


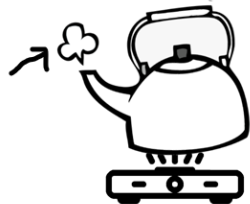




W1	Learning Area	SCIENCE	Grade Level	8
	Quarter	THIRD	Date	MARCH 1-5, 2021

I. LESSON TITLE		Properties of Solids, Liquids and Gases																										
II. MOST ESSENTIAL LEARNING COMPETENCIES (MELCs)		Explain the properties of solids, liquids, and gases based on the particle nature of matter S8MT-IIIa-b-8																										
III. CONTENT/CORE CONTENT																												
IV. LEARNING PHASES	Suggested Timeframe	Learning Activities																										
A. Introduction <i>Panimula</i>	Day 1	<p>In your Grade 7 Science class, you learned how to classify substances into elements, compounds and mixtures. In this module, you will be on a magical journey where you are going to learn more about the properties of matter. Are you excited to learn?</p> <p>Well, let's start this magical journey in the world of Chemistry by answering the activity below.</p> <p>Directions: Decode the words using the clue. The definition of each word is also given to help you identify the words.</p> <table><tr><td>A</td><td>B</td><td>C</td><td>D</td><td>E</td><td>F</td><td>G</td><td>H</td><td>I</td><td>J</td><td>K</td><td>L</td><td>M</td></tr><tr><td>N</td><td>O</td><td>P</td><td>Q</td><td>R</td><td>S</td><td>T</td><td>U</td><td>V</td><td>W</td><td>X</td><td>Y</td><td>Z</td></tr></table> <p>1. ZBYRPHYRF – smallest particle in a chemical element or compound Answer: _____</p> <p>2. QRSVAVGR – exact, having precise limits or boundaries Answer: _____</p> <p>3. VAQRSVAVGR – not definite, without fixed or specific limit Answer: _____</p> <p>4. IBYHZE – the amount of space that an object occupies Answer: _____</p> <p>5. ENCVQ – fast or quick Answer: _____</p>	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
A	B	C	D	E	F	G	H	I	J	K	L	M																
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B. Development <i>Pagpapaunlad</i>	Day 2	<p>Try to look around. You can see different kinds of things—table, chair, book, pen, a glass of water or electric fan. What do you think do all these things have in common?</p> <p>These things are all examples of matter. Matter is anything that has mass and volume. Consider your book. It takes a portion of space when you put it on the table. Your book occupies space. When you pour water in a glass, the water occupies space inside the glass. When you blow air inside a balloon, the balloon inflates this means that the air takes up space inside the balloon. Matter occupies space. Volume is the space occupied by an obejct.</p> <p>Try lifting up your book. Then try lifting the chair you are sitting on. Which is more heavy? The chair is heavier than the book because it contains more mass. The amount of material in a body is called mass. Matter has mass.</p>																										

IV. LEARNING PHASES	Suggested Timeframe	Learning Activities		
		<p>Properties of the Three States of Matter</p> <p>Matter can be classified as solid, liquid and gas. The following are the properties of solids, liquids and gases.</p> <p>Solid has a definite shape and volume. This means that solids maintain its shape and volume even you transfer it to another container. Solids don't flow easily unlike liquids and gases.</p>  <p><small>"Key" by SioW is licensed with CC BY-ND 2.0. To view a copy of this license, visit https://creativecommons.org/licenses/by-nd/2.0/</small></p> <p>Liquid has no definite shape. This means that liquids take the shape of its container. Liquid has definite volume. It means that liquids don't change its volume even if you transfer it to a different container. Liquids flow easily.</p>  <p><small>"orange juice" by Mervi Emilia is licensed with CC BY 2.0. To view a copy of this license, visit https://creativecommons.org/licenses/by/2.0/</small></p> <p>Gas has no definite shape and volume. This means that gases take the shape and volume of its container. Like liquids, gases also flows easily.</p>  <p><small>"Balloons" by Preston Kemp is licensed with CC BY-NC-SA 2.0. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/2.0/</small></p>		
<p>C. Engagement Pakikipagpalihan</p>	<p>Day 3</p>	<p>Learning Task 1 Write S if the statement describes a solid, L if liquid and G if gas.</p> <p>_____ 1. Has definite shape and volume _____ 2. Does not flow easily _____ 3. Has no definite shape and volume _____ 4. Flows easily _____ 5. Has no definite shape but has definite volume _____ 6. Water takes this form at 100°C _____ 7. Can be poured. _____ 8. Water takes this form at 0°C _____ 9. Water takes this state between 0°C and 100°C _____ 10. Solids take this state when they melt.</p> <p>Learning Task 2 Match column A with column B.</p> <table><tr><td><p>Column A</p><p>_____ 1. Matter _____ 2. Volume _____ 3. Mass _____ 4. Solid _____ 5. Liquid _____ 6. Gas _____ 7. Three states of matter _____ 8. Example of Gas _____ 9. Example of liquid _____ 10. Example of solid</p></td><td><p>Column B</p><p>A. the space occupied by an obejct B. anything that has mass and volume C.</p></td></tr></table> 	<p>Column A</p> <p>_____ 1. Matter _____ 2. Volume _____ 3. Mass _____ 4. Solid _____ 5. Liquid _____ 6. Gas _____ 7. Three states of matter _____ 8. Example of Gas _____ 9. Example of liquid _____ 10. Example of solid</p>	<p>Column B</p> <p>A. the space occupied by an obejct B. anything that has mass and volume C.</p>
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IV. LEARNING PHASES	Suggested Timeframe	Learning Activities
		<p>D. solid, liquid, gas</p> <p>E. Things take this form when they melt</p> <p>F. Things take this form when they freeze</p> <p>G. </p> <p>H. </p> <p>I. amount of material in a body</p> <p>J. liquids take this state when state when they evaporate</p>
D. Assimilation Paglalapad	Day 4	Explain why a stone is compact, water has the ability to flow and the fragrance of perfume spreads?
V. REFLECTION		<ul style="list-style-type: none"> The learner communicates the explanation of their personal assessment as indicated in the Learner's Assessment Card. The learner, in their notebook, will write their personal insights about the lesson using the prompts below. I understand that _____. I realize that _____. I need to learn more about _____.
Prepared by: Elvira B. Garcia		Checked by: Job S. Zape, Jr.

Personal Assessment on Learner's Level of Performance

Using the symbols below, choose one which best describes your experience in working on each given task. Draw it in the column for Level of Performance (LP). Be guided by the descriptions below.



- I was able to do/perform the task without any difficulty. The task helped me in understanding the target content/lesson.

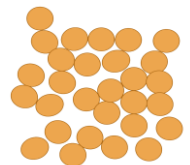
- I was able to do/perform the task. It was quite challenging but it still helped me in understanding the target content/lesson.

- I was not able to do/perform the task. It was extremely difficult. I need additional enrichment activities to be able to do/perform this task.

