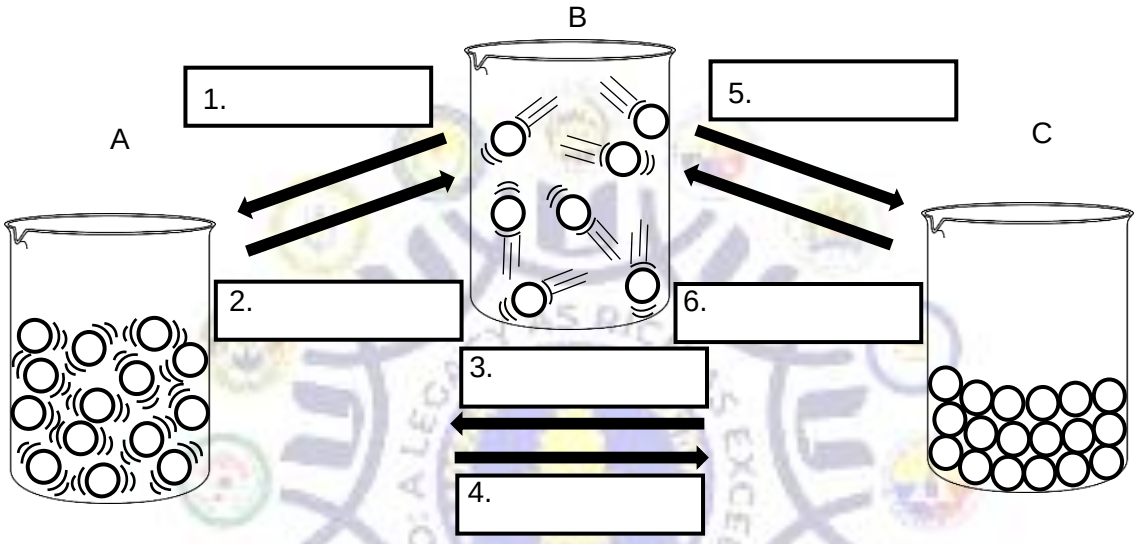
LEARNING ACTIVITY SHEET
Grade 8 – SCIENCE

Name: _____Date: _____ Rating/Score_____

MATTER: SUBJECT TO CHANGE

I. **Phase to Phase**
DIRECTIONS: Complete the diagram below with words from the word pool to correctly describe the phase changes that occur in matter.



Condensation Deposition Evaporation Freezing Melting Sublimation

Guide Questions:

1. Which of the following beakers represents a solid? Liquid? Gas?

2. What processes listed above involve absorption of heat? How about release of heat?

3. You observe mothballs disappearing in cabinets. What do you think is the reason for this? Do all substances behave like mothballs at normal conditions? Explain by citing some examples.

Specific Week: 3-4 (LAS 2)
Target Competency: Explain physical changes in terms of the arrangement and motion of atoms and molecules. (S8MT-IIIc-d-9)

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II. What Happens?

DIRECTIONS: Fill in the table by predicting the transformation that will happen in the matter presented in the pictures. Illustrate the arrangement of their particles after the change.

Matter and its Phase	Change in Matter	Arrangement of Particles	Explain your Answer
 ice cream **Phase:**	What happens to ice cream when exposed to heat? **New Phase:**		
 water **Phase:**	What happens to water when placed in a place below 0^{o}C? **New Phase**		
 dry ice **Phase:**	What happens to dry ice when exposed to heat? **New Phase**		

Think and Reflect

How will you explain the effect of the absorption and release of heat on the kinetic energy and arrangement of particles of matter?

Environmental Scanning

Observe around you and list down at least two phenomena that exhibit physical change. Explain briefly how these changes affect the arrangement and motion of particles (atoms and/or molecules).
Write your reflection.

3 things I learned	
2 things I found interesting	
1 question I have	

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III. Let's Get Physical or Chemical!

DIRECTIONS: Complete the table below by writing the properties of the substance before and after the change. Classify whether the material undergoes physical or chemical change.

Process that Involves Change	Properties		Physical Change/ Chemical Change
	Before the Change	After the Change	
fermenting of milk	white liquid, tastes sweet and creamy	yellowish liquid with white solid (precipitate), tastes sour	Chemical Change
crumpling of a piece of pad paper			
burning of refined sugar			
placing powdered eggshells in vinegar			
exposing butter to heat			
placing a piece of iron nail in vinegar			

Points to Ponder:

1. How will you differentiate physical from chemical change in terms of the properties before and after the change?

2. Can you say that the matter which underwent a chemical change is still the same substance as before? Why?

What learnings from this activity can I share with my family and peers?

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IV. Let's Connect and Reflect

DIRECTIONS: Guess the hidden words related to the article in this activity. Decode by finding the letters that correspond to the given number. Read the short article about the physical and chemical changes in our environment then answer the questions below.

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
6	13	1	19	8	11	5	18	21	3	24	17	9	12	23	2	26	15	22	7	14	10	25	20	4	16

25	6	7	8	15		1	4	1	17	8		5	17	23	13	6	17		25	6	15	9	21	12	5

Physical and Chemical Changes in Our Environment

Water is one of the essential substances in our planet. All species need water to live. When it evaporates from the surface of the earth, it rises into clouds, cools and condenses, and falls again as rain or snow in the *precipitation* process on the surface. It cycles in the atmosphere. Snow in the mountains directly turns into water vapor due to high vapor pressure. Unfortunately, the cycle of water in our environment is disturbed due to human activities.

Fossil fuels such as coal, crude oil, and, natural gas when burned, produce *carbon dioxide gas* (CO_2). Carbon dioxide is a primary greenhouse gas that traps the heat from the sun in our atmosphere. The trapping of heat by these substances is known as the *greenhouse effect*. The temperature of the atmosphere increases as more greenhouse gases are released. This phenomenon is called *global warming*. The greenhouse effect and global warming are the contributing factors to climate change. Strong typhoons, floods, and severe droughts are the results of the changing climate. The Philippines and all of the countries in the world are experiencing the effects of climate change. Human activities contribute to pollution. Pollutants such as *sulfur dioxide* (SO_2) and *oxides of nitrogen* (NO_x) react with rainwater producing acid rain. Acid rain affects both living and nonliving things. It causes yellowing of the plant's leaves, corrosion of metals, and leaching of marble structures.

Think About This:

1. Write down all the physical and chemical processes that you encountered as you read the article.

2. How can phase changes in water help organisms in the environment?

3. As a student, how will you help solve the problems about climate change?

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