4 Science

Quarter 1

PIVOT 4A LEARNER'S MATERIAL

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Science

Grade 4

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Science Grade 4
PIVOT IV-A Learner's Material
Quarter 1
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Guide in Using PIVOT Learner's Material

For the Parents/Guardian

This module aims to assist you, dear parents, guardians, or siblings of the learners, to understand how materials and activities are used in the new normal. It is designed to provide the information, activities, and new learning that learners need to work on.

Activities presented in this module are based on the Most Essential Learning Competencies (MELCs) in Science as prescribed by the Department of Education.

Further, 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.

You are expected to assist the child in the tasks and ensure the learner's mastery of the subject matter. Be reminded that **learners have to answer all the activities in their own notebook**.

For the Learners

The module is designed to suit your needs and interests using the IDEA instructional process. This will help you attain the prescribed grade-level knowledge, skills, attitude, and values at your own pace outside the normal classroom setting.

The module is composed of different types of activities that are arranged according to graduated levels of difficulty—from simple to complex. You are expected to **answer all activities on separate sheets of paper** and submit the outputs to your respective teachers on the time and date agreed upon.

PARTS OF PIVOT LEARNER'S MATERIAL

	Parts of the LM	Description
Introduction	What I need to know	The teacher utilizes appropriate strategies in presenting the MELC and desired learning outcomes for the day or week, purpose of the lesson, core content and relevant samples. This allows teachers to maximize learners awareness of their own knowledge as regards content and skills required for the lesson.
	What is new	
Development	What I know	The teacher presents activities, tasks , contents of value and interest to the learners. This shall expose the learners on what he/she knew, what he /she does not know and what she/he wanted to know and learn. Most of the activities and tasks must simply and directly revolved around the concepts to develop and master the skills or the MELC.
	What is in	
	What is it	
Engagement	What is more	The teacher allows the learners to be engaged in various tasks and opportunities in building their KSA's to meaningfully connect their learnings after doing the tasks in the D. This part exposes the learner to real life situations /tasks that shall ignite his/ her interests to meet the expectation, make their performance satisfactory or produce a product or performance which lead him/ her to understand fully the skills and concepts .
	What I can do	
	What else I can do	
Assimilation	What I have learned	The teacher brings the learners to a process where they shall demonstrate ideas, interpretation, mindset or values and create pieces of information that will form part of their knowledge in reflecting, relating or using it effectively in any situation or context. This part encourages learners in creating conceptual structures giving them the avenue to integrate new and old learnings.
	What I can achieve	

Weeks 1-2

Special Properties of Matter

Lesson I

In this lesson, you will discover the special properties of materials and the changes that will happen when they are exposed to certain conditions. You will learn how to classify materials based on their ability to absorb water, float or sink in water , and undergo decay.

Examine the two set of pictures in Figure 1 below. These materials are commonly found at home and are grouped according to their properties. Can you identify the properties or characteristics by which they will be grouped and classified?

Figure 1. Materials found at home

What can you say about the pictures in Set B? Do you think that these materials have the ability to absorb water also? If you placed all these materials in water, which materials will have the ability to sink or float in water?

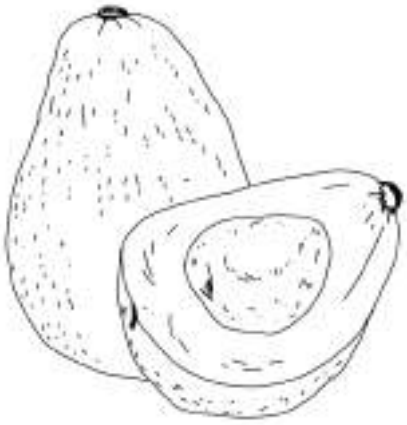
Porosity is the property of a material to absorb liquid like water. Porous materials have plenty of spaces or holes called pores where liquid can be quickly absorbed. In Set A, you see that towels, tissues and sponge are good materials that absorb water. They are used at home for

The ability of materials to absorb water is due to the presence of loose fibers with lots of pores or holes between the particles that make up the materials. In sponge, for example, these hole or pores absorb water, making the sponge swell. When you are cooking, you make sure that materials are clean before using them. When you squeeze the sponges, you are forcing the water or liquid cleanser out of the holes that cleans the surface of the dishes, glasses or spoons that you washed and used in cooking.

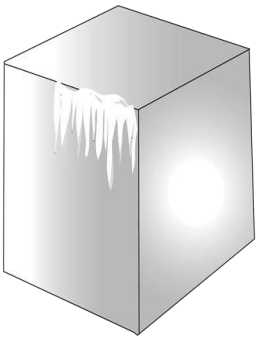
Other materials that absorb water like tissue paper, cottons, and cloth are called **porous** materials. These materials can easily undergo decay also. This happens because the presence of water or moist in the materials can cause degradation of the materials due to presence of microorganisms that harbors or pile up in the materials.

