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DepED
DEPARTMENT OF EDUCATION

Lesson Exemplar for Science for Science

Quarter 1
Lesson 1
Week
1

Lesson Exemplar for Science Grade 5
Quarter 1: Week 1
SY 2023-2024

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LESSON EXEMPLAR TEMPLATE

LEARNING AREA/QUARTER/ GRADE LEVEL

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 describe matter as anything that has mass and takes up space**.** *Lesson Objectives:* The learners will be able to: 1. define what matter is; and 2. determine the characteristics of matter. **Learning Competency:** The learners identify that matter has (exists in) three states called solids, liquids, and gases. *Lesson Objectives:* The learners will be able to: 1. define solid, liquid and gas; and 2. provide sample materials that are solid, liquid and gas.
C. Content	1. Matter in daily life 2. Matter and its three states
D. Integration	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.

II. LEARNING RESOURCES

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- *Three states of matter*. (n.d.). Science Learning Hub. https://www.sciencelearn.org.nz/images/1839-three-states-of-matter
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III. TEACHING AND LEARNING PROCEDURE		NOTES TO TEACHERS
A. **Activating Prior Knowledge**	**1. Short Review:** *"Mystery Box"* **(Week 1-Day 1)** The teacher prepares a *"Mystery Box"* containing different materials which the learners will identify. *Guide Questions:* 1. What are the things that you got from the box? 2. Where do you see these things?	The teacher should prepare a "mystery box" containing materials like toy, paper, small, inflated balloon, stone, and other common materials. Reiterate that different materials are useful to adults

	3. What other term can use to name these things? 4. Are these materials useful for you? How?	even to them as young students.
B. Establishing Lesson Purpose	**1. Lesson Purpose** *The teacher says,* "In the succeeding weeks, we will be doing activities which will help us understand more about the things around us. Through these activities, we will conquer the world of matter, their three phases, their characteristics, and where we can find them." **2. Unlocking Content Vocabulary** For you to understand our topics better, try to familiarize yourselves with these terms by arranging the jumbled letters to come up with the correct term being described. 1. Anything that occupies space and has mass. **TTMERA** 2. Has closely packed molecules which limit movement and has definite shape. **ISDLO** 3.Has loosely packed molecules permitting them to have some movement, thus has no definite shape. **DQLIIU** 4. Has molecules far from each other, thus has maximum freedom to move around. **SAG** 5. The amount of space occupied by an object or substance. **UMELOV**	The teacher must connect the short review with this part to establish purpose of studying different materials. The teacher can use strips of paper for this activity or make a presentation/slide deck for ease of use and for added interactivity. Other terms may be added by the teacher. *Answer Key to UCV:* *1. Matter* *2. Solid* *3. Liquid* *4. Gas* *5. Volume*
C. Developing and Deepening Understanding	**SUB-TOPIC 1: Characteristics of Matter and Its Different Phases** 1. **Explicitation.** *"Matter Matters"* Group the learners into two. Group 1 will go around the room and list all the things they see inside the classroom. Group 2 will investigate the picture posted on the board. Using the table below, the learners will list all the things they saw in their respective task. They can use their notebooks to do so. After the activity, the learners will share what they saw with their classmates.	To manage the class, the teacher should give rules to follow while the learners do the activity. Use a timer, too, to manage the time. Image for Group 2 must be pasted

For Group 1:

The Things I See Inside the Classroom

For Group 2:

The Things I See in the Picture

Image for Group 2:

Source:
https://thumbs.dreamstime.com/z/burnham-park-parks-lake-view-baguio-city-144693431.jpg?w=992

Guide Questions:

already before the start of the activity.

After the activity, the learners should be able to tell that the things that they've identified inside the classroom and from the pictures are called Matter. From there, the teacher discusses that matter is anything that occupies space and has mass.

The teacher can pick one representative for each group to answer each guide question. The answers can be written on the board too for easier comparison.

Other related and relevant questions should be asked by the teacher to come up with the

	• What are the things that you saw inside the classroom (for Group 1) or in the picture (for Group 2)? • Compare your answers. Have you seen the same things inside the room and from the picture? • Can you describe the things that you have identified? • How do you call the things that you see inside and outside the classroom? • What is matter? • Aside from the things that you have identified in your activity, give other examples of matter. • Do you consider yourself and your classmates matter? Why?	desired concept to be learned by the learners. Probe and use art of questioning. For the last guide question, the teacher can integrate "valuing" and do word play with matter. Start with positive remarks such as *"You are considered matter because you occupy space and mass. So do not think that you are a waste of space and not worth it because YOU MATTER."*
	2. **Worked Example:** *"Gallery Walk: Knowing Matter More"* **(Week 1-Day 2)** The teacher will prepare four (4) stations in the classroom where learners can read and observe the different characteristics/concepts about matter *(LAS 1)*. The stations can be 3D with the use of different relevant materials depending on the topic of the station, or just printed and pasted on the wall. The materials needed for the task for each station (if needed) must be there for easier demonstration. The station must be full of definitions, examples and real-life application of the topic written. □ STATION 1: Matter takes space. □ STATION 2: Matter has mass. □ STATION 3: Matter has shape and color.	This part will be done in two sessions. In each station, a task is given for the learners to do. The teacher can strategize the activities in Worked Example and Lesson Activity in two days, just make sure that the concepts learned from the activity in Worked Example can be explained properly and clearly to the learners (Lesson Activity). The teacher must be careful with the sweeping statements