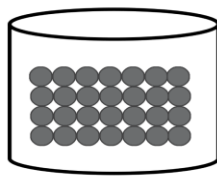
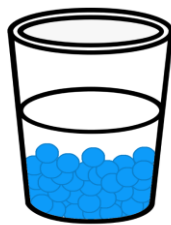
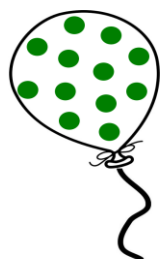
Learning Task	LP	Learning Task	LP	Learning Task	LP	Learning Task	LP
Number 1		Number 3		Number 5		Number 7	
Number 2		Number 4		Number 6		Number 8	

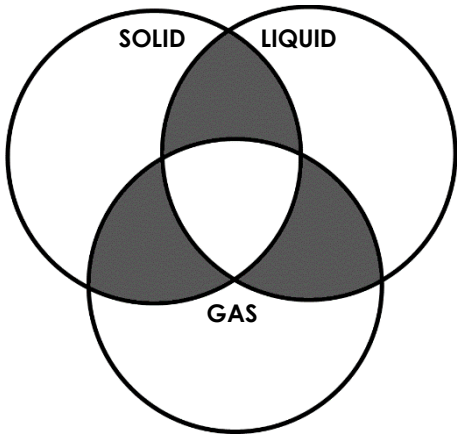
W2	Learning Area	SCIENCE	Grade Level	8
	Quarter	THIRD	Date	MARCH 8-12, 2021

I. LESSON TITLE		Properties of Solids, Liquids and Gases
II. MOST ESSENTIAL LEARNING COMPETENCIES (MELCs)		Explain the properties of solids, liquids, and gases based on the particle nature of matter S8MT-IIIa-b-8
III. CONTENT/CORE CONTENT		
IV. LEARNING PHASES	Suggested Timeframe	Learning Activities
A. Introduction <i>Panimula</i>	Day 1	From the previous lesson, you have learned the different phases of matter, their properties, and that it can be classified as solid, liquid, and gas. As you look around, you can see all sorts of examples of matter. Matter is made up of particles that are in constant random motion and are held together by attractive forces. In this lesson, you will learn more about how these particles of matter behaves.
B. Development <i>Pagpapaunlad</i>	Day 2	<p>Every substance in the universe is made up of matter that can exist in a number of different forms called states. Almost all matter on Earth exists in three different states: solid, liquid, and gas. These states of matter have very different properties, or ways they behave and appear. Scientists used a model to explain these different properties called particle model. According to the particle model:</p> <ul style="list-style-type: none"> • All substances are made up of tiny particles. • The particles are attracted towards other surrounding particles. • The particles are always moving • The hotter the substance is the faster the particles move <p>In solids, the particles are very close together and arranged in an orderly manner because the particles are held together by very strong attractive forces. This explains why solids have definite shape and volume.</p> <p>In liquids, the particles are arranged in a disorderly manner, and the bonds between them are weaker than those in solids. This explains why liquids has no definite shape. The weak attraction between the particles of liquid allows the particles to roll over each other. This makes the particles of liquids to move freely. Liquids have a fixed volume, but the rolling motion of the particles allows them to take up the shape of their container. Liquids cannot be compressed into smaller spaces.</p> <p>In gases, the particles have much energy than those in solids or liquids. The attraction between the particles in a gas is so weak that they can move freely in all directions. They spread out and take up any space that is available, so gases have no definite shape or volume. Because of the large spaces between particles, gases can be compressed.</p> <p>To learn more about the particle nature of matter, read the passage below then answer the questions that follow.</p> <p>READING COMPREHENSION Solids, Liquids, and Gases Matter is basically a substance that takes up space. All matter is a solid, liquid, or gas, and they are called the states of matter.</p>



IV. LEARNING PHASES	Suggested Timeframe	Learning Activities												
		<p>Everywhere a person looks, there are examples of solids: desks, chairs, windows, rocks, tissues, and much more. Examples of liquids: water, milk, juice, chocolate syrup, soda, and others. Examples of gases are harder to see, because they are invisible: the oxygen in the air, propane gas used for a grill, helium inside a balloon, and more.</p> <p>Everything, all matter, can be identified as a solid, liquid, or gas. Besides what they look like, there are many differences between solids, liquids, and gases. These differences are called characteristics. The characteristics of each state of matter are different. These characteristics determine if a substance is a solid, liquid, or gas.</p> <p>A solid has a definite shape. It can be hard or soft, smooth or rough. Solids can come in all sizes. A solid can be large like the Statue of Liberty, or small like a marble. It can be very tiny like a bread crumb, or as big as a mountain, and everything in between. If small enough, solids can be held in a person's hand, and they are difficult to compress or push, or change shape. The molecules of a solid are compact and close together, and nearly impossible to move through.</p> <p>A liquid takes the shape of the container it is held in, and will fill the bottom of a container. Liquids usually have a smooth surface, but does not have a specific size. A person may be able to hold a small amount of liquid in their hand, but a liquid cannot be held like a solid. Liquids are less difficult to compress or push. It is much easier to move through a liquid than a solid. The molecules of a liquid are spread out more than a solid, but less than a gas.</p> <p>Finally, a gas has no shape, but can fill a container or any size or shape. It will fill an entire container as the molecules move. A gas cannot be felt in the hands like a solid or liquid. It has no surface or no particular size. It cannot be held in a person's hands, and it is easy to push or compress. A gas is the easiest to move through versus a liquid or solid.</p> <p>The molecules in a gas are more spread out and move all the time. They are full of energy.</p> <p>Water is the best example of a substance that can be a solid, liquid, or gas. Water by itself is a liquid. When water freezes it becomes a solid. If a container of water is heated it turns into a gas called water vapor.</p> <p>There are many other substances that can be more than one type of matter too. Ice cream is solid then turns into liquid, once melted. A moth ball is solid, but it releases a gas that can be smelled by a person inside the room. To summarize, the different states of matter are called solids, liquids, and gases. The states of matter have different characteristics and examples of each can be found throughout the universe.</p> <p>http://www.softschools.com/language_arts/reading_comprehension/science/49/solids_liquids_and_gases/</p> <p>Choose the letter of the correct answer.</p> <p>1) Matter is basically a solid, liquid, or gas that takes up:</p> <table><tr><td>A. time</td><td>C. energy</td></tr><tr><td>B. space</td><td>D. heat</td></tr></table> <p>2) Oxygen, helium, and propane are examples of a</p> <table><tr><td>A. solid</td><td>C. gas</td></tr><tr><td>B. liquid</td><td>D. mineral</td></tr></table> <p>3) Which of the following states of matter has a definite shape?</p> <table><tr><td>A. solid</td><td>C. gas</td></tr><tr><td>B. liquid</td><td>D. none of the above</td></tr></table>	A. time	C. energy	B. space	D. heat	A. solid	C. gas	B. liquid	D. mineral	A. solid	C. gas	B. liquid	D. none of the above
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IV. LEARNING PHASES	Suggested Timeframe	Learning Activities																														
		<div>4) Which of the following states of matter takes on the shape of the container? A. solid B. liquid C. gas D. all of the above</div> <div>5) Which of the following states of matter has no surface or particular size? A. solid B. liquid C. gas D. both b and c</div> <div>6) Which of the following describes the molecules in a solid? A. The molecules are spread out and have lots of energy. B. The molecules are spread out some, but less than a gas. C. The molecules can easily be moved through. D. The molecules are compact and close together.</div> <div>7. Water is liquid but it is also a substance that can be more than one type of matter. How can water be transformed into solid? A. boil B. melt C. freeze D. none of the above</div>																														
C. Engagement Pakikipagpalihan		<div>Learning Task 1</div> <div>1.Look at the diagrams below as it shows how the molecules in each phase of matter behaves. Complete the table by filling in the blanks with the correct word from the word bank.</div> <div><div><p>SOLID</p></div><div><p>LIQUID</p></div><div><p>GAS</p></div></div> <div><table><tr><th></th><th colspan="5">Phase Properties</th></tr><tr><th>Phase</th><th>Distance (between the particles)</th><th>Energy (during the movement of the particles)</th><th>Motion (movement of the particles)</th><th>Volume (definite or indefinite)</th><th>Shape (definite or indefinite)</th></tr><tr><td>Solid</td><td>close</td><td>1. _____</td><td>2. _____</td><td>definite</td><td>3. _____</td></tr><tr><td>Liquid</td><td>4. _____</td><td>moderate</td><td>5. _____</td><td>6. _____</td><td>indefinite</td></tr><tr><td>Gas</td><td>7. _____</td><td>8. _____</td><td>rapid</td><td>9. _____</td><td>10. _____</td></tr></table></div> <div><div>WORD BANK</div><div><div>DEFINITE</div><div>INDEFINITE</div><div>VIBRATING</div><div>SLIDING</div><div>LITTLE</div><div>A LOT</div><div>SHORT DISTANCE</div><div>FAR APART</div><div>DEFINITE</div><div>INDEFINITE</div></div></div>		Phase Properties					Phase	Distance (between the particles)	Energy (during the movement of the particles)	Motion (movement of the particles)	Volume (definite or indefinite)	Shape (definite or indefinite)	Solid	close	1. _____	2. _____	definite	3. _____	Liquid	4. _____	moderate	5. _____	6. _____	indefinite	Gas	7. _____	8. _____	rapid	9. _____	10. _____
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D. Assimilation Paglalapat		<div>Using the 3-Circle Venn Diagram, compare and contrast the properties of Solids, Liquids and Gases.</div>																														

