7

DepED
DEPARTMENT OF EDUCATION

Learning Activity Sheet for Science

Quarter 1

Week

4

DepED MATATAG
Bansang Makabata Batang Makabansa

BAGONG PILIPINAS

DEPARTMENT OF EDUCATION NCR

ONE NCR STRONGER TOGETHER

Learning Activity Sheet Science Grade 7
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 7**	**Quarter:**	**1**
Week:	**4**	**Day:**	**1**
Lesson Title/ Topic:	**Scientific Investigation and Its Components**		
Name:		**Grade & Section:**	**7**

Activity 1: Scientific Investigation

Objective(s):

1. Define scientific investigation; and
2. Describe components of scientific investigation.

ACTIVITY 1.1: Me, My Role and Purpose

Directions: Read about the following names of headings for a science investigation. Ask the students to complete the task below by matching the headings with their role/ purpose. (Use an available crayon to Match A with B)

Heading (Column A)	**Role//Purpose** (Column B)
Results	How do you gather data?
Conclusion	What do you want to measure?
Aim	What have you learned from the results?
Experiment	What are you trying to prove?

ACTIVITY 1.2: Fair Testing

The Mystery of the Thirsty Tomatoes

In the school, a seventh-grader Mia loved science. One day, she noticed some tomato plants in her garden looked vibrant while others were droopy. Mia decided to investigate.

She hypothesized that the amount of water each plant received might affect its health. To test this, she chose three tomato plants, labeling three pots: Pot A, Pot B, and Pot C.

Mia watered Pot A with half a cup of water daily, Pot B with a full cup, and Pot C with no water. She recorded her observations.

After a week, clear differences emerged:

- Tomato plants in Pot B grew tall and strong.
- Tomato plants in Pot A were moderate.
- Tomato plants in Pot C were weak and wilted.

Mia concluded that the plants watered with a full cup of water were the healthiest. She presented her findings at school, impressing her teacher, Mr. Cruz.

"Excellent work, Mia! You've demonstrated key scientific principles," he praised.

Mia was proud. She solved the mystery of the thirsty tomatoes and learned the importance of water for growth. From then on, she carefully watered her garden, letting her love for science and her plants thrive.

GUIDE QUESTIONS:

1. What did Mia notice in the garden?

_____
_____
_____
_____

2. What steps did she take to find answers to her queries?

_____
_____
_____
_____

3. Why is it important to follow a certain procedure to solve scientific problems?

_____
_____
_____
_____

LEARNING ACTIVITY SHEET

Learning Area:	**SCIENCE**	**Quarter:**	**1**
Week:	**4**	**Day:**	**2**
Lesson Title/ Topic:	**Identifying Problem**		
Name:		**Grade & Section:**	**7**

Activity 2: Making Scientific Investigations - Identifying a Problem

Objective(s):

1. Identify a scientific problem.
2. Create/formulate a scientific problem based on a given situation.

ACTIVITY 2.1: SCIENTIFIC INVESTIGATION QUEST
Match the picture with the correct steps in scientific investigation.

Identifying the problem

Gathering of data

Stating hypothesis

Analyzing Data

Drawing of Conclusions

Experimentation

ACTIVITY 2.2: LET'S READ AND IDENTIFY THE PROBLEM

Read the following story below and answer the needed information below.

The Mystery of the Overheating Batteries

Jenny, a brilliant young chemist, created a new long-lasting **battery** that performed excellently in the lab, lasting twice as long as the existing model. The company quickly moved to production, but soon customer complaints poured in: phones with the new battery overheated and **shut down** unexpectedly.

Realizing she had overlooked potential issues, Jeneca decided to investigate. She researched common causes of battery overheating and hypothesized that the problem was due to inadequate thermal **insulation**. She then designed and tested multiple battery versions with different insulation materials and thicknesses, simulating real-world conditions.

After analyzing the data, Jenny found that improved insulation materials and optimized designs maintained stable temperatures and prevented **overheating.** She documented her findings and presented them to the company, recommending design changes.

The company implemented her recommendations, and the new batteries became reliable and efficient, gaining customer satisfaction. Jenny's experience reinforced the importance of thorough testing and scientific investigation in developing new technologies.

GUIDE QUESTIONS:

1. Did Jenny follow a scientific method in her scientific investigation? How?

   _____
   _____
   _____

2. What problem did Jenny identify and find the solution?

   _____
   _____
   _____

3. What other problems can you identify that could be addressed by Jenny?

   _____
   _____
   _____

ACTIVITY 2.3: IDENTIFYING PROBLEMS

From the given Scenario below, identify the scientific problem being stated.

SCENARIO 1

The Case of the Disappearing Ice Cubes

In science class, Mr. Lewis placed two identical ice cubes on two separate plates. He put one plate in the classroom by the window and the other plate inside a cupboard. He asked the students to observe what happens to the ice cubes over time.

SCENARIO 2

The Case of the Rusty Nails

In the science lab, Mrs. Turner set up an experiment to show how different conditions affect the rusting of iron nails. She placed iron nails in three different beakers:

- Beaker A: Nail submerged in plain water.
- Beaker B: Nail submerged in saltwater.
- Beaker C: Nail exposed to air with no water.

After one week, the students observed the following:

- The nail in Beaker A had a small amount of rust.
- The nail in Beaker B was heavily rusted.
- The nail in Beaker C showed no rust.

SCENARIO 3

The Puzzle of the Dissolving Sugar

In the science lab, Mr.Magno conducted an experiment with his students to observe how quickly sugar dissolves in water. He prepared three beakers with 100 ml of water each at different temperatures: cold, room temperature, and hot. He then added a teaspoon of sugar to each beaker and stirred them for 30 seconds.

