4

Learning Activity Sheet for Science

Quarter 1

Week

4

Learning Activity Sheet Science Grade 4
Quarter 1: Week 4

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 Office of the Director of the Department of Education – National Capital Region via telephone number (02) 85229412 or send an email to ncr@deped.gov.ph.

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LEARNING ACTIVITY SHEET

Learning Area:	**Science 4**	**Quarter:**	**1**
Week:	**4**	**Day:**	**1**
Lesson Title/ Topic:	**Materials and their Uses**		
Name:		**Grade & Section:**	**4**

Activity 1: Representation on the Effect of the Temperature on Materials

Objectives:

1. Make a simple representation of how temperature affects materials.

Direction: Read the passage and answer the questions below.

In a Grade 4 classroom, there were three curious friends named Lily, Ethan, and Olivia. One afternoon, their science teacher, Mrs. Reyes, had an intriguing experiment planned to show them how materials change when exposed to changes in temperature. Mrs. Reyes gathered the class around a model fireplace. "Today, we're going to discover the secrets of fire and how it changes materials like wood and coal," she announced with a sparkle in her eye.

First, Mrs. Reyes placed a small piece of wood in the fireplace and lit a match. As the wood caught fire, the students watched as it crackled and turned into glowing embers. "When we burn wood, it undergoes a chemical change called combustion," Mrs. Reyes explained. "The heat from the fire causes the wood to break down and release energy in the form of heat and light."

Next, Mrs. Reyes demonstrated how coal reacts to heat. She added a lump of coal to the fire and watched as it started to burn, releasing a dark smoke. "Coal is a fossil fuel, and when we burn it, it releases carbon dioxide and other gases into the air," Mrs. Reyes said. "This is why it's important to use alternative energy sources like solar and wind power. As the students observed the fire, they noticed how the wood and coal changed color and shape as they burned. "It's like magic!" exclaimed Lily, her eyes wide with wonder.

After the experiment, Mrs. Reyes led a discussion about the importance of using energy wisely and protecting the environment. The Grade 4 students learned that even simple actions, like choosing renewable energy sources, can make a big difference in preserving the Earth for future generations. As the class said goodbye to the crackling fire, they left with a newfound appreciation for the wonders of science.

Questions:

1. What change occurred in the small piece of wood when it was heated?

_____

_____

_____

2. What are the materials released when coal is heated?

_____

_____

_____

Activity 1.2 Make a simple representation of how temperature affects materials

Materials	Simple Representation (diagram, illustration, model)
1.Coal	
2.Natural gas	
3.Fuel oil	

Based on your prediction, what could be the possible products if these materials are heated?

1.coal + heat ⟶

2.natural gas + heat ⟶

3.fuel oil + heat ⟶

Additional Activity for Remediation

Write a short reflection or idea on the effects of increasing temperature related to the use of coal, fuel oil and natural gas.

_____

_____

_____

LEARNING ACTIVITY SHEET

Learning Area:	**Science 4**	**Quarter:**	**1**
Week:	**4**	**Day:**	**2**
Lesson Title/ Topic:	**Materials and their Uses**		
Name:		**Grade & Section:**	**4**

Activity 2: Community Practices, Culture, or Tradition that involve Changes in the Properties of Materials

Objectives:

1. Describe the change the materials underwent whether physical or chemical.
2. Explain how heat affects the materials chemically and physically.
3. Cite community practices/culture/tradition which involve changes in the properties of materials because of the increase and decrease in temperature.

Activity 2.1 Read the passage and answer the questions below.

New Year celebrations vary greatly across cultures and regions, but they generally involve a combination of festivities, traditions, and customs to welcome the new year. One of the most iconic moments of New Year's Eve is the countdown to midnight. As the final seconds of the year tick away, people gather often in public squares, city centers, or at private parties, eagerly awaiting the stroke of midnight. Countdowns are typically accompanied by cheers, hugs, and the singing of traditional songs. Fireworks, a hallmark of New Year celebrations in many parts of the world, light up the night sky with colorful explosions as the clock strikes midnight. These dazzling displays symbolize the excitement and joy of the occasion, creating a magical atmosphere for revelers to enjoy. New Year's Eve often involves feasting on delicious food, where families and friends come together to share meals, often including special dishes and traditional foods like roasted pig, barbecue, and kakanin, associated with the holiday.

