A Lesson Plan on States of Matter

QUARTER: Third Quarter **TIME FRAME:** 1 Hour

TOPIC: The States and Changes of Matter **DATE**: March 5, 2020

CONTENT STANDARD:

The learners demonstrate an understanding of the particle nature of matter as basic for explaining properties, physical changes and structure of substance and mixtures.

PERFORMANCE STANDARDS:

The learner is able to present how water behaves in its different states within the water cycle.

LEARNING COMPETENCY:

The learners should be able to explain the properties of solids, liquids, and gases based on the particle nature of matter.

Code: S8MT-IIIa-b8

I. LEARNING OBJECTIVES

At the end of the period, at least 85% of the students with 85% of proficiency must be able to:

a. Describe the different arrangement of molecules in each states of matter;
b. Connect the different changes of matter forming one state to another in illustrative way; and
c. Reflect and share some important contribution of matter in our daily life.

II. LEARNING CONTENT

- Subject Matter: States and Changes of Matter
- Skills: Manipulative skills and Thinking skills
- Values: Mental alertness, Cooperation, and Team Work
- Materials: Visual Aids, Activity/Task Sheets, Manila Paper, and Marker
- References: Campo, P. C., Chavez, M. R., Catalan, M. H., Ph. D., Catris, L. V., Ph. D., et al. (2013). *Science Learner's Module* (1st ed.). Philippines: Vibal Publishing Houe, Inc. pp. 171-191.

III. LEARNING PROCEDURE

Teacher's Activity	Student's Activity
A. MOOD SETTING **1. Preliminary Activities** **a.** Prayer In the name….Amen **b.** Energizer/ Ice breaker Lean forward; lean backward, to the left to the right. **c.** Greetings Good Morning class!!! **d.** Checking Attendance	 In the name….Amen

Class Mayor/ President kindly check the attendance of your classmates.	Good Morning, Ma'am Kim!!! The class mayor/ president will state the absentees and late.
2. Review • What is Matter? • What makes up a matter? Very good, since you have understood well the previous topic, let us now proceed to a new lesson.	It is anything that occupies space and has mass. Matter is made up of atoms.
3. Motivation Are you familiar with the famous mobile game 4 pictures, 1 Word? Do you want to play it now? Alright, let's play First pictures.  Second pictures.  Third pictures.  Very good. You have guessed all the words from the pictures shown.	Yes Ma'am. Gas Liquid Solid
B. PRESENTATION OF THE LESSON **1. Pre – Activity** • I will divide you into five groups. Each	1,2,3,4,5…

group must select a leader, secretary and two representatives. Count one to five, starts here (pointing to the right side).

- Selected leader stand up. And secretary, get one fourth sheet of paper then write the list of your members.

- Each leader will pick only one envelope. And each envelope contains different task, activity sheets and materials needed. Further instructions are provided in the task sheet.

- You are given 10 minutes to answer the activity. And be guided with rubrics presented. Afterwards the representatives of every group will present their work in the class.

- Now, go to your respective groups then, make a little circle with your group.

Rubrics

For the Evaluation of the students' work from the activity

Areas to Assess	Very Satisfactory 10 points	Satisfactory 7 points	Needs Improvement 3 point
Content	Shows a full understanding of the topic.	Shows a good understanding of the part of the topic.	Does not seem to understand the topic very well.
Teamwork/ Behavior	All the members of the group cooperated in the activity, follow instructions and shows good behaviour in doing the task.	Half of the members of the group cooperated in the activity, follow instructions and shows good behaviour in doing the task	Less than half of the members of the group cooperated in the activity, follow instructions and shows good behaviour in doing the task.
Presentation/ Explanation	Very well organized presentation of output and was able to communicate well with the others.	Satisfactorily organized presentation and explanation with communication.	Needs improvement on presenting and explaining group output and needs to communicate with others.