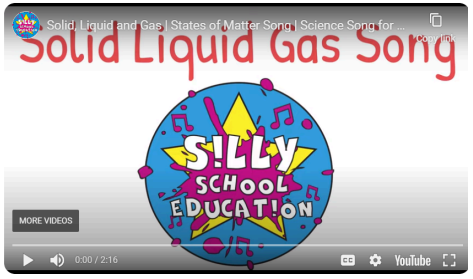
	STATION 4: Matter has texture. Guide Questions: 1. What are the characteristics of a matter? 2. Explain each characteristic of matter. 3. Give other examples showing/explaining each characteristic. 3. **Lesson Activity: "***Interactive Discussion"* **(Week 1-Day 3)** In this part, the teacher conducts interactive discussion to reinforce the concepts observed in different activities. **Station 1: Matter takes space.** [Materials in the station: pebbles, cup, water] 1. When an empty cup was filled with pebbles, what happened to the space in the cup? - *The space in the cup was taken up already by the pebbles.* 2. Can you add more pebbles into the cup after filling it up to its brim? Why? -. *No, because there is no more space for the additional pebbles. No pebble can take the space occupied already by other pebble.* 3. When you filled the empty cup half-filled with water, what happened to the space in the cup? - *The space in the cup was taken up by the water.* 4. When you kept on pouring water into the cup, what happened to the water? Why? - *When we kept pouring water into the cup, the water spilled. This happened because the space up to the brim of the cup was taken up already by water. No water can take up the same space at the same time.* 5. What can you say then about space occupied by matter? - *Matter occupies space. Once space is taken up by matter, nothing else can take up the same space at the same time.*	that can lead to confusion. For example, "Matter has shape and color." and "Matter has texture." Make sure to include separate explanations about liquids and gases. Convey it to the learners. The teacher should test the comprehension and critical thinking of the pupils in this part. Questions can be enriched to facilitate better understanding of the concepts. The teacher must prepare for questions like "What about gases? Do they have mass?" A video clip or actual

	Station 2: Matter has mass. [Materials in the station: pebbles, weighing scale] 1. What did you observe when you placed the pebbles (other materials) at one end of the weighing scale? - *The end where the pebbles were placed went down.* 2. What characteristic of matter is shown in this activity? - *Matter has mass.* *In here, the teacher may elaborate more on the definition of mass. The difference between mass and weight should be clearly discussed here. **Station 3: Matter has shape and color.** [Materials in the station: materials vary depending on the teacher but include piece of paper and ball] 1. What are the materials that you saw on the table? - *(Answers vary)* 2. Name the shapes of the materials found in the table. How about their colors? - *piece of paper- rectangular, white* - *ball – circular, orange* - *and others.* 3. Based on this activity, what can you say about matter? - *Matter has shape and color.* **Station 4: Matter has texture.** [Materials in the station: piece of sandpaper, piece of floor tile, mirror] 1. What are the materials you found on the table? - *The materials found on the table were piece of sandpaper, piece of floor tile, mirror.* 2. What can you say about the surface of the sandpaper? Piece of floor tile? Mirror? - *The sandpaper has rough surface, while the mirror has smooth surface. For the floor tile, one side is smooth, the other side is rough.* 3. Based on this activity, what can you say about matter? - *Matter has texture.*	demonstration showing gases have mass can be played/done. The teacher must prepare for questions like "What about liquids and gases? Do they have shape and color?" A video clip or actual demonstration showing liquids and gases can have shape and color can be played/done. Reiterate that gases and liquid can take the shape of their containers too, thus, indefinitely shaped. The teacher must prepare for questions like "What about liquids and gases? Do they have texture? A video clip or actual demonstration showing further explanation can be played/done. After discussing all the characteristics of matter, the teacher may present other set of materials and the pupils will describe them based on the discussed characteristics of matter.

SUB-TOPIC 2: **The Three Phases of Matter: Solid, Liquid, Gas**
(Week 1-Day 4)

1. **Explicitation:** "Sing-*along Matter*"
   Present the song to the class and let them sing along. Tell them to take note of the three words repeatedly mentioned in the song. They should accomplish the table given below.

