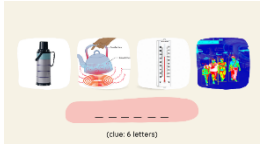
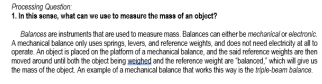
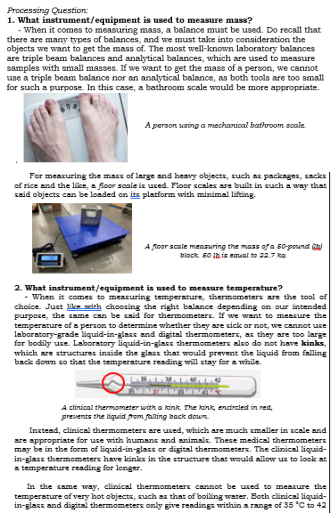
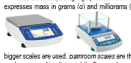
DAILY LESSON LOG FOR IN-PERSON CLASSES	School:		Grade and Section:	V -
	Teacher:		Subject:	SCIENCE
	Teaching Dates:	AUGUST 04 – 08, 2025 (WEEK 8)	Quarter:	FIRST QUARTER

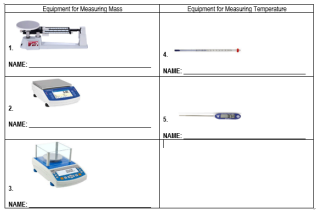
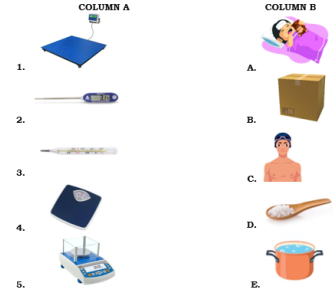
MATATAG CURRICULUM/ REVISED K-12 CURRICULUM	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
I. CURRICULUM CONTENT, STANDARDS, AND LESSON COMPETENCIES					
A. Content Standards	The learners learn that: 1) Scientists identify three states of matter based on shape and volume. 2) Temperature can cause changes of state. 3) Planned simple scientific investigations require several steps and processes. 4) An understanding of matter can be applied to solve real world problems.				
B. Performance Standards	By the end of the quarter, learners describe three states of matter based on properties of shape and volume and identify heat as being involved in changes of state. They plan a simple scientific investigation following appropriate steps and using units such as milliliters, liters, grams, kilograms, and degrees Celsius for measuring.				
C. Learning Competencies and Objectives	**Learning Competency:** The learners plan simple scientific investigations in answering questions, such as "Do gases (like air) or liquids (like water) have mass?", using appropriate simple science equipment, such as a balance, and a thermometer, with appropriate units. *Lesson Objectives:* The learners will be able to: **1.** record measurements using mechanical and/or electronic balances, and liquid-in-glass thermometers and/or digital thermometers; **2.** identify the appropriate science equipment to use for a given test; and **1.** perform simple scientific investigation to get the measurement (mass) of a given sample of air and liquid water.				
D. Content	1. Using Balances and Thermometers a. Using a triple beam balance and an electronic analytical balance b. Using a liquid-in-glass thermometer and a digital laboratory thermometer 2. Planning Simple Scientific Investigations Using Appropriate Simple Science Equipment a. Identifying the equipment needed based on the nature of the test Proving gases and liquids are matter by taking their mass.				
E. Integration	Environmental Awareness: Relate how climate change may make temperatures too warm or too cold for humans to live. Safety: When conducting experiments even with common materials, precaution and safety procedures must still be followed. Accountability and Responsibility: Learners should understand that different materials can be beneficial if use in the right and proper way and can be harmful if used otherwise. Measuring Skill (Science Process Skill Focus): Value of Precision				
LEARNING CONTENT	**USING BALANCES AND THERMOMETERS**	**USING BALANCES AND THERMOMETERS**	**PLANNING SIMPLE SCIENTIFIC INVESTIGATIONS USING**	**USING BALANCES AND THERMOMETERS**	**WEEKLY TEST**

