7

Lesson Exemplar for Science

Quarter 1
Lesson
6

Lesson Exemplar for Science 7
Quarter 1: Lesson 6 (Week 6)
S.Y. 2024-2025

Development Team

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SCIENCE (CHEMISTRY) / QUARTER 1 / GRADE 7

I. CURRICULUM CONTENT, STANDARDS, AND LESSON COMPETENCIES	
A. Content Standards	The learners shall learn different standard units of measurement, organize collected data and identify the components of a solution.
B. Performance Standards	By the end of the quarter, the learners shall perform accurate measurements and organize collected data. They can also demonstrate an understanding of the role of solute and solvent in solutions and predict whether a given solute will dissolve in a given solvent
C. Learning Competencies and Objectives	***Learning Competency*** The learners shall make accurate measurements using standard units for physical quantity, and organize the collected data when carrying out a scientific investigation and be able to identify the role of the solute and solvent in a solution. ***Learning Objectives*** At the end of the lesson, the learner shall be able to: 1. *use the standard units of physical quantities.* 2. *make accurate measurements of physical quantities using measuring instruments.* 3. *organize data collected from investigation.* 4. *identify the components of a solution.*
D. Content	Standard Units of Physical Quantities Measuring Physical Quantities Organizing data Components of a Solution
E. Integration	Measurement can be integrated into various aspects across different subject areas in mathematics, science, social studies, technical education, health and physical education.

II. LEARNING RESOURCES

- Frontiers of Science and Technology Diwa Scholastic Press Inc. Makati City, Philippines
- Set-up of Filtration (3D diagram). https://quizlet.com/hk/241654822/set-up-of-filtration-3-d-diagram/

III. TEACHING AND LEARNING PROCEDURE		NOTES TO TEACHERS
A. Activating Prior Knowledge	**DAY 1** Give the meaning of the abbreviated unit of measure shown in Column A. The learners will write their answers in Column B. **Column A** / **Column B** **Tsp** **ml** **g** **cm**	**ANSWER KEY:** 1.Teaspoon 2.Mililiter 3.grams 4.Centimeter
B. Establishing Lesson Purpose	**1. Lesson Purpose** Explain to the learners that the lesson is about making accurate measurements using standard units for physical quantities. **Unlocking Content Vocabulary** The learners will be given a material to read. After reading, they will be asked to take note of any unfamiliar words, terms, phrases, or sentences, as well as identify confusing ones. Note: A copy of the material is in the Attachment to Lesson Exemplar No. 7 Quarter 1 Science 7 (Week 7)	

C. Developing and Deepening Understanding	1**. Explicitation** Learners will be given reading material about how standard units are used in measurement. After reading, they will be asked to answer the questions that follow. Note: Copy of the material is in the Attachment to Lesson Exemplar No. 7 Quarter 1 Science **2. Worked Example** Learners will be asked to read out and answer the following questions: 1. What is needed to show the accurate measurement of a given quantity? _____ _____ 2. What is the SI unit of mass? Temperature? Time? _____ _____ 3. What is the official system of units used in our country? _____ _____ The teacher will analyze learners' answers, give positive feedback/s, select the best answer, and post the answers on the board for all learners to copy. **3. Lesson Activity** Learners will be asked to read out and answer the following questions: 1. Which is longer, 1000 km or 1000 mm? why? 2. Why did the Philippines adopt the SI units? 3. Why do we still use some of the English units such as feet, inches, and degree Celsius in our daily measurements? Teacher facilitates answering of the questions and post on the board the correct answer for the learners to write down on their notebook.	
D. Making Generalizations	**1. Learners' Takeaways** Learners will fill the empty boxes of the concept map with the right term/s through the facilitation of the teacher. Learners may add new boxes to present a related idea. To maximize the class time, the teacher shall prepare the concept map before the class starts.	

	Note: A copy of the reading material and the given data are in the Attachment to Lesson Exemplar No. 7 Quarter 1 Science 7. **1. Reflection on Learning** Learners will be asked if the lesson today has helped them make accurate measurements. If so, why? If not, what can be made better? _____ _____	

IV. EVALUATING LEARNING: FORMATIVE ASSESSMENT AND TEACHER'S REFLECTION		**NOTES TO TEACHERS**
A. Evaluating Learning	**Formative Assessment** Written Work: Learners will answer a 5-item multiple choice test. 1. Which of the following units is used to measure length? A. Liters B. Grams C. Meters D. Seconds 2. What is the appropriate unit to measure the volume of a liquid? A. Kilograms B. Liters C. Meters D. Newtons 3. If you want to measure the mass of an object, which unit would you use? A. Centimeters B. Liters C. Kilograms D. Celsius	**ANSWER KEY:** 1. C Meters 2. B Liters 3. C Kilograms 4. B Seconds 5. B Celsius