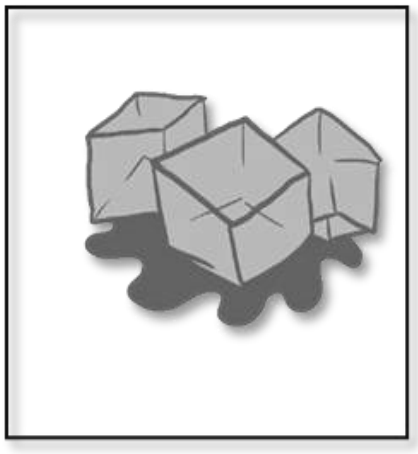
Materials like plastic or metal spoons and forks, porcelains, cups, iron nails, aluminum cook wares and glasses that you used at home do not absorb water or liquid, hence, they are called **non-porous** materials. There are no holes or spaces between their particles.

Look at the pictures. Can you identify which materials have the ability to absorb water? float or sink in water? Or will undergo decay?



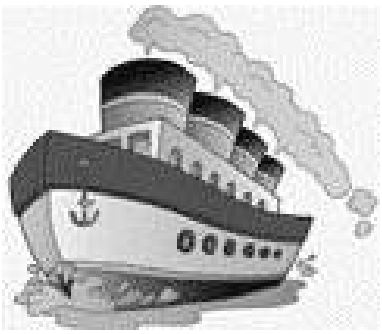
The ability of materials to sink or float in water depends on their **density.** Density is the amount of mass of an object per unit volume. Water has a density of 1 g/cc (gram/cubic centimeter). If the density of an object is higher than the density of water, that object will sink in water. But if the density of the object is less than the density of water, the object will float in water. Different materials have different densities. For example, gold will sink in water because its density of 19.3 g/cc is higher than the density of water which is 1 g/cc.





Examine the picture of ice cubes above.

What do you think will happen to the ice cubes if you place them in water?



What about these used styro cup for noodle , a ship and a metal bell, will they sink or float in water? Let us discover more about these abilities of materials to absorb water, float or sink and undergo decay in the different activities designed for you.

Remember to seek help from elders if needed. In answering the activities, write all your answers in your notebook.

I

Learning Task 1: Perform the activity. Write your observation as indicated in

Materials:

Small basin with 3/4 full of water

1. paper towel 2. styro cup 3. piece of bread 4. glass 5. spoon

6. facial tissue 7. plastic cup 8. detergent 9. clothes pin 10. rice grains

Steps:

1. Prepare small basin with 3/4 full of water. *(You can replace water after each task if needed)*
2. Soak each of the materials numbered 1 to 10, one at a time.
3. Test each material if it will absorb water .
4. Copy table 1 to write your answer by putting a check (/) mark in column I.
5. Observe if these materials will float or sink in water.
6. Check each item that float or sink in columns II and III, respectively.

Table 1. Ability of the materials that absorb water, sink or float

Materials	Absorb water (I)	Sink (II)	Float (III)
1. paper towel			
2. styro cup			
3. piece of bread			
4. glass			
5. spoon			
6. facial tissue			
7. plastic cup			
8. detergent soap			
9. clothes pin			
10. rice grains			

D

Learning Task 2 : Study the picture of a family having their dinner. Identify at least 3 porous and 5 non-porous materials. Write your answer in the chart given below.

Porous Materials	Non-porous Materials

Learning Task 3 : Analyze each situations that happened at home carefully. Then, write your answers briefly.

Situation 1:

A glass of juice was accidentally spilled on the table. What should you use to dry the table? Why?

_____

Situation 2:

You filled a jar with water up to its filling mark. Your mother asked you to put ice cubes, some cube slices of apple and powdered juice crystals for a very special drinks during lunchtime.

1. What will you do with the amount of water filled in the jar? Why?
2. What do you think will happen to the juice crystals?
3. What will happen to the ice cubes and cube slices of apples, will they float or sink?

E

Learning Task No. 4 : Identify which material will float or sink in water. Check the column that corresponds to your answer.

Materials	Float	Sink
1. paper clip		
2. rock		
3. ball		
4. ship		
5. feather		

A

Learning Task No.5 : Choose the letter of the best answer.

1. Which of the following materials will SINK in the water?
   A. big stones
   B. empty bottle
   C. styro cup
   D. feather

2. What kind of materials enable the boats to float in water?
   A. wood/bamboo that are denser than water
   B. wood/bamboo that are less dense than water
   C. light metal
   D. plastics that are denser than water

For number 3 to 4,

3. What properties of materials are common among coins, spoon and iron ?
   I. non-porous
   II. more dense than water
   III. porous
   IV. less dense that water
   A. I and II B. I and IV C. III and II D. I only

4. Which property make these materials sink in water?
   A. II B. I and IV C. III and II D. I only

5. Which material will most likely undergo decay?
   A. aluminum
   B. left over foods
   C. water
   D. plastic cups

Weeks
3-4

Changes in Solid Materials

I Lesson

In this lesson, you will describe changes in solid materials when they are bent, pressed, hammered, or cut. Read the poem below. Can you name materials that can be bent, pressed, hammered or cut?

