Name: _____ Sci Number: _____
Period: _____ Parent Signature: _____

My little book of:

States of Matter

Chp 3

Draw/paste examples of all 5 States of Matter. Be sure to Label

States of Matter: Section 1 definitions:

Word: Pg found	Match the definition
States of matter _____ pg60	**A.** law that states that for a fixed amount of gas at a consta temperature, the volume of a gas increases as its pressure decreases
Solid pg61 _____	**B.** law that states that for a fixed amount of gas at a consta pressure, the volume of a gas increases as its temperature increases
Liquid pg62 _____	**C.** the physical forms in which a substance can exist
Gas pg63_____	**D.** state in which matter has a definite shape and volume
Plasma pg67_____	**E.** the state in which matter takes the shape of its containe but has a definite volume
Boyle's law pg65 _____	**F.** the state in which matter changes in both shape and volume
Charle's law pg66_____	**G.** the state of matter that does not have a definite shape o volume and whose particles have broken apart
Pressure pg64 _____	**H.** the amount of force exerted in a given area

Section 1: Four States of Matter (pages 60-67)

1. Skim the first paragraph on page 60 and complete the following:
The states of matter are the _____ _____
in which a substance can exist. For example, water commonly exists in 3 different states of matter: _____ (ice), _____(water), & _____ (steam).
2. True or False (circle one): Matter consists of tiny particles called atoms and molecules that can only be seen with a powerful microscope. These atoms and molecules are always motionless.
3. True or False (circle one): The state of matter of a substance is determined by hov fast the particles move and how strongly they are attracted to one another.
4. What is the blue title on page 61?_____
5. What are the two types of solids? _____ &_____
6. How are the two types of solids different from one another?

_____
_____

7. Use figure 2 on page 60 to fill in the chart below:

	Solid	Liquid	Gas
Draw a picture of what the particles look like in each of the 3 states.			
Describe how the particles move in each of the 3 states.			
Describe in terms of volume & shape for each of the 3 states			

Teach a parent: Today's concept is: Explain what the 5 Phases of Matter are, and how they different from each other?

Students, you can use your cover of this little book to explain the 5 phases of matter!

Parent Response

1. _____ I'm not sure my child really understands. Please work with him/her and let's try again.
2. _____ The concept was explained thoroughly with examples he/she created. "By golly, I think they've got it!"
3. _____ WOW! My child did an exceptional job! It was logically explained,

Mom or Dad Comments: Please explain how your student taught you this concept and what you learned in 1-2 sentences!

_____

_____

Parent Signature:_____ Date: _____

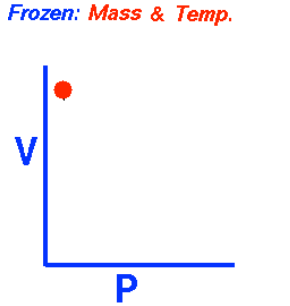
Boyle's Law

Air is a gas. Gases have various properties which we can observe with our senses, including the gas pressure (p), temperature, mass, and the volume (V) which contain the gas. Careful, scientific observation has determined that these variables are related to one another, and the values of these properties determine the state of the gas.

In the mid 1600's, Robert Boyle studied the relationship between the **pressure p** and the **volume V** of a confined gas held at a constant temperature. Boyle observed that the product of the pressure and volume are observed to be nearly constant. The product of pressure and volume is exactly a constant for an ideal gas. P * V = constant

This relationship between _____ and _____ is called Boyle's Law in his honor.

On the right Draw how this graph would look:



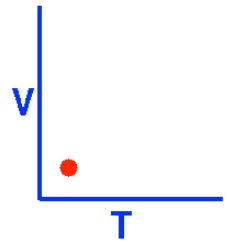
Charles' Law

Air is a gas. Gases have various properties that we can observe with our senses, including the gas pressure, temperature (T), mass, and the volume (V) that contains the gas. Careful, scientific observation has determined that these variables are related to one another and that the values of these properties determine the state of the gas.