2. **Activity.**
   (See attached activity sheets)
   TASK FOR GROUP 1

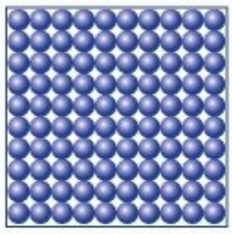
INSTRUCTIONS:

Each sentence from the strips of paper has corresponding unknown letters that should be fill up. Each letter will lead you to one word. After you arrived to the unknown word you have to answer the leading question from the whole

Yes Ma'am

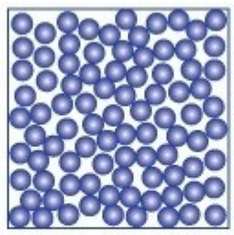
- (S)
- (O)
- (L)
- (I)
- (D)
- (HEART)

The arrangement of particles is closely packed in an orderly arrangement.

strip. Then, describe the particles of states of matter based on the given picture. Write your answer to the given material. Refer your counting to the Alphabet Letters. Good luck! • I am an example of a matter composed of many tissues. (count 1 – 19) • I am one of the essential part of an organism. (count 1 – 18) • I beat normally but when I run, do strenuous activity and see my crush I panic. Just kidding. ☺ I just beat faster that ever. (count 1 – 11) • I have a definite shape and volume. (count 1 – 9) • I look bloody if my owner is alive and pale if I no longer have value. (count 1 – 4) • What am I? (Answer Me)	• (L) • (I) • (Q) • (U) • (I) • (D) • (BLOOD)
Describe Me!! 	The arrangement of particles is close together in a disorderly arrangement.
TASK FOR GROUP 2 **INSTRUCTIONS:** Each sentence from the strips of paper has corresponding unknown letters that should be fill up. Each letter will lead you to one word. After you arrived to the unknown word you have to answer the leading question from the whole strip. Then, describe the particles of states of matter based on the given picture. Write your answer to the given material. Refer your counting to the Alphabet Letters. Good luck! • I am what I am. Visible enough to be useful. (count 1 -11) • I am responsible of carrying oxygen in and taking carbon dioxide out. (count 1 – 9) • I do not have definite shape that's why I take the shape of my container. (count 1 – 17) • I do have changeable volume. (count 1 –	• (G) • (A) • (S) • (OXYGEN) The arrangement of particles is far apart in a random arrangement.

21)

- I am vital to humans and other animals' cause I provide important nourishment to all body organs. (count 1 – 9)
- I am "the river of life". (count 1 – 4)
- What am I? (Answer Me)



Describe Me!!

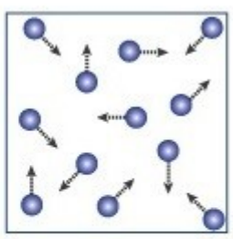
TASK FOR GROUP 3

INSTRUCTIONS:

Each sentence from the strips of paper has corresponding unknown letters that should be fill up. Each letter will lead you to one word. After you arrived to the unknown word you have to answer the leading question from the whole strip. Then, describe the particles of states of matter based on the given picture. Write your answer to the given material.

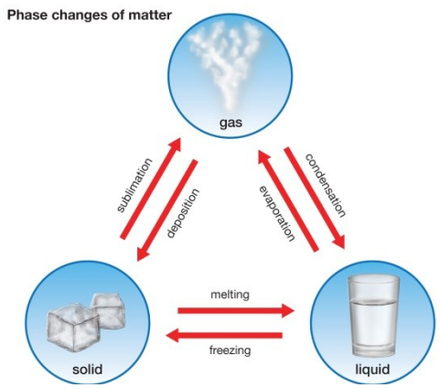
Refer your counting to the Alphabet Letters. Good luck!

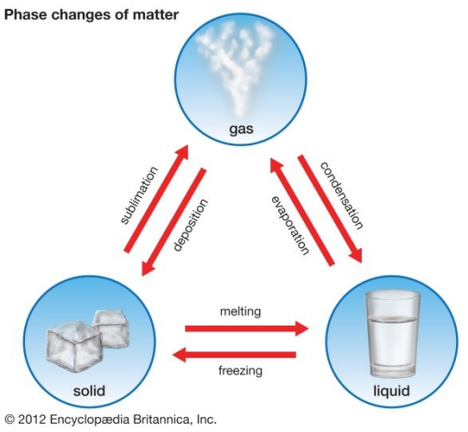
- Abundant that's what I am. Colorless, odourless, tasteless and slightly magnetic element. (count 1 – 7)
- I am a traveller I must say. I live with freedom and a person needs me. (count 1)
- I do not have definite space and fixed volume but without me you won't be able to breathe. (count 1 – 19)
- What am I? (Answer Me)



Describe Me!!

