



Republic of the Philippines  
**Department of Education**  
REGION X – NORTHERN MINDANAO  
SCHOOLS DIVISION OF EL SALVADOR CITY

Office of the Schools Division Superintendent

January 25, 2023

**DIVISION MEMORANDUM**

NO. 042 S. 2023

**ADDENDUM TO THE DIVISION MEMORANDUM NO. 016 S. 2023 RE:  
ADMINISTRATION OF THE NATIONAL ACHIEVEMENT TEST  
FOR GRADE 12 FOR SCHOOL YEAR 2022-2023**

To: Assistant Schools Division Superintendent  
Division Chiefs  
Curriculum Implementation Division  
School Governance and Operations Division  
Public Secondary Schools  
Private Secondary Schools  
This Division

1. Relative to the Division Memorandum No. 016, s. 2023 *Re: Administration of the National Achievement Test (NAT) for Grade 12 Learners on January 30-31, 2023*, the following are the additional details:

**a. Distribution of Test Materials:**

January 30, 2023, 6:00 a.m. – 7:00 a.m. at the Division  
Conference Room, 2<sup>nd</sup> Floor, Diamond Building

**b. Retrieval of Test Materials:**

January 31, 2023, 1:00 p.m. – 5:00 p.m. at the Division  
Conference Room, 2<sup>nd</sup> Floor, Diamond Building

**c. Monitoring Team:**

- Technical Assistance Provider (TAP) / Education Program Supervisors from the CID and SGOD
- Chief Education Supervisors
- Guidance Counselors (District I and II)
- Division Testing Coordinator and Assistant Division Testing Coordinator
- Division Health Personnel

SGOD-smme



Address: Zone 3, Poblacion, El Salvador City | Website: [www.depedelsalvadorcity.net](http://www.depedelsalvadorcity.net)  
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**SCHOOLS DIVISION OF EL SALVADOR CITY**

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2. Attached is the list of the Room Examiners per School.
3. Further, this Memorandum shall serve as the **Authority to Travel** of the Division Monitoring Team and the identified Room Examiners per School.
4. This activity shall adhere to the Equal Opportunity Principle (EOP) wherein there is no discrimination on account of age, gender, identity, sexual orientation, civil status, disability, religion, ethnicity or political affiliation.
5. For information, guidance, and strict compliance.

  
**OLGA C. ALONSABE, PhD, CESO V**  
Schools Division Superintendent

To be included in the Perpetual Index  
under the following subject:  
Testing NAT G12  
SGOD-smme

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Republic of the Philippines  
**Department of Education**  
REGION X – NORTHERN MINDANAO  
**SCHOOLS DIVISION OF EL SALVADOR CITY**

**Office of the Schools Division Superintendent**

January 12, 2023

**DIVISION MEMORANDUM**

NO. 016 S. 2023

**ADMINISTRATION OF THE NATIONAL ACHIEVEMENT TEST  
FOR GRADE 12 FOR SCHOOL YEAR 2022-2023**

To: Assistant Schools Division Superintendent  
Division Chiefs  
Curriculum Implementation Division  
School Governance and Operations Division  
Public Secondary Schools  
Private Secondary Schools  
This Division

1. Relative to the DepEd Memorandum No. 001, s. 2023 Re: Administration of the National Achievement Test (NAT) for Grade 12 for School Year 2022-2023, this Office thru the School Governance and Operations Division, will conduct an orientation the said test administration on **January 17, 2023, 2:00 – 4:00 p.m.**, at the Division Office, 2<sup>nd</sup> floor, Diamond Building.
2. The participants to this activity are the School Head of the following schools:
  1. Cogon National High School (SHS)
  2. Hinigdaan National High School
  3. Molugan National High School
  4. Sinaloc National High School
  5. El Salvador City National High School
  6. Himaya National High School
  7. San Francisco de Asis National High School
  8. St. Joseph Academy of El Salvador
  9. The New El Salvador City College, Inc.

SGOD-smme




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Republic of the Philippines  
**Department of Education**  
REGION X – NORTHERN MINDANAO  
**SCHOOLS DIVISION OF EL SALVADOR CITY**

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3. All School Heads are hereby required to bring the updated enrolment of their Grade 12 learners which will serve as basis for the allocation of Test Materials.
4. Attached are the DepEd Memorandum No. 001, s. 2023 and the NAT G12 primer for reference.
5. This activity shall adhere to the Equal Opportunity Principle (EOP) wherein there is no discrimination on account of age, gender, identity, sexual orientation, civil status, disability, religion, ethnicity or political affiliation.
6. For information, guidance, and compliance.

  
**OLGA C. ALONSABE, PhD, CESO V**  
Schools Division Superintendent

To be included in the Perpetual Index  
under the following subject:  
Testing            NAT G12

SGOD-smme

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Republic of the Philippines  
**Department of Education**

JAN 05 2023

DepEd MEMORANDUM  
No. **001**, s. 2023

**ADMINISTRATION OF THE NATIONAL ACHIEVEMENT TEST FOR GRADE 12  
FOR SCHOOL YEAR 2022-2023**

To: Undersecretaries  
Assistant Secretaries  
Minister, Basic, Higher, and Technical Education, BARMM  
Bureau and Service Directors  
Regional Directors  
Schools Division Superintendents  
Public and Private Secondary School Heads  
All Others Concerned

