Tracking #
63235-2023
Date: 9/11 2023

Republic of the Philippines
Department of Education
Caraga Region
SCHOOLS DIVISION OF SURIGAO DEL SUR

Office of the Schools Division Superintendent

September 9, 2023

Division MEMORANDUM
No. 471 , s. 2023

UTILIZATION OF PORTFOLIO ASSESSMENT IN SCIENCE, TECHNOLOGY AND ENGINEERING (STE) IMPLEMENTING SCHOOLS FOR SY 2023-2024

To : Public Schools District Supervisors
District Science Coordinators
STE School Heads and Teachers

1. Portfolio assessment involves systematically collecting a learner's work, which may include written assignments, drafts, artwork, and presentations, to showcase competencies, exemplary work, or the learner's developmental progress. Typically, portfolios also encompass reflective statements prepared by learners. The assessment of portfolios aims to identify evidence of learner achievement concerning established learning outcomes and standards.

2. For this school year (2023-2024), STE schools shall implement portfolio assessment as a **quarterly performance assessment** tool. This measure is designed to enhance the academic achievement of science learners.

3. Per DepEd Order No. 31, s. 2020, portfolios of the learners must be displayed in time of the quarterly release of SF 9 (report cards).

4. Refer to the 3 attachments for details of the implementation:

   Attachment A: ***Template of the Quarterly Portfolio Assessment***
   Attachment B: ***Rubric for Portfolio Assessment***

4. Immediate dissemination of this memorandum is desired.

NELIA S. LOMOCSO, PhD, CESO V
Schools Division Superintendent

Encl.: As stated
Reference: None

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

PORTFOLIO ASSESSMENT STE

BLA//DM-MEMO
471 /September 4, 2023

Attachment A

QUARTERLY PORTFOLIO ASSESSMENT

TABLE OF CONTENTS. *This is a list of what is included in the portfolio and the order in which the materials appear.*

PART 1. My Quarterly Goal Record. *This is a record of your positive, realistic goals to be prepared within the 1st week of the quarter. You may organize it this way:*

Quarterly Goals of Juan dela Cruz, Grade 10 Section Rizal	
PLANS	Date: February 13, 2023
During this week, I plan to achieve the following: (example) 1) understand how feedback mechanisms help organisms maintain homeostasis to reproduce and survive 2) learn how changes in DNA molecule cause mutations 3) learn how evolution through natural selection result in biodiversity *Note: You can have at least 3 plans for the whole quarter. You can formulate your plans guided by the content standards shown in Attachment C.*	
ACHIEVEMENTS	Date: _____
(Example write-up) During the quarter, I achieved all the above goals, except plan No. 3: learn how evolution through natural selection result in biodiversity. Although this goal wasn't achieved, I could say that I did half of it because even though I didn't find anything much that will be of use to me, I still discovered a lot of new things that were unknown to me before. I read the suggested readings by my teacher and discovered facts. I expect to find use for them someday. *Note: This should be accomplished within the 10th week of the quarter.*	

PART 2. My Test Self-Evaluation. *This is a reflection of your performance in the weekly summative assessments. This will reflect your honest accomplishment of the assessment. Choose one (1) from among the summative tests and paste the test paper in your portfolio for the test self-evaluation. Be guided with the following questions:*

a. What general topic was covered by the test?

b. How did I prepare for the test?

c. What have I learned?

d. What do I need to improve?

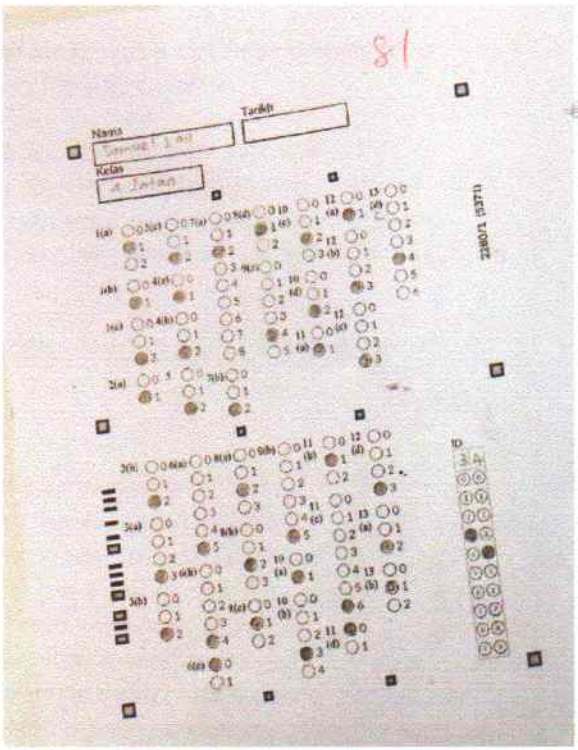
e. How might have I prepared more efficiently?

f. Am I satisfied with my performance? Why?