Questions:

1.Based on the article, what New Year’s Eve practices involve changes in the properties of materials due to increased temperature?

_____

_____

_____

2.Write down 3 observations of changes in the properties of materials during New Year’s Eve celebrations.

_____

_____

_____

Activity 2.2 Create a poster showcasing your findings, highlighting specific examples, and explaining how temperature changes impact the materials involved. Use the rubrics in rating the learners.

Rubrics:

Criteria	Exemplary (4)	Proficient (3)	Basic (2)	Limited (1)
Content	Connections between temperature changes and material properties are clearly demonstrated.	Between temperature changes and material properties are evident.	Connections between temperature changes and material properties are somewhat unclear.	Connections between temperature changes and material properties are unclear or absent
Organization	Information is logically presented and easy to follow	Information is presented in a some-what logical manner.	Information is presented in a confusing manner.	Information is presented in a confusing or nonsensical manner.
Clarity of Explanation	Explanations are clear, concise and effectively communicate how temperature changes impact materials	Explanations are mostly clear and effectively communicate how temperature changes impact mate-rials	Explanations are somewhat unclear or lack detail in communicating how temperature changes impact materials	Explanations are unclear or insufficient in communicating how temperature changes impact materials.
Overall Quality	Poster leaves a lasting impression on the audience.	Poster is memorable to some extent.	Poster may be forgettable.	Poster fails to leave a lasting impression.

LEARNING ACTIVITY SHEET

Learning Area:	**Science 4**	**Quarter:**	**1**
Week:	**4**	**Day:**	**3**
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Activity 3: The Consequences of Burning Waste Materials

Objectives:

1. Identify the human activities that harm the environment.
2. Describe the human activities that may disrupt/harm the environment.
3. Discuss the consequences of burning waste materials.

Activity 3.1 Read the passage below and answer the questions below

The Consequences of Improper Waste Disposal

Lily loved playing outdoors, exploring nature, and learning about the surroundings in school. One sunny afternoon, while walking home from school, Lily noticed thick black smoke rising from a nearby vacant lot. Lily, curious and concerned, decided to investigate. As she got closer, she saw that a group of older kids were burning piles of garbage in the lot. They were laughing and chatting, unaware of the harm they were causing to the environment and their health. Lily remembered her lessons in school about the dangers of burning garbage. She knew that burning trash released harmful materials and pollutants into the air, soil, and water. These pollutants could harm plants, animals, and even people who breathed in the toxic fumes. Lily, worried about the consequences, approached the older kids and told them about the dangers of burning garbage. She explained how it could pollute the air they breathe, contaminate the soil where they grow food, and harm the animals that lived nearby. The older kids don't take Lily seriously. They ignored her concerns and continued to toss more trash into the fire. Lily was determined to make a difference. She ran home and grabbed some pamphlets she had received at school about recycling and proper waste disposal. Lily returned to the lot, handed out the pamphlets to the older kids, and explained why it was important to recycle and dispose of trash responsibly**.** She told them about the benefits of recycling, such as conserving natural resources, reducing pollution, and protecting wildlife habitats. To Lily's surprise, the older kids started to listen. The older kids began to realize the impact of their actions on the environment and the community. Together, they decided to put out the fire and clean up the mess left behind. They vowed to spread the word about the importance of proper waste disposal and recycling to their friends and family. From that day on, Lily became famous as a little environmentalist. She inspired her peers to act and make a positive difference in the world around them. And together, they worked to create a cleaner, healthier, and more sustainable future for everyone.