The relationship between temperature and volume, at a constant number of moles and pressure, is called Charles' Law in honor of the original work, It was observed that if the **PRESSURE** is held constant, the _____ is equal to a constant times the _____

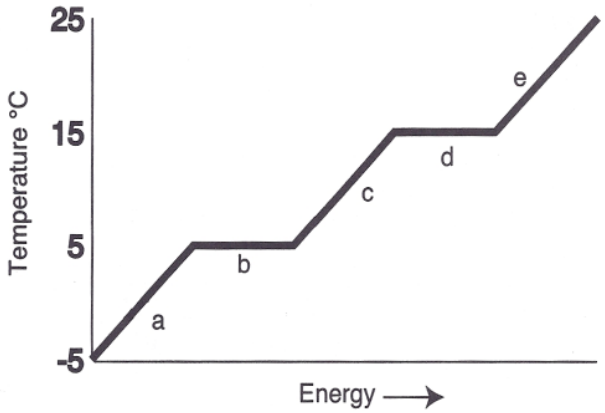
On the right Draw how this graph would look:

V = constant * T



Match these definitions from section 1: (pg60)	
Boyle's law: ___	a. law that states that for a fixed amount of gas at a constant pressure, the volume of a gas increases as its temperature increases
Charle's law:___	b. law that states that for a fixed amount of gas at a constant temperatur the volume of a gas increases as its pressure decreases
Pressure _____	c. the physical forms in which a substance can exist
States of matter: _____	d. the amount of force exerted in a given area

Part 2: **Freezing and Boiling Point Graph**



Answer the following questions using the graph above

1. What is the freezing point of the substance? _____
2. What is the boiling point of the substance? _____
3. What is the melting point of the substance? _____
4. What letter represents the range where the solid is being warmed? _____
5. What letter represents the range where the liquid is being warmed? _____
6. What letter represents the range where the vapor is being warmed? _____

Changes of State: Section 2 definitions: (pg68)

Write the definition letter next to the words

Change of state: _____	a. the change of state from a liquid to a gas; includes boiling and evaporation
Vaporization: _____	b. the conversion of a substance from one physical form to another
Evaporation _____	c. vaporization that occurs at the surface of a liquid below its boiling point
Boiling & Boiling point:____	a. vaporization that occurs throughout a liquid & the temperature at which this takes place
Condensation:____	b. the change of state from a gas to a liquid
Sublimation:_____	c. the change of state from a gas to a liquid

6. Draw & label Fig 19 from pg 73 in the box below:

Phase Change:

Evaporation, Condensation, Freezing, Melting, Sublimation & Deposition

Watch the video by using on online link:

http://education-portal.com/academy/lesson/phase-change-evaporation-condensation-freezing-melting.html - lesson

Identify these phase changes:

_____ the substance changes directly from a gas to a solid without going through the liquid phase.

_____ the substance changes from a liquid to a solid.

_____ the substance changes from a liquid to a gas.

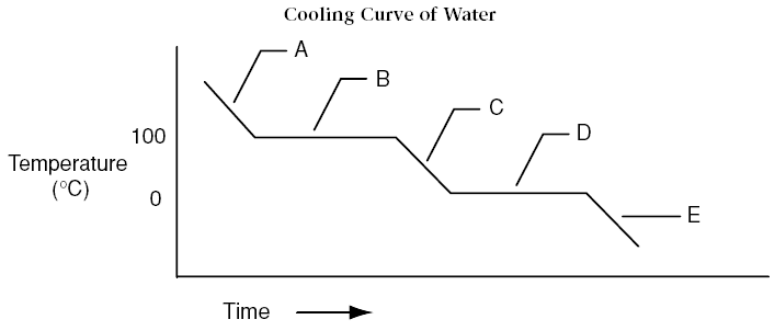
_____the substance changes from a gas to a liquid

_____ the substance changes back from the solid to the liquid.

_____ the substance changes directly from a solid to a gas without going through the liquid phase.

Use the letters on the graph to the match the following terms

Gas ___freezing ___ liquid____ condensation___ solid ___



Teach a parent: Today's concept is:

1. Explain the differences between: Exothermic & Endothermic?

Teach your parent about Exothermic & Endothermic! Remember: "Elvis has left the building & Coaches booboo bags!. **Parent Response**

1. _____ I'm not sure my child really understands. Please work with him/her and let's try again.
2. _____ The concept was explained thoroughly with examples he/she created.
   "By golly, I think they've got it!"
3. _____ WOW! My child did an exceptional job! It was logically explained,

Mom or Dad Comments: Please explain how your student taught you this concept and what you learned in 1-2 sentences!

_____

_____

Parent Signature:_____ Date: _____

5. Copy chart at the bottom of page 72 below:

Summary of the Changes of State			
Change of state	**Direction**	**Endothermic or exothermic?**	**Example**
Condensation			
Sublimation			
Melting			
Vaporization			
Freezing			

Additional Page for notes if you want those notes! ☺