Words Repeatedly Mentioned in the Song	Example of Materials Given in the Video for Each Repeated Word
1.	
2.	
3.	



Source: https://youtu.be/Re3_ajB11E0

Guide Questions:
1. What are the three (3) key words repeatedly mentioned in the song?
2. What are solid, liquid, and gas?
3. What are the examples mentioned in the song for each phase of matter?

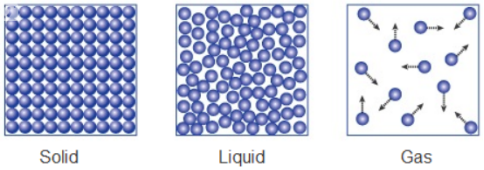
The teacher then asks, "Do you want to know more about solid, liquid, and gas?"

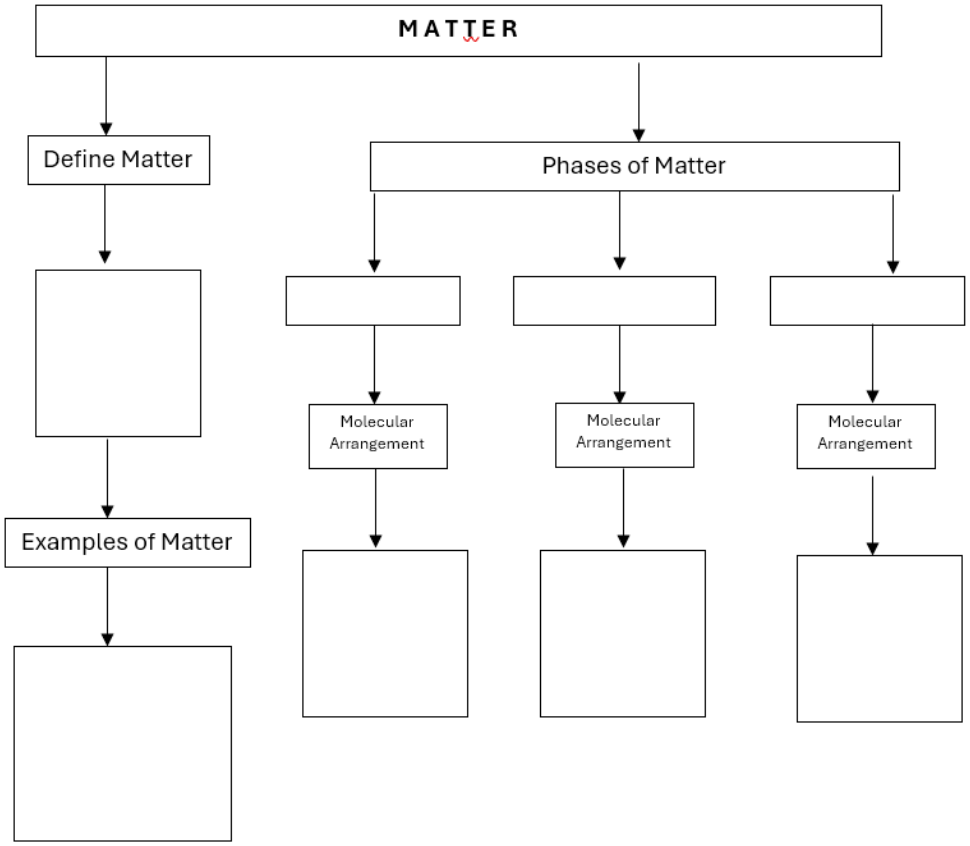
2. **Worked Example:** *"States of Matter in Action"*

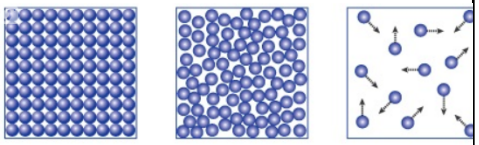
The teacher must watch the video and accomplish the table first before giving the activity to the learners. The teacher must prepare the table either in print or as a visual aid and allow learners to write and complete it in their notebook.

It is advisable to download the video before class. The video must be shown to the learners twice so they will be able to accomplish the table.