1. The Department of Education (DepEd) will administer the **National Achievement Test for Grade 12 (NATG12)** for School Year (SY) 2022-2023 on January 30 and 31, 2023, pursuant to DepEd Order (DO) No. 55 s. 2016 titled **Policy Guidelines on the National Assessment of Student Learning for the K to 12 Basic Education Program**. All currently enrolled Grade 12 learners in public and private schools will take the test through a paper-based modality.
2. In reference to DO 029, s. 2022 titled **Adoption of the Basic Education Monitoring and Evaluation Framework**, DepEd has to identify and articulate indicators and targets for measuring performance in the development of plans and policies. These indicators will be used for the assessment of the effectiveness and efficiency of the delivery of education services. The results of system assessments will serve as evidence and proxy indicator for the improvement of the curriculum implementation, evidence-based decision-making, and results-based Monitoring and Evaluation.
3. The NATG12 is one of the exit assessments under the national assessment framework of the K to 12 Basic Education Program. It is designed to determine if graduating learners are meeting the learning standards in the senior high school (SHS) curriculum. The result of the NATG12 provides data on the percentage of Grade 12 learners attaining at least the minimum level of proficiency in the Stage 4 SHS core areas over the total number of Grade 12 learners. Each learner will be provided with a Certificate of Rating (COR) with the learner's actual rating per core subject area for SY 2022-2023.
4. The test shall cover 21st-century skills and the core SHS learning areas of Languages, Humanities, Communication, Mathematics, Science, Social Science, and Philosophy. The test design is progressive in nature wherein test items measure varying levels of skills. The language of the assessment tool shall be English and Filipino while the test item format shall be multiple-choice.
5. The Bureau of Education Assessment (BEA) will manage the national implementation of the NATG12 with the assistance of the regional offices (ROs) and schools division offices (SDOs). BEA will coordinate with the identified field-testing

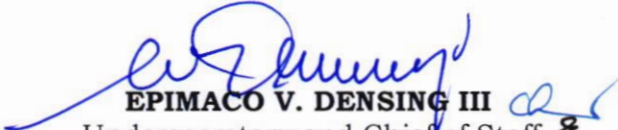
personnel for the conduct of a national conference and the administration of the NATG12.

6. The guidelines on the test administration, including the roles and responsibilities of the field-testing personnel and the downloading of the Program Support Funds (PSF) to SDOs, will be discussed in an online national orientation that will be held on **January 6, 2023**. The link to the virtual event will be sent to the Regional Testing Coordinators (RTCs), Division Testing Coordinators (DTCs), and SDO Private School Supervisors through an advisory.

7. For more information, please contact the **Bureau of Education Assessment – Education Assessment Division** through email at [bea.ead@deped.gov.ph](mailto:bea.ead@deped.gov.ph) or at telephone number (02) 8631-2589.

8. Immediate dissemination of this Memorandum is desired.

By Authority of the Secretary:

  
**EPIMACO V. DENING III**  
Undersecretary and Chief of Staff

References:

DepEd Order (Nos. 55 s. 2016 and 029, s. 2022)



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please scan the QR code.



DEPED-OSEC-479790

To be indicated in the Perpetual Index  
under the following subjects:

ASSESSMENT  
BUREAUS AND OFFICES  
LEARNERS  
MONITORING AND EVALUATION

PERFORMANCE  
POLICY  
SCHOOLS  
TEST

Prepared by:  
The Bureau of Education Assessment (BEA)

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Republic of the Philippines  
**Department of Education**  
BUREAU OF EDUCATION ASSESSMENT



**NATIONAL ACHIEVEMENT TEST**  
**FOR GRADE 12 (NAT G12)**  
**PRIMER**



## NATIONAL ACHIEVEMENT TEST FOR GRADE 12 (NAT G12)

### Introduction



The Department of Education (DepEd) ensures the continuous improvement of its systems to provide all learners access to quality basic education. To assess the continuous improvement of teaching and learning processes, sound information and data on learning outcomes are needed as proxy indicators of system effectiveness and efficiency. In line with this, DepEd through the Bureau of Education Assessment (BEA) administers the National Achievement Test for Grade 12 (NAT G12).



The NAT G12 is part of the exit assessment per Section 3 of DepEd Order No. 55, s. 2016 titled, *"Policy Guidelines on the National Assessment of Student Learning for the K to 12 Basic Education Program"*. The results of this assessment shall be utilized to:

- a. determine if learners are meeting the learning standards;
- b. help provide information to improve instructional practices;
- c. assess/evaluate effectiveness and efficiency of education service delivery using learning outcomes as indicators; and
- d. provide empirical information as bases for curriculum, learning delivery, assessment and policy reviews, and policy formulation.

DepEd Order No. 55, s. 2016 laid the framework for all exit assessments which covers the target clientele, purpose, design, test administration procedures, and results utilization.



DepEd Order No. 29, s. 2017 titled, *"Policy Guidelines on System Assessment in the K to 12 Basic Education Program,"* decreed NAT G12 as part of DepEd's internal system assessment which aims to generate reliable data for use in planning, monitoring, and evaluation cycles of the department. This directs all DepEd offices to organize advocacy activities that will lead to understanding and acceptance of, and support for participation in national and international large-scale assessments among teachers, administrative personnel, students, and education stakeholders.

### Primer Objectives



The purpose of this NATG12 primer is to provide greater awareness to the DepEd field offices and schools on national assessments. This primer shall be used to facilitate school-based rapid assessment of learning gaps and to design regional, division, or school-level interventions. It may aid schools in helping students prepare the needed student- and school-related data/information before the examination.

