4

Lesson Exemplar in Science

Quarter 1
Week
2

Lesson Exemplar for Science Grade 4
Quarter 1: Week 2
SY 2024-2025

This material is intended exclusively for the use of teachers in the implementation of the MATATAG K to 10 Curriculum. It aims to assist in delivering the curriculum content, standards, and lesson competencies.

Every care has been taken to ensure the accuracy of the information provided in this material. For inquiries or feedback, please call the Department of Education - Regional Office via telephone number (02) 85229412 or send an email to ncr@deped.gov.ph.

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MATATAG K to 10 Curriculum Weekly Lesson Log	School		Grade Level	4
	Name of Teacher		Learning Area	Science
	Teaching Dates and Time		Quarter	1

	DAY 1	DAY 2	DAY 3	DAY 4
I. CURRICULUM CONTENT, STANDARDS, AND LESSON COMPETENCIES				
A. *Content Standards*	Chemical properties of materials determine their uses			
B. *Performance Standards*	By the end of the Quarter, learners describe chemical properties of materials and their changes. 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*	Describe the chemical properties of materials, such as they can be burnt, react with other materials, or are degradable or biodegradable.			
D. *Learning Objectives*	At the end of the lesson, the learners should be able to: 1.describe the properties of materials that can be burned; 2. provide examples of flammable and combustible materials; and 3. express the importance of understanding the properties of materials like flammability and combustibility.	At the end of the lesson, the learners should be able to: 1. describe the properties of materials that can react with other materials; 2. define corrosion; and 3. suggest ways to protect materials from corrosion.	At the end of the lesson, the learners should be able to: 1. describe properties of materials that are biodegradable and non-biodegradable; 2. give examples of biodegradable and non-biodegradable materials at home and in school; and 3. express the importance of using biodegradable materials	At the end of the lesson, the learners should be able to: 1. describe the properties of materials, such as flammability, reactivity, or degradability; 2. conduct simple investigation focusing on these chemical properties of materials; 3. express the importance of chemical properties of common household materials.
E. *Instructional Design Framework*	Connection (linking practical applications) / ideational (Critical thinking, application) / Experience (real-world application	Connection (Bridging theory and practice) / Integrative (application of concepts) / Experience (real-world application)	Context (Relevance to Real-world situations) / Integrative (real-world context) /Experience (real-world application)	Context (Relevance to Real-world Situations) / Integrative (real-world)

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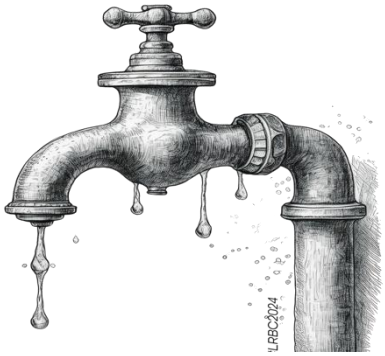
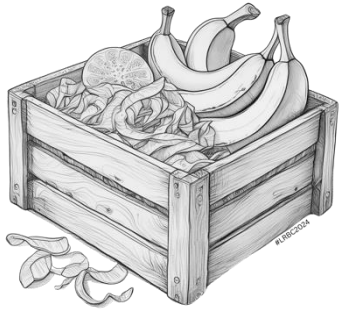
F. 21st Century Skills	Communication skill (interactive communication)	Learning and innovation (reflective thinking)	Life and career skills (self-discipline, resilience, and adversity management)	Learning and innovation (reflective thinking)
II. CONTENT	Materials and their uses	Materials and their uses	Materials and their uses	Materials and their uses
III. LEARNING RESOURCES				
A. References	Science in Our World 5 Worktext, Revised Edition by Sarte, Evelyn, Garcia, Ednaliza R et.al, Vibal Group, Inc. 2019	Science in Our World 5 Worktext, Revised Edition by Sarte, Evelyn, Garcia, Ednaliza R et.al, Vibal Group, Inc. 2019	Science in Our World 5 Worktext, Revised Edition by Sarte, Evelyn, Garcia, Ednaliza R et.al, Vibal Group, Inc. 2019	Science in Our World 5 Worktext, Revised Edition by Sarte, Evelyn, Garcia, Ednaliza R et.al, Vibal Group, Inc. 2019
B. Other Learning Resources	Science Quarter 1 – Module 4: Changes in Materials that are Useful and Harmful to One's Environment EASE Module 1 Integrated Science Module 5 Project EASE	Science Quarter 1 – Module 4: Changes in Materials that are Useful and Harmful to One's Environment EASE Module 1	Science Quarter 1 – Module 4: Changes in Materials that are Useful and Harmful to One's Environment EASE Module 1	Science Quarter 1 – Module 4: Changes in Materials that are Useful and Harmful to One's Environment EASE Module 1
IV. TEACHING AND LEARNING PROCEDURES				
Before/Pre-Lesson Proper				
Activating Prior Knowledge	The teacher will allow the learners to describe the materials. Directions: Write at least 3 words to describe the properties of the following materials: 1. stone 2. paper 3. wood 4. alcohol 5. gasoline	 The teacher will show the picture above and ask the	The teacher will show the pictures below and ask the following questions to the learners. 	Show the following materials and ask these questions: **Materials** plastic cup pieces of paper dried leaves metal Alcohol Rugs cellophanes candy wrappers plastic straw dried branches of trees