Questions:

1. What did Lily notice while walking home?

_____

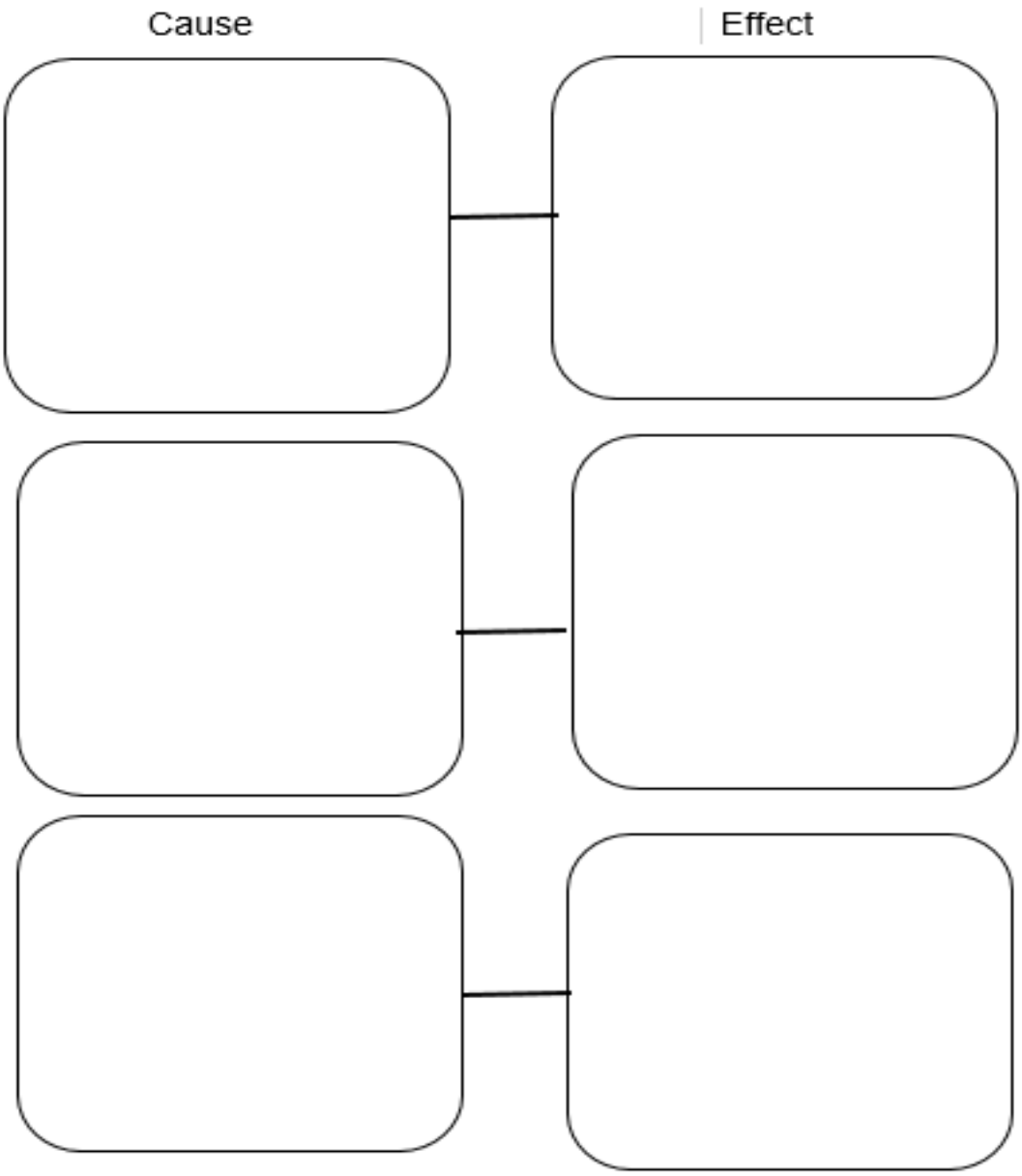
2. What are the consequences of burning garbage?

_____

Activity 3.2 Prepare a 3-minute presentation (role play, debate, panel discussion) on the consequences of burning waste materials.

Criteria	**Excellent (4)**	**Good (3)**	**Satisfactory (2)**	**Needs Improvement (1)**
Creativity	You use your own ideas and imagination all the time	You use your own ideas and imagination most of the time	You use some of your own ideas and imagination	You did not use your own ideas and imagination
Key ideas/ Content	You use the correct key ideas all the time.	You use the correct key ideas most of the time.	You use the correct key ideas sometimes.	You did not use the correct key ideas
Presentation Style	Present with confidence, speak clearly, and maintain excellent engagement	Present with confidence, speak well, and are engaged with the audience	Speak softly and unclearly, difficult to engage the audience.	Lack confidence, do not speak clearly, and do not engage the audience.

