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DepED
DEPARTMENT OF EDUCATION

Lesson Exemplar for Science

Quarter 1
Lesson
7

Lesson Exemplar for Science 4
Quarter 1: Lesson 7 (Week 7)
S.Y. 2024-2025

Development Team

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SCIENCE (CHEMISTRY) / QUARTER 1 / GRADE 4

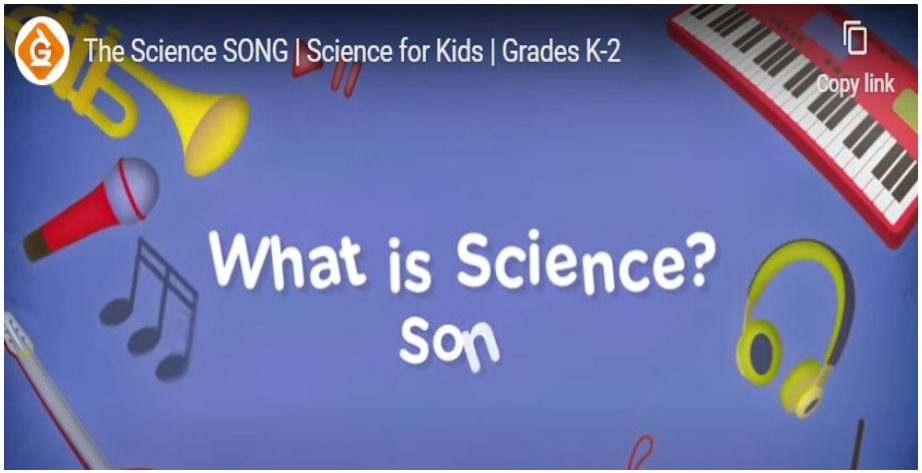
I. CURRICULUM CONTENT, STANDARDS, AND LESSON COMPETENCIES	
A. Content Standards	Learners learn that: 1. Science inventions have brought about major changes to our daily lives. 2. Chemical properties of materials determine their uses. 3. Communication skills and open mindedness are needed in solving environmental issues.
B. Performance Standards	By the end of the Quarter, learners describe chemical properties of materials and change them. They demonstrate an understanding that science processes can solve everyday problems and use creativity and determination to provide examples. They exhibit objectivity and open-mindedness in gathering information related to environmental issues and concerns in the community.
C. Learning Competencies and Objectives	**Learning Competency:** The learners identify issues and concerns in the local community and how they could be addressed by science, such as the treatment of waste. ***Lesson Objective/s:*** 1. identify appropriate science process skills and attitudes needed in addressing issues and concerns in the local community; and 2. explain the different scientific attitudes and science process skills.
D. Content	1. Scientific inventions 2. Materials and their uses 3. Gathering scientific information
E. Integration	Love for scientific works

II. LEARNING RESOURCES
• Attitudes and values in science (n.d.). Chapter 6. https://riuma.uma.es/xmlui/bitstream/handle/10630/18239/Chapter%206.%20Attitudes%20%26%20Values%20in%20Science.pdf?sequence=1&isAllowed=y#:~:text=These%20attitudes%20include%20curiosity%2C%20honesty

- Science for Kids (n.d.) *The Science SONG* | Grades K-2 [Video File]. YouTube. Retrieved https://youtu.be/TDaOw0Rgnyg
- Fun & Learning with Teacher Danny Ong (2022). Scientific Attitudes [Video File]. YouTube. Retrieved https://youtu.be/9Lv2JZM-pQo
- Academics Plus (2020). Grade 7 Science #2: Basic Science Process Skills [Video File]. YouTube. Retrieved https://youtu.be/y8Vkrt8xad8
- Attitude Psychology (n.d.). 10 Scientific Attitudes. Retrieved https://www.scribd.com/document/386420688/10-Scientific-Attitudes

III. TEACHING AND LEARNING PROCEDURE		NOTES TO TEACHERS
A. Activating Prior Knowledge	**DAY 1** **1. Short Review** Let the students watch a scientist doing his work in the laboratory. After watching, ask why scientists still work and persevere despite the failures.  Source: https://mixkit.co/free-stock-video/scientist-working-with-a-microscope-in-the-lab-23618/ **Question:** How do scientists succeed in their scientific works?	In part, the class should discuss that those who are engaged in scientific works have skills and attitudes needed by them to go through the activity.