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<table>
<tr>
<td></td>
<td>(ex. hard, smooth, rough, color, and other observable properties)</td>
<td>learners the following questions:

1. Do you have a faucet with the same condition in the picture?

2. Describe the faucet and the metal tube.</td>
<td> 
What can you see in the picture?

Where do you obtain these materials?

What do you call these materials?</td>
<td>1.What observable properties do the given materials have?

2.How can you classify them based on their properties?</td>
</tr>
<tr>
<td>Lesson Purpose/Intention</td>
<td>The teacher will ask the learners this question:

Which of the materials you described burn easily?
<table>
<tr><th>Can Burn Easily</th><th>Cannot Burn Easily</th></tr>
<tr><td></td><td></td></tr>
<tr><td></td><td></td></tr>
<tr><td></td><td></td></tr>
</table>
</td>
<td>The teacher will ask the learners if they have observations about the changes in the materials they see at home. The teacher will process the answers leading to the topic for the day.</td>
<td>The teacher will ask the learners to:

Imagine a world where every piece of waste we generate disappears naturally, leaving no harmful residue or pollution. How will you feel in such an environment with no waste?</td>
<td>The teacher will ask the learners this question.

How can the knowledge on chemical properties of materials be applied in the materials we use at home and in school?</td>
</tr>
<tr>
<td>Lesson Language Practice</td>
<td>The teacher will ask the learners to do this:
Provide synonyms for the following words based on your understanding:
1. spontaneous fires
2. flammability
3. combustibility</td>
<td>The teacher will ask the learners to do this:
Word Association:
Below are illustrations related to the words. Match them and make a sentence.</td>
<td>The teacher will ask the learners to do this:</td>
<td>The teacher will instruct the learners to conduct a school environment scan. They will list the materials commonly disposed of inside and outside the classrooms, classify them as</td>
</tr>
</table>

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	4. extinguish The teacher writes the appropriate synonyms for the words on the board	 A. Corrosion _____  B. Chamber _____  C. dilapidated vessel _____		flammable, reactive with other materials, or biodegradable, and write the list in their notebook.

What do I know?	What I want to know?	What did I learn ?
Degradable		
Biodegradable		
Non-biodegradable		