TASK FOR GROUP 4





1. Matter typically exists in one of three states: solid, liquid, or **gas**. The state a given substance exhibits is also a physical property. Some substances exist as gases at room temperature (oxygen and carbon dioxide), while others, like water and mercury metal, exist as liquids

2. The behaviours of these particles differ in the three phases.... gas are well separated with no regular arrangement. Liquid are close together with no regular arrangement. Solid are tightly packed, usually in a regular pattern.

3. Matter can change from one state to another when thermal energy is absorbed or released. heated, it absorbs thermal energy and its temperature rises. At some

INSTRUCTIONS:

Connect each strips of paper according to the changes of matter forming one state to another in illustrative way.

SOLID

LIQUID

GAS

Melting – is when a solid becomes a liquid.
Freezing – is when a liquid becomes a solid.
Condensation – is when a gas becomes a liquid.
Vaporization – When a liquid becomes a gas.
Deposition – when a gas becomes a solid without going through the liquid phase.
Sublimation – when a solid becomes a gas without going through the liquid phase.

TASK FOR GROUP 5.

INSTRUCTIONS:

Connect each strips of paper according to the changes of matter forming one state to another in illustrative way.

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LIQUID

GAS

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3. **Analysis**
   Socialized Discussion

   Guide Questions:
   1. What is the common substance that occurs at ordinary temperatures in all three states of matter?

   2. How the arrangements of molecules in a solid state differ from the liquid state or gaseous state?

point, the temperature stops rising and the ice begins to change into liquid water. The change from the solid state to the liquid state is called melting.

States of matter plays an important role in our daily life. We experience the changes of the states of matter daily. For example, ice. Cooling of the liquid causes it to freeze to become a solid and there are more examples of states of matter that contributes in our life.

3. What are the changes taking place as you heat up a matter?

4. Abstraction

Water is the common substance that occurs at ordinary temperatures in all three states of matter, that is, as a solid, a liquid, and a gas. As a solid, or ice, it is found as glaciers and ice caps, on water surfaces in winter, as snow, hail, and frost, and as clouds formed of ice crystals. It occurs in the liquid state as rain clouds formed of water droplets, and on vegetation as dew. As gas, or water vapor, it occurs as fog, steam, and clouds.

Solids are simply hard substances, and they are hard because of how their molecules are packed together. Examples include rock, chalk, and sugar. They are all solids at room temperature. They can come in all sizes, shapes and forms.

The particles in liquids are not as closely bonded, arranged and fixed in place as in solids. The particles in liquid can flow freely and can mix with particles from other liquids. Liquids have their atoms close together, so they are not very easy to compress.

The particles that make up a gas, however, are completely separated from one another. Empty space accounts for more than 99 percent of the total volume of air, for example. Because gas particles are separated, the attractive forces between them are extremely small and are insufficient to hold gases in a definite shape or volume. Gases expand freely to fill their containers.

There are six distinct changes of phase which happens to different substances at different temperatures. The six changes are:

Freezing: the substance changes from a liquid to a solid.

Melting: the substance changes back from the solid to the liquid.

Condensation: the substance changes from a gas to a liquid.

Vaporization: the substance changes from a liquid to a gas.

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

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

5. **Application** : (Valuing)
   Oral Questioning

• How important is this states and changes in our life? • Share some important contribution of matter in our life.	

IV. ASSESSMENT:

Part1. Choose in the box.
Instruction: Read each statement carefully and choose the correct answer inside the box. Write your answers directly after each number in a ¼ sheet of paper.

Solids	Gas	Liquid
Atoms	Physical Change	Chemical Change
Mass	Oxygen	Helium

1. _____ do not have a definite shape, mass or volume.
2. _____ do not have a definite shape, but they do have a definite volume.
3. _____ and _____ are examples of gases.
4. _____ have a definite shape and volume.
5. All matter is made up of tiny particles called _____.

Part2. Multiple Choice.
Instruction: In a ¼ sheet of paper write only the letter of the correct answer.