IV. LEARNING PHASES	Suggested Timeframe	Learning Activities
		
V. ASSESSMENT (Learning Activity Sheets for Enrichment, Remediation or Assessment to be given on Weeks 3 and 6)		<p>Choose the letter of the best answer. Write the chosen letter on a separate sheet of paper.</p> <ol style="list-style-type: none"> This state of matter has a definite shape and volume with particles closely packed together with little movement. This is a: <div style="display: flex; justify-content: space-between;"> A. liquid C. gas </div> <div style="display: flex; justify-content: space-between;"> B. solid D. plasma </div> When you bring two drops of water near each other and allow them to touch, why do they combine immediately and become one drop? <div style="display: flex; justify-content: space-between;"> A. water molecules are made of atoms B. water molecules are attracted to each other </div> <div style="display: flex; justify-content: space-between;"> C. water molecules are magnetic D. water is a liquid </div> What is the arrangement of particles in a liquid? <div style="display: flex; justify-content: space-between;"> A. the particles of a liquid are close to one another B. the particles of a liquid are spread out </div> <div style="display: flex; justify-content: space-between;"> C. the particles of a liquid vibrate but do not move past one another D. a liquid has mass and takes up space </div> What is the arrangement of particles in a solid? <div style="display: flex; justify-content: space-between;"> A. the particles of a solid are attracted to one another B. the particles of a solid are able to move past one another </div> <div style="display: flex; justify-content: space-between;"> C. the particles of a solid vibrate but do not move past one another D. a solid has mass and takes up space </div> Which of the following statements is true? <div style="display: flex; justify-content: space-between;"> A. Liquids have a definite volume but no definite shape. B. Gases have volume but they do not have mass. </div> <div style="display: flex; justify-content: space-between;"> C. Liquids are made up of particles that are widely spaced. D. Solids are made up of particles that do not move. </div>
VI. REFLECTION		<ul style="list-style-type: none"> The learner communicates the explanation of their personal assessment as indicated in the Learner's Assessment Card. The learner, in their notebook, will write their personal insights about the lesson using the prompts below. I understand that _____. I realize that _____. I need to learn more about _____.

Prepared by: ELVIRA B. GARCIA

Checked by: Job S. Zape, Jr.

Personal Assessment on Learner's Level of Performance

Using the symbols below, choose one which best describes your experience in working on each given task. Draw it in the column for Level of Performance (LP). Be guided by the descriptions below.



★ - I was able to do/perform the task without any difficulty. The task helped me in understanding the target content/lesson.


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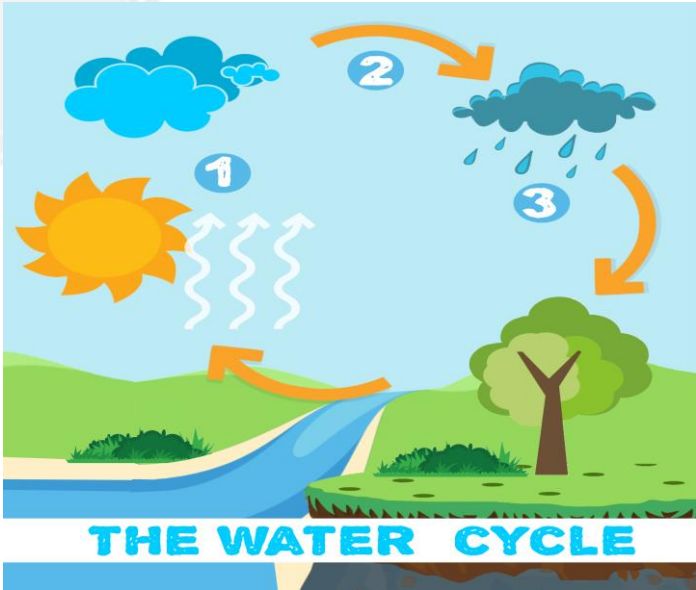
Learning Task	LP	Learning Task	LP	Learning Task	LP	Learning Task	LP
Number 1		Number 3		Number 5		Number 7	
Number 2		Number 4		Number 6		Number 8	

W3	Learning Area	Science	Grade Level	8
	Quarter	3rd	Date	March 15-19, 2021

I. LESSON TITLE	Physical Changes in Solid, Liquid and Gas
II. MOST ESSENTIAL LEARNING COMPETENCIES (MELCs)	Explain physical changes in terms of the arrangement and motion of atoms and molecules S8MT-IIIc-d-9
III. CONTENT/CORE CONTENT	

IV. LEARNING PHASES	Suggested Timeframe	Learning Activities																																																																																																																																																																																																
A. Introduction Panimula	Day 1	<p>Matter commonly exists on earth in three forms: solid, liquid, or gas- which are called as three states of matter.</p> <p>The main difference of the three is based on how the molecules move. Solid molecules are tightly packed and cannot move much, liquid molecules have more space and can move freely, while gas molecules are farther and move very fast.</p> <p>In this lesson, you will learn more about the physical changes matter undergo. To be familiar with the terms that we will discuss, answer this word search puzzle first.</p> <p>WORD SEARCH Direction: Find the words hidden in the puzzle.</p> <div><div><p>MELTING</p><p>FREEZING</p><p>CONDENSATION</p><p>EVAPORATION</p><p>SUBLIMATION</p><p>DEPOSITION</p></div><div><table><tr><td>M</td><td>S</td><td>S</td><td>V</td><td>G</td><td>N</td><td>B</td><td>X</td><td>L</td><td>J</td><td>I</td><td>C</td><td>O</td><td>B</td><td>D</td><td>V</td></tr><tr><td>E</td><td>Y</td><td>U</td><td>C</td><td>L</td><td>F</td><td>C</td><td>Y</td><td>A</td><td>M</td><td>C</td><td>N</td><td>J</td><td>F</td><td>M</td><td>L</td></tr><tr><td>L</td><td>L</td><td>B</td><td>I</td><td>E</td><td>V</td><td>A</td><td>P</td><td>O</td><td>R</td><td>A</td><td>T</td><td>I</td><td>O</td><td>N</td><td>M</td></tr><tr><td>T</td><td>N</td><td>L</td><td>Q</td><td>P</td><td>S</td><td>L</td><td>M</td><td>L</td><td>F</td><td>B</td><td>Q</td><td>J</td><td>M</td><td>R</td><td>T</td></tr><tr><td>I</td><td>D</td><td>I</td><td>G</td><td>D</td><td>E</td><td>P</td><td>O</td><td>S</td><td>I</td><td>T</td><td>I</td><td>O</td><td>N</td><td>Q</td><td>F</td></tr><tr><td>N</td><td>U</td><td>M</td><td>F</td><td>Z</td><td>G</td><td>L</td><td>P</td><td>R</td><td>S</td><td>G</td><td>H</td><td>X</td><td>Y</td><td>W</td><td>S</td></tr><tr><td>G</td><td>X</td><td>A</td><td>H</td><td>E</td><td>J</td><td>P</td><td>F</td><td>T</td><td>O</td><td>U</td><td>H</td><td>B</td><td>Y</td><td>I</td><td>V</td></tr><tr><td>U</td><td>V</td><td>T</td><td>R</td><td>N</td><td>Z</td><td>T</td><td>X</td><td>N</td><td>S</td><td>A</td><td>N</td><td>Y</td><td>Y</td><td>G</td><td>K</td></tr><tr><td>M</td><td>K</td><td>I</td><td>F</td><td>C</td><td>O</td><td>N</td><td>D</td><td>E</td><td>N</td><td>S</td><td>A</td><td>T</td><td>I</td><td>O</td><td>N</td></tr><tr><td>N</td><td>S</td><td>O</td><td>H</td><td>Q</td><td>D</td><td>P</td><td>D</td><td>U</td><td>U</td><td>F</td><td>R</td><td>S</td><td>Z</td><td>S</td><td>D</td></tr><tr><td>D</td><td>X</td><td>N</td><td>S</td><td>F</td><td>R</td><td>E</td><td>E</td><td>Z</td><td>I</td><td>N</td><td>G</td><td>F</td><td>E</td><td>Y</td><td>S</td></tr><tr><td>U</td><td>S</td><td>R</td><td>T</td><td>R</td><td>X</td><td>W</td><td>H</td><td>O</td><td>P</td><td>E</td><td>Z</td><td>O</td><td>W</td><td>F</td><td>O</td></tr></table></div></div>	M	S	S	V	G	N	B	X	L	J	I	C	O	B	D	V	E	Y	U	C	L	F	C	Y	A	M	C	N	J	F	M	L	L	L	B	I	E	V	A	P	O	R	A	T	I	O	N	M	T	N	L	Q	P	S	L	M	L	F	B	Q	J	M	R	T	I	D	I	G	D	E	P	O	S	I	T	I	O	N	Q	F	N	U	M	F	Z	G	L	P	R	S	G	H	X	Y	W	S	G	X	A	H	E	J	P	F	T	O	U	H	B	Y	I	V	U	V	T	R	N	Z	T	X	N	S	A	N	Y	Y	G	K	M	K	I	F	C	O	N	D	E	N	S	A	T	I	O	N	N	S	O	H	Q	D	P	D	U	U	F	R	S	Z	S	D	D	X	N	S	F	R	E	E	Z	I	N	G	F	E	Y	S	U	S	R	T	R	X	W	H	O	P	E	Z	O	W	F	O
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B. Development Pagpapaunlad	Day 1	<p>Matter can change from one state to another without a change in chemical composition. This physical change is called Phase Change.</p> <p>Melting happens when solid turns to liquid. When solid is heated, it absorbs energy enough to overcome the force that holds the particles together. The attraction between particles becomes less allowing them to move freely. When this happens, the melting point of the solid is reached and the solid melts. Melting point is the temperature at which solid turns into a liquid.</p> <div><p>"Ice in glass" by jgbarah is licensed with CC BY-SA 2.0. To view a copy of this license, visit https://creativecommons.org/licenses/by-sa/2.0/</p></div> <p>If more heat is added, liquid particles move rapidly and farther apart. At this point, boiling point is reached. Boiling point is the temperature at which vapor</p>																																																																																																																																																																																																