Can be burnt (Flammable)	Can react with other materials (Reactive)	Biodegradable

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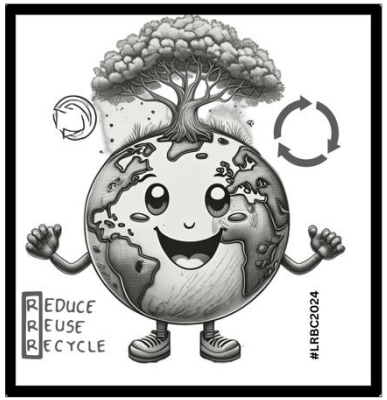
During/Lesson Proper				
Reading the Key Idea/ Stem	The teacher will have the learners read the story in Worksheet 2 Activity 1.1 **Title: The Great Science Adventure: Quest for the Flaming Dragon**  Alex enjoyed exploring and discovering new things, especially about the properties of materials. One day, while playing in the forest, Alex stumbled upon an ancient map hidden inside a mysterious bottle. The map depicted a dangerous journey to find the legendary Flaming Dragon, rumored to possess the secret of ultimate knowledge about the properties of materials.	The teacher will let the learners read the story Worksheet 2 Activity 2.1 **Title: Rusty Adventure: The Mystery of the Missing Treasure**  Sam loved nothing more than searching the shores for hidden treasures, and mysterious artifacts washed up by the waves. One sunny morning, while digging in the sand, Sam unearthed an ancient treasure map with faded markings and mysterious symbols. Excited by the possibility of finding hidden riches, Sam asked for the help of her best friend, Maya, and	The teacher will let the learners read the story Worksheet 2 Activity 3.1 **Title: Exploring the Magic of Biodegradable Materials**  In a world of environmental challenges, sustainable solutions have never been more critical. Among the innovations emerging to stop pollution and waste, biodegradable materials stand out as champions of eco-friendliness and sustainability. Let us embark on a journey to explore the magic of biodegradability and its transformative impact on our planet. Biodegradable materials, often derived	The teacher will let the learners read the story Worksheet 2 Activity 4.1 **Title: Clara's Chemistry Adventure**  Once upon a time in a neighborhood, there lived a curious young girl named Clara. Clara had always been fascinated by the world around her, especially the mysteries hidden within everyday objects. Armed with her curiosity Clara embarked on a thrilling adventure to uncover the importance of understanding the chemical properties of common household

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	Alex, thrilled by the possibility of adventure, gathered supplies and set off on the quest with his trusty sidekick, a talking parrot named Sparky. Along the way, they encountered various obstacles and challenges, such as rivers and dark caves. But with courage and determination, they persevered. As they ventured deeper into the unknown, Alex and Sparky came across a village with a strange phenomenon: spontaneous fires erupting from seemingly harmless objects. The villagers were terrified, and Alex knew that understanding the properties of materials was crucial to solving this mystery. Using their knowledge, Alex and Sparky conducted experiments to test the flammability and the combustibility of various materials found in the village. They learned that some materials were highly flammable and could catch fire easily, while others were less prone to combustion. Armed with this newfound knowledge, Alex and Sparky	together they started on a quest to uncover the lost treasure. Following the map's clues, they journeyed deep into the heart of a dense jungle, where they stumbled upon an old, abandoned pirate ship half-buried in the overgrown plants. As they explored the dilapidated vessel, Sam and Maya noticed something weird. The ship's once-shiny metal cannons and anchor were now covered in a reddish-brown substance. Maya recognized it immediately as rust, a form of corrosion that occurs when iron reacts with water and oxygen. Intrigued by the discovery, Sam and Maya decided to explore further. They followed a winding path through the jungle until they stumbled upon a hidden cave entrance obscured by vines and moss. Inside, they found a chamber filled with ancient chests overflowing with gold coins and precious jewels. But as they reached out to touch the treasure, they heard a rumbling sound,	from renewable resources such as plant fibers or starches, paper, and cardboard possess a remarkable ability to decompose naturally. Biodegradable materials offer a promising alternative that minimizes harm in the environment. Imagine a world where every discarded item, from food packaging to disposable utensils, could vanish without a trace, leaving behind no harmful residues or pollutants. This vision becomes a reality with the widespread adoption of biodegradable materials, which embrace the principles of nature's regenerative cycles. Consider the journey of a biodegradable bag, crafted from plant-based materials, and designed to break down when its purpose is served. From its humble beginnings on a store shelf, where environmentally conscious consumers choose sustainable alternatives, to its eventual disposal in a composting facility, this bag embodies the beliefs of responsible consumption	materials. One sunny morning, as Clara roamed through her kitchen, she stumbled upon an array of household items – from colorful cleaning agents to sturdy plastic containers. Intrigued by the diverse array of materials, Clara decided to investigate their chemical properties to unlock the secrets they held. Her first stop was the pantry, where she encountered a box of matches nestled among jars of spices and baking ingredients. Clara knew that matches could be burnt, but she wondered why some materials caught fire more easily than others. With her magnifying glass in hand, she carefully examined the matchsticks, noting their composition and texture. Through her research, Clara learned about the flammable properties of matchstick heads, which contain phosphorus and sulfur compounds that