The dissemination of primers and conduct of information campaigns intend to ensure that the school-level and national-level assessments are aligned and to identify complementary quality standards beyond those covered by the national assessments for a holistic evaluation of education quality. In addition, the dissemination of the primers may provide information to parents and other



stakeholders for the appreciation of the role of assessment in the continuous improvement of the delivery of basic education services.

Further, this primer provides an overview of the test design, test administration, and data reporting and utilization. It also includes sample test items per learning area across the 21<sup>st</sup> Century Skills domains.

### Test Design



The NAT G12 covers the following 21<sup>st</sup> Century Skills: *Problem-Solving, Critical Thinking, and Information Literacy*, and the core Senior High School learning areas of **Languages, Humanities, Communication, Mathematics, Science, Social Science,** and

**Philosophy.** Test items are constructed and validated based on subskills and progression indicators.

### 21<sup>st</sup> Century Skills Competencies

Competencies from each learning area are arranged according to 21<sup>st</sup> century skills. The test design is progressive in nature wherein test items measure varying levels of skills in a multiple-choice format in Filipino and English language.

The following tables provide the subskills and the corresponding progression indicator that is included in each learning area:

### Problem-Solving

Subskill	Progression Indicator
Analyzing outcome	Identify association
	Identify cause and effect
	Predict outcome
Executing strategy/methods	Identifies a strategy/method
	Selects appropriate methods to solve the problem
	Identifies alternative methods to solve the problem
Understanding the problem	Generates hypothesis about the problem
	Modifies hypothesis to other problems
	Generalizes hypothesis to other problems

### Critical Thinking

Subskill	Progression Indicator
Analyzing relevance	Identifying that there is different information
	Differentiating between relevant and irrelevant information
	Drawing only on relevant information
Evaluating sources	Identifies the source of information
	Evaluates the credibility of the source
	Develops the criteria for evaluation of the source
Using evidence to formulate an argument	States evidence
	Links evidence to the argument
	Draws a conclusion based on various evidence

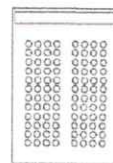
## Information Literacy

Subskill	Progression Indicator
Ability to manage information	Classify information
	Organize structure of the classification
	Sequence the information
Ability to identify types of information	Acknowledge different types of information
	Present required information when explicitly asked
	Interpret questions or forms to provide appropriate information
Ability to communicate information	Present information in another medium
	Organize information in another medium
	Re-organize or sequence the information

## Test Administration

The NAT G12 shall be administered to all enrolled Grade 12 learners in public and private schools in a paper-based modality. The census mode of administration is implemented to collect large-scale data, as well as monitoring of achievement at the micro- or school-level, and to provide a balance between the classroom-based assessment and the system-wide assessment. Examinees with special needs will also be accommodated as articulated in Section 9 of DepEd Order 55, s. 2016.

## Answer Sheet



Scannable answer sheets will be used to record examinees' responses. The answer sheet contains circles/bubbles for the personal information of the learner, school-related variables, and a section where examinees can shade their test answers. To manage the shading in the answer sheet, a lead pencil will be used. At the end of the examination, room examiners should ensure that all answer sheets are free from any erasures or unnecessary marks.

Information to be filled in/shaded on the first page of the answer sheet is important in the generation of assessment data for field offices, researchers, and other stakeholders. Moreover, accurate and complete information is crucial in producing valid and reliable data. Hence, room examiners should check whether examinees are supplying the necessary information in the proper section of the answer sheet.



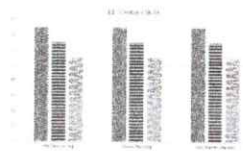
Schools should inform examinees that the following information are to be provided on the examination day:

- Name
- Type of school
- Gender
- Type of community
- Region and Division codes
- Learner Reference Number (LRN)

- Plans after graduating Senior High School (SHS)
- Are you a member of IP group?
- Is your family a recipient of 4Ps?
- For private school students, are you a recipient of SHS Voucher program?
- School ID (Grade 12)
- Birth Date
- Class number
- Age

Answer sheets retrieved from all testing centers are electronically processed.

#### Data Reporting and Utilization



Test scores shall be reported as percentages. Normative data using the measure of standard deviations are computed based on the Mean Percentage Scores (MPS). Results are presented by levels of progression and proficiency level is at least 75%. The levels of proficiency, descriptions, and their corresponding range of percentage scores are shown in the following table.

#### Levels of Proficiency

Level	MPS	Description
Highly Proficient	90-100	At this level, the students are highly capable of solving problems, managing and communicating accurate information, and analyzing and evaluating data to create/formulate ideas.
Proficient	75-89	At this level, students are skilled in solving problems, managing and communicating information, and analyzing and evaluating data to create/formulate ideas.
Nearly Proficient	50-74	At this level, students met the minimum level of skills in solving problems, managing and communicating information, and analyzing and evaluating data to comprehend ideas.
Low Proficient	25-49	At this level, the students are able to identify strategies in solving problems, differentiate and organize information.
Not Proficient	0-24	At this level, students are able to solve simple problems, classify and identify the source of information.



### ***Duties and Responsibilities of Field Offices and Schools***

As provided for in DepEd Order No. 29, s. 2017, equally important to the successful conduct of system performance evaluation is students' understanding of their role in the process. Therefore, using developmentally appropriate methods, the field offices and schools are directed to:

- a. conduct orientation activities for learners explaining to them the relationship between their performance on the assessments and its effect on curriculum policies and assessment standards;
- b. conduct a post-assessment debriefing session that will allow students to share their experience; and
- c. inform the learners about the results and their implications on the educational system.