1. What kind of phase change matters undergo from water vapour to a frost?
   A. liquid B. sublimation C. deposition D. gas
2. Which of the following is NOT a way that matter changes phase?
   A. melting B. freezing C. vaporization D. mixing
3. A matter that changes from a solid to a gas without going through the liquid phase is called?
   A. evaporation B. sublimation C. deposition D. melting
4. A matter that changes from a solid to a liquid is called?
   A. evaporation B. sublimation C. deposition D. melting
5. Are gases hard to compress?
   A. Yes B. No

V. Agreement:

Memorize the atomic numbers, symbols, and chemical names of elements from 1 to 25 found in the periodic table.

Prepared by:

KIMBERLY M. SUMI-OG, LPT
Applicant

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- I beat normally but when I run, do strenuous activity and see my crush I panic. Just kidding. ☺ I just beat faster than ever. (count 1 – 11) (L)
- I have a definite shape and volume. (count 1 – 9) (I)
- I look bloody if my owner is alive and pale if I no longer have value. (count 1 – 4) (D)
- What am I? (Answer Me) (HEART)

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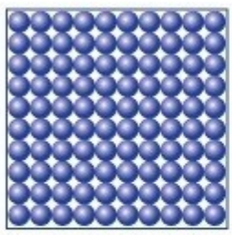

TASK FOR GROUP 2

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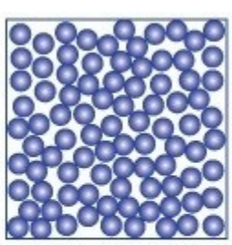
- I do not have definite shape that’s why I take the shape of my container. (count 1 – 17) (Q)
- I do have changeable volume. (count 1 – 21) (U)
- I am vital to humans and other animals’ cause I provide important nourishment to all body organs. (count 1 – 9) (1)
- I am “the river of life”. (count 1 – 4) (D)
- What am I? (Answer Me) (BLOOD)
  D

Describe Me!!



TASK FOR GROUP 3

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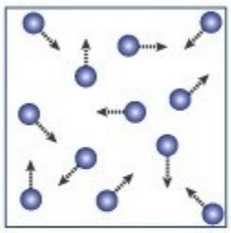

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TASK FOR GROUP 4

INSTRUCTIONS:

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TASK FOR GROUP 5

INSTRUCTIONS:

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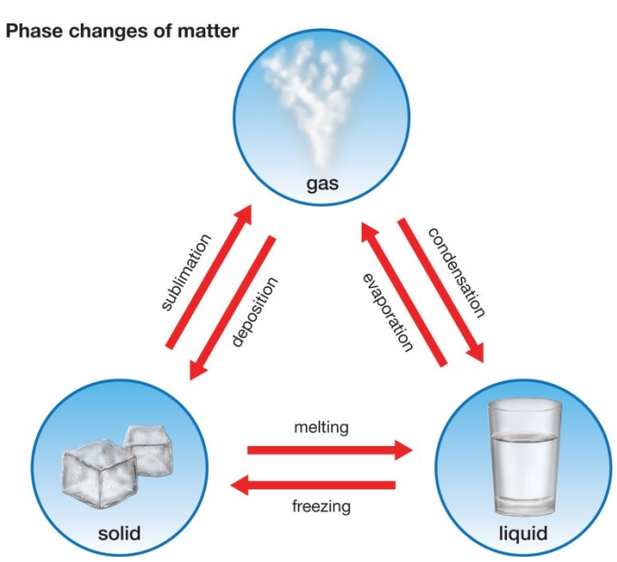
Answer:



Rubrics

Areas to Assess	Very Satisfactory 10 points	Satisfactory 7 points	Needs Improvement 3 point
Content	Shows a full understanding of the topic.	Shows a good understanding of the part of the topic.	Does not seem to understand the topic very well.
Teamwork/ Behavior	All the members of the group cooperated in the activity, follow instructions and shows good behaviour in doing the task.	Half of the members of the group cooperated in the activity, follow instructions and shows good behaviour in doing the task	Less than half of the members of the group cooperated in the activity, follow instructions and shows good behaviour in doing the task.
Presentation/ Explanation	Very well organized presentation of output and was able to communicate well with the others.	Satisfactorily organized presentation and explanation with communication.	Needs improvement on presenting and explaining group output and needs to communicate with others.

For the Evaluation of the students' work from the activity.