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	devised a plan to extinguish the fires and save the village. They asked the villagers for help and worked together to remove the highly flammable materials from their homes, replacing them with safer alternatives. Finally, after many trials, Alex and Sparky reached the home of the Flaming Dragon. Instead of finding a fearsome creature, they discovered a wise old elder who revealed that the true secret of understanding materials lay in respecting their properties and using that knowledge responsibly. With this valuable lesson in mind, Alex returned home a hero, having not only saved the village but also gained a deeper understanding of the importance of knowing the properties of materials like flammability and combustibility. And so, the adventures of Alex and Sparky continued, fueled by curiosity and a thirst for knowledge.	and the ground began to shake. To their horror, the cave walls started crumbling, and water began seeping in from unseen cracks in the ceiling. Sam and Maya realized that the corroded metal from the pirate ship had weakened the cave's structure, causing it to collapse. Thinking quickly, Sam remembered reading about how corrosion could be prevented by coating metal with a protective layer, like paint or oil. With no time to spare, they grabbed a nearby bucket of oil and quickly coated the rusted metal supports holding up the cave's ceiling. Though they may not have found the treasure they sought, Sam and Maya learned a valuable lesson about the destructive power of corrosion and the importance of protecting valuable metals from its effects. And as they returned home, they knew that the greatest treasure of all was the knowledge they had gained from their daring adventure.	and waste management. As the bag completes its life cycle, it undergoes a transformation, facilitated by the action of microorganisms in the compost pile. These tiny heroes, invisible to the naked eye, work tirelessly to break down the bag's fibers, returning them to the earth as nutrient-rich organic matter. In this process, the bag not only fulfills its role as a carrier of goods but also nourishes the soil, supporting the growth of healthy plants and vegetation. The story of biodegradability extends far beyond single-use items. From biodegradable plastics used in packaging to compostable textiles and bio-based fuels. Education, policy support, and investment in research and development are essential in advancing the adoption of biodegradable materials globally.	ignite when struck against a rough surface. Next, Clara ventured to the bathroom, where she encountered an assortment of cleaning products stored beneath the sink. She recalled her mother's warnings about mixing different cleaning agents and wondered why some substances could react violently when combined. With cautious curiosity, Clara conducted experiments using household acids and bases, observing the chemical reactions that ensued. Through her investigations, Clara gained insight into the importance of understanding the reactivity of household materials to avoid accidents and ensure safe handling. As Clara continued her exploration, she turned her attention to the garden, where she discovered a compost bin teeming with organic waste and garden clippings. Intrigued by

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				the concept of biodegradability, Clara sought to understand how organic materials could break down naturally over time. With the help of her magnifying glass, Clara examined the microbial activity within the compost pile, marveling at the tiny organisms responsible for decomposing organic matter. Through her observations, Clara learned about the environmental benefits of biodegradable materials and the importance of composting to reduce waste and enrich the soil. Though her adventure had been filled with surprises and discoveries, Clara realized that the greatest treasure of all was the knowledge she had gained along the way.
Developing Understanding of the Key Idea/ Stem	The teacher will ask the following questions and process the answers. 1. Was there really a dragon in the story? Explain.	The teacher will ask the following questions and process the answers. 1. What kind of treasure did Sam and Maya find?	The teacher will ask the questions below: 1.What are the biodegradable materials mentioned in the story?	The teacher will ask the learners to answer the questions below: 1.How did Clara's investigation into the