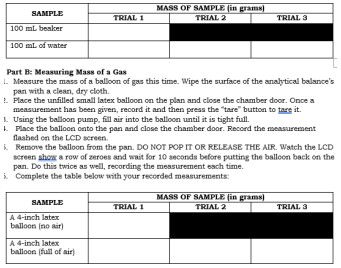
			APPROPRIATE SIMPLE SCIENCE EQUIPMENT		
II. LEARNING RESOURCES					
a. References	Masong, R. (2024). Lesson Exemplar for Science Philippine Normal University Research Institute for Teacher Quality SiMMER National Research Centre Department of Education. (2023). MATATAG Curriculum Phase 1 SY 2024-2025. Retrieved from https://www.deped.gov.ph/matatagcurriculumk147/	Masong, R. (2024). Lesson Exemplar for Science Philippine Normal University Research Institute for Teacher Quality SiMMER National Research Centre Department of Education. (2023). MATATAG Curriculum Phase 1 SY 2024-2025. Retrieved from https://www.deped.gov.ph/matatagcurriculumk147/	Masong, R. (2024). Lesson Exemplar for Science Philippine Normal University Research Institute for Teacher Quality SiMMER National Research Centre Department of Education. (2023). MATATAG Curriculum Phase 1 SY 2024-2025. Retrieved from https://www.deped.gov.ph/matatagcurriculumk147/	Masong, R. (2024). Lesson Exemplar for Science Philippine Normal University Research Institute for Teacher Quality SiMMER National Research Centre Department of Education. (2023). MATATAG Curriculum Phase 1 SY 2024-2025. Retrieved from https://www.deped.gov.ph/matatagcurriculumk147/	Masong, R. (2024). Lesson Exemplar for Science Philippine Normal University Research Institute for Teacher Quality SiMMER National Research Centre Department of Education. (2023). MATATAG Curriculum Phase 1 SY 2024-2025. Retrieved from https://www.deped.gov.ph/matatagcurriculumk147/
III. TEACHING AND LEARNING PROCEDURE					
a. Activating Prior Knowledge	***Directions:*** *Answer the following questions:* 1. Can anybody from the class recall for me what were the different units of measurement that we learned about? - The units of measurement that we learned are the *milligrams*, *grams*, *kilograms*, and *degrees Celsius*, a type of a centigrade scale. 2. What physical quantity do grams, milligrams, and kilograms describe? - All of them describe **mass**. As you may recall, the mass of an object is the amount of matter it has.	**Directions:** Write **TRUE** if the statement is correct, **FALSE** if not. _____ 1. A triple-beam balance is an example of an electronic balance. → **False** (*It is a mechanical balance.*) _____ 2. Digital thermometers can show the temperature reading faster than liquid-in-glass thermometers. → **True** _____ 3. Analytical balances are used to measure very heavy objects like people or packages. → **False** (*Analytical balances are used to measure very light substances.*)	**Directions:** Write **TRUE** if the statement is correct, **FALSE** if not. 1. **Milligrams, grams, and kilograms** are units used to measure the **temperature** of an object. → **False** (*They are used to measure mass, not temperature.*) 2. **Degrees Celsius (°C)** is a unit used to describe how hot or cold something is. → **True** 3. A **balance** is the correct instrument to use when measuring an object's **mass**. → **True** 4. You can measure the **mass** of an object using a **thermometer**.	**Directions:** Answer the following questions: 1. What type of equipment do we use to measure mass? ______________________ 2. What type of equipment do we use to measure temperature? ______________________ 3. Would you use an analytical balance to measure your bodyweight? Why or why not? What kind of balance should you use? ______________________ 4. Would you use a laboratory liquid-in-glass thermometer to measure your body temperature? Why or why not? What kind of thermometer should you use?	

