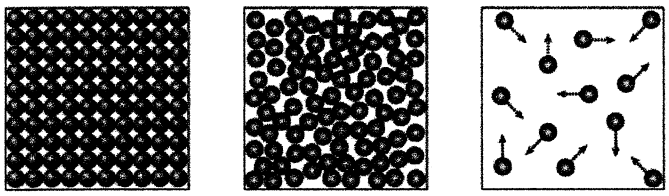
Name: **ANSWER KEY** Class: _____

Grade 8 SCIENCE NOTES

Chapter 11 Foundations of Chemistry Lesson: 2 – Physical Properties Pages: 387- 393

Page Number	Title/Sub-Title	Guided Questions
388	**Physical Properties**	What is a physical property? **A physical property is a characteristic of matter that you can observe or measure without changing the identity of the matter** There are many Physical Properties of Matter. Go to pages 392-393 and list the 8 physical properties shown in Table 1. **1. Mass** **2. Conductivity** **3. Volume** **4. Boiling/Melting Points** **5 State of Matter** **6 Density** **7 Solubility** **8 Magnetism**
389	**States of Matter**	What are the 3 states of matter? **1. Solids** **2. Liquids** **3. Gases** What makes some matter a solid and others a liquid or gas? **How close the particles in matter are to one another and how fast they move, determines whether matter will be a solid, liquid or gas** Label each of the 3 states of matter below:  **_____solid__ _____liquid_____ ___gas____** **Differentiate** *states of matter.*

State	Arrangement of Particles	Motion of Particles
Solid	Very close together and vibrate	vibrate back and forth
Liquid	each particle still touches the particles around it	particles slide past each other
Gas	particles spread out and fill container	move very quickly

390 - 391	**Size-Dependent Properties**	What is mass? **Mass is the amount of matter in an object** Why is mass a size dependent property? **Mass is a size-dependent property of a substance because its value depends on the size of the sample** What is weight? **Weight is the pull of gravity on matter.** Why would a dumbbell have the same mass on the Moon but a different weight? **Weight changes with location, but mass does not.** What is the unit of measurement used for volume? **A unit of measurement often used to measure volume is the mL (millimeter)** What is volume? **Volume is the amount of space an object takes up**
391-392	**Size-Independent Properties**	What does size-independent properties mean? **Size dependent means the measurement depends on how much matter is in a sample** What are some examples of size-independent properties: **1. Melting Point** **2. Boiling Point** **3. Density** **4 Conductivity** **5 Solubility** What is melting point? **The temperature at which a substance changes from a solid to a liquid is its melting point** What is boiling point? What is the boiling point of water in Celsius at sea level? **The temperature at which a substance changes from a liquid to a gas is its boiling point. The boiling point of water at sea level is 100 °C.** What is density? **Density is the mass per unit volume of a substance.** Look at the "Math Skills Box" on page 391. Write the equation for density below: **Denisty = mass/volume** What is electrical conductivity? **Electrical Conductivity is the ability of matter to conduct, or carry, an electric current.** What is thermal conductivity? **Thermal conductivity is the ability of a material to conduct thermal energy.** What is solubility? **Solubility is the ability of one substance to dissolve in another.**
393	**Separating Mixtures**	How is a mixture different from a compound? **One way a mixture is different than a compound is that the parts of a mixture can often be separated.** How can we separate the salt from water in a salt water mixture? **One way to separate salt from a salt water mixture ~~is to~~ boil away the water**

Why can't physical properties be used to separate a compound into the elements it contains?
Physical properties can't be used to separate a compound into the elements it contains because the elements are chemically bonded together.

Use Table 1 on pp. 392-393 to fill in the diagram below:

Identify and describe *three* physical properties *that can be used to separate mixtures.*

Property	How it can be used to separate a mixture
boiling point	each part of mixture will boil at diff. temp.
density	objects w/ greater density will sink in objects w/ less density
magnetism	attract iron from a mixture of metals

answers will vary