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	2. What caused the fire? 3. What do you think were the things Alex and Sparky did to put off the fire? The teacher will explain the difference between combustibility and flammability and will give examples of materials that are combustible and flammable. Examples of combustible materials: paper, cloth, dried leaves, wax, wood. flammable materials: gasoline, solvents, high concentration of alcohol (70%), oil, acetone, thinner Discuss: Materials that can be burnt may be combustible or flammable. Combustible materials require considerable time of exposure to heat before they catch fire while flammable materials can easily catch fire. Note: The teacher may demonstrate the difference	2. How did corrosion affect the treasure they found? 3. How does paint or oil protect metals from further corrosion? The teacher will show pictures of corroded metals:   	2. What are some examples of renewable resources from which biodegradable materials can be derived? 3. Can you describe the journey of a biodegradable bag from its creation to its disposal in a composting facility? Explain. 4. What are some other applications of biodegradable materials beyond single-use items, as mentioned in the text? 5. How would you describe materials or wastes which cannot be decomposed or degraded by natural agents or processes?	chemical properties of household materials, such as matches, contribute to her understanding of their combustibility? 2.What precautions did Clara take when experimenting with different cleaning agents in the bathroom, and how did her observations help her grasp the importance of understanding reactivity? 3.Describe Clara's discovery in the garden regarding the process of biodegradability. How did her examination of microbial activity contribute to her understanding of this concept? 4.Reflecting on Clara's adventure, what lesson did she learn about the importance of understanding the chemical properties of common household materials?

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<table>
<tr>
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<td>between combustibility and flammability by showing how long the piece of cardboard produces fire when exposed to a lighted match and how fast the kerosene produces fire when exposed to a lighted matchstick.

Caution: Be prepared with a sandbag and water.</td>
<td> 

Questions:
1. What causes metals to form rust or corrode?
2. Define corrosion.
3. What are the effects of rust on materials?</td>
<td></td>
<td>It helps in ensuring safety by recognizing the potential dangers of flammable or reactive substances, allows for responsible use and disposal of materials, and promotes environmentally friendly practices like composting.</td>
</tr>
<tr>
<td>Deepening Understanding of the Key Idea/ Stem</td>
<td>The teacher will let the learners answer tasks provided in the Worksheet 2 Activity 1.2.

The teacher will process learners' answers leading to the formation of concepts.</td>
<td>The teacher will ask the learners to do Activity 2.2 in Worksheet 2

School Tour:
Go to the school grounds and locate materials with rust. Suggest at least two ways to prevent further rusting in the table below.

<table>
<tr><th>Materials</th><th>Location</th><th>Suggestion/s</th></tr>
<tr><td>1.</td><td></td><td></td></tr>
<tr><td>2.</td><td></td><td></td></tr>
<tr><td>3.</td><td></td><td></td></tr>
<tr><td>4.</td><td></td><td></td></tr>
<tr><td>5.</td><td></td><td></td></tr>
</table>
</td>
<td>The teacher will ask the learners to do Activity 3.2 and 3.3 in Worksheet 2.</td>
<td>The teacher will ask the learners to do Activity 4.2 in Worksheet 2.

Directions:
Carefully examine the materials given below. Identify whether they are combustible/flammable, biodegradable and can react with other materials by putting a checkmark (√) on the proper column.

<table>
<tr><th>Materials</th><th>Degradable</th><th>Reactive</th><th>Flammable</th></tr>
<tr><td>plastic cup</td><td></td><td></td><td></td></tr>
<tr><td>pieces of paper</td><td></td><td></td><td></td></tr>
<tr><td>dried leaves</td><td></td><td></td><td></td></tr>
<tr><td>metal</td><td></td><td></td><td></td></tr>
<tr><td>alcohol</td><td></td><td></td><td></td></tr>
<tr><td>rugs</td><td></td><td></td><td></td></tr>
<tr><td>cellophanes</td><td></td><td></td><td></td></tr>
<tr><td>candy wrappers</td><td></td><td></td><td></td></tr>
<tr><td>plastic straw</td><td></td><td></td><td></td></tr>
<tr><td>dried branches of trees</td><td></td><td></td><td></td></tr>
</table>
</td>
</tr>
</table>

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<table>
<tr><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td colspan="5">After/Post-Lesson Proper</td></tr>
<tr>
<td>Making Generalizations and Abstractions</td>
<td>The teacher may use a graphic organizer for the learners to generalize the concepts learned.