	3. On the other hand, what physical quantity does the degrees Celsius describe? - It describes **temperature**. As you may know, the temperature of an object tells us how cold or how hot an object is. Lastly, let us go back to milligrams, grams, and kilograms. 4. Which among the three measurements describes the greatest amount of mass: one milligram, one gram, or one kilogram? - One kilogram has the greatest amount of mass, as one kilogram is equal to one thousand (1000) grams. On the other hand, the milligram has the least amount of mass, as it contains only one-thousandth ($\frac{1}{1000}$) the mass of a gram.	_____4. A bathroom scale is used to measure a person's body mass in kilograms. → **True** _____5. In liquid-in-glass thermometers, the liquid rises when the temperature increases. → **True**	→ **False** (*Thermometers are for measuring temperature.*) 5. Both **mechanical** and **electronic balances** can be used to find the mass of an object, depending on the situation. → **True**	_____	
b. Establishing Lesson Purpose	"Class, have you ever joined your parents on a trip to the market before?" Processing Questions: 1. Whenever your parents buy fish, meats, vegetables, and rice, what do the vendors do to these items before mentioning their price? - The vendors weigh the items on a scale first. These	Guess the correct word based on the clues given. 1.  2. 			

	weighing scales allow vendors to know how much of the item is being bought (in mass) and for how much it can be sold for (in cash). Now, I also want you to recall the times when you have had a fever. 2. What did your parents use at home to check your temperature? How about what a nurse or doctor used to check your temperature? - Using the back of our hand if someone is warm or cold, but it is not enough to tell us whether someone is sick or not. They use thermometers to accurately measure temperature.	3.  4.  Answer Key 1. THERMO 2. BALANCE 3. DIGITAL 4. ELECTRONIC			
c. Developing Understanding of the Lesson	**USING BALANCES AND THERMOMETERS** The units of measurement that you learned in previous lessons are used to describe the physical characteristics of an object. Milligrams, grams, and kilograms are used to describe how much mass an object has, while degrees Celsius is used to describe how hot or how cold something is.  *Processing Question:* **1. In this sense, what can we use to measure the mass of an object?** *Balances* are instruments that are used to measure mass. Balances can either be *mechanical* or *electronic*. A mechanical balance only uses springs, levers, and reference weights, and does not need electricity at all to operate. An object is placed on the platform of a mechanical balance, and the said reference weights are then moved around until both the object being weighed and the reference weight are "balanced," which will give us the mass of the object. An example of a mechanical balance that works this way is the *triple-beam balance*.	**To use the triple beam balance, do the following:** a) Move the sliders (reference weights) on each of the beams to the leftmost side so that the balance reads zero. The indicator on the far right must also read zero. If the indicator does not read zero, adjust it by turning the screw under the balance pan. b) Place the object to be measured on the pan. You will see that the	 *Processing Question:* **1. What instrument/equipment is used to measure mass?** - When it comes to measuring mass, a balance must be used. Do recall that there are many types of balances, and we must take into consideration the objects we want to get the mass of. The most well-known laboratory balances are triple beam balances and analytical balances, which are used to measure samples with small masses. If we want to get the mass of a person, we cannot use a triple beam balance nor an analytical balance, as both tools are too small for such a purpose. In this case, a bathroom scale would be more appropriate. *A person using a mechanical bathroom scale.* For measuring the mass of large and heavy objects, such as packages, sacks of rice and the like, a *floor scale* is used. Floor scales are built in such a way that said objects can be loaded on its platform with minimal lifting. *A floor scale measuring the mass of a 60-pound (lb) block. 60 lb is equal to 22.7 kg.* **2. What instrument/equipment is used to measure temperature?** - When it comes to measuring temperature, thermometers are the tool of choice. Just like with choosing the right balance depending on our intended purpose, the same can be said for thermometers. If we want to measure the temperature of a person to determine whether they are sick or not, we cannot use laboratory-grade liquid-in-glass and digital thermometers, as they are too large for bodily use. Laboratory liquid-in-glass thermometers also do not have **kinks**, which are structures inside the glass that would prevent the liquid from falling back down so that the temperature reading will stay for a while. *A clinical thermometer with a kink. The kink, encircled in red, prevents the liquid from falling back down.* Instead, clinical thermometers are used, which are much smaller in scale and are appropriate for use with humans and animals. These medical thermometers may be in the form of liquid-in-glass or digital thermometers. The clinical liquid-in-glass thermometers have kinks in the structure that would allow us to look at a temperature reading for longer. In the same way, clinical thermometers cannot be used to measure the temperature of very hot objects, such as that of boiling water. Both clinical liquid-in-glass and digital thermometers only give readings within a range of 35 °C to 42 °C. Clinical thermometers are intended for measuring the temperature of the human body, which falls within this range.		