You may organize it this way:

Test Self-Evaluation
Test taken by: Juan dela Cruz
Test Date: _____
Score: _____

1. What general topic was covered by the test?
2. How did I prepare for the test?
3. What have I learned?
4. What do I need to improve?
5. How might have I prepared more efficiently?
6. Am I satisfied with my performance?



PART 3. The Scientist in Me. *This is your "scientific" autobiography. You may include reflections on what you have learned in the quarter.*

Sample:

The Scientist in Me

A brief discussion of the second quarter achievements/lessons

The first part of the second quarter was devoted to stoichiometry in general, because the future curriculum in chemistry requires the student to have full knowledge of the conversions that will have to be done when chemical reagents undergo reaction.

Stoichiometry involves calculations for and in chemical equations. This is also involved in getting limiting reagents and the like. Dimensional analysis is the process that uses the multiplication of ratios to convert amounts from one unit to another. It is the heart of stoichiometry, for the subject mainly revolves around that topic.

The mole is a very strong element building stoichiometry. It is a unit that is used as a "middleman" for the conversions between the number of particles in a particular amount of mass. Avogadro's number/ratio is a feature, which says that for every one mole exists 6.02×10^{23} representative particles. (6.02×10^{23} is a constant number). This is very helpful in finding the number of atoms in a particular amount of mass. (You do this by multiplying it by it's molar mass (Ratio: mass of one atom is to one mole)

The second major division of the second quarter curriculum involves gases, it's properties and laws, where we still apply stoichiometry. The major discussions revolved around the Kinetic-Molecular theory, the different gas laws and such. From this I've come to learn that gas has unique properties from that of it's liquid and solid counterparts (compressibility). The gas laws: Charles' law, Boyle's and the others all combine to define the behavior of the ideal theoretical gas. This is expressed in the ideal gas law, which states $PV=nRT$, where P=pressure, V=volume, n=amount, R=a constant, and T=temperature.

PART 4. My Best Test. *This is a test that shows your best efforts for the quarter. You may choose from any of the weekly summative assessments and paste your test result on a page in your portfolio. You may add art elements (e.g. emojis or emoticons) to reflect your feelings about the test.*

PART 5. Biology/Chemistry/Physics/Earth Science Watch. This is an article review, a critical analysis of a news item related to the lessons for the quarter.

PART 6. "A...Ganu'n Pala 'Yon". This is a misconception corrected. *You write this in ESSAY form, sharing your identification of a misconception related to the content of your lessons for the quarter. State it as a concept with your belief explained before and after the discovery of the misconception and explain what you have learned in the process.*

Sample:

"AAA... Ganun pala yun!"

The Trouble with Temperature

I have long been puzzled by what is being measured when you say you measure temperature. Long before, I had speculations that the energy given off of by an object (taken as a whole) was the variable being measured. I was partially correct, but then I met a new problem: while temperature is said to be in the form of kinetic energy (the energy of motion) how can something have high kinetic energy when it isn't moving? How can temperature be said to be in form of kinetic energy? If hot objects have high kinetic energy, then why isn't it moving at a very high speed.

It's a good thing I read across the Kinetic-molecular theory. It explained the behavior of things. Gas, liquid and solid are represented by lots of particles moving at random direction. They are more compact in solids, and get farther apart as the substance changes to liquid, and even farther in gases. This is the basis for saying that temperature is in form of kinetic energy: the particles were the ones, which had the kinetic energy, and not the object as a whole. The explanation that followed indicated that high temperatures are present when these representative particles have high kinetic energy, that is when they move very fast.

Generally, I think it's safe to say that all things are made of these representative particles, often in form of molecules. They are all moving and it is only in absolute zero temperature (0° K) that the particles are still and stationary. Energy transfer occurs when these particles collide with each other, and since these collisions are perfectly elastic, no energy is lost during the transfer.