The students observed:

- In the hot water, the sugar dissolved completely.
- In the room temperature water, some sugar grains were still visible.
- In the cold water, most of the sugar remained undissolved.

SCENARIO 4

The Mystery of the Fizzing Beakers

In the science lab, Mr. David demonstrated a reaction by mixing baking soda and vinegar in two different beakers. He used the same amounts of baking soda and vinegar in each beaker but added a pinch of salt to Beaker B before the reaction.

The students observed:

- In Beaker A (without salt), the reaction produced a lot of fizz and bubbles quickly.
- In Beaker B (with salt), the reaction produced fewer bubbles and fizzed more slowly.

Guide Questions:

1. What are the scientific problems you formulated?

_____

_____

_____

_____

2. What are the things you consider in formulating your scientific problem?

_____

_____

_____

_____

3. How did you come up with your scientific problems?

_____

_____

_____

_____

4. Define scientific problems in your own words.

_____

_____

_____

_____

LEARNING ACTIVITY SHEET

Learning Area:	**SCIENCE**	**Quarter:**	**1**
Week:	**4**	**Day:**	**3**
Lesson Title/ Topic:	**Methods of Gathering Data**		
Name:		**Grade & Section:**	**7**

Activity 3: Making Scientific Investigations - Methods of Gathering Data

Objective(s):

1. Identify methods of gathering data;
2. Describe the kind of data-gathering procedure

ACTIVITY 3.1: SCIENTIFIC INVESTIGATION QUEST

An experiment was performed in a Grade 7 Science class to investigate how different amount of lights affect the growth of plants. Three similar pots labeled A B, and C were used to plant 3 pieces of identical bean seeds. Then Pot A was exposed to full sunlight, Pot B to partial sunlight and Pot C placed in a dark box. All three pots received same amount of water daily.

A tabular representation of results was presented at the end of the 15th day.

DAY	Pot A Height (cm)	Pot B Height (cm)	Pot C Height (cm)	Observations
1	0	0	0	Seeds planted
3	2	1	0	Pot A sprouting, Pot B small sprout, Pot C no change
6	5	3	1	Pot A growing well, Pot B has moderate growth, Pot C small sprout
9	8	5	2	Pot A healthy leaves, Pot B pale leaves, Pot C weak sprout
12	11	7	3	Pot A thriving, Pot B struggling, and Pot C very weak
15	14	9	3.5	Pot A tall and strong, Pot B small and pale, and Pot C barely growing

GUIDE QUESTIONS:

1. Explain in your own words the scenario above.

   _____
   _____

2. What is the scientific problem being addressed?

   _____
   _____

3. How was the result presented?

   _____
   _____

ACTIVITY 3.2: Formulate a scientific problem from the given Scenario below.

Recalling the 4 scenarios discussed yesterday, each group will now plan how they will gather data for the assigned scenario. Include also how these data will be presented.

Scenario 1

The Case of the Disappearing Ice Cubes. Think about how you could collect data on the temperature, light exposure, and other conditions.

_____
_____
_____
_____
_____

Scenario 2

The Case of Rusty Nails. Think about how you could measure the amount of rust on each nail and the conditions they were exposed to.

_____
_____
_____
_____
_____

Scenario 3

The Puzzle of the Dissolving Sugar. Think about how you could measure the temperature and observe the dissolving process more closely.

_____
_____
_____
_____
_____

Scenario 4

The Mystery of the Fizzing Beakers. Think about how you could measure the amount of fizz produced, the reaction time, and any other visible changes.

_____
_____
_____
_____
_____

GUIDE QUESTIONS:

1. What are the data-gathering procedures you decided on?

_____
_____
_____
_____
_____

2. How did you come up with that data-gathering procedure?

_____
_____
_____
_____
_____

LEARNING ACTIVITY SHEET

Learning Area:	**SCIENCE**	**Quarter:**	**1**
Week:	**4**	**Day:**	**4**
Lesson Title/ Topic:	**Formulating Hypothesis**		
Name:		**Grade & Section:**	**7**

Activity 4: Formulating Hypothesis

Objective(s): Make a hypothesis based on the given scientific problem/s

ACTIVITY 4.1:
Read the story below and answer the questions that follow.

Lily's Experiment

In a small town, Lily loved conducting backyard experiments. One day, she noticed her flowers blooming vibrantly when watered with rainwater from her gauge. Intrigued, she wondered if rainwater made a difference.

Lily thought: "If I water flowers with rainwater, they'll bloom more vibrantly than with tap water." She split her garden, testing rainwater on one side and tap water on the other.

Carefully observing for weeks, Lily saw the rainwater side bloomed more vibrantly, confirming her guess. She learned the importance of making a clear guess, guiding her experiments to meaningful conclusions.

GUIDE QUESTIONS:

1. What was the problem identified by Lily in her backyard?

_____
_____
_____
_____
_____

1. What helped Lily solve her problem?

_____
_____
_____
_____

2. What is the hypothesis formulated by Lily?

_____
_____
_____
_____

3. How can a hypothesis be proven?

4. Why is it important to have a hypothesis in a scientific investigation?

ACTIVITY 4.2: MAKING A HYPOTHESIS

Recalling the 4 scenarios discussed yesterday, formulate a hypothesis for the assigned scenario.

Scenario 1
The Case of the Disappearing Ice Cubes

Scenario 2
The Case of Rusty Nails

Scenario 3
The Puzzle of the Dissolving Sugar

Scenario 4
The Mystery of the Fizzing Beakers