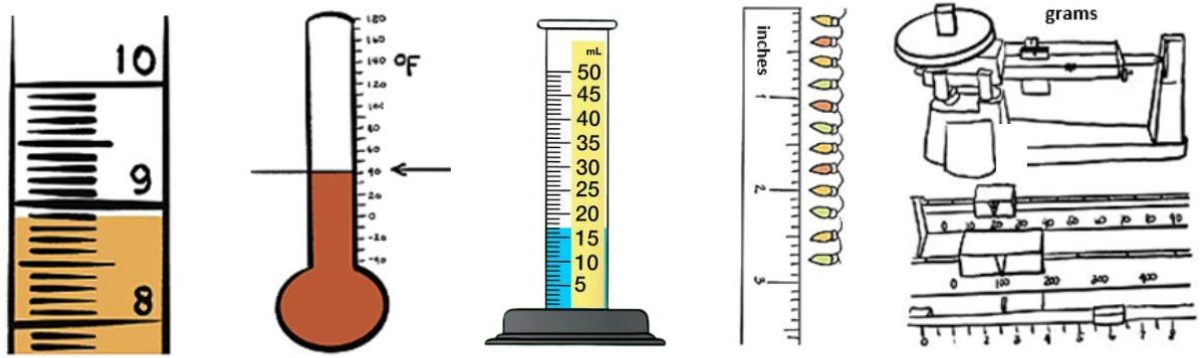
	4.Which unit would be best for measuring the time it takes to run a race? A. Meters B. Seconds C. Kilograms D. Liters 5.Which unit is used to measure the temperature of an object? A. Grams B. Celsius C. Meters D. Liters Learners will be asked if the lesson today has helped them make accurate measurement. If so, why? If not, what can be made better?	
A. Activating Prior Knowledge	**DAY 2** **SHOW AND TELL** Learners will present a picture of an object or a place and give its standard unit of measure.	Teacher may collect some of the pictures and post it on the wall
B. Establishing Lesson Purpose	**1. Lesson Purpose** Explain to the learners that the lesson will allow them to make actual measurements using measuring devices with standard unit. **2. Unlocking Content Vocabulary** The learners will be given material to read, and they will be asked to take note of any unfamiliar words, terms, phrases, or sentences, as well as identify confusing ones. The teacher will facilitate the discussion by asking the learners to give their insights first on the unfamiliar terms, phrases, or sentences cited/identified from the reading material. Then, the teacher will provide additional information/ knowledge on those identified terms, phrases, and sentences, when necessary.	Teacher will establish a link between the use of standard units to the use of actual measuring devices as lesson for the day. **Note:** A copy of the material is in the Attachment to Lesson Exemplar No. 7 Quarter1 Science 7

C. Developing and Deepening Understanding	**1. Explicitation** Learners will be given reading material about measurement. After reading, they will be given time to clarify or ask questions. **2. Worked Example** Learners will perform an activity titled: "Reading Between the Lines" **Objective:** At the end of the activity, the learners will be able to make accurate measurements using standard units. A copy of the procedures is found in the Worksheet for Week 6 Activity No. 1 titled "Reading Between the Lines" After doing the Instructions in the Worksheet, learners will read the following questions to the class and give their answer. 1. What is the least count of each of the measuring devices you used? 2. What quantities were measured? 3. What is the value of the quantity measured in each station? 4. From where did you base the unit in your measurements? 5. What unit is used in measuring volume of liquid? Of regular-shaped objects? The teacher will analyze learners' answers, give positive feedback/s or clarification, select the best answer, and post the answers on the board for learners to copy. **3. Lesson Activity** The learners will be asked to read out and answer the following questions: 6. What is the importance of knowing the least count? 7. How would you use a ruler if its zero line cannot be seen? 8. How do you measure the volume of irregularly shaped objects?	The teacher takes note of the questions or clarification and provides additional information. **Note:** A copy of the material is in the Attachment to Lesson Exemplar No. 7 Quarter 1 Science 7 The teacher provides positive feedback/s on learners' answers and provide additional information, if necessary.