Materials that can be burnt are combustible or flammable.

Combustible materials require considerable exposure time to high temperature before they catch fire whereas flammable materials can easily ignite.

When tested, flammability and combustibility both produce ashes and smoke. They are the properties of material which can be burnt.

Flammability and combustibility are chemical properties of materials. Combustible and flammable materials must be used, handled and stored properly to avoid fire.</td>
<td>Why is it important to know how materials react when mixed with other materials?</td>
<td>A. The teacher will present the KWL chart and have the learners correct or change their answer based on what they have learned in the lesson.

<table>
<tr><th>What do I know?</th><th>What I want to know?</th><th>What did I learn?</th></tr>
<tr><td>Degradable</td><td></td><td></td></tr>
<tr><td>Biodegradable</td><td></td><td></td></tr>
<tr><td>Non-biodegradable</td><td></td><td></td></tr>
</table>
B. The teacher may use a Thinking Map for the learners to generalize the concepts learned.

1. The property of biodegradable materials is their ability to break down naturally into simpler compounds when exposed to environmental conditions such as moisture, heat, and microorganisms.

2. The decomposition of biodegradable materials is a process that helps create new types of useful materials.</td>
<td>The teacher will allow the learners to answer Worksheet 2 Activity 4.3.</td>
</tr>
</table>

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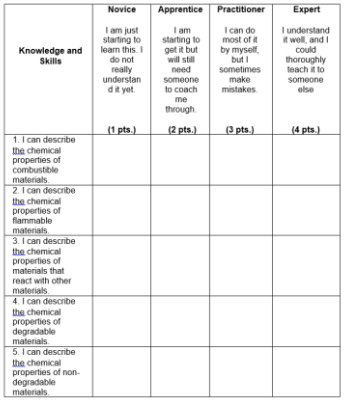
			3. By harnessing the benefits of biodegradability, we can reduce waste, conserve resources, and mitigate the negative impacts of human activities in the environment.	
Evaluating Learning	**Sarah's Science Fair Presentation** It was the day of the annual science fair at Maguinto Elementary School. Sarah and her classmates had been working hard on their presentation and couldn't wait to showcase their discoveries. Sarah's project focused on the flammability of different materials. She set up a demonstration to show how certain materials react when exposed to fire. Sarah started by placing a piece of paper in a metal tray and then lighting it with a match. The paper quickly caught fire and burned brightly, producing smoke, ashes, heat, and light. Next, Sarah tried burning a piece of wood from a tree branch she found in her backyard. The wood released smoke with a fragrant smell as it burned, leaving behind a	**The Rusty Bike Adventure** Alex loves exploring the outdoors on his old bicycle. One sunny Saturday morning, Alex decided to take his bike for a ride through the neighborhood park. As he pedaled along the winding paths, he noticed that his bike seemed a bit different today. The once shiny metal frame now had patches of reddish-brown rust forming on it. Intrigued by this unexpected change, Alex decided to investigate. He parked his bike by a bench and took out his magnifying glass from his backpack. Looking closely at the rusted areas, he observed tiny flakes of metal collapsing. "Hey, Mom!" Alex called out excitedly. "Come see what's happening to my bike!" His mom, who was sitting	**Biodegradable Pencil Adventure** In a small barangay near the forests and crystal-clear streams, there lived a young inventor named Lily. Lily loved to create things, and her latest invention was a pencil made from a special type of wood that is completely biodegradable. She called it "Eco-Pencil." Excited to share her invention with the world, Lily decided to conduct a test to show the biodegradable properties of her Eco-Pencil. She asked her friends, Tim, Sarah, and Ben, to help her with the experiment. Lily buried one Eco-Pencil and one regular pencil in separate pots filled with the same type of soil. She marked each pot with a label showing which pencil was buried. The friends would observe and compare	**Reflections:** Let the learners reflect on their learning about chemical properties of materials by doing the reflection provided in learning activity sheet 4.4. Use the following scoring rubric for learning feedback. 