IV. LEARNING PHASES	Suggested Timeframe	Learning Activities
		<p>pressure becomes high that causes bubbles to form inside the body of the liquid and evaporation happens. Evaporation is the change from liquid to gas. As liquid absorbs energy when heated, the closer particles of liquid become separated. There will be less attraction between particles which allows them to move freely.</p>  <p><small>"Boiling Water" by Skakeman (Archive) is licensed with CC BY 2.0. To view a copy of this license, visit https://creativecommons.org/licenses/by/2.0/</small></p> <p>The reverse process can also happen. A gas can be cooled to become liquid. This process is called condensation. Condensation happens when a gas turns into a liquid. When a gas loses heat, the particles become closer and roll over as it turns into liquid.</p>  <p><small>"Fanciful Condensation - Condensation fantasiste" by monteregina is licensed with CC BY-NC-SA 2.0. To view a copy of this license, visit https://creativecommons.org/licenses/by-nc-sa/2.0/</small></p> <p>Further cooling of the liquid causes freezing or solidification. This process allows the particles to get closer and have rigid position. The particles can no longer move freely instead, they will just vibrate. The temperature wherein a liquid solidifies is called freezing point.</p>  <p><small>"Trio of Summer Fruit Ice Creams" by jessicafm is licensed with CC BY-ND 2.0. To view a copy of this license, visit https://creativecommons.org/licenses/by-nd/2.0/</small></p>
<p>C. Engagement Pakikipagpalihan</p>	<p>Day 2</p>	<p>Learning Task 1 Match column A with column B.</p> <div> <div> <p>Column A</p> <ul style="list-style-type: none"> _____ 1. Phase Change _____ 2. Freezing _____ 3. Condensation _____ 4. Melting _____ 5. Evaporation _____ 6. Freezing point _____ 7. Boiling point _____ 8. Melting point _____ 9. 100°C _____ 10. 0°C </div> <div> <p>Column B</p> <ul style="list-style-type: none"> a. temperature wherein a liquid solidifies b. change from one state to another without a change in chemical composition c. the temperature at which solid turns into a liquid d. the temperature at which vapor pressure becomes high that causes bubbles to form inside the body of the liquid e. the change from liquid to gas f. happens when solid turns to liquid g. freezing and melting point of water h. boiling point of water i. happens when a gas turns into a liquid </div> </div>

IV. LEARNING PHASES	Suggested Timeframe	Learning Activities
	Day 3	<p>Learning Task 2 Draw an example of each phase change that you can observe at home.</p> <div data-bbox="619 342 1048 810"> <p>MELTING</p> </div> <div data-bbox="1072 342 1497 810"> <p>EVAPORATION</p> </div> <div data-bbox="609 869 1034 1337"> <p>CONDENSATION</p> </div> <div data-bbox="1058 869 1484 1337"> <p>FREEZING</p> </div>
<p>D. Assimilation <i>Paglalapad</i></p>	Day 4	<p>Below is a water cycle diagram. Label the arrows with the correct word that corresponds to the process involved.</p>  <p>THE WATER CYCLE</p>

IV. LEARNING PHASES	Suggested Timeframe	Learning Activities
VI. REFLECTION		<ul style="list-style-type: none"> The learner communicates the explanation of their personal assessment as indicated in the Learner's Assessment Card. The learner, in their notebook, will write their personal insights about the lesson using the prompts below. I understand that _____. I realize that _____. I need to learn more about _____.

Prepared by:	Louise A. De Guzman	Checked by:	Job S. Zape, Jr.
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Personal Assessment on Learner's Level of Performance

Using the symbols below, choose one which best describes your experience in working on each given task. Draw it in the column for Level of Performance (LP). Be guided by the descriptions below.



- I was able to do/perform the task without any difficulty. The task helped me in understanding the target content/lesson.

- I was able to do/perform the task. It was quite challenging but it still helped me in understanding the target content/lesson.

- I was not able to do/perform the task. It was extremely difficult. I need additional enrichment activities to be able to do/perform this task.

Learning Task	LP	Learning Task	LP	Learning Task	LP	Learning Task	LP
Number 1		Number 3		Number 5		Number 7	
Number 2		Number 4		Number 6		Number 8	

W4	Learning Area	SCIENCE	Grade Level	8
	Quarter	THIRD	Date	MARCH 22-26, 2021

I. LESSON TITLE		Physical Changes in Solid, Liquid and Gas
II. MOST ESSENTIAL LEARNING COMPETENCIES (MELCs)		Explain physical changes in terms of the arrangement and motion of atoms and molecules S8MT-IIIc-d-9
III. CONTENT/CORE CONTENT		
IV. LEARNING PHASES	Suggested Timeframe	Learning Activities
A. Introduction <i>Panimula</i>	Day 1	<p>From the previous lesson, you have learned that when heat is added to a solid, its temperature rises. This causes the particles to vibrate rapidly and the melting point of the solid is reached and the solid melts. When an object absorb heat, there is a corresponding increase in temperature.</p> <p>On the other hand, If heat is added, liquid particles move faster and additional heat results in the transformation of liquid into gas. At this point, temperature is reached at which vapor pressure of a liquid equals the external pressure surrounding the liquids is called boiling point.</p> <p>Moreover, A reverse process also happens when liquid turns into a solid. In this process heat is removed from liquid. The temperature wherein a liquid solidifies is called freezing point.</p> <p>Some molecules of water have enough kinetic energy to overcome the attraction of neighboring molecules and escape from the surface of the liquid and eventually move into the air. To break away from the surface of the liquid, the molecules must have at least some minimum kinetic energy. The process by which the molecules on the surface of a liquid break away and change into gas is called evaporation. Usually, it is described as the process where a liquid is changed into a gas.</p> <p>In this lesson, you will learn more about the physical changes matter undergo. Changes in physical state from solid to liquid and to gas or vice versa are common. However, some substances change from solid to gas without passing through the liquid state. This change is called sublimation. Examples of substances that undergoes this kind of changes are dry ice, mothballs, toilet bowl deodorizer.</p> <p>A reverse reaction in which a gas changes directly to solid without passing through the liquid state also happens and this is called deposition. An example of this changes is when water vapor changes directly into frost formation.</p> <div data-bbox="718 1520 1388 1841"> </div>