D. Making Generalizations	**Learners' Takeaways** The learners will be asked to give ideas that they learned from the day's lesson. Teacher clarifies answers, if needed.	
IV. EVALUATING LEARNING: FORMATIVE ASSESSMENT AND TEACHER'S REFLECTION		**NOTES TO TEACHERS**
A. Evaluating Learning	**1. Formative Assessment** **Written Work:** Learners will answer a 5-item multiple choice test. After the learners have taken the test, the teacher asks the learners if the lesson helped them make measurements accurately? If so, how. If not, what can be improved next time? **2. Homework** For advanced learners, you may consider extending the lesson by asking them to give possible sources of errors in measurement. For lagging learners, give additional exercises on reading measuring instruments with different scales or graduations.	
B. Activating Prior Knowledge	**DAY 3** Learners shall perform accurate measurements using standard units for physical quantity and organize the data collected from investigation.	
C. Establishing Lesson Purpose	**1. Lesson Purpose** Explain to the learners that the lesson will help them analyze their data to come up with an accurate conclusion or idea. **2. Unlocking Content Vocabulary** The learners will be given material to read, and they will be asked to take note of any unfamiliar words, terms, phrases, or sentence, as well as identify confusing ones. Measurement from measuring instruments and observations produces raw data. As data usually measures several quantities in different objects, data tends to pile up. When this happens, searching for data takes a longer time and becomes confusing. Organizing the data helps us read and use it easily. It also reduces the loss of data and errors. The teacher will facilitate the discussion by asking the learners to give their	

	insights about the material they have read. Then, the teacher will provide additional information on the cited term, phrase, or sentences.	
D. Developing and Deepening Understanding	**1. Explicitation** Learners will be given time to read the material. After reading, they will answer questions to facilitate further understanding of the ideas presented in the material. **2. Worked Example** Learners will perform an activity entitled "Order in the Court!" **Objective:** At the end of the activity, the learners will be able to organize data into a table. A copy of the procedures is found in Worksheet for Week 6 Activity No. 2 titled "Order in the Court!" After doing the instructions in the worksheet, learners will read the following questions to the class and give their answer. 1. What data organization tool is used to organize the given data? _____ 2. Does each column contain one measured quantity? _____ 3. Can the title still be improved? How? _____ **3. Lesson Activity** The learners will be asked to read to the class following questions and answer them: 1. How will the table change if there are three trials in the measurement of mass of each object? Volume? _____ 2. How would the density be computed? _____	**Note:** A copy of the reading material and the given data are in the Attachment to Lesson Exemplar No. 7 Quarter 1 Science 7.

E. Making Generalizations	**Learners' Takeaways** Learners will be asked to identify terms, phrases, or sentences from previous reading that still need clarification. Teacher asks other learners to share their understanding of the given term, phrase, or sentence that still need clarification. If no learner volunteers, teacher provides additional information.	

IV. EVALUATING LEARNING: FORMATIVE ASSESSMENT AND TEACHER'S REFLECTION		**NOTES TO TEACHERS**
A. Evaluating Learning	**Formative Assessment** **Performance Task:** Learners will organize a given set of data. They will also be given a rubric to guide them in making a table.	**Note:** A copy of the given data and the rubric is in Attachment to Lesson Exemplar No. 7 Quarter 1 Science 7
B. Activating Prior Knowledge	**DAY 3** The learners will identify and write down the measurement of each of the following substances/material.  1._____ 2. _____ 3. _____ 4. _____ 5. _____	**ANSWER KEY:** 1. 8.9 mL 2. 90 °F 3. 17 mL 4. 2.8 inches 5. 120 grams

C. Establishing Lesson Purpose	**1. Lesson Purpose** The learners shall be able to differentiate solute from solvent. **2. Unlocking Content Vocabulary** ***Vocabulary*** *Solute* *Soluble* *Insoluble* *Solution* *Solvent* The learners will use the terms in the vocabulary box above to fill in the blanks. Each term should be used once only. Then, they will write a sentence to show they understood each term. 1. A/an _____is a substance that dissolves into a solvent. Sentence: _____ 2. A/an _____ is a liquid in which a solute dissolve into. Sentence: _____ 3. A/an _____is a mixture of a solute dissolved in a solvent. Sentence: _____ 4. Sugar is _____ in water. Sentence: _____ 5. Sand is _____ in water. Sentence: _____	**ANSWER KEY:** 1. Solute 2. Solvent 3. Solution 4. Soluble 5. Insoluble

D. Developing and Deepening Understanding	**1. Explicitation** The learners will read a story and sing a song titled "Rain Rain Go Away" Once upon a time, in a faraway land, a sugar family lived in a small house in the forest. When it was summertime, the three children were happy for they could play outside. But during rainy seasons, they were all sad and just stared at the window and sing: "Rain, Rain, Go Away, Rain, rain, go away". Come again another day, All the children want to play, Rain, rain, go away". (3x) **2. Worked Example** 1. Why do you think children are afraid to go out of their house during rainy days? _____ _____ 2. What will happen to the children if they go out of the house while raining? Why? _____ _____ The learners will carry out an investigation about the components of a solution using the following materials. — 1 teaspoon salt — beaker — 20 mL water **Procedure:** 1. Measure 20 mL water. 2. Put 1 tsp of salt into the water. Observe what happens to salt.	