	2. Feedback (Optional)	
B. Establishing Lesson Purpose	1. **Lesson Purpose** The teacher may ask, "If scientists don't have the skills and attitudes to finish a scientific work, what could possibly happen to us? In this lesson, we will learn about the different science process skills and attitudes one should possess to be able to work and finish scientific activities."	Expected answer from the learners would be: "We don't have the things we have like the technology that we have now". " Life might not be as easy as now by using the different products of technology". (other answers are expected)
	2. Unlocking Content Vocabulary Through a game, the learners will classify the words written on flashcards (These are the attitudes and science process skills). Post these words on the board: **SCIENTIFIC ATTITUDES** | **SCIENCE PROCESS SKILLS** Check if there are flashcards pasted under your chairs. Read what is written on the flashcards and decide if it is a skill or an attitude. Post the flashcards under the proper heading; ATTITUDE or SKILL	These words should be written on the flashcards: ATTITUDES: belief, curiosity, objectivity, critical thinking, open-mindedness, inventiveness, risk-taking, intellectual honesty, humility, responsibility SCIENCE PROCESS SKILLS: observing, measuring, classifying, inferring, predicting. **SCIENTIFIC ATTITUDE**: It is an attitude that is indicated by the existence of logical thinking based on facts and considered according to the basic scientific theory.

	After they've classified the words, let them define the terms SCIENTIFIC ATTITUDE and SCIENCE PROCESS SKILLS by arranging the words below to form the meaning of these two words (follow the colors in cutting the statement). **SCIENTIFIC ATTITUDE**: by the existence of logical thinking to the basic scientific theory. based on facts and considered according It is an attitude that is indicated **SCIENCE PROCESS SKILL**: when they study and investigate. that one/scientist should possess/do It is a skill or something	**SCIENCE PROCESS SKILL**: it is a skill or something that one/a scientist should possess/do when they study and investigate.
C. Developing and Deepening Understanding	1. **Explicitation** Let the learners sing along to the song below.  Source: https://youtu.be/TDaOw0Rgnyg Afterwards, talk about the song and ask them: Do you like to do experiments? What are the things that you need to develop and possess to accomplish a scientific task properly / successfully? Let's continue learning.	

DAY 2 and DAY 3

2. Worked Example: *"Sci-Salon"* (Worksheet 7)

The teacher will set-up two "salons": one for scientific attitude and the other, science process skills. She then divides the class into two groups. One group will be assigned to Salon 1 where learners will be pampered with scientific attitudes and the other group will be assigned to Salon 2 where they will be treated with dose of science process skills.

Salon 1: Scientific Attitudes

Source: https://youtu.be/9Lv2JZM-pQo

Guide questions:

1. What are scientific attitudes?
2. List the science attitudes mentioned in the video clip.
3. Describe each attitude specially when doing scientific works.

Salon 2: Science Process Skills

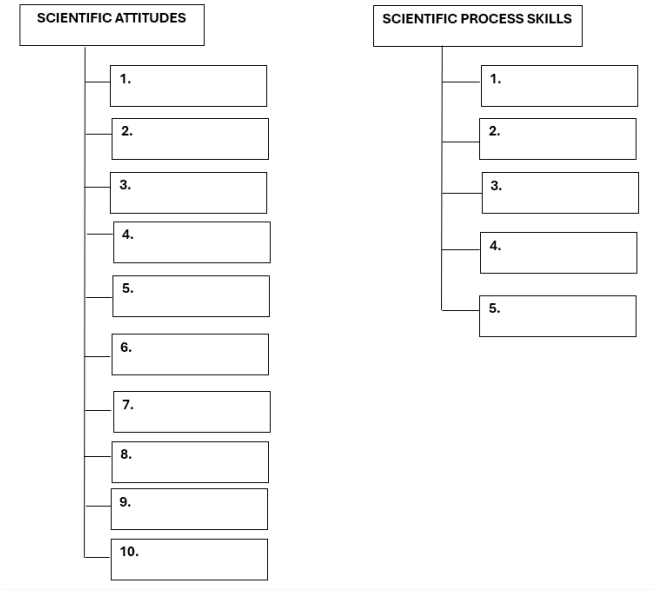
Source: https://youtu.be/y8Vkrt8xad8

In this part, the teacher may strategize, she may opt not to divide the class anymore and just present the videos on Day 1 (attitudes) and Day 2 (skills) and discuss them on the designated days especially so when the class has only 1 television set or laptop to use. That depends on the available gadgets to be used.

In another scenario, they may work in a group and each group watch the videos simultaneously. After watching, a representative from each group will share what they've learned from the video which they've watch while the members of the other group will listen and jot down notes.

	Guide questions: 1. What are science process skills? 2. What are the basic process skills as mentioned in the video? 3. Describe each skill specially when doing scientific works. **3. Lesson Activity** The teacher will facilitate the interactive discussions by asking the following questions. **Salon 1:** 1. What are scientific attitudes? *-It is an attitude that is indicated by the existence of logical thinking based on facts and considered according to the basic scientific theory.* 2. What are the scientific attitudes presented in the video? *-The scientific attitudes presented in the video are belief, curiosity, objectivity, critical thinking, open-mindedness, inventiveness, risk-taking, intellectual honesty, humility, responsibility.* *3. Describe each attitude.* • **Belief** – everything happens for a reason. • **Curiosity** – a hunger for information; wanting to know everything or reason for everything. • **Objectivity** – not letting own opinions/emotions influence the findings/results of the experiment. • **Critical thinking** – testing all possible factors/hypothesis before giving conclusions and generalizations. • **Open-mindedness** – listening and respecting ideas of others and willingness to take suggestions. • **Inventiveness** – generates new and original ideas. • **Risk-taking** – willingness to take the risk even the work may fail or generate criticism.	In the lesson activity, the teacher should watch the videos so she can deepen the discussion on the different scientific attitudes and skills. Giving situations where the attitudes and skills are applied is highly encouraged so the learners will be able to visualize the application of these attitudes and skills. Other questions are encouraged to further enrich the discussion. Sample answers are given. Sample answers are given but definitions can be operational or exemplified. It is up to the teacher to further reach and enable students to comprehend the meanings of the words.