### **Sample Results of NAT G12 for School Year 2018-2019**

The following table shows the summary of the national ratings of the NAT G12 administered in school year 2018 - 2019 to **1,263,963** examinees. The MPS per track indicates that most of the learners exhibit low proficiency in *Problem Solving*, *Information Literacy*, and *Critical Thinking*.

TRACK	OVERALL					
	Problem-Solving		Information Literacy		Critical Thinking	
	MPS	SD	MPS	SD	MPS	SD
Academic Track	41.68	10.13	38.59	9.56	37.91	9.52
Technical-Vocational Livelihood Track	36.75	8.91	34.09	8.19	33.53	8.02
Sports Track	30.76	7.73	28.90	6.93	29.00	6.61
Arts and Design Track	36.89	11.04	34.76	10.10	34.29	10.00
Others	31.74	7.72	29.91	6.98	29.59	6.92
Not Specified	28.41	11.76	26.39	10.61	25.75	10.93

This information serves as evidence and a basis for monitoring and evaluation of the current system and formulating policies and solutions for improvement.

## Sample Test Items

### MATHEMATICS

<b>21<sup>st</sup> Century Skill</b>	:	Problem Solving
<b>Sub-skill</b>	:	Analyzing Outcome
<b>Content</b>	:	Functions and Their Graphs
<b>Item Numbers</b>	:	1, 2, and 3

- Two tanks are filled with water at weekly rates given by  $t(x) = 4x - 2$  and  $l(x) = x^2 + x$ . Which function shows the total amount  $t(x)$  of water that is contained by both tanks?
  - $t(x) = x^2 + 3x - 2$
  - $t(x) = x^2 + 5x - 2$
  - $t(x) = 4x^2 + 5x - 2$
  - $t(x) = 4x^3 + x - 2$
- If the function  $f(x) = 4x^2 - 8$  is decreased by  $g(x) = x^2 + x$ , what value will the new function give for  $x = 5$ ?
  - 30
  - 62
  - 78
  - 92

- Given  $h(x) = x + 1$  and  $g(x) = |x|$ . What will be the sign of  $g(f(x))$ ?

- Negative
- Positive
- $g(f(x))$  has no sign
- Cannot be determined

<b>21<sup>st</sup> Century Skill</b>	:	Information Literacy
<b>Sub-skill</b>	:	Ability to Manage Information
<b>Content</b>	:	Random Variables and Probability Distributions
<b>Item Numbers</b>	:	4, 5, and 6

**For items 4 to 6, refer to the following:**

A Senior High School offers three academic strands: GAS, STEM, and HUMSS. The following table shows the proportion of teachers by strand, and within each strand, the proportion by gender.

GAS		STEM		HUMSS	
50%		20%		30%	
Male	Female	Male	Female	Male	Female
20%	80%	70%	30%	40%	60%

4. The School Principal wants to have a classification on the probability of randomly selecting a teacher to lead a forum. What is the probability that a randomly selected teacher is a male from the GAS strand?

- A. 0.10
- B. 0.12
- C. 0.16
- D. 0.20

5. The table below presents missing probabilities (?) of randomly selecting a teacher from a certain strand by gender.

Strand	GAS		STEM		HUMSS	
Gender	Male	Female	Male	Female	Male	Female
Probability	?	?	?	?	?	?

Which of the following would BEST provide the appropriate probabilities of randomly selecting a teacher from each strand by gender?

A.

Strand	GAS		STEM		HUMSS	
Gender	Male	Female	Male	Female	Male	Female
Probability	0.10	0.80	0.14	0.30	0.12	0.10

B.

Strand	GAS		STEM		HUMSS	
Gender	Male	Female	Male	Female	Male	Female
Probability	0.20	0.40	0.70	0.06	0.40	0.18

C.

Strand	GAS		STEM		HUMSS	
Gender	Male	Female	Male	Female	Male	Female
Probability	0.10	0.40	0.70	0.30	0.12	0.18

D.

Strand	GAS		STEM		HUMSS	
Gender	Male	Female	Male	Female	Male	Female
Probability	0.10	0.40	0.14	0.06	0.12	0.18



6. The probabilities of selecting 1, 2, 3, and 4 items at a Department Store are 0.20, 0.45, 0.25, and 0.10, respectively. Which of the following is the CORRECT sequence of the given discrete data, based on increasing probability of being chosen at random?
- A. 4, 1, 3, 2
  - B. 3, 1, 2, 4
  - C. 2, 3, 1, 4
  - D. 1, 4, 2, 3

<b>21<sup>st</sup> Century Skill</b>	: Critical Thinking
<b>Sub-skill</b>	: Uses evidence to formulate an argument
<b>Content</b>	: Basic Business Mathematics
<b>Item Numbers</b>	: 7, 8, and 9

7. Shown on the table are two investment options.

	Amount of Investment	Nominal Rate	Interest Compounded	Time in Years
Option 1	₱100,000.00	10%	Quarterly	1.5
Option 2	₱100,000.00	10%	Monthly	1.5

Which option is better? Justify your answer.

- A. Option 2: Larger interest, compounding is more often (every month)
- B. Option 1: Larger interest, compounding has large intervals (every 3 months)
- C. Either Option 1 or 2: Amount of investment and rate of interest are the same.
- D. Either Option 1 or 2: Amount of investment and duration of investment are the same.

