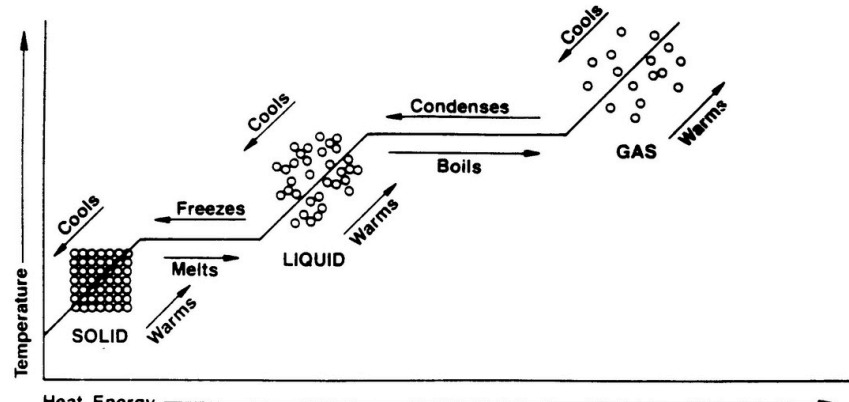
Summarize EXOTHERMIC REACTION .	Summarize ENDOTHERMIC REACTION .
Give an example of a real world application of an Exothermic Reaction.	Give an example of a real world application of an Endothermic Reaction.

Highlight the correct answer

<p>B. Changing phases from a solid to a liquid to a gas, Is an EXOTHERMIC or ENDOTHERMIC reaction.</p>	
<p>B. Changing phases from a gas, to a liquid, to a solid, Is an EXOTHERMIC or ENDOTHERMIC reaction.</p>	

Heating Curve Graph Analysis

Instructions: Looking at the graph below, answer the following question...


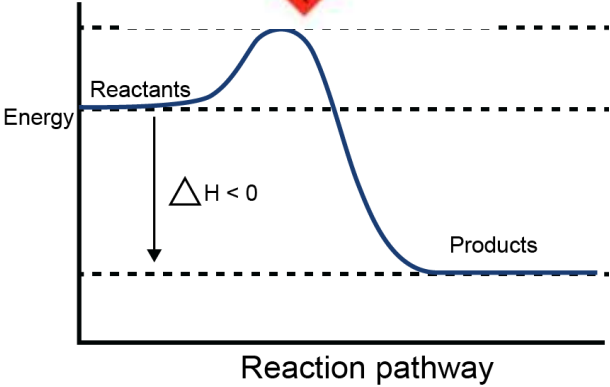
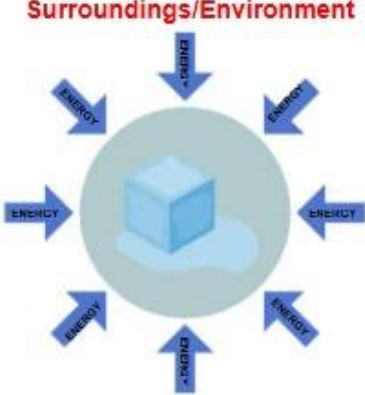
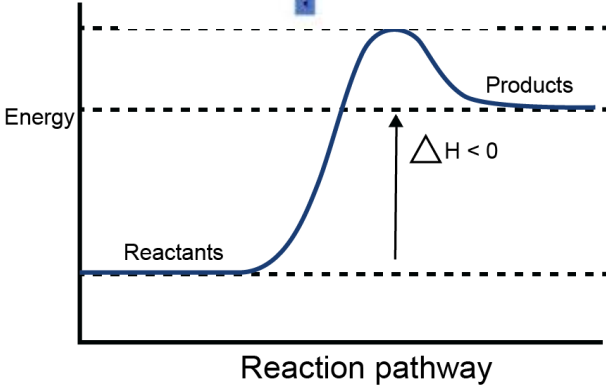
<p>What can you infer about the relationship between temperature and heat energy during phase transitions on the heating curve?</p>	<p>What is the Independent Variable & Dependent Variable?</p> 
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<p>How does kinetic energy and intermolecular forces determine the states of matter and drive phase changes in response to energy changes?</p>	
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Endothermic v. Exothermic Reactions (re-explained)

Essential Question
Learning Objective

Define SYSTEM :
Define BOND ENERGY :

Exothermic Reaction	Endothermic Reaction
Energy released into the environment as heat and/or light. This release of energy results in a temperature increase around the reaction.	Energy absorbed from the environment. This absorption results in a temperature decrease around the reaction.
FREEZING or CONDENSING	MELTING or VAPORIZING
Example -	Example -
<div><p>Surroundings/Environment</p><p>System</p><p>Reactants</p><p>Products</p><p>$\Delta H < 0$</p><p>Reaction pathway</p></div>	<div><p>Surroundings/Environment</p><p>System</p><p>Reactants</p><p>Products</p><p>$\Delta H < 0$</p><p>Reaction pathway</p></div>
<div>_____ of Energy</div>	<div>_____ of Energy</div>
Energy/Heat _____ HIGH (hot) to LOW (cold)	