	 *A triple beam balance. Note the slidable weights on the beams.* On the other hand, an electronic balance, as the name suggests, uses electronics in the form of a simple computer. A person can place an object on the pan of an electronic balance and determine the mass just by looking at the LCD screen of the balance. The computer does all the balancing and measuring for you. Examples of electronic balances are *top-loading balances* and *analytical balances*. An analytical balance can measure much smaller masses than a top-loading balance. These balances, being high precision instruments used to measure very light substances in the laboratory, expresses mass in grams (g) and milligrams (mg). To measure objects with greater mass in kilograms (kg),  *A top-loading balance (left) and an analytical balance (right). Note how many more zeroes the analytical balance has.* bigger scales are used. *Bathroom scales* are the scales that people use to measure their own mass. *Physician scales* are used in clinics, while *floor scales* can be used to measure the mass of packages.  *From left to right: a bathroom scale, a physician scale, and a floor scale.* **2. In this sense, what can we use to measure the temperature of an object?** *Thermometers* are instruments used to measure the temperature of an object. There are two types of thermometers commonly used in the laboratory: *liquid-in-glass thermometers* and *digital thermometers*. Liquid-in-glass thermometers, as the name suggests, are thermometers that have liquids encased in a glass tube. Two of the liquids that are commonly used in these thermometers are *mercury* and *ethanol*, with ethanol being regarded as the safer alternative. When exposed to a warm area, the liquid inside the glass tube expands—in a cool area, the liquid shrinks. The rising of the liquid in the tube corresponds to an increase in temperature, while the lowering of that same liquid corresponds to a decrease in temperature.  *A laboratory-grade liquid-in-glass thermometer. The liquid in the glass tube is dyed blue for visibility.* Digital thermometers, like electronic balances, make use of electronics in the form of simple computers. It calculates the temperature of an object and show the results on its LCD screen. Due to this, digital thermometers are also faster at reading temperature than liquid-in-glass thermometers.  *A laboratory-grade digital thermometer. The power button is first pressed to turn it on, then its probe is immersed in the substance to measure its temperature.*	indicator will go above the zero mark. c) To start measuring the mass, first move the biggest slider (the 100-gram slider) until the indicator is aligned just slightly above—if not exactly on—the zero mark on the far right. The arrow marks on the sliders that points to the number it lands on indicates the mass of the object. If the slider causes the indicator to be aligned exactly on the zero mark, you may skip steps d) and e). d) Next, move the second largest slider (the 10-gram slider) until the indicator is also just below—if not exactly on—the zero mark on the far right. e) Move the smallest slider until the indicator falls exactly at the zero mark. f) Add the masses recorded on each of the beams. This will give you the overall mass of the object.			
d. Deepening Understanding of the Lesson	**Directions:** Identify the science equipment shown in each item. Write your answers on the spaces provided below the images.	**The steps in using an analytical balance are as follows:** a) Clean the surface of the balance. Make sure	**Directions**: Determine which science equipment or measuring tool is best used for a particular sample, situation, or test by matching	**I. Activity No. 3: Do Gases and Liquids Have Mass?**	