	• **Intellectual honesty** – giving truthful observations and properly acknowledging ideas of others. • **Humility** – recognizing one's weaknesses and acknowledging better ideas from others. • **Responsibility** – actively participating in a task and religiously doing their task. **Salon 2:** 1. What are science process skills? *-It is a skill or something that one/scientist should possess/do when they study and investigate.* 2. What are the basic process skills as mentioned in the video? *-The science process skills mentioned in the video are observing, measuring, classifying, inferring, predicting.* 3. Describe each skill. • **Observing** – it is skill where we use our sense organs: eye, ears, nose, tongue, and skin. • **Measuring** – it is a skill needed in telling the properties of materials using units. Measuring tools are used to tell these properties. • **Classifying** – grouping based on a defined criterion. • **Inferring** – explaining an observation • **Predicting** – telling the outcome of an event.	Sample answers given. Sample answers are given but definitions can be operational or exemplified. It is up to the teacher to further reach and enable students to comprehend the meanings of the words.
F. Making Generalizations	**DAY 4** **1. Learners' Takeaways** Fill out the chart below to summarize the lesson this week.	Help and facilitate the activity to give further instructions to the students. Make sure to reiterate meanings of each word as you go along with the activity to ensure mastery.

	 **2. Reflection on Learning** Is it hard to develop the skills and attitudes of scientists? Can you see yourself doing or working on a scientific work? Why or why not?	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. Direction:** Match the scientific attitudes to the situations which best describe them. Write the letter only. .	The teachers can employ the assessments and can give additional guide questions if s/he deems necessary.

Scientific Attitudes	**Definition**
1. Belief	A. Marga respects the ideas of her groupmates. When criticized, she never keeps a bad feeling towards that person, instead, she willingly changes her view if she knows that others have a better idea.

2. Curiosity	B. John is not in favor to the result of his experiment because this disapproves his assumptions but still, he presented the outcome of his research without any alteration.
3. Objectivity	C. Rodrigo always ask questions to everything that happens, he pays close particular attention to objects.
4. Critical Mindedness	D. Jong is not possessive to generated ideas. He reports information gathered in an experiment without any personal interest.
5. Open mindedness	E. Maria believes that whatever the outcome of her experiment is destined to happened and you cannot question it.
6. Inventiveness	F. Marco never love scientific works but when in his science class, he does his part always in all activities, trying his best to do his work with utmost diligence.
7. Risk taking	G. Mark has proven his prowess in scientific work many times. He even competed and won in various science research. When doing group activities, he still seeks for the opinions of his groupmates because he believes that others have bright ideas, too, and that his is not always the best
8. Intellectual Honesty	H. Sonia always draws conclusions based on evidence. One time, she was in doubt of the result she gathered. As a result, she went through the whole process just to verify the obtained data
9. Humility	I. Erick keeps on trying his experiments just to prove his claims. He failed many times, heard criticisms but he never stopped until he proved it right.
10. Responsibility	J. Roy is named "Mr. Impossible" in class. He proposes ideas which seem so impossible to happen. One day, Roy surprised everyone when he proved one of his ideas.

Answer to Formative Assessment

A.

1. E
2. C
3. B
4. H
5. A
6. J
7. I
8. D
9. G
10. F

<table>
<tr>
<td></td>
<td colspan="3">B. Direction: Give the science process skill /s you should employ to give answer to the following questions.
1. What are the characteristics of an ice cream?
2. How many fruits of each kind are there in the basket?
3. What will happen after a typhoon?
4. How much of each ingredient will you use in baking the cake?
5. Why do plants wilt easily?

2. Homework (Optional)
List 1 activity you do at home and tell what science process skills ae involved when you do this activity.</td>
<td>Possible answers for Formative Test
B.
1. observing
2. observing, classifying
3. predicting
4. measuring
5. inferring

The teacher may opt to give homework if s/he thinks the competency is not yet mastered.</td>
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<td rowspan="5">C. 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>
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<tr>
<td>strategies explored</td>
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<td></td>
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<td>materials used</td>
<td></td>
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<tr>
<td>learner engagement/ interaction</td>
<td></td>
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<tr>
<td>others</td>
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<td>D. 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>
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