Knowledge and Skills	Novice I am just starting to learn this. I do not really understand it yet. (1 pts.)	Apprentice I am starting to get it but will still need someone to coach me through. (2 pts.)	Practitioner I can do most of it by myself, but I sometimes make mistakes. (3 pts.)	Expert I understand it well, and I could thoroughly teach it to someone else (4 pts.)
1. I can describe the chemical properties of combustible materials.				
2. I can describe the chemical properties of flammable materials.				
3. I can describe the chemical properties of materials that react with other materials.				
4. I can describe the chemical properties of degradable materials.				
5. I can describe the chemical properties of non-degradable materials.				

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	pile of ash. Finally, Sarah demonstrated the flammability of a plastic toy. She held it over a candle flame, and within seconds, the plastic began to melt and drip, emitting black smoke and a strong odor. As Sarah concluded her demonstration, she explained the importance of understanding the chemical properties of materials like flammability. She emphasized that while burning gives us heat and light, it can also be dangerous if not controlled. By learning about flammability, we can make safer choices and prevent accidents in our homes and communities. *Answer the following questions:* 1.What is produced when materials are burned? a. ashes only b. ashes and smoke c. ashes, smoke, and light d. ashes, smoke, light, and heat energy	nearby reading a book, walked over to see what had captured Alex's attention. "Look at all this rust!" Alex exclaimed, pointing to the corroded spots on his bike. "What's happening to it?" His mom smiled and knelt beside him. "That's called corrosion, Alex," she explained. "It's a natural process where metal, like the metal your bike is made of, reacts with oxygen and moisture in the air." Alex listened intently as his mom continued, "When metal corrodes, it forms a new substance called rust. Rust weakens the metal and makes it look rough and crumbly, like you see here on your bike." Alex nodded, absorbing this new information. "So, does that mean my bike will stop working?" His mom shook her head. "Not necessarily, but if we don't take care of it, the rust could spread and eventually cause parts of the bike to break or become unusable. That's why it's important to keep your bike clean and dry, especially after riding in the	how each pencil decomposed over time. Ben placed equal-sized shavings of the Eco-Pencil and a regular pencil into separate compost bins. They monitored the decomposition process and noted any differences in breakdown rate and compost quality. As days passed, Lily and her friends eagerly watched their tests. They were amazed to see that the Eco-Pencil decomposed much faster in the soil compared to the regular pencil. Finally, in the composting test, the Eco-Pencil broke down rapidly, enriching the compost with nutrients, while the regular pencil remained intact. Lily knew that her Eco-Pencil was not only a great invention but also an environmentally friendly alternative to traditional pencils. 1. What material was tested by Lily and friends in their experiment? a. cotton b. pencil c. pot d. soil	<table><tr><th>Overall Score</th><th>What Am I Going to Do</th></tr><tr><td>1-5 Novice</td><td>Use the internet, textbooks, or any reliable resources to help you. Understand the lesson better. Try answering the tasks again. Ask your teacher for assistance.</td></tr><tr><td>6-10 Apprentice</td><td>Go over the tasks which you find challenging and try again. You may contact your friend to help you.</td></tr><tr><td>11-15 Practitioner</td><td>You need to try other similar exercises/tasks.</td></tr><tr><td>16-20 Expert</td><td>Congratulations! You have a great mission. Help the novice.</td></tr></table>