	The teacher will say: *Let's differentiate the three phases of matter through an activity (LAS 2).* The teacher must download the video titled "*Arrangement of Molecules in the Three States of Matter*" (*Source: https://youtu.be/v12xG80KcZw*)	The video can be played even thrice, since it is only 1 minute and 50 seconds, so the learners will be able to maximize their learning and participate in the discussion actively.
	Guide Questions: 1. What are the three phases of matter? Draw the molecules of each phase of matter.  S_____ L_____ G____ 2. Describe each phase of matter based on their molecular arrangement. S_____ - _____ L_____ - _____ G_____ - _____ 3. Give example materials for each phase of matter. S_____ - _____ and _____ L_____ - _____ and _____ G_____ - _____ and _____	The teacher must explain to the learners that "states" and "phases" are interchangeable words used to collectively call solid, liquid and gas materials to avoid confusion.
	3. Lesson Activity: "*Interactive Discussion"* In this part, the teacher will facilitate an interactive discussion. See to it that learners are all engaged. The following questions can be asked. 1. What are the three phases of matter? *- The three phases of matter are Solid, Liquid, and Gas.*	The teacher may bring examples of the different phases of matter to reinforce the discussion.

	2. Draw the molecules of each state of matter. (image peg)  *Source: https://www.sciencelearn.org.nz/resources/1499-states-of-matter* 3. Describe each phase of matter. ***Solid –*** *The molecules are closely packed to each other; thus they can hardly move.* *- The attraction between molecules is very strong and there is little to no free space for each molecule making them rigid and keeping their shape.* ***Liquid*** *– The molecules are loosely packed.* - *Movement of molecules is possible because there is considerable space in between molecules which allow them to slide past one another or flow.* - *They don't have shape of their own, thus taking the shape of their container.* ***Gas –*** *The molecules are separated from each other by wide spaces.* - *It has the least attraction between molecules permitting them to have maximum freedom of motion.* - *Because of the nature of its molecules, gas has no definite shape and volume.* - *Like liquid, gas takes the shape of its container.* - *But only gas has indefinite volume and fills the volume of its container* 4. Give examples for each phase of matter. - *(Answers vary)*	Other relevant questions are encouraged to explain the topic better. Practice probing and art of questioning.
D. Making Generalizations	**1. Learners' Takeaways**	

	What have you learned? Fill out each box in the chart below with at least three (3) words to summarize the concepts gained from the different activities.  **2. Reflection on Learning** The teacher can ask the learners what the most interesting part in learning matter is, the hardest task for the past week, and the most challenging question they have encountered through the discussion for the lessons of Week 1.	The teacher prepares the concept map ahead of time, can be printed and can be given individually or prepare a big one to be posted on the board. The learners can answer in their notebook and put their answers in the posted one on the board. Either way, the teacher lets the learners complete the chart. Afterwards, s/he will call at least two (2) students to explain their answer. The teacher can always insert reflection in every lesson or activity if s/he deems necessary not just at the end of the lessons in matter and its states.

IV. EVALUATING LEARNING: FORMATIVE ASSESSMENT AND TEACHER'S REFLECTION		NOTES TO TEACHERS
A. Evaluating Learning	1. **Formative Assessment** **A. Draw the molecules of the three states of matter.** SOLID LIQUID GAS **B. Read the questions carefully. Choose the letter of the correct answer.** 1. Atheena wants to conduct an experiment to observe the volume of different solid objects. She fills two containers with small marbles made of glass and saw no change in the volume occupied by the marbles in both containers. What conclusion can Atheena draw about the volume of solids based on her observations? a) Solids have a variable volume. b) **Solids have a definite volume.** c) Solids have no volume. d) Solids have a changing volume.	The teachers can employ the assessments and can give additional guide questions if s/he deems necessary. **Answer Key:** **Part A** - (image peg)  Solid Liquid Gas *Source:* *https://www.sciencelearn.org.nz/resources/1499-states-of-matter* **Part B** - the answers are in bold.

	2. Amanda pours water into a container and observes that the volume of water remains the same when transferred from the measuring cup to the container. What can Amanda conclude about volumes of liquids? a) Liquids have indefinite volume. b) Liquids' volume doubles as it transfers from one container to another. c) **Liquids have definite volume.** d) Liquids have no volume. 3. During a science experiment, Jearica bursts a balloon as she fills it with air by blowing continuously. What do you think happened to the air inside the balloon? a) It becomes solid. b) It disappears. c) It changes its volume. d**) It spreads out.** 4. Diana filled different balloons with helium gas for a birthday party. The balloons have different shapes. What do you think Diana can conclude about the shape of gases after inflating all the balloons? a) Gases maintain their original shape. b) Gases are round no matter what the shape of their container is. **c) Gases take the shape of their container.** d) Gases cannot be contained and will disappear. 5. Nicko pours water into various containers and observed that the water follows the form of the container where it is poured. What property of matter did he observe? a) Conductivity b) Volume c) Density d) **Shape** **2. Homework (Optional)**	The teacher may opt to give homework if s/he thinks the competency is not yet mastered.

B. Teacher's Remarks	*Note observations on any of the following areas:*	**Effective Practices**	**Problems Encountered**	
	Strategies explored			
	Materials used			
	Learner engagement/ interaction			
	Others			
C. Teacher's Reflection	*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?*			

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