8. Study the table below.

Investment Scheme	Present value of the investment	Nominal rate	Interest Compounded	Term (yrs)	Future Value
I	A	12%	Monthly	10	₱1,000,000.00
II	B	12%	Quarterly	10	₱1,000,000.00
III	C	12%	Semi-annually	10	₱1,000,000.00

If the present value is the same for all investments that is  $A = B = C$ , which component in the table is the easiest to change for the entire investment scheme to be consistent?

- A. Term
- B. Future Value
- C. Nominal Rate
- D. Interest Compounding

9. Study the table below.

Investment Scheme	Nominal Rate	Interest Compounded	Term (years)
I	12%	Quarterly	5
II	12%	Semi-annually	5
III	12%	Annually	5

If the same amount is invested in the three investment schemes, which statement is true?

- A. Investment scheme III will yield the largest interest.
- B. All investment schemes will yield the same investment.
- C. Investment scheme I will yield the largest investment interest.
- D. Investment scheme II will yield an interest which is double that of Investment Scheme III.

\*\*\*\*\* END OF MATHEMATICS \*\*\*\*\*

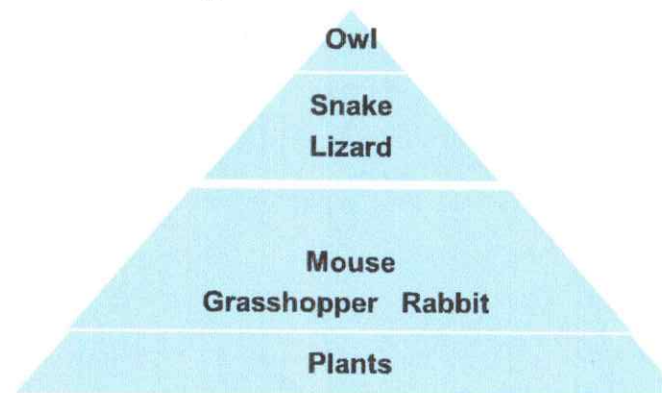
### SCIENCE

<b>21<sup>st</sup> Century Skill</b>	:	Information Literacy
<b>Sub-skill</b>	:	Ability to manage information
<b>Content</b>	:	Interaction and interdependence
<b>Item Numbers</b>	:	10, 11, and 12

10. In predation, a species called predator feeds on another species called prey. Which of the following relationships can be classified as predation?

- A. blue crab and barnacle
- B. chicken and fleas
- C. human and head lice
- D. snake and mice

11. The organisms in the diagram below are arranged according to feeding levels (i.e., first to fourth trophic levels). Which of the following statements describes the proper organization of the organisms in the diagram?



- A. The owl directly feeds on mice.
- B. The grasshopper feeds on plants.
- C. The snake directly feeds on plants.
- D. The owl feeds on all the other animals

For item 12, refer to the food web below.

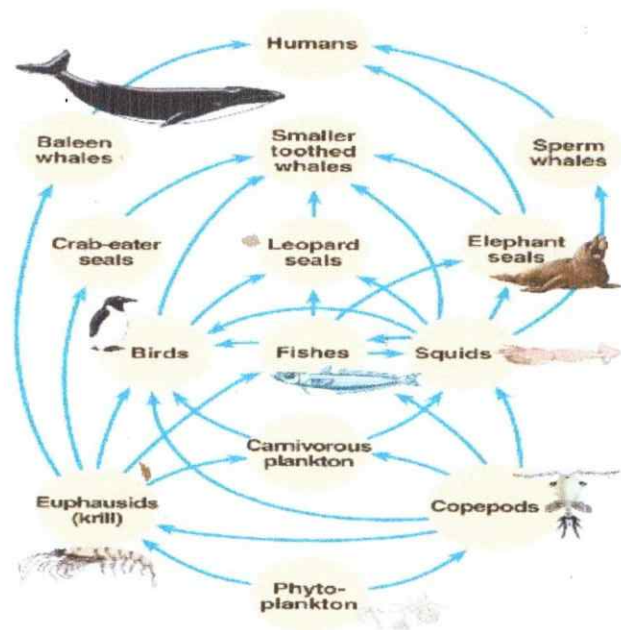


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12. What will be the proper sequence of organisms if you are going to derive a food chain from the above figure? Assume that decomposers are at the end of all the choices.

- A. krill → birds → fishes
- B. copepods → fishes → leopard seals
- C. carnivorous plankton → squid → sperm whales
- D. phytoplankton → copepods → carnivorous plankton

<b>21<sup>st</sup> Century Skill</b>	: Critical Thinking
<b>Sub-skill</b>	: Analyzing Relevance
<b>Content</b>	: How the properties of matter relate to their chemical structure
<b>Item Numbers</b>	: 13, 14, and 15

For items 13 to 15, refer to the graph below.