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	2.What kind of change happens to a material when it burns? a. chemical change b. phase change c. phase change d. nuclear change 3.How can you tell if the material is flammable? a. Material is flammable if it readily reacts when exposed to flame. b. Material is flammable if it contains water. c. Material is flammable if it is smelly. d. Material is flammable if it is foamy. 4.In what way can you apply your knowledge about flammability? I. In choosing the materials in building houses. II. In choosing the materials for baking. III. In choosing the materials for playing. IV. In choosing the materials for camping. a. I and II b. III and IV c. I and IV d. II and III	rain or near water." Alex nodded again, determined to take better care of his bike from now on. Armed with his newfound knowledge about corrosion, he hopped back on his bike and continued his ride through the park, eager to explore and learn more about the world around him. *Answer the following questions:* 1.When does corrosion happen? a. Corrosion happens when metals react to soil and sand. b. Corrosion happens when metals react with oxygen and water. c. Corrosion happens when metals react with oil and other greases. d. Corrosion happens when the metallic part of the bicycle is already old. 2. What is the effect of corrosion in metals? a. It makes the metal stronger.	2. Which experiment shows the biodegradability of the Eco-Pencil? a. solubility in water b. composting c. pencil test. d. reactivity to metal 3. What were the observations that happened in the 'Eco-Pencil" experiment? I-Eco-Pencil decomposed much faster in soil compared to the regular pencil. II- Eco-Pencil dissolves completely in water leaving no residue. III- Eco-Pencil broke down rapidly during the composting test. a. I only b. II-only c. I and II d. I, II, III 4. What makes the "eco-pencil" environmentally friendly? a. It decomposes easily, producing soil nutrients. b. It produces more residues than the commercial pencil.	

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		b. It makes the metal weaker. c. It makes the metal cleaner. d. It makes the metal dirty. 3. What material is formed out of the corrosion of metals? a. chalk b. oil c. slime d. rust 4.If you were Alex, what would you do to protect your bike against corrosion? a. Wash the bike with water and detergent. b. Apply oil on the bike. c. Keep the bike dry. d. Paint the bike.	c. It dissolves completely in water. d. It reacts with metals causing corrosion.	
Additional Activities for Application or Remediation (if applicable)			The teacher will ask the learners to bring 3 sample materials available at home.	
Remarks				
Reflection				

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Answer Key			
DAY 1	**DAY 2**	**DAY 3**	**DAY 4**
1.There was really no dragon in the story. When Alex and Sparky reached the home of the flaming dragon, they only discovered a wise elder. 2. The fire was caused by some materials that were highly flammable and could catch fire easily, while others were less prone to combustion. 3. They asked the villagers for help, and worked together to remove the highly flammable materials from their homes, replacing them with safer alternatives.	1.Sam and Maya found a chamber filled with ancient chests overflowing with gold coins and precious jewels inside a hidden cave. 2. Corrosion had weakened the cave's structure, causing it to start collapsing when Sam and Maya found the treasure. The rusted metal from the abandoned pirate ship had contributed to this instability. 3. Paint or oil protects metals from further corrosion by creating a barrier that prevents water and oxygen from coming into contact with the metal surface. This barrier helps to inhibit the chemical reactions that lead to rust and other forms of corrosion.	1. Paper, Cardboard, Biodegradable plastics, Compostable textiles, Bio-based fuels 2. Plant fibers or Starches 3. **Creation:** The biodegradable bag is crafted from plant-based materials. **Consumer Use:** Environmentally conscious consumers choose the biodegradable bag over non-biodegradable alternatives. **Disposal:** After its use, the bag is disposed of in a composting facility. **Decomposition:** Microorganisms in the compost pile break down the bag's fibers. **Transformation:** The bag decomposes into nutrient-rich organic matter. **Regeneration:** The decomposed material nourishes the soil, supporting the growth of healthy plants and vegetation. 4. Biodegradable plastics used in packaging, compostable textiles, and bio-based fuels 5.These materials are often referred to as **non-biodegradable**. Non-biodegradable materials persist in the environment for long periods because they cannot be broken down by natural agents such as bacteria, fungi, or other microorganisms.	1.This investigation helped Clara understand why some materials catch fire more easily than others due to their chemical properties. 2.Clara was cautious and mindful of her mother's warnings about the potential dangers of mixing different cleaning agents. 3.In the garden, Clara discovered a compost bin filled with organic waste and garden clippings. She was intrigued by the concept of biodegradability and wanted to understand how organic materials break down naturally over time. 4.It helps in ensuring safety by recognizing the potential dangers of flammable or reactive substances, allows for responsible use and disposal of materials, and promotes environmentally friendly

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			practices like composting
Assessment: 1.c 2.a 3.a 4.c	**Assessment: Day 2** 1.b 2.b 3.d 4.b	**Assessment: Day 3** 1.b 2.b 3.c 4.a	*(Please refer to the checklist at the end of Day 4 of Learning Activity Sheet 2)*

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