**THE SIX WAYS
PHASES OF MATTER
CHANGE**

IV. LEARNING PHASES	Suggested Timeframe	Learning Activities
C. Engagement Pakikipagpalihan	Day 3	<p>Activity 2.3 Direction: Write the correct word that describes the phase changes of water shown in each of the pictures below. (Evaporation, Condensation, Sublimation, Deposition, Freezing or Melting)</p> <div> <div>1. _____</div> <div>2. _____</div> <div>3. _____</div> <div>4. _____</div> <div>5. _____</div> <div>6. _____</div> <div>7. _____</div> <div>8. _____</div> </div> <div>  <p>DEW 1</p> </div> <div>  <p>BOILING WATER 2</p> </div> <div>  <p>SOLIDIFIED LAVA 3</p> </div> <div>  <p>4</p> </div> <div>  <p>DRYING LAUNDRY 5</p> </div> <div>  <p>HAILSTORM 6</p> </div> <div>  <p>ICE CUBES LEFT OUT 7</p> </div> <div>  <p>DRY ICE 8</p> </div>



IV. LEARNING PHASES	Suggested Timeframe	Learning Activities
D. Assimilation <i>Paglalapad</i>	Day 4	<p>Essay: Condensation is the change of matter from gas to liquid. On the other hand, sublimation is a change from solid to gas. What happens during condensation and sublimation? Describe the arrangement of particles during such transformation.</p>
V. ASSESSMENT (Learning Activity Sheets for Enrichment, Remediation or Assessment to be given on Weeks 3 and 6)		<p>Choose the letter of the best answer. Write the chosen letter on a separate sheet of paper.</p> <ol style="list-style-type: none"> Which part of the water cycle is occurring when warm, moist air cools and begins forming clouds? <div> A. transpiration B. evaporation C. condensation D. precipitation </div> Which is NOT a way that matter changes phase? <div> A. melting B. freezing C. evaporation D. mixing </div> The drops of water that appear on the outside of a glass of cold juice on a warm day is an example of? <div> A. condensation B. evaporation C. sublimation D. precipitation </div> Which of the following BEST explain the physical changes in terms of the arrangement and motion of atoms and molecules during boiling point? <div> A. temperature is reached at which vapor pressure of a liquid equals the external pressure surrounding the liquids B. A reverse reaction in which a gas changes directly to solid without passing through the liquid state C. substances change from solid to gas without passing through the liquid state D. molecules on the surface of a liquid break away and change into gas </div> Which of the following BEST explain the physical changes in terms of the arrangement and motion of atoms and molecules during boiling point? <div> A. A reverse reaction in which a gas changes directly to solid without passing through the liquid state B. temperature is reached at which vapor pressure of a liquid equals the external pressure surrounding the liquids C. substances change from solid to gas without passing through the liquid state D. A reverse process also happens when liquid turns into a solid. In this process heat is removed from liquid </div>
VI. REFLECTION		<ul style="list-style-type: none"> The learner communicates the explanation of their personal assessment as indicated in the Learner's Assessment Card. The learner will write their personal insights on their notebook or portfolio about the lesson using the prompts below. I understand that _____. I realize that _____. I need to learn more about _____.
Prepared by: ELVIRA B. GARCIA		Checked by: SHEILAH MAY M. VILLAMOR

References:

Science Grade 8 – Learner's Manual
Science Grade 8 – Teacher's Guide

W5	Learning Area	Science	Grade Level	8
	Quarter	3rd	Date	April 5-9, 2021


I. LESSON TITLE	Atomic Theory
II. MOST ESSENTIAL LEARNING COMPETENCIES (MELCs)	1. Determine the number of protons, neutrons, and electrons in a particular atom; S8MT-IIIe-f-10
III. CONTENT/CORE CONTENT	


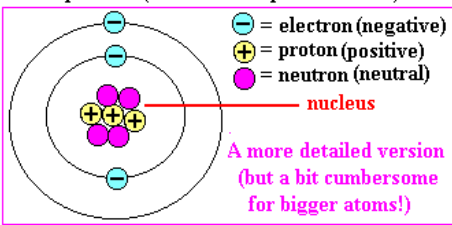
IV. LEARNING PHASES	Suggested Timeframe	Learning Activities												
A. Introduction <i>Panimula</i>	Day 1	<p>In the previous module, you learned about the different states of matter namely solid, liquid and gas. You also discovered the properties and physical changes it undergoes. In this module, you learn about the tiny particles matter is made up of. Those tiny particles are called atoms. What then are atoms? And how do scientists discover atoms? These are the questions that will be able to answer at end of the lesson.</p> <p>4 pics 1 word</p> <p>Directions: Identify the word in each item using the four pictures shown as a clue.</p> <div><div><div><div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div></div><div></div><div></div><div></div><div></div></div></div></div><div><div><div><div><div></div><div></div><div></div><div></div></div><div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div></div></div></div></div></div>												
C. Engagement <i>Pakikipagpalihan</i>	Day 2	<p>Learning Task 1</p> <p>Direction: Match column A with column B.</p> <table><tr><td>A</td><td>B</td></tr><tr><td>1. Democritus</td><td>A. Plum Pudding or Raisin Bread Model</td></tr><tr><td>2. John Dalton</td><td>B. atoms are small, hard particles</td></tr><tr><td>3. J. J. Thomson</td><td>C. Alpha Particle Scattering Experiment</td></tr><tr><td>4. Ernest Rutherford</td><td>D. electrons move around the nucleus</td></tr><tr><td>5. Niels Bohr</td><td>E. electrons are found in regions around the nucleus called electron cloud</td></tr></table>	A	B	1. Democritus	A. Plum Pudding or Raisin Bread Model	2. John Dalton	B. atoms are small, hard particles	3. J. J. Thomson	C. Alpha Particle Scattering Experiment	4. Ernest Rutherford	D. electrons move around the nucleus	5. Niels Bohr	E. electrons are found in regions around the nucleus called electron cloud
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IV. LEARNING PHASES	Suggested Timeframe	Learning Activities
		<p>6. Erwin Schrödinger & Werner Heisenberg</p> <p>7. Nucleus</p> <p>8. Proton</p> <p>9. Electron</p> <p>10. Neutron</p> <p>F. atomic theory (elements combine in certain proportions to form compounds)</p> <p>G. Positively charged particle</p> <p>H. Negatively charged particle</p> <p>I. Neutral charge</p> <p>J. Center of an atom (contains protons and neutrons)</p>
D. Assimilation Paglalapat	Day 3	Based on your prior knowledge about atom, draw your own model of an atom. Do this on a separate sheet of paper.
V. ASSESSMENT (Learning Activity Sheets for Enrichment, Remediation or Assessment to be given on Weeks 3 and 6)	Day 4	<p>Direction: Choose the letter of the best answer. Write the chosen letter on a separate sheet of paper.</p> <p>1. An electron is in a region outside the nucleus. How will you describe an electron?</p> <p>A. Has a positive charge B. Is larger than a proton and has no charge C. Is smaller than a proton and has no charge D. Has less mass than a proton and has a negative charge</p> <p>2. What subatomic particle has a negative charge?</p> <p>A. electron C. neutron B. proton D. isotopes</p> <p>3. Who discovered the electron of an atom?</p> <p>A. Eugen Goldstein C. J.J. Thomson B. Ernest Rutherford D. James Chadwick</p> <p>4. Which scientist discovered the charged particle proton?</p> <p>A. Chadwick C. Rutherford B. Thomson D. Milliken</p> <p>5. Which of the following particles bear neither a positive nor a negative charge?</p> <p>A. electron C. neutron B. proton D. molecules</p>
VI. REFLECTION	Day 5	<p>· The learner communicates the explanation of their personal assessment as indicated in the Learner's Assessment Card.</p> <p>· The learner will write their personal insights on their notebook or portfolio about the lesson using the prompts below.</p> <p>I understand that _____.</p> <p>I realize that _____.</p> <p>I need to learn more about _____.</p>