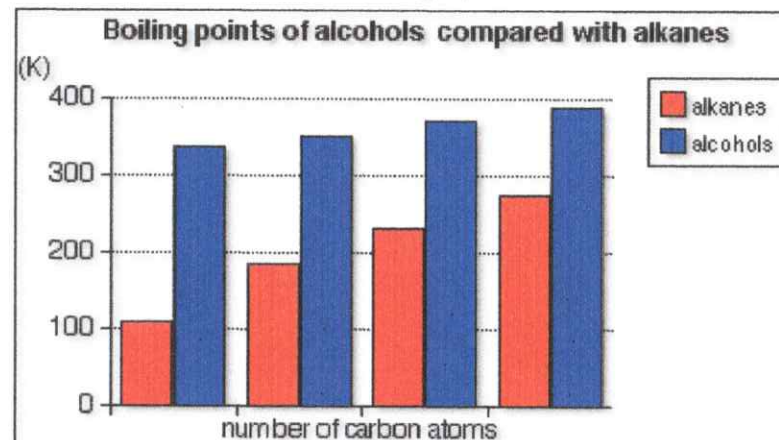


Photo Retrieved from: <https://files.mtstatic.com/site>

13. Which among the given information in the graph are being compared?

- A. Number of bonds
- B. Length of carbon chains
- C. Boiling points of alkanes and alcohols
- D. Number of carbon atoms of alkanes and alcohol



14. Which of the following intermolecular forces of attraction is best presented by the given graph?

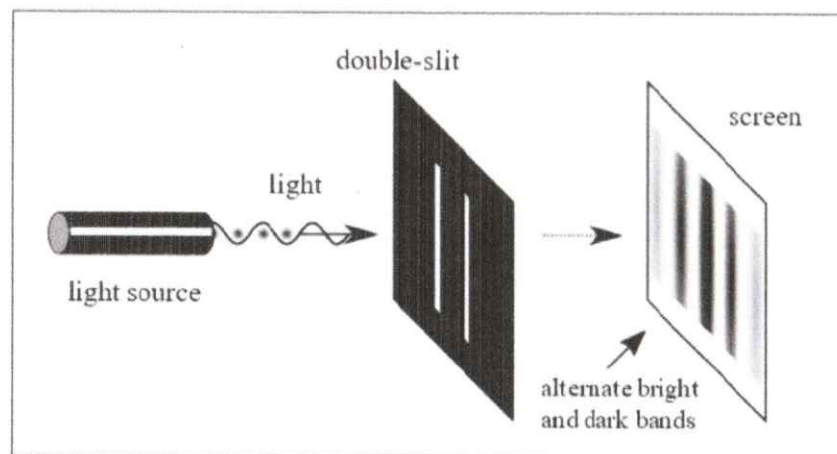
- A. Hydrogen bonding
- B. Dipole-dipole interaction
- C. Ion-dipole interaction
- D. Van der Waals force

15. Based on the given data, what is the approximate boiling point of an alcohol with 5 carbons?

- A. 100 K
- B. 225 K
- C. 350 K
- D. 410 K

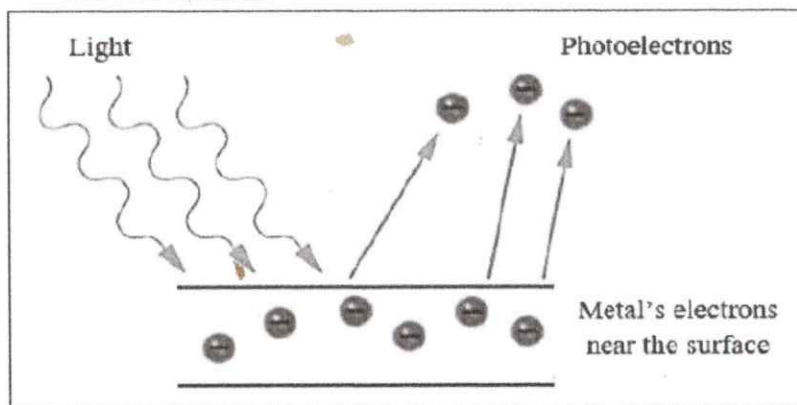
<b>21<sup>st</sup> Century Skill</b>	: Critical Thinking
<b>Sub-skill</b>	: Use evidence to formulate an argument
<b>Content</b>	: How light acts as a wave and a particle
<b>Item Numbers</b>	: 16, 17, and 18

16. The illustration on the next page depicts Thomas Young's set up of his Double-Slit Experiment. What evidence supporting the wave theory of light can be drawn from the illustration?



- A. The creation of shadows on the screen.
- B. The creation of interference patterns on the screen.
- C. The detection of photons of light passing through one slit only.
- D. The detection of photons of light passing through the two slits, producing two parallel bright bands on the screen.

17. The illustration on the next page depicts the phenomenon called the Photoelectric Effect which was first observed by Heinrich Hertz in 1880 and explained by Albert Einstein in 1905 using Max Planck's Quantum Theory of Light. As seen in the diagram, one can argue that the instantaneous emission of electrons from the metal upon shining light on the metal is associated with the \_\_\_\_\_.



- A. wave-like nature of light
- B. particle-like nature of light
- C. dual nature of light
- D. constancy of light

18. Study the table below. Which of the following conclusions CANNOT possibly be drawn from the information table?

Phenomenon	Can be explained in terms of waves	Can be explained in terms of particles
Reflection	✓	✓
Refraction	✓	✓
Interference	✓	✗
Diffraction	✓	✗
Polarization	✓	✗
Photoelectric Effect	✗	✓

- A. Photons of light do not exhibit interference, diffraction, or polarization properties.
- B. Light can be viewed as a particle or a wave depending on the effect being observed.
- C. Light was viewed completely as a wave until the photoelectric effect was discovered.
- D. Most commonly observed light phenomena can be explained by the wave nature of light

\*\*\*\*\* END OF SCIENCE \*\*\*\*\*

## LANGUAGE AND COMMUNICATION

<b>21<sup>st</sup> Century Skill</b>	: Critical Thinking
<b>Sub-skill</b>	: Analyzing Relevance
<b>Content</b>	: Communicative Competence Strategies in Various Speech Situations
<b>Item Numbers</b>	: 19, 20, and 21

For items 19 to 21, refer to the speeches below.

