SECONDARY
JHS

DepED DEPARTMENT OF EDUCATION

ALS Alternative Learning System LIFELONG LEARNING

LEARNING STRAND 2
SCIENTIFIC AND CRITICAL THINKING SKILLS

SESSION GUIDES FOR MODULE 3:
WHY IS IT STILL HOT DURING THE RAINY SEASON?

ALS Accreditation and Equivalency Program: Junior High School

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LEARNING STRAND 2

SESSION GUIDES

Alternative Learning System - Accreditation and Equivalency (ALS-A&E)

JUNIOR HIGH SCHOOL: SCIENTIFIC AND CRITICAL THINKING SKILLS
SESSION GUIDES FOR MODULE 3 (WHY IS IT STILL HOT DURING THE RAINY SEASON?)

ALS Accreditation and Equivalency Program: Junior High School
Learning Strand 2: Scientific and Critical Thinking Skills
Session Guides for Module 3 (Why Is It Still Hot During the Rainy Season?)

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User's Guide

For the ALS Teacher/Instructional Managers/Learning Facilitator:

Welcome to the Session Guides of this Module entitled Why Is It Still Hot During the Rainy Season? under Learning Strand 2 Scientific and Critical Thinking Skills of the ALS K to 12 Basic Education Curriculum (BEC).

This module was collaboratively designed, developed, and reviewed by select DepEd field officials and teachers from formal school and ALS, and private institutions to assist in helping the ALS learners meet the standards set by the ALS K to 12 Basic Education Curriculum (BEC) while overcoming their personal, social, and economic constraints in attending ALS learning interventions.

This learning resource hopes to engage the learners in guided and independent learning activities at their own pace and time. Furthermore, this also aims to help learners acquire the needed 21st century skills while taking into consideration their needs and circumstances.

As an ALS Teacher/Instructional Manager/Learning Facilitator, you are expected to orient the learners on how to use this module. You also need to keep track of the learners' progress while allowing them to manage their learning. Moreover, you are expected to encourage and assist the learners as they do the tasks included in the module.

WHY IS IT STILL HOT DURING THE RAINY SEASON?
Session Guide No. 1

I. Objectives

1. Describe the difference between weather and climate (LS2SC-DR-PSE-AE/JHS-19);
2. Discuss the factors affecting weather and climate (LS2SC-DR-PSE-AE/JHS-19); and
3. Explain the four types of climate in the Philippines (LS2SC-DR-PSE-LE/AE/JHS-20).

II. Subject

A. Lesson 1: What Is the Difference Between Weather and Climate?

B. Materials: colored paper, short bond paper, ballpen/pencil, ruler, coloring materials

III. Procedure

1. **Activity**
   - **a.** Assign the learners in four groups.
   - **b.** Prepare 120 cut-outs of the same colored paper (e.g., yellow or orange) and label each as "sunny."
   - **c.** Prepare 120 cut-outs of a different colored paper (e.g., blue or gray) and label each as "rainy."
   - **d.** Place 30 "sunny" cut-outs and 30 "rainy" cut-outs in a container and give it to one group. Do the same distribution for the other groups.
   - **e.** Ask each group to prepare a daily log. (e.g., Day 1 = ___, Day 2 = ___, etc.)
   - **f.** Each group will draw a paper and assign it for each day in the log. They will continue doing such until they finish all 30 days. Remind them to expect that extra pieces of paper will remain in the container.
   - **g.** Using a clean sheet of paper and coloring materials, each group will prepare a calendar showing the results from the activity.
   - **h.** All groups will be asked to present their calendar to the class.

2. **Analysis**
   a. Once all four groups are finished presenting their calendar, ask them about the general outcome of their month. Is it sunny or rainy?
   b. Discuss with the class that their daily logs represent the "weather" and the general outcome for the entire month represents the "climate."
   c. Using the learner's module, present the key concepts about the difference between weather and climate.
   d. Initiate a discussion by presenting the following questions to the learners:
      - How can you tell that a day is "sunny" or hot?
      - How can you tell that a day is "rainy" or cold?
      - How does weather change on a daily basis?
   e. Discuss with the learners that weather changes because of different factors such as temperature, humidity, and precipitation.
   f. Using the calendar of each group, ask the learners to compare their output. Discuss with them that even if they live in the same country, the weather can be different according to their location. Using the learner's module, present the key concepts about the difference among the four types of climate in the Philippines.

3. **Abstraction/Generalization**
   a. Using their calendar, ask each group to provide more details about the daily log by writing whether each factor (temperature, humidity, and precipitation) is "high" or "low."
   b. Once finished with the details about their daily logs, ask the groups to count the highs and lows of each factor for the entire month (e.g., temperature has 25 highs and 5 lows).
   c. After getting the tally, ask each group to compare data from the initial observation (general outcome). Do the data conform with their observation?
   d. On a clean sheet of paper, ask the learners to explain the effects of each factor to weather and climate.