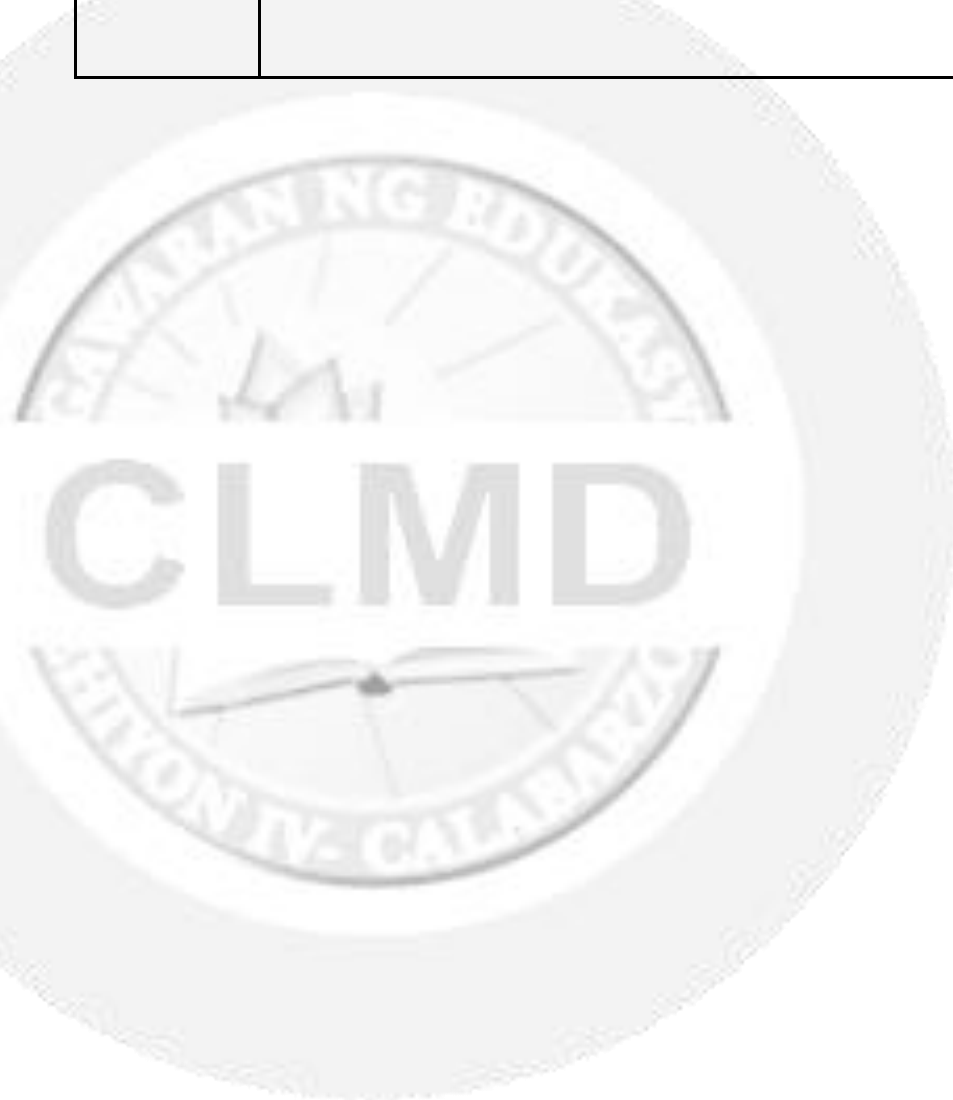
Prepared by:	LOUISE A. DE GUZMAN	Checked by:	SHEILAH MAY M. VILLAMOR
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W6	Learning Area	Science	Grade Level	8
	Quarter	3rd	Date	April 12-16, 2021

I. LESSON TITLE		Proton, Electron and Neutron
II. MOST ESSENTIAL LEARNING COMPETENCIES (MELCs)		Determine the number of protons, neutrons, and electrons in a particular atom; S8MT-IIIe-f-10
III. CONTENT/CORE CONTENT		
IV. LEARNING PHASES	Suggested Timeframe	Learning Activities
A. Introduction <i>Panimula</i>		<p>Look at the picture on the right. This is an example of an art style called Pointillism. Pointillism is an art style that uses small dots and brush strokes to create an image. This is also the same in matter. Matter is made up of tiny particles like this pointillism art work. And we call those particles "atoms". Atoms are the smallest unit of matter. It is the smallest particle of an element that has the properties of an element.</p>  <p>In the previous lesson, you learned about the history of the atom and found out that atom is made up of subatomic particles namely, protons, neutrons and electrons. In this lesson, we will know more about each subatomic particle and the relationship between each.</p>
B. Development <i>Pagpapaunlad</i>		<p>Atoms are the basic units of matter. The atoms are made up of three particles: protons, neutrons and electrons. Nucleus, the center of the atom is composed of protons and neutrons. It was discovered by Ernest Rutherford in 1911.</p> <p>PROTONS</p> <p>Protons (p^+) are positively charged particles found within the nucleus of an atom. Ernest Rutherford discovered protons in his cathode-ray tubes experiment. The number of protons of an atom is called the atomic number. Hydrogen for example has only one proton thus, its atomic number is 1. The number of protons of an element is equal to the number of electrons.</p> <p>ELECTRONS</p> <p>Electrons (e^-) are negatively charged particles found outside the nucleus of the atom, in the electron orbits or levels. Compared to protons and neutrons, electrons are many times smaller. J.J. Thomson discovered the electron in 1897. The number of electrons of an element is equal to the number of protons which is the atomic number of an element. Oxygen for example has an atomic number of 8, thus, its number of protons and electron is also 8.</p> <p>NEUTRONS</p> <p>Neutrons (n^0) are neutral particles which means that they have no electric charge. Neutrons help make up the nucleus of the atom. Ernest Rutherford theorized the existence of neutrons in 1920 and discovered by James Chadwick in 1932. The number of neutron of an element is equal to the mass number minus the number of protons of the element. Sodium for example, has a mass number of 23 and an atomic number of 11. To get the number of neutron of Sodium, subtract the atomic number 11 to the</p>