		that your balance is on a flat surface and levelled. i. To check the levelling, look at the levelling bubble and make sure that the bubble is at the center of the circle. If the bubble is not centered, adjust by turning the levelling screws on the bottom at the back of the balance. b) Close the chamber doors and press the power button. A row of zeros will appear on the LCD screen, indicating that it is now ready for use. c) Place the weighing container on the balance pan. Close the chamber doors after you do so. d) As the weighing container has a mass of its own, you need to tare it. "Taring" is the process of taking the mass of the weighing container into account so that the mass of the substance you want to measure is what you directly get. To tare, just press the "tare" button on the control panel of the balance. e) Slowly add the sample that you want to measure the mass of onto the weighing container. You may remove the weighing container from the balance first to make it easier to pour the sample. provided that no	Column A with Column B using lines. 	**II. Objective(s):** *At the end of the activity, learners are expected to:* a. perform measurements to get the mass of a given sample of air and liquid. **III. Materials Needed:** ● analytical balance ● 100 mL beaker ● small (4 inch) latex balloon ● balloon pump ● 100 mL water **IV. Instructions:** **Part A: Measuring Mass of a Liquid** 1. First, make sure that the surface of the analytical balance's pan is clear of dust and debris. You may wipe the pan with a clean cloth. Make sure that the analytical balance is levelled as well. Once all this is done, plug in the analytical balance and turn it on. 2. Start with measuring how much mass 100 mL of water would contain. Do so by placing an empty 100 mL beaker on the pan of the analytical balance and closing the chamber door. Once the mass of the beaker flashes on the LCD screen, record it first and then press the "tare" button to tare it. 3. Remove the beaker from the analytical balance	

		one touches the controls of the balance to avoid removing the tare. f) With the sample and container on the pan, close the chamber doors and look at the LCD screen to get the mass of sample.		and pour 100 mL of water into the beaker. Make sure there are no droplets or moisture outside the beaker. If there are, wipe it with a clean dry cloth. 4. Carefully place the filled beaker on the analytical balance's pan and close the chamber door. Record the measurement flashed on the LCD screen. 5. Carefully remove the beaker from the pan. DO NOT POUR OUT THE WATER. Watch the LCD screen show a row of zeroes and wait for 10 seconds before putting the beaker back on the pan. Do this twice, recording the measurement each time. 6. Complete the table below with your recorded measurements: 	
e. Making Generalizations					
IV. EVALUATING LEARNING: FORMATIVE ASSESSMENT AND TEACHER'S REFLECTION					

SAMPLE	MASS OF SAMPLE (in grams)		
	TRIAL 1	TRIAL 2	TRIAL 3
100 mL beaker			
100 mL of water			

Part B: Measuring Mass of a Gas

i. Measure the mass of a balloon of gas this time. Wipe the surface of the analytical balance's pan with a clean, dry cloth.
ii. Place the unfilled small latex balloon on the plan and close the chamber door. Once a measurement has been given, record it and then press the "tare" button to tare it.
iii. Using the balloon pump, fill air into the balloon until it is tight full.
iv. Place the balloon onto the pan and close the chamber door. Record the measurement flashed on the LCD screen.
v. Remove the balloon from the pan. DO NOT POP IT OR RELEASE THE AIR. Watch the LCD screen show a row of zeroes and wait for 10 seconds before putting the balloon back on the pan. Do this twice as well, recording the measurement each time.
vi. Complete the table below with your recorded measurements:

SAMPLE	MASS OF SAMPLE (in grams)		
	TRIAL 1	TRIAL 2	TRIAL 3
A 4-inch latex balloon (no air)			
A 4-inch latex balloon (full of air)			