A	B
<p><i>Adapted extract of the speech of Megan Shinnick, TEDxYouth</i></p> <p>I had worked for years to be where I was, a young social activist, who co-created two successful non-profit organizations, a good student, and an even better friend, and a girl who never lacked positivity nor energy. I asked myself why. I had ignored what was going on in my head for so long, simply to maintain this reputation.</p>	<p><i>Adapted extract of the speech of Labour leader Ed Miliband at the Royal College of Psychiatrists</i></p> <p>It is excellent to be here with you today at the Royal College of Psychiatrists. I spoke a few weeks ago about the huge challenges Britain faces, as we attempt to rebuild our economy and create a stronger society. And today I want to talk about one of the most serious challenges our country faces.</p> <p>It is a challenge that affects our competitiveness as a country. That places a huge strain on our</p>

A	B
<p>(Cont...) I had already accomplished so much in my life, when strange things began happening to me. When even though I was academically motivated in the past, I couldn't seem to do homework, and I removed myself from friends, I didn't answer my phone for a week, and I refused to go to school, and getting out of my bed in the morning seemed impossible. I was diagnosed with depression.</p> <p>Depression in our society is not obvious when you are walking down the street or the hallway, but simply open your laptops, your smartphones, and do maybe one Google search, and you will be blown away. After my one Google search, I found that after a study conducted in this spring, 16 million Tumblr blogs were examined and of those,</p>	<p>(Cont...) public services. And that costs our economy tens of billions of pounds a year. I am talking, of course, about the challenge of mental health. In my view, mental health is an economic challenge holding back prosperity.</p> <p>As I speak here today, one in six people across Britain is affected by a mental illness. That is one in six people in each town or city, each workplace or community. According to the World Health Organization, one in four of us will have a mental illness at some point in our lifetime. The WHO predicts that by 2030, depression will be the leading cause of disease around the world. Physical or mental. That means mental health must be at the top of the agenda of the next Labour government.</p> <p>The extra physical healthcare necessitated by mental illness</p>



A	B
<p>(Cont...) 200,000 contained pictures, videos, and text posts of teenagers hurting themselves due to depression. Depression does not just come and go, it's there. And it is the third largest cause of death among teenagers in this country. 4,400 kids commit suicide a year, and for every one of those, at least 100 attempts. So if just some of you, who listen to me talk today, advocate to your school boards and beg, plead, demand that programs are set up, and maybe you start a petition, and it's for school funder's support, whatever you do, just do something, the impact would be life changing. Together, we can fight this disease that is controlling so many of us. And if you're out there, you're dealing with the depression, turn the energy that you have towards hatred for this awful thing into energy</p>	<p>(Cont...) costs the National Health Service (NHS) a further £10 billion a year. Seventy percent of those in our prisons have a mental illness. But it is not just our public services that bear the burden. British business does too. In time off work. In unproductive days at work. Mental ill health costs Britain's businesses almost £8,5 billion in sickness absence each year. The single biggest cause of long term sickness absence. It costs almost £2.5 billion in replacing staff who are unable to continue at work. And it costs £15 billion in reduced productivity. That's almost £26 billion a year.</p> <p>So mental health is an economic as well as a social challenge. It's one we must overcome. So can we do it?</p>

A	B
<p>(Cont...) for change. Because together we can fight back, and we can't let it win, we can't let depression win anymore. It's time to fight back.</p> <p>Thank you.</p>	

19. Which of the following does NOT explain the differing topic coverage of the two speeches?

- A. the audience
- B. the speaker's background
- C. the sources of the statistics
- D. the objectives of the speech

20. Which detail has the LEAST relevance to a community social worker?

- A. At least 100 kids attempt suicide every year.
- B. Seventy percent of those in prisons have a mental illness.
- C. One in six people in each town is affected by a mental illness.
- D. 26 billion yearly is lost on reduced productivity due to mental health problems.

21. Which group will find the following statement most relevant to their primary duty? "Seventy percent of those in our prisons have a mental illness."

- A. police officers
- B. social workers
- C. public officials
- D. health advocates

<b>21<sup>st</sup> Century Skill</b>	:	Critical Thinking
<b>Sub-skill</b>	:	Evaluate Sources
<b>Content</b>	:	Types of Speeches
<b>Item Numbers</b>	:	22, 23, and 24

For items 22 to 24, refer to this text and picture on the next page.

Imagine that you were invited to talk about the experiences of your class as you were taught by a teacher from the organization featured in the online profile in the picture. Answer the following questions by evaluating the credibility of the given text as an information source for an informal speech to be delivered in front of the members of the organization.

**TEACH FOR THE PHILIPPINES**

Our Story Vision Mission Values Our Team

## Our Story

Teach for the Philippines is a for-purpose, non-stock, non-profit organization that works to ensure all Filipino children benefit from an excellent, inclusive, and relevant education.

Founded in 2012, TFP focuses its efforts on improving teacher quality and addressing education challenges at the system-level. Through its three core programs, the organization builds a movement of high-potential Filipinos who can improve student learning outcomes, spark positive change in public school communities, and set reforms in motion to transform our public schools to become that which our children deserve, and that which our country needs.

Teach for the Philippines stands on the shoulders of a giant: **Sa Aklat Sisikat Foundation** (SAS). SAS created a 30-day reading program which was proven by the MIT J-PAL Poverty Action Lab to have significant positive impact in the reading skills of participating students (Linden, Leigh, Baafra Abeberese, and Todd Kumler, 2013).