Questions:

1. What is formed when salt is added to water?

_____
_____

2. In a salt solution, which is the solute? Why?

_____
_____

3. In a salt solution, which is the solvent? Why?

_____
_____

4. What component of solution exists in greater amount?

_____
_____

3. Lesson Activity

The learners will define the terms “solute” and “solvent” in their own words. Then, identify the solute and solvent for each of the following solutions.

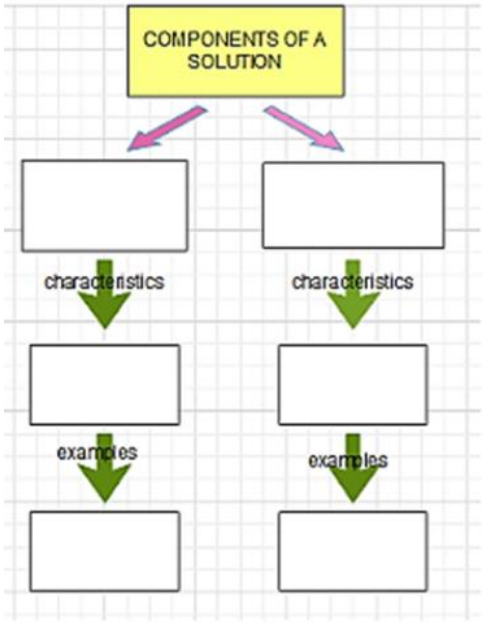
1. Jane mixed some water and powdered juice to make a fruit drink.

2. Makky swished salt water in his mouth after he lost his tooth in a basketball game.

3. Jace put a rubbing alcohol on the grass stain that was on his sock.

4. Kyle added a little sugar to his tea because it tasted bitter

5. The tea from Irish’s teabag coloured the water as it brewed.

E. Making Generalizations	The learners will answer the flowchart which will be followed by sharing output**.**  Has this lesson helped you better understand the differences between solute and solvent? If so, how? _____ _____ _____	

IV. EVALUATING LEARNING: FORMATIVE ASSESSMENT AND TEACHER'S REFLECTION		**NOTES TO TEACHERS**
A. Evaluating Learning	**1. Formative Assessment** The learners will be given a set of questions which will serve as formative assessment to evaluate their learning outcomes for the day's lesson objectives and competencies.	

	Directions. Read each question carefully and write only the letter of the correct answer in a separate sheet of paper. 1. Which is an example of a solution? A. Cooked flour B. Marshmallow C. Seawater D. Blood 2. The two components of a solution are solute and solvent. Which statement describes the solute? A. It is the solid formed in a solution. B. It is the liquid component of the solution. C. It is the component of a solution in smaller quantity. D. It is the component of a solution in bigger quantity. 3. Which happens if you mix juice powder with water? A. The juice powder will dissolve in water. B. The juice powder will form a layer. C. The juice powder will not dissolve in water. D. The juice powder will settle at the bottom of the water. 4. What is the solvent in a cup of milk? A. sugar B. milk powder C. water D. sugar and milk 5. In a solution, what do you call the substance in a larger amount? A. salt B. solute C. solvent D. sugar	**ANSWER KEY:** 1. C) Seawater 2. C) It is the component of a solution in smaller quantity. 3. A) The juice powder will dissolve in water. 4. C) Water 5. C) Solvent

<table>
<tr><td></td><td colspan="3">2. Homework
The learners will be tasked to have an advance reading on properties of solution.</td><td></td></tr>
<tr><td rowspan="5">D. Teacher's Remarks</td><td>Note observations on any of the following areas:</td><td>Effective Practices</td><td>Problems Encountered</td><td rowspan="5"></td></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>
<tr><td>E. Teacher's Reflection</td><td colspan="3">Reflection guide or prompt can be on:

▪ <u>principles behind the teaching</u>
What principles and beliefs informed my lesson?
Why did I teach the lesson the way I did?

▪ <u>students</u>
What roles did my students play in my lesson?
What did my students learn? How did they learn?

▪ <u>ways forward</u>
What could I have done differently?
What can I explore in the next lesson?</td><td></td></tr>
</table>