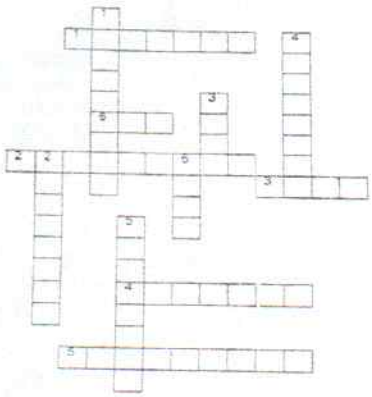
I'm thankful that came across this theory because I'm sure that when night comes, and I still haven't figured this out yet, I won't be able to sleep. Thanks to the kinetic-molecular theory!

PART 7. My Creative Connection. *This is an opportunity for you to share your creative or analytical side. It may be in any form (poem, comic strip, poster, game, puzzle, etc.) as long as it is YOUR work and related to the lessons/content standards for the quarter.*

Sample

Chemistry Connections

Just Another Chemistry Puzzle to Keep up With Your Vocabulary



ACROSS

1) _____-Molecular theory
2) Instrument that measures pressure
3) Temperature
4) _____ Clausius, one of the three who established a great theory
5) The subject that has everything under its' scope
6) Standard Temperature and Pressure

DOWN

1) Movement of one substance through another
2) He said that at Standard Temperature and Pressure, there are equal numbers of particles for one mole of any two gases
3) 6.02×10^{23}
4) Direct proportion to temperature, but inverse to volume
5) The first elem[illegible]

PART 8. Rubric for Portfolio Assessment. *Aside from acting as your guide in portfolio completion, you also need to put the rubric for portfolio assessment. Please see the table on Attachment B.*

Final Note: *You are given the freedom of creativity in packaging your portfolio. You can have scrapbook style, an album with a touch of recycling and reuse, etc. for as long as all the elements required of you by the portfolio are present.*

Attachment B

RUBRIC FOR PORTFOLIO ASSESSMENT

LEVELS					
Criteria	**Novice (1-3)**	**Apprentice (4-6)**	**Proficient (7-8)**	**Distinguished (9-10)**	**Score**
1. ***Goal Setting (Quarter Goal Record)***	Sets sloppy goals, not realistic for ability nor level of development.	Sets some goals and processes that are positive and realistic.	Sets general goals and processes that are positive and realistic	Sets clearly defined goals that are attainable and growth-oriented	____ out of 10
2. ***My Test Self Evaluation***	Shows little evidence of reflection and self-assessment.	Shows adequate evidence of reflection and self-assessment.	Shows good evidence of reflection and self-assessment.	Shows very good and clear evidence of reflection and self-assessment with documentation.	____ out of 10
3. ***The Scientist in Me***	Provides little evidence of growth and achievement.	Provides adequate evidence of growth and achievement.	Provides good performance or general improvement in achievement.	Provides clear evidence of performance or continued improvement in achievement.	____ out of 10
4. ***My Best Test***	75% - 79%	80% - 84%	85% - 88%	89% - 100%	____ out of 10
5. ***Biology/Chemistry /Physics/Earth Science Watch***	Links most of the analysis to the lessons inadequately	Links several of the analysis to the lessons slightly	Links the analysis to the lessons properly	Links analysis to the lessons completely	____ out of 10
6. ***"A...Ganu'n Pala 'Yon!"***	Explains the misconception and the concept inadequately	Explains the misconception and the concept somewhat	Explains the misconception and the concept adequately	Explains the misconception and the concept aptly	____ out of 10
7. ***My Creative Connection***	Indicates little evidence of creativity/analytical work.	Indicates adequate evidence of creativity/analytical work.	Indicates clear evidence of creativity/analytical work.	Indicates distinct evidence of creativity/analytical work.	____ out of 10
	[1-2]	[3]	[4]	[5]	
Overall Presentation	Submits some of the items in a disorganized form. Portfolio looks slapdash.	Submits most of the items. Portfolio is well presented.	Presents all items in a chronological form. Portfolio is well organized.	Presents thorough, clear and complete items. Portfolio is neat and elegant.	____ out of 5
Promptness in Submission	Submits late (5-6 days).	Submits late (3-4 days).	Submits late (1-2 days).	Submits on time.	____ out of 5
				Total	