Today, as a way of expanding the impact of SAS, oriented towards learning and built on a foundation of research, evidence, and operational excellence, TFP has grown into a nationwide movement that has engaged over 300 Filipino teachers and community leaders who are committed to work towards meaningful and positive change. And so, driven by a passion for expanding opportunities for public school students across the country, Teach for the Philippines aims to build a nation of readers and to transform the public school system to become the best that it can be.

Photo retrieved from: <https://teachforthephilippines.com/about/>

22. Which of the following supplied the information in the text?

- A. A blogger
- B. A news writer
- C. A government agency
- D. The featured organization

23. Based on the presented features, how would you characterize the credibility of the text as an information source of a speech to be composed?

- A. There is not enough information to evaluate the credibility of the text.
- B. Other sources need to be checked to confirm the credibility of the text.
- C. The text appears to be fairly credible.
- D. There is enough evidence that indicates the credibility of the source.

24. Which of the following is a negligible feature in the credibility of the text as an information source of a speech?

- A. Use of hyperlinks
- B. Recency of the text
- C. Accuracy of content
- D. Appropriateness of graphics

<b>21<sup>st</sup> Century Skill</b>	:	Critical Thinking
<b>Sub-skill</b>	:	Using Evidence to Formulate an Argument
<b>Content</b>	:	Purposeful Writing in the Disciplines and for Professions
<b>Item Numbers</b>	:	25, 26, and 27

For items 25 to 27, refer to the article below.

A form of vitamin E has been identified as a "very strong culprit" in lung injuries related to vaping, health officials reported on Friday, a major advance in a frightening outbreak that has killed 40 people and sickened 2,051. Vaping refers to the use of an electronic cigarette. Many patients with the mysterious illness have wound up hospitalized in intensive care units.

"For the first time, we have detected a potential toxin of concern, vitamin E acetate, from biological samples from patients," with lung damage linked to vaping, Dr. Anne Schuchat of the Centers for Disease Control and Prevention, said at a news briefing.

The new report, based on samples taken from the lungs of 29 patients, including two who died, "provided evidence of vitamin E acetate at the primary site of injury in the lungs," she said. She added, "These findings tell us what entered the lungs of some patients with these injuries. The results are consistent with other research that found vitamin E acetate in vaping products.



(Cont...) But Dr. Schuchat left open the possibility that other chemicals or toxins from vaping fluids or devices could also be causing the severe respiratory ailments. Samples of lung fluid from the 29 patients were also tested for plant oils, mineral oil, and other potentially harmful substances. None were found, she said. Health investigators have said since nearly the beginning of the outbreak in mid-August that some ingredients, including vitamin E acetate, could be responsible for some of the lung illness cases.

State health officials in New York had first identified vitamin E acetate from several samples of vaping products that were analyzed in a laboratory. Although most cases of the vaping illness have been linked to a form of vitamin E, THC (tetrahydrocannabinol), Dr. Schuchat said that this did not mean that other vaping products could be considered safe.

Nicotine has not been cleared, either. In a survey in Illinois, most of the healthy responders vaped nicotine, but 21 percent used THC. The patients who became ill were more likely to vape only THC (tetrahydrocannabinol), and to use it frequently.

Because there is still uncertainty about what is causing the illness, people are urged to avoid vaping anything, including e-cigarettes.

25. Which of the following is NOT evidence that identifies Vitamin E acetate as the cause of the disease?
- A. Vitamin E acetate is common in vaping products.
  - B. Vitamin E acetate was found in the lungs of sick patients.
  - C. Twenty-one percent of healthy survey respondents used THC.
  - D. From the survey respondents, those who got sick vaped only THC.
26. Which of the following strongly supports the claim that the detection of Vitamin E acetate is a "major advance" in preventing the outbreak?
- A. The finding was reported by the health officials.
  - B. So far, in the lungs of the sick patients no other toxin has been detected.
  - C. Previously conducted surveys were relatively small, but the recent survey was larger in scope.
  - D. Some ingredients, including Vitamin E acetate, could be responsible for some of the lung illnesses.

27. Based on evidence in the text, what can be concluded about the process of identifying causes of medical outbreaks?

- A. It threatens the health of scientists and medical staff.
- B. Medical examinations of ill patients can provide helpful data.
- C. Millions of money is needed to conduct several laboratory data.
- D. Cooperation between society and the government is necessary to solve the problem.

\*\*\*\*\* END OF LANGUAGE AND COMMUNICATION \*\*\*\*\*

#### KEY TO CORRECTION

Mathematics	Science	Language and Communication
1. B	10. D	19. C
2. B	11. B	20. D
3. B	12. D	21. B
4. A	13. C	22. D
5. D	14. A	23. D
6. A	15. D	24. D
7. A	16. B	25. C
8. D	17. B	26. B
9. C	18. C	27. B

#### Legal Bases

**DepEd Order No. 27, s. 2022**, *Conduct of Rapid Assessment in School Year 2021-2022 for Learning Recovery as well as in Preparation for the 2021 Baseline System Assessment.*

**DepEd Order No. 55, s. 2016**, *Policy Guidelines on the National Assessment of Student Learning for the K to 12 Basic Education Program.*

**DepEd Order No. 29, s. 2017**, *Policy Guidelines on System Assessment in the K to 12 Basic Education Program.*

**DepEd Memorandum No. 01, s. 2023**, *Administration of the National Achievement Test for Grade 12 For School Year 2022-2023*