4. **Application**
   Ask each group to prepare a comic strip about how weather and climate change on a daily basis over a long period of time. The comic strip must include the factors affecting weather and climate.

IV. Evaluation

Let the learners answer the questions on page 18, Treading the Road to Mastery.

WHY IS IT STILL HOT DURING THE RAINY SEASON?
Session Guide No. 2

I. Objectives

1. Discuss the greenhouse effect as a cause of global warming (LS2SC-DR-PSE-LE/AE/JHS-21); and
2. Discuss pollution as a cause of global warming (LS2SC-DR-PSE-LE/AE/JHS-21).

II. Subject

A. **Lesson 2**: What Is the Difference Between Global Warming and Climate Change?

B. **Materials**: plastic bottle (with cap), thermometer, scissors/cutter, tape, short bond paper, ballpen/pencil

III. Procedure

1. **Activity**

   Assign the learners in groups. Ask them to do the following:

   a. Using a pair of scissors/cutter, punch a hole on the first plastic bottle big enough to fit one thermometer.
   b. Using any adhesive tape (e.g., scotch tape), attach the thermometer firmly on the bottle and cover the hole to prevent air from escaping.
   c. Cut the second plastic bottle in half. Discard the upper half of the bottle.
   d. Place a thermometer on the bottom half of the bottle.
   e. Record the initial temperature for both bottles. Label each as T_0.
   f. Place both bottles under the sunlight. Make sure that they have equal amount of exposure to sunlight.
   g. Every ten minutes, record the temperature for both bottles. Do this for one hour (e.g., first ten minutes is labeled T_{10}, followed by T_{20}, etc.).

   Ask the groups to log their observation on a clean sheet of paper. Remind them to correctly label which data is for the first/second

bottle with or without sunlight.

2. **Analysis**
   - **a.** Ask the groups to present their results to the class.
   - **b.** Once all groups are finished discussing their results, ask the following questions:
     - Did both thermometers always record the same temperature?
     - Which setup had a higher temperature?
     - Why do these two setups have a different temperature reading even if they were both placed under equal amounts of sunlight or shade?
   - **c.** Ask the learners to imagine the experiment in a larger scenario: the air inside the bottle represents the surface (land/water) of the earth and the bottle represents the earth's atmosphere. How does the atmosphere affect the earth's temperature?
   - **d.** Ask the learners: If the bottle (atmosphere) became thicker, what would happen to the earth's temperature? What if it was thinner?

3. **Abstraction/Generalization**
   Using the learner's module, present the key concepts about the greenhouse effect, global warming, and climate change.

4. **Application**
   Ask each learner to prepare a similar experiment or activity which exhibits the greenhouse effect. The experiment should also be able to help predict global warming (e.g., thickening the film of the plastic bottle will cause more heat to generate inside, thus increasing temperature).

IV. Evaluation

On a clean sheet of paper, ask the groups to write their understanding of the session.

WHY IS IT STILL HOT DURING THE RAINY SEASON?
Session Guide No. 3

I. Objectives

1. Describe how people adapt to climate change (LS2SC-ASPSE-LE/AE/LJHS/AJHS 23); and
2. Explain why people need to adapt to climate change (LS1CS/EN-W-PSE- AJHS-23).

II. Subject

A. **Lesson 3**: How Do People Adapt to Climate Change?
B. **Materials**: cardboard paper, short bond paper, ballpen/pencil

III. Procedure

1. **Activity**
   a. Divide the learners into eight groups.
   b. Prepare cue cards with the following labels:
      - producing and using renewable energy over fossil fuels
      - engaging in public transport and sustainable mobility (bicycles, trains, and carpooling)
      - promoting environment-friendly industry, food sustainability, and the 3Rs (reduce, reuse, recycle)
      - increasing tax on industries that use fossil fuels and release high amount of carbon dioxide in the environment
      - constructing sustainable infrastructures
      - replanting trees in forests and doing other restorative measures to the ecosystem
      - diversifying farming for better crop management
      - developing action plans for climate emergencies (e.g., drought, strong typhoons, storm surges)
   c. Hand out one cue card each to the groups then ask them to classify it as adaptation or mitigation.

2. **Analysis**
   a. Ask the groups to present their cue card in class and explain why they chose to classify such as adaptation or mitigation.

   b. Inform the students about the correct classification:
   Mitigation
   - producing and using renewable energy over fossil fuels
   - engaging in public transport and sustainable mobility (bicycles, trains, and carpooling)
   - promoting environment-friendly industry, food sustainability, and the 3Rs (reduce, reuse, recycle)
   - increasing tax on industries that use fossil fuels and release high amount of carbon dioxide in the environment

   Adaptation
   - constructing sustainable infrastructures
   - replanting trees in forests and doing other restorative measures to the ecosystem
   - diversifying farming for better crop management
   - developing action plans for climate emergencies (e.g., drought, strong typhoons, storm surges)

   c. Discuss with the class that mitigation is the reduction of the flow of greenhouse gases into the atmosphere, thereby minimizing the causes and maximizing the solutions. Adaptation is the adjustment to the actual climate or expected future climate, thereby finding ways to decrease the negative effects.

