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DepED
DEPARTMENT OF EDUCATION

Science Activity Sheet Quarter 2 – MELC 8 Week 8
Percentage Composition of Compounds

REGION VI – WESTERN VISAYAS

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Science Grade 9
Activity Sheet No. 8-Percentage Composition of Compounds
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Introductory Message

Welcome to Science Grade 9!

The **Learning Activity Sheet** is a product of the collaborative efforts of the Schools Division of Escalante City and DepEd Regional Office VI - Western Visayas through the Curriculum and Learning Management Division (CLMD). This is developed to guide the learning facilitators (teachers, parents and responsible adults) in helping the learners meet the standards set by the K to 12 Basic Education Curriculum.

The **Learning Activity Sheet** is self-directed instructional materials aimed to guide the learners in accomplishing activities at their own pace and time using the contextualized resources in the community. This will also assist the learners in acquiring the lifelong learning skills, knowledge and attitudes for productivity and employment.

For learning facilitator:

The **Science Activity Sheet** will help you facilitate the leaching-learning activities specified in each Most Essential Learning Competency (MELC) with minimal or no face-to-face encounter between you and learner. This will be made available to the learners with the references/links to ease the independent learning.

For the learner:

The **Science Activity Sheet** is developed to help you continue learning even if you are not in school. This learning material provides you with meaningful and engaging activities for independent learning. Being an active learner, carefully read and understand the instructions then perform the activities and answer the assessments. This will be returned to your facilitator on the agreed schedule.

Name of Learner: _____

Grade and Section: _____Date: _____

SCIENCE 9 ACTIVITY SHEET No. 8
PERCENTAGE COMPOSITION OF COMPOUNDS

I. Learning Competency with Code
   Determine the percentage composition of a compound given its chemical formula and vice versa**. (S9MT-IIj20)**

II.   Background Information for Learners

   Aren't you curious of the elements present in some foods you ate every day? How about each composition? Why there is a need for you to know the chemical composition of an element that is present in each compound?

   In water for example it is a compound of Hydrogen and oxygen, how would you know if how much is the percentage composition of each element?

   In this learning activity, you will understand more on how to determine the percentage composition of a compound.

III.   Accompanying DepEd Textbook and Educational Sites
   Department of Education. (2014). K-12 Basic Education Curriculum,
      Science 9 Learner's Material pages 157-158. Pasig City, Philippines

IV. Activity Proper

   We can have the formula as:

$$\% \text{ mass of element} = \frac{\textbf{mass of element in the compound}}{\textbf{mass of the compound}} \times 100\%$$

   In order to learn more about the percentage composition of   compounds please refer to pages 155-158 of Science 9 Learner's Material.

   Directions: Refer to periodic table for the atomic masses and complete the table below by filling in the required information.

Compound	Formula	Mass (g)	Molar Mass g/mole	Percentage Composition of each element
glucose	$C_6H_{12}O_6$			
propane	C_3H_8			
ammonium nitrate	NH_4NO_3			
hydrogen peroxide	H_2O_2			
Copper sulfate	$CuSO_4$			

Activity 2:

      Directions: Refer to pages 157-158 of Science 9 Learner's Material and do Activity 7.

      Answer guide questions nos. 17 – 19 on page 158.

IV.   Reflection

1. How important is it to know the percent composition of substances to your life?

_____

_____

_____

V. Answer Key

Activity 1

1. Glucose :

Carbon= 12 g
Hydrogen = 1 g
Oxygen = 16 g

Molar mass: C= 6 x 12= 72
H= 12 x 1 = 12
O = 6 x 16 = 96
180g/mole

% C = 72/180 = 40%
% H =12/180= 6.67%
% O = 96/180 = 53.33%

2. Propane

Molar mass   C = 3 x12=36
H=8 x 1= 8
44 g/mol

%C = 36/44= 81.82%
H% = 8/44= 18.18%

3. Ammonium Nitrate

Molar Mass   N =14   N= 2 x14=28   % N = 28/80 =35%
H=1   H=4x1=4   H % = 4/80= 5%
O=16   O=3x 16 = 48   % O = 48/80= 60%
80g/mol

4. Hydrogen peroxide

Molar mass   H=1   H= 2 x 1=2   %H =2/34= 5.88%
O=16   O= 2 x 16 =32   %O=32/34=94.12%
34g/mol

5. Copper Sulfate

Molar Mass   Cu=64   1 x 64 = 64   % Cu=64/160= 40%
S =32   1 x 32 = 32   S% = 32/160 = 20%
O =16   4 x 16 = 64   %O = 64/160 = 40
160g/mol

Exercises 1

Q1. The answer of the leaners may vary depending on their food preferences. (Probable Answer) Soft drinks, fruit juices in Joy packs, cupcakes, and other foods which contain sugar that is reported as carbohydrates will give them a lot of carbon atoms. On the other hand, food products commonly known as "junk food," such as crackers, potato chips, and corn chips and canned goods contain salt that provide sodium ions to their body.

Q2. Too much intake of those foods is not good for the body. The Food and Nutrition Research Institute has a recommended value intake to individuals of Junior High School (JHS) age.

Q3. The concept on percentage composition can be used in the preparation of food (baking and cooking), preservation of food, production of paste, paint, and alloy to name a few. There is a wide variety of application for this topic.

Activity 2

Q17. The answer of the learners may vary depending on their food preferences. Generally speaking, soft drinks, fruit juices in day packs, cupcakes, and other foods which contain sugar that is reported as carbohydrates in the nutrition facts will give them a lot of carbon atoms. On the other hand, grocery items commonly known as "junk food," such as crackers, potato chips, and corn chips and canned goods contain salt that provide sodium ions to their body.

Q18. Too much intake of those foods is not good for the body. The Food and Nutrition Research Institute has a recommended value intake to individuals of Junior High School (JHS) age.

Q19. The concept on percentage composition can be used in the preparation of food (baking and cooking), preservation of food, production of paste, paint, and alloy to name a few. There is a wide variety of application for this topic.

Reflection:
Answer may vary. It is important to know the percent composition of substances to your life because the percentage composition tells you the percentage composition of every substance in a particular substance and can be useful in choosing the good quality of food product you need to eat based on its content.

For inquiries or feedback, please write or call:

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