IV. LEARNING PHASES	Suggested Timeframe	Learning Activities																																																																								
		<p>mass number 23, which equals to 12.</p> <p>Different styles of atomic structure and diagram notation eg lithium: atomic number = 3 protons in the nucleus mass number = 7 = 3 protons + 4 neutrons in the nucleus Li element symbol (no sub-atomic particle information) ³Li symbol with atomic number (often seen in periodic table) ⁷Li symbol with mass number (often used to indicate particular isotope) ⁷₃Li full sub-atomic particle composition (often seen in periodic table)</p> <div><div><p>Two representations of this Lithium atom</p><div><p>• = electron p = proton n = neutron</p><p>Abbreviated version</p></div><div><p>A more detailed version (but a bit cumbersome for bigger atoms!)</p></div></div></div> <p>Reference: https://docbrown.info/page04/4_71atom.htm</p>																																																																								
C. Engagement Pakikipagpalihan		<p>Learning Task 3</p> <p>Directions: Given the Atomic Number and Mass Number of the following elements, determine the number of Protons, Neutrons and Electrons.</p> <table><tr><th>Element</th><th>Atomic Number</th><th>Mass Number</th><th>No. of Protons</th><th>No. of Electrons</th><th>No. of Neutrons</th></tr><tr><td>Boron</td><td>5</td><td>11</td><td></td><td></td><td></td></tr><tr><td>Argon</td><td>18</td><td>40</td><td></td><td></td><td></td></tr><tr><td>Krypton</td><td>36</td><td>86</td><td></td><td></td><td></td></tr><tr><td>Sulfur</td><td>16</td><td>32</td><td></td><td></td><td></td></tr><tr><td>Silver</td><td>47</td><td>108</td><td></td><td></td><td></td></tr><tr><td>Iron</td><td>26</td><td>56</td><td></td><td></td><td></td></tr><tr><td>Tin</td><td>50</td><td>119</td><td></td><td></td><td></td></tr><tr><td>Calcium</td><td>20</td><td>40</td><td></td><td></td><td></td></tr><tr><td>Magnesium</td><td>12</td><td>24</td><td></td><td></td><td></td></tr><tr><td>Aluminum</td><td>13</td><td>27</td><td></td><td></td><td></td></tr><tr><td>Copper</td><td>29</td><td>64</td><td></td><td></td><td></td></tr></table>	Element	Atomic Number	Mass Number	No. of Protons	No. of Electrons	No. of Neutrons	Boron	5	11				Argon	18	40				Krypton	36	86				Sulfur	16	32				Silver	47	108				Iron	26	56				Tin	50	119				Calcium	20	40				Magnesium	12	24				Aluminum	13	27				Copper	29	64			
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D. Assimilation Paglalapad		<p>Complete the table below.</p> <table><tr><th>PROPERTIES</th><th>ELECTRON</th><th>PROTON</th><th>NEUTRON</th></tr><tr><td>Symbol</td><td></td><td>p⁺</td><td></td></tr><tr><td>Charge</td><td>-1</td><td></td><td></td></tr><tr><td>Position</td><td></td><td>In the nucleus</td><td></td></tr><tr><td>Discovered by</td><td></td><td></td><td>James Chadwick</td></tr></table>	PROPERTIES	ELECTRON	PROTON	NEUTRON	Symbol		p ⁺		Charge	-1			Position		In the nucleus		Discovered by			James Chadwick																																																				
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V. ASSESSMENT (Learning Activity Sheets for Enrichment, Remediation or Assessment to be given on Weeks 3 and 6)		<p>Direction: Choose the letter of the best answer. Write in on a separate answer sheet.</p> <p>1. How many protons have an Aluminum atom with electron of 13? A. 15 B. 16 C. 13 D. 10 2. An atom has a mass number of 23 and atomic number 11. How many electrons are present in that atom? A. 11 B. 12 C. 23 D. 34 3. How many protons have an atom with electron of 34? A. 35 B. 36 C. 33 D. 34 4. How many protons have a hydrogen atom have?</p>																																																																								

IV. LEARNING PHASES	Suggested Timeframe	Learning Activities
		A. 0 B. 1 C. 2 D. 3 5. What is the atomic number of an atom which contains 28 protons, 28 electrons, and 34 neutrons? A. 28 B. 56 C. 62 D. 90
VI. REFLECTION		<ul style="list-style-type: none"> The learner communicates the explanation of their personal assessment as indicated in the Learner's Assessment Card. The learner, in their notebook, will write their personal insights about the lesson using the prompts below. I understand that _____. I realize that _____. I need to learn more about _____.
Prepared by:	LOUISE A. DE GUZMAN	Checked by: SHEILAH MAY M. VILLAMOR



W7	Learning Area	SCIENCE	Grade Level	8
	Quarter	THIRD	Date	April 19-23, 2021

I. LESSON TITLE		The Development of the Periodic Table
II. MOST ESSENTIAL LEARNING COMPETENCIES (MELCs)		Trace the development of the periodic table from observations based on similarities in properties of elements; S8MT-IIIg-h-11
III. CONTENT/CORE CONTENT		
IV. LEARNING PHASES	Suggested Timeframe	Learning Activities
A. Introduction <i>Panimula</i>		<p>In your previous grade level, the elements were already introduced as part of pure substances. You have done activities to differentiate elements with compounds. Based from those activities, you must have observed that no two elements are the same. Each element has its own unique property. Just like Hydrogen and Oxygen, they are two different elements with different sets of properties. With so many elements around us, it was a brilliant work done by the scientists to organize these elements based on the similarities of properties and eventually after series of revisions based on increasing atomic number. This useful tool is called Periodic Table of Elements.</p> <p>In this lesson, you will learn about the arrangement of elements in the periodic table. In this lesson you will learn about scientists who tried to arrange the elements according to their properties. You will discover what the different groups are and the basis in forming these kinds of arrangements. You will also identify which of the elements are considered as metals, non-metals, and metalloids</p>
B. Development <i>Pagpapaunlad</i>		<p>The following are some of the scientists who tried to arrange the elements according to their properties. These ideas had become helpful in arranging the elements in the modern periodic table we have now.</p> <ul style="list-style-type: none"> • John Dobereiner (1829) – was a German scientist who developed the Law of Triads. Each triad was composed of set of three elements that have similar properties. • John Newlands (1863) – was an English Chemist who proposed the Law of Octaves. He arranged the elements in order of increasing atomic mass and he discovered that every seventh element had similar properties and he called them octaves. • Dmitri Mendeleev (1869) – who first published his periodic table in 1869, was a Russian chemist who arranged the elements in order of increasing atomic mass while putting groups in those with similar properties. The elements were arranged in rows and columns and he left blank spaces for elements to be discovered because of the pattern he saw. • Lothar Meyer (1864) – was German chemist. He arranged 28 elements into 6 families with similar chemical and physical traits. He came up with the same conclusion as Dmitri Mendeleev. • William Ramsay (1894) – was a British chemist who discovered four noble gases (neon, krypton, and xenon) and showed that those gases (together with Helium and Radon) formed a new family of elements named Noble Gases. • Henry Moseley (1913) - was a British physicist who used X-ray to order the elements and discovered that each element has a unique emission pattern

IV. LEARNING PHASES	Suggested Timeframe	Learning Activities
		<p>when X-rayed. He demonstrated that properties of an element are determined by the atomic number.</p> <ul style="list-style-type: none"> • Glenn Seaborg (1944) – was an American chemist who identified lanthanides and actinides.
C. Engagement <i>Pakikipagpalihan</i>		<p>Activity 1.2a</p> <p>Organize your desk drawer</p> <p>Procedures:</p> <ol style="list-style-type: none"> 1. Place the following objects on your desk: pen binder clips bond paper notebook thumb tacks pencil paper clip marker index cards 2. Suppose you want to organize these objects into bins for a desk drawer. Separate the objects into three or four groups each containing at least two items that are similar. 3. Choose a short descriptive name for each group. <p>Activity 1. 2b</p> <p>Based on the activity given above, answer the following questions. Write your answer on the space provided.</p> <p>Guide Questions:</p> <p>Q1. List the physical characteristics of the objects that caused you to place them together.</p> <p>_____</p> <p>Q2. What are the advantages of grouping the objects?</p> <p>_____</p> <p>Q3. Identify another item that could be added to each group.</p> <p>_____</p>
D. Assimilation <i>Paglalapad</i>		<p>List 3 elements that are found in food (fruits, vegetables, drinks, etc.) needed by the human body for nourishment, indicate its roles and functions.</p>
V. ASSESSMENT (Learning Activity Sheets for Enrichment, Remediation or Assessment to be given on Weeks 3 and 6)		<p>Direction: Choose the letter of the best answer. Write in on a separate answer sheet.</p> <ol style="list-style-type: none"> 1. Who was the scientist credited with devising the first periodic table similar with the one we use today? <ul style="list-style-type: none"> A. John Dalton B. Dmitri Mendeleev C. Gregor Mendel D. Ernest Rutherford 2. Whose work led to a periodic table based on increasing atomic number? <ul style="list-style-type: none"> A. Henry Moseley B. Dmitri Mendeleev C. Ernest Rutherford D. Neils Bohr 3. Who classified the known elements into eight groups?