a. Evaluating Learning	**Directions:** Answer the following questions. **1.** **Janelle** was assigned to weigh a small packet of powdered medicine in their science lab. She used a triple-beam balance and carefully adjusted the weights until the pointer was balanced in the middle. What type of balance did Janelle use, and how does it work to measure the mass of an object? _____ **2. Darren** wants to quickly know the exact temperature of a cup of warm water for their experiment. He uses a device with a screen that immediately shows the temperature. Which kind of thermometer did Darren most likely use, and why is it more convenient than a liquid-in-glass thermometer? _____ **3.** In the school clinic, **Miguel** steps onto a scale to check his body weight. At the same time, the nurse is using another instrument to measure his body temperature using his forehead. What instruments were used to measure Miguel's mass and temperature? Are they	**To use a liquid-in-glass thermometer, do the following:** a) Calibrate the liquid-in-glass thermometer by lightly flicking or tapping the thermometer with your finger. This is to ensure all of the liquid will fall to the bottom of the thermometer. i. DO NOT flick the thermometer too hard. DO NOT shake the thermometer. Doing these two actions will damage the thermometer. b) Place the thermometer in the sample. Make sure that the bulb of the thermometer is immersed in the sample. DO NOT let the bulb touch the base or the wall of the container. Keep it suspended by holding the thermometer up. c) Watch the liquid rise (if the sample is hot) or shrink (if the sample is cold). Once the liquid stops moving and stabilizes, record the measurement. i. Depending on the graduation of your thermometer, you may have to read it in two (0.00) or three (0.000) decimal places. d) Remove the thermometer from the sample and wash it with	1. The class will be divided into four groups. Each group will be given a simple science equipment to use to measure the mass and temperature of five things. 2. Groups 1 and 2 will be given a triple beam balance and an analytical balance respectively and are assigned to measure the mass of five samples. **For Groups 1 and 2:** SAMPLE | MASS (in grams) 1. A stick of chalk 2. A piece of candy 3. A spoonful of brown sugar 4. A bag of tea 5. A stick of instant coffee 3. Groups 3 and 4 will be given a liquid-in-glass thermometer and a digital thermometer respectively and are assigned to measure the temperature of five samples. **For Groups 3 and 4:** SAMPLE | TEMPERATURE (in centigrade) 1. A glass of water 2. A glass of fresh milk 3. A glass of cola 4. A glass of orange juice 5. A glass of iced tea 4. Afterwards, the groups will then present their answers to the class. Groups 1 and 2 will compare their measurements, while Groups 3 and 4 will compare theirs. The group's output and presentation will be graded.	**Guide Questions:** 1. Does water having mass prove that it is matter? Why or why not? _____ 2. Did you expect for the balloon to have more mass once it had air filled into it? Why or why not? _____ 3. Based on your measurements, does air have mass? If yes, how much mass did the air in the balloon have? How did you compute for your answer? _____ 4. If air has mass, does it prove that gases are matter? Why or why not? _____	

	appropriate for those purposes? _____	deionized water/distilled water before using it again or putting away. **How to use a digital thermometer**. The steps in using one are as follows:" a) Hold the digital thermometer on its plastic parts. DO NOT touch the metal part of the thermometer while you do a measurement. b) Press the power button on a digital thermometer. The LCD screen will flash to indicate that it has been turned on. a. If there is a switch or button that allows you to change the temperature scale from degrees Celsius to Fahrenheit, make sure to set the scale to Celsius. c) Submerge the metal part into the sample that you want to measure. Just as with a liquid-in-glass thermometer, DO NOT let the metal part touch the base and sides of the container. Keep the thermometer suspended by holding it up. d) Wait for the numbers on the LCD screen to stop switching. The numbers you end up with is the temperature of the sample.			

<table>
<tr><td></td><td></td><td>e) Wash the metal part with deionized/distilled water and dry it before using it again or putting it away.</td><td></td><td></td><td></td></tr>
<tr><td>b. Teacher’s Remarks</td><td colspan="5">
<table>
<tr><th>Note observations on any of the following areas:</th><th>Effective Practices</th><th>Problems Encountered</th></tr>
<tr><td>strategies explored</td><td></td><td></td></tr>
<tr><td>materials used</td><td></td><td></td></tr>
<tr><td>learner engagement/ interaction</td><td></td><td></td></tr>
<tr><td>others</td><td></td><td></td></tr>
</table>
</td></tr>
<tr><td>c. Teacher’s Reflection</td><td colspan="5">Reflection guide or prompt can be on:
▪ principles behind the teaching
What principles and beliefs informed my lesson?

Why did I teach the lesson the way I did?

▪ students
What roles did my students play in my lesson?

What did my students learn?

How did they learn?

▪ ways forward
What could I have done differently?

What can I explore in the next lesson?</td></tr>
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