**TOPIC TITLE:  SCIENCE AND TECHNOLOGY AND NATION BUILDING**

**LEARNING OBJECTIVES:**

At the end of the topic session, the students should be able to:

LO5:  Discuss the role of Science and Technology in Philippine nation building;

LO6:  Evaluate government policies pertaining to science and technology in terms of their contributions to nation building;

LO7:  Identify actual science and technology policies of the government and appraise their impact on the development of the Filipino nation; and

LO8:  Instill in mind and heart the roles/ task/ responsibilities of everyone in nation building.

**MATERIALS/EQUIPMENT:**

- o Computer
- o LCD projector
- o Files (03 Science and Technology and Nation Building)
  - 03 LCD Slides 1.ppsx
  - 03 Activity 1.pdf
  - 03 Readings 1.pdf
  - 03 Readings 2.pdf
  - 03 Readings 3.pdf
  - 03 Readings 4.pdf
  - 03 Readings 5.pdf
  - 03 Readings 6.pdf
  - 03 Readings 7.pdf
  - 03 Teaching Materials 1.pdf
  - 03 Teaching Materials 2.pdf
- o Software requirement
  - MS PowerPoint

**TOPIC PREPARATION:**

- o This session involves information about the different policies enacted by the Philippine government and the programs launched in aid of S&T development in the country, the personalities involved in promulgating these policies, the nature of science education in the Philippines, and selected indigenous science and technologies in the country.
- o The instructor must ensure that materials for the **collage making** activity are assigned to the students prior to actual session.
- o Creative group output presentations must not exceed 20 minutes to ensure that ample time is given for critiquing and reflection.

    o   For the module **vocabulary**, the instructor **MUST** instruct the students to highlight the unfamiliar/difficult terms/phrases in the readings and look for their meaning in their dictionaries or from the Web.

**PRESENTATION OVERVIEW:**

| | | |
|---|---|---|
| A. | Introduction | 20 min |
| B. | Instructional Input | |
| | *The Philippine Government S & T Agenda* | 130 min |
| | *Major Development programs and the personalities* | |
| | *in S & T in the Philippines* | |
| | *Science Education in the Philippines* | |
| | *Selected indigenous Science and Technologies* | |
| C. | Generalization | 20 min |
| D. | Task Performance | 65 min |
| E. | Learning Management System | 5 min |
| | Total duration | 240 min |

**TOPIC PRESENTATION:**

**A. Introduction**

1. Review students' understanding of the concepts in Module 2 by doing the Everyone Up Activity.

2. Ask all the students to stand up. They only get to sit down when they can share one (1) important fact or concept from the previous session. Build a positive connection with reluctant students by immediately calling them if they raise their hands and they are able to give correct answers.

3. To acknowledge students who are keeping track of the lessons, you may also ask for concepts or ideas that are related for this week's session.

4. The instructor may ask the class to sit down even if students have not shared their ideas as they have already heard ideas restated and summarized.

*Slide 1*

5. Introduce the new module by presenting *Slide 1* of **03 LCD Slides 1**. Briefly discuss the different topics for the week, then proceed to *Slide 2*.



**STI**

**Science and Technology and Nation Building**
- The Philippine Government Science and Technology (S & T) Agenda
- Major Development Programs and Personalities in S & T in the Country
- Science Education in the Philippines
- Selected Indigenous Science and Technologies

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*Slide 2*



A mining operation in Claver, Surigao del Norte

Former DENR Secretary Gina Lopez

6. Ask the students to interpret the first image on **Slide 2**. Then, show the second image and ask them who the person in the image is.

   The first image is an open pit mining in Claver, Surigao del Sur, ordered closed by the person in the second image, Former DENR Secretary Gina Lopez.

*Slide 3*



Former Philippine Climate Change Commissioner Naderev Saño

Saño weeping at the UN Climate Conference in Warsaw (2013)

7. Repeat this process in **Slide 3**.

   The person in the two (2) images is Naderev Saño, former Climate Change Commissioner of the country. He represented the Philippines in the UN Climate Conference in Warsaw Poland, back in 2013. He became emotional and broke down in tears as he addressed the delegates. Typhoon Haiyan just hit the Philippines at that time and terribly damaged his native hometown, Tacloban.

8. Explain to the class that these two (2) personalities have become controversial because of their stand against environmental destruction and climate change. The said issues are the foremost issues confronting the world and the Philippines right now. And to effect change caused by these problems, long-term programs must be implemented.

9. Just like the mentioned issues, the state of science and technology in the Philippines need a big push from the government and the private sector.

10. Explain further that the development and success of S&T programs are dependent upon the will power of the focal person/group implementing the policies and programs.

**B. Instructional Input**

1. The first session of Week 4 will be used in the following manner:

   A. Introduce the topics for the session. You may start the short discussion by mentioning the President's assurance to support Science and Technology (S&T) when he approved a bigger budget for the Department of Science and Technology (DOST) this year (see **03 Readings 1**). Worth mentioning is the President's stand regarding S&T in his 10-point socioeconomic agenda.