IV. LEARNING PHASES	Suggested Timeframe	Learning Activities
		<p>A. John Newlands B. Dmitri Mendeleev C. Lothar Meyer D. Erwin Schrodinger</p> <p>4. Who created the periodic table and how is it organized? A. Dmitri Mendeleev; atomic weight B. Neils Bohr; atomic properties only C. Neils Bohr; atomic weight D. Dmitri Mendeleev; atomic properties only</p> <p>5. Who discovered the noble gases neon, krypton and xenon? A. William Ramsay B. Henry Moseley C. Dimitri Mendeleev D. Lothar Meyer</p>
VI. REFLECTION		<ul style="list-style-type: none"> The learner communicates the explanation of their personal assessment as indicated in the Learner's Assessment Card. The learner will write their personal insights on their notebook or portfolio about the lesson using the prompts below. I understand that _____. I realize that _____. I need to learn more about _____.
Prepared by:	ROLDAN C. SAYOTO	Checked by: SHEILAH MAY M. VILLAMOR

W8	Learning Area	SCIENCE	Grade Level	8
	Quarter	THIRD	Date	April 26-30, 2021

I. LESSON TITLE	Arrangement of Elements
II. MOST ESSENTIAL LEARNING COMPETENCIES (MELCs)	Use the periodic table to predict the chemical behavior of an element. S8MT-III-j-12
III. CONTENT/CORE CONTENT	

IV. LEARNING PHASES	Suggested Timeframe	Learning Activities
A. Introduction <i>Panimula</i>		<p>In this lesson, you will learn more about the arrangement of elements using periodic table to predict the chemical behavior of an element. You will discover what the different groups are and the basis in forming these kinds of arrangements. You will also identify which of the elements are considered as metals, non-metals, and metalloids. And how can you classify the group of elements just by looking at its valence configuration.</p> <p>The periodic table of elements arranges all of the known chemical elements in an informative array to provide useful facts for learning. The rows are called period while columns are called groups.</p>
B. Development <i>Pagpapaunlad</i>		<p>The periodic table of elements arranges all of the known chemical elements in an informative array to provide useful facts for learning. The following are the useful information about the periodic table to help you predict the chemical behavior of an element.</p> <div data-bbox="582 967 1487 1601" data-label="Image"> </div> <p>Elements in the periodic table are arranged in periods (row nos. 1-7) and groups (column nos. 1-18). Atomic number increases as you move across a period.</p> <ul style="list-style-type: none"> Metals are located on the left side of the periodic staircase on the periodic table. They are malleable, ductile, good conductors of heat and electricity, solid at room temperature (except for Mercury), and they have a high luster (they are shiny). Metals make up most of the elements in the periodic table. Nonmetals are located on the right side of the periodic staircase on the periodic table (except for Hydrogen). They are brittle, not ductile, poor

IV. LEARNING PHASES	Suggested Timeframe	Learning Activities
		<p>conductors of heat and electricity, and they have a low luster. Most are gases at room temperature, but some are solids and Bromine is a liquid.</p> <ul style="list-style-type: none"> · Metalloids have properties of both metals and nonmetals. · The periodic table consists of Representative Elements and Transition Elements (Transition Metals and Inner Transition Metals). Representative Elements on many periodic tables are labeled Group A and the Transition Elements are labeled group B. <ul style="list-style-type: none"> · The Representative Elements are found in groups 1 through 2 and 13 through 18 in the periodic table. · The transition metals are groups 3 through 12 in the middle of the periodic table. · The inner transition metals are found underneath the periodic table. The Lanthanide series belongs in period 6 and the Actinide series belongs in period 7. · Elements in a group share similar chemical and physical properties. There are groups of elements in the periodic table that are given special names. <ul style="list-style-type: none"> · Alkali metals (Li, Na, K, Rb, Cs, Fr), excluding Hydrogen, are found in Group 1 or also called group 1A. Alkali metals are very abundant in nature. They share many similar chemical and physical properties for example they have low densities and low melting and boiling points. · Alkaline Earth Metals (Be, Mg, Ca, Sr, Ba, Ra) are found in Group 2 (2A). They are very reactive, likely to bond with other elements. · Halogens (F, Cl, Br, I, At) are found in Group 17 (7A). A halogen will easily bond with an alkali metal (whom wants to lose 1e⁻), together they form a salt. Example NaCl (sodium chloride) is table salt. · Noble Gases (He, Ne, Ar, Kr, Xe, Rn) are found in Group 18 (8A). are the most stable of the elements (non-reactive). Noble gases share properties like high densities, high melting points, colorless, odorless, and tasteless. · Lanthanide Series include the "rare-earth elements" and are found on the top row of the inner transition metals, these elements are part of period 6. All the elements in the lanthanide series have common properties to the element Lanthanum. · Actinide Series The actinide series includes all radioactive metals. All the elements in the lanthanide series have common properties to the element Actinium.
C. Engagement Pakikipagpalihan		<p>Activity 2.2a</p> <p>Periodic Table Scavenger Hunt</p> <p>With the help of your periodic table, search the answer to these questions</p>

IV. LEARNING PHASES	Suggested Timeframe	Learning Activities
		<p>_____ 1. Which element is number 14 on the periodic table?</p> <p>_____ 2. What is the element symbol for californium?</p> <p>_____ 3. How many protons are in an atom of bismuth?</p> <p>_____ 4. To which element group does argon belong?</p> <p>_____ 5. Which element would you expect to have a higher mass: cadmium or zinc?</p> <p>_____ 6. What is the atomic mass of carbon?</p> <p>_____ 7. What do you call the element series from atomic number 57-71?</p> <p>_____ 8. Which element has a symbol that starts with a letter different from the first one in its name: aluminum, copper, gold, rhenium?</p> <p>_____ 9. Which element has the lowest atomic mass?</p> <p>_____ 10. What is the first element with an atomic mass greater than 100?</p> <p>Activity 2.2b: Color the Periodic Table</p> <p>Directions: Color the periodic table below. Use green color for metals, blue for nonmetals and pink for metalloids then answer the guide questions briefly. Write your answer on the space provided:</p>  <p>Guide Questions</p> <p>1. How are the elements in the periodic table arranged?</p> <p>_____</p> <p>2. What are the different groups and periods in the periodic table of elements?</p> <p>_____</p> <p>3. How can we classify the group of element by just looking at its valence configuration?</p> <p>_____</p> <p>4. What are the difference between metal, non-metal, and metalloid?</p> <p>_____</p>
D. Assimilation Paglalapat		<p>Each element in the Periodic Table has its unique characteristics. If you are to become one of the elements in the Periodic Table, what element would you want to be? Why?</p> <p>_____</p>

IV. LEARNING PHASES	Suggested Timeframe	Learning Activities
V. ASSESSMENT (Learning Activity Sheets for Enrichment, Remediation or Assessment to be given on Weeks 3 and 6)		<p>Direction: Choose the letter of the best answer. Write in on a separate answer sheet.</p> <ol style="list-style-type: none"> What is the organizational system/chart for elements? <ol style="list-style-type: none"> Atomic weight Families Periodic table Atomic number What do you call the horizontal row of elements in a periodic table of elements? <ol style="list-style-type: none"> Group Family Period column How many groups/family and period does a Periodical Table have? <ol style="list-style-type: none"> There are 17 groups/family and 7 periods There are 18 groups/family and 7 periods There are 7 groups/family and 18 periods There are 18 groups/family and 6 periods Which of the following are the three major groups of elements in the periodic table? <ol style="list-style-type: none"> Metals, non-metals, metalloids Metals, conductors, metalloids Metals, conductors, insulators Non-metals, conductors, insulators In which area of the periodic table does the carbon and other non-metals can be found? <ol style="list-style-type: none"> on the left side in the bottom rows on the right side in the middle part
VI. REFLECTION		<ul style="list-style-type: none"> The learner communicates the explanation of their personal assessment as indicated in the Learner's Assessment Card. The learner will write their personal insights on their notebook or portfolio about the lesson using the prompts below. I understand that _____. I realize that _____. I need to learn more about _____.
Prepared by: ROLDAN C. SAYOTO	Checked by: SHEILAH MAY M. VILLAMOR	