Activity 3.3 Using the diagram below,list the causes and effects of the human activities mentioned in the story.



LEARNING ACTIVITY SHEET

Learning Area:	**Science 4**	**Quarter:**	**1**
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Name:		**Grade & Section:**	**4**

Activity 4: Methods and Strategies in Managing Waste Materials

Objectives:

1. Identify the sources of waste materials in the environment.
2. Classify the waste materials as medical, radioactive, wastewater, hazardous or solid waste.
3. Propose methods and strategies for managing waste materials.

Activity 4.1 Read the passage below and answer the questions below.

The Hazards of Mixing Cleaning Products

It was a sunny Saturday afternoon, and the Reyes family had decided to tackle their cleaning chores together. Mrs. Reyes, who had assorted cleaning supplies, set out to scrub the bathrooms, while Mr. Reyes and their teenage daughter, Emily, took on the task of cleaning the kitchen. As Mrs. Reyes sprayed the shower tiles with a commercial bathroom cleaner containing bleach, Mr. Reyes reached for a bottle of ammonia-based cleaner to remove the grease from the stove. Meanwhile, Emily grabbed a bottle of window cleaner to spray on the glass table. Unaware of the potential dangers, they worked diligently, spraying, and wiping surfaces with their respective cleaners. However, as they continued their cleaning tasks, a dangerous situation began to unfold. They were not aware that the combination of bleach and ammonia produces a toxic gas known as chloramine, which can cause respiratory irritation, coughing, and even difficulty breathing

As Mrs. Reyes sprayed the bleach-based cleaner in the bathroom, the fumes drifted into the kitchen, where Mr. Reyes was using the ammonia-based cleaner. The window cleaner Emily used, which also contained ammonia, only worsened the problem. Emily suddenly began to cough and gasp, struggling to catch her breath. Mrs. Reyes, noticing her distress, also started to feel lightheaded and dizzy. Mrs. Reyes, panicked, rushed to their aid but began to experience symptoms of chemical exposure as well. Realizing the danger, the Reyes family quickly evacuated the house and called emergency services for help. The paramedics promptly arrived and assessed their condition, determining that they had been exposed to toxic fumes from mixing cleaning products. Fortunately, the Reyes family received prompt medical attention and recovered from their ordeal. However, their disturbing experience served as a reminder of the importance of understanding the hazards associated with household products and using them safely. The Reyes family made a commitment to educate themselves on proper cleaning product usage and storage. They vowed never to mix cleaning

products again, pledged to read labels carefully, to follow safety precautions, and to store hazardous materials securely to prevent similar incidents in the future. As they returned home, grateful for their safety and newfound knowledge, the Reyes family shared their story with friends and neighbors, hoping to raise awareness and prevent others from falling victim to the hazards of household cleaning products.

Questions:

1. What are the cleaning materials used by the Reyes family?

_____

2. What caused Emily to cough and struggle to catch her breath?

_____

3. How can we prevent hazards from happening when using cleaning materials?

_____
_____
_____

Activity 4.2 Reactive Materials

Directions:

A. List down 5 reactive materials found at home and classify them into paints and solvents, household cleaners, polishes and waxes, automotive products and miscellaneous. Write your answer on the table below.

Reactive Materials found at Home	**Classification of the Reactive Materials** *(pesticides, paints and solvents, household cleaners, polishes and waxes, automotive products, and miscellaneous)*
1.	
2.	
3.	
4.	
5.	

B. Choose 1 reactive material at home. Examine the product label and enumerate practices in handling and using this reactive material.

Product	Uses	Proper Handling

Activity 4.3 Reactive Materials at Home

Examine the product label of the given materials. Then, complete the table below using the symbol in the label of the following products.

Product	**Classification** *(pesticides, paints and solvents, household cleaners, polishes and waxes, automotive products, miscellaneous)*	**Warning Label** *(Danger, Warning, Caution)*
1. mosquito killer		
2. paint thinner		
3. bleach		
4. liquid sosa		
5. lithium battery		