3. **Abstraction/Generalization**
   Using the learner's module, present the key concepts on the suggested ways that countries can do to adapt to climate change.

4. **Application**
   Ask the students to prepare a proposal on how their community can adapt to climate change. They can use the following guide questions in writing the proposal:
   a. What is the most obvious effect of climate change in your community?
   b. How has this affected your community in the past years?
   c. What is your proposed adaptive measure to this effect?
   d. Why do you think your proposal is effective?

IV. Evaluation

On a clean sheet of paper, ask the groups to write their understanding of the session.

ANSWER KEY

PRE-ASSESSMENT

PAGE 2

1. A
2. B
3. C
4. D
5. A
6. B
7. C
8. D
9. A
10. B
11. C
12. D
13. A
14. B
15. C

LESSON I: WHAT IS THE DIFFERENCE BETWEEN WEATHER AND CLIMATE?

SHARPENING YOUR SKILLS

PAGE 14

ACTIVITY I

1. FALSE
2. TRUE
3. FALSE
4. TRUE
5. TRUE
6. FALSE
7. FALSE
8. FALSE
9. TRUE
10. FALSE

ACTIVITY II

1. FALSE
2. FALSE
3. TRUE
4. TRUE
5. TRUE
6. FALSE
7. FALSE
8. TRUE
9. TRUE
10. TRUE

TREADING THE ROAD TO MASTERY

PAGE 18

ACTIVITY I

Weather: sunny/windy/rainy days, daily/monthly/yearly atmospheric conditions

Climate: average of atmospheric conditions, decade/century weather conditions

Weather and Climate: atmosphere, seasons, temperature, humidity, rainfall

ACTIVITY II

CRITERION	Exemplary (2)	Proficient (1)
Support/ Evidence (x3)	argument is clearly supported by accurate evidence considered credible by the audience; there is sufficient detail to support the main points of the argument	some evidence is provided, but information is not fully explained; important pieces of evidence have not been included; some data are relevant or credible but inaccurate
Clarity/ Conciseness (x2)	sentences flow smoothly, are structurally correct, and convey the intended meaning; no wordiness	majority of ideas expressed are awkward, incorrectly constructed, or wordy
Strategy/ Audience	content, structure, and language of argument are geared to intended audience	argument is missing a substantial portion of content required by audience

ACTIVITY III

Temperature		
TI	>	TII
TII	<	TIII
TIII	>	TIV

Humidity		
TI	>	TIII
TI	<	TIV
TII	=	TIV

Rainfall		
TI	<	TII
TII	<	TIV
TI	<	TIII

LESSON II: WHAT IS THE DIFFERENCE BETWEEN GLOBAL WARMING AND CLIMATE CHANGE?

SHARPENING YOUR SKILLS

PAGE 25

ACTIVITY I

1. TRUE
2. TRUE
3. FALSE
4. FALSE
5. TRUE
6. FALSE
7. TRUE
8. FALSE
9. TRUE
10. TRUE

ACTIVITY II

1. Intergovernmental Panel on Climate Change (IPCC)
2. man-made activities
3. 0.74°C
4. poor developing countries
5. rising surface (land and ocean) temperature
6. rising sea levels
7. decrease in snow covers in the Northern Hemisphere
8. cold days, cold night, and frost becoming less frequent
9. hot days, hot nights, and heat waves becoming more frequent
10. increasing intense tropical cyclone activities

TREADING THE ROAD TO MASTERY

PAGE 28

CRITERION	Exemplary (2)	Proficient (1)
Support/ Evidence (x3)	argument is clearly supported by accurate evidence considered credible by the audience; there is sufficient detail to support the main points of the argument	some evidence is provided, but information is not fully explained; important pieces of evidence have not been included; some data are relevant or credible but inaccurate
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LESSON III: HOW DO PEOPLE ADAPT TO CLIMATE CHANGE?

SHARPENING YOUR SKILLS

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ACTIVITY I AND ACTIVITY II

CRITERION	Exemplary (2)	Proficient (1)
Support/ Evidence (x3)	argument is clearly supported by accurate evidence considered credible by the audience; there is sufficient detail to support the main points of the argument	some evidence is provided, but information is not fully explained; important pieces of evidence have not been included; some data are relevant or credible but inaccurate
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TREADING THE ROAD TO MASTERY

PAGE 39

1. C
2. D
3. C
4. A
5. B
6. B
7. A
8. A
9. C
10. B

REACH THE TOP

PAGE 45

ACTIVITY I

1. W
2. C
3. C
4. C
5. W

ACTIVITY II

1. ↑
2. ↓
3. ↓
4. ↑
5. ↓

ACTIVITY III

1. 3
2. 4
3. 1
4. 2
5. 2

ACTIVITY IV

1. FAST
2. SLOW
3. FAST
4. FAST
5. SLOW
6. FAST
7. SLOW
8. FAST
9. SLOW
10. SLOW

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