"Promote science, technology, and the creative arts to enhance innovation and creative capacity towards self-sustaining, inclusive development."

*Slide 4*



B. Present *Slide 4*. Briefly discuss the Philippine Development Plan for 2017-2022, the first medium-term plan anchored on the Ambisyon Natin 2040. Refer to **03 Readings 2** for discussion points.

*Slide 5*



C. Show *Slide 5*, showing the images of the country's renowned scientists. Use **03 Readings 3** and **4** to share with the students their contributions in nation building. Relate this with the discussion in **03 Readings 5**, discussing how a new bill by Albay Rep. Joey Salceda aims to "revitalize the country's S&T," apart from the other four (4) bills he previously authored.

*Slide 6*



D. Present *Slide 6*. Tell the class that the image shows a contemporary house design based on the principles of building a bahay kubo. Ask the class of other indigenous science concepts and technologies that they are familiar with. You may use **03 Readings 6** and **7** to enrich the short discussion.

*Slide 7*



E. Flash *Slides 7-9* to show several samples of collage. Ask them what kind of art is shown in the images.
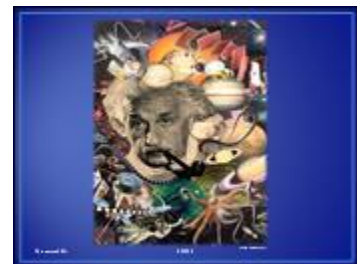
F.  With their respective groups, distribute **03 Activity 1** to the students (one sheet per group) and let them read a short selection about the nature of collage and the instructions in carrying out the activity (collage making).

G.  After 10 minutes, call the attention of the students and instruct them to create a collage of the assigned policy to their group. Remind the students of their groupings (Group 1 – Air, Group 2 – Water, Group 3 – Land).  They must be able to utilize the knowledge they obtained from their research, as well as the information from the required readings and videos.

H.  The collage must convey information about the following:

i.  personality/ies in charge for the promulgation of the policy and the reason for its creation;

ii.  specific contributions of the policy to nation building; and

iii.  impact of the policy on the development of the country.

I.  Instruct the students to finish their work within the session, ensuring that all members are collaborating with the group.

J.  Survey the groups for any difficulty they have in carrying out the activity. Ensure that all groups were able to come up with quality work.

K.  Once the groups are done with their collage, give them time to brainstorm on how they will showcase what they have researched and understood through a creative presentation next meeting. It may be a poem, song, dance routine, or role playing.

2.  The second session of Week 4 will be spent in the following manner:

A.  The groups will present their group outputs in no more than 20 minutes. Critiquing will only be done after all the groups have presented their outputs.

B.  A group reflection follows, with the guide question below:

How do Science and Technology advancements help the development of the Philippine nation?

C.  The answer must be written in a bond paper and submitted to the instructor. Use **03 Teaching Materials 1** to explain to the students how their work will be evaluated.

**C.  Generalization**

1.  Wrap up the session by asking several students to summarize their learnings using the 3-2-1 Summary Technique. Let students share three (3) things they discovered, two (2) things they find interesting with the topics presented, and one (1) question they have about the topics.

**D.  Task Performance**

> **Steps 1-2**
> **Activity:** Coffeehouse Day
> **Learning Objective(s):** LO5, LO6, LO7

1.  Session 1 of Week 5 will be designated as "Coffeehouse Day" or "Café Day" where the class will sit and "catch up on the news" while sipping coffee and listening to good music. Refer again to **01 Task Performance 1** for the details of the activity, as well as the rubric in evaluating their work.

2.  Students will be doing a gallery walk to give them the chance to comment on what they liked about each other's submission (newspapers). Use the first rubric in **01 Teaching Materials 2** to evaluate their output.

3.  After the gallery walk, the instructor will do the following:

    a.  Commend the students for their effort in putting up the café and in producing their newspapers.

    b.  Guide the students in accomplishing their group peer evaluation (see second rubric in **03 Teaching Materials 2**).

4.  The instructor is encouraged to give awards to deserving editors, artists, or teams.

**E.  Learning Management System**

*Slide 8*

> **Steps 1-2**
> **Tool:** eLMS (Neo - LMS)
> **Resources:** 04 Readings 3

1.  Present *Slides 10-11* to the students, discussing the eLMS activities for this session and the next lesson.
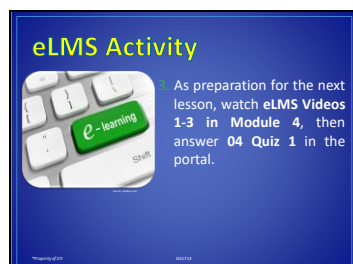
eLMS Activity

1. Answer the **eLMS Review Quiz** in **Module 3** as preparation for the Preliminary Exam.
2. Download and read **01 Readings 1-3.**

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*Slide 9*



2. Remind the students that reading the assigned materials and viewing the assigned videos for the next lesson is a **MUST**.

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