Bend it, Stretch it, Hammer it, Break it

By: May Natividad

At home, I know
A wood cabinet is hard. I can`t bend , nor stretch it.
But then I found in my room,
My broken crayons , pencils and metal key, lied in the window.
My younger brother played with them, so I placed them in a row.
My mother saw these, and she gave me coins to buy a metal case that is new. So I got on my bicycle and bought a hammer. But along the way, I found a tin can, so I did bring it home, too.
I pressed and hammered a tin can to make a pencil case.
So this time I know,
All things I can keep in it, surely will be safe and always look new.

What are the different solid materials mentioned in the poem?

What are the different ways by which these materials are changed?

You have read in the story the different solid materials found at home. These materials have their own property or characteristics. A wooden cabinet can`t be bent because it`s very tough but they can easily be shaped. Unlike the wood cabinet, crayons and pencils are brittle. The metal key is tough, hard and has luster. A tin can is shaped into pencil case. This means that metals are malleable, that which can be hammered into thin sheets. This property is called malleability. In car manufacturing companies, bending of iron and steel bars are done in making the parts of the bicycle or other automobiles , and appliances found at home. Isn`t that amazing?

Metals are usually shiny, and can conduct both heat and electricity. You probably observed electric wires at home. The materials used for this are copper wires. When bent and hammered into thin wires, they will change in size and shape only, but there`s no new material formed. Ductility is associated with the ability of the materials to be hammered thin or stretched into wire without breaking. A **ductile** substance can be drawn into a wire. Other examples of **ductile** materials include gold, silver, and copper. Other solid materials can be bent like pencil, crayons, and small twigs . They are brittle.

Look at the pictures below. These are materials that have been shaped or made into another material . Can you name each material found in Figure 2. Tell what process caused the changes in its size, shape or texture that make them useful in our daily lives.

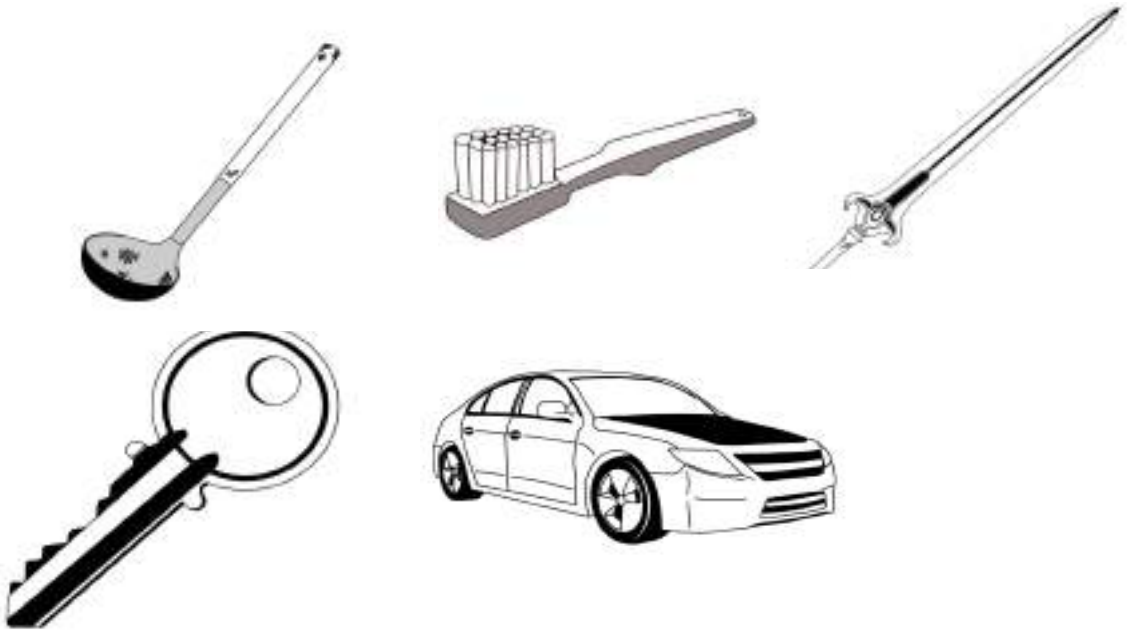


Figure 2. Materials made into useful products based on its property

Solid materials can be changed in many ways: by cutting, tearing, bending, pressing, and hammering. Such actions may change the material's size, shape, texture, color and other characteristics or properties but no new material is formed. Let us try to investigate these properties of materials in the following learning task specially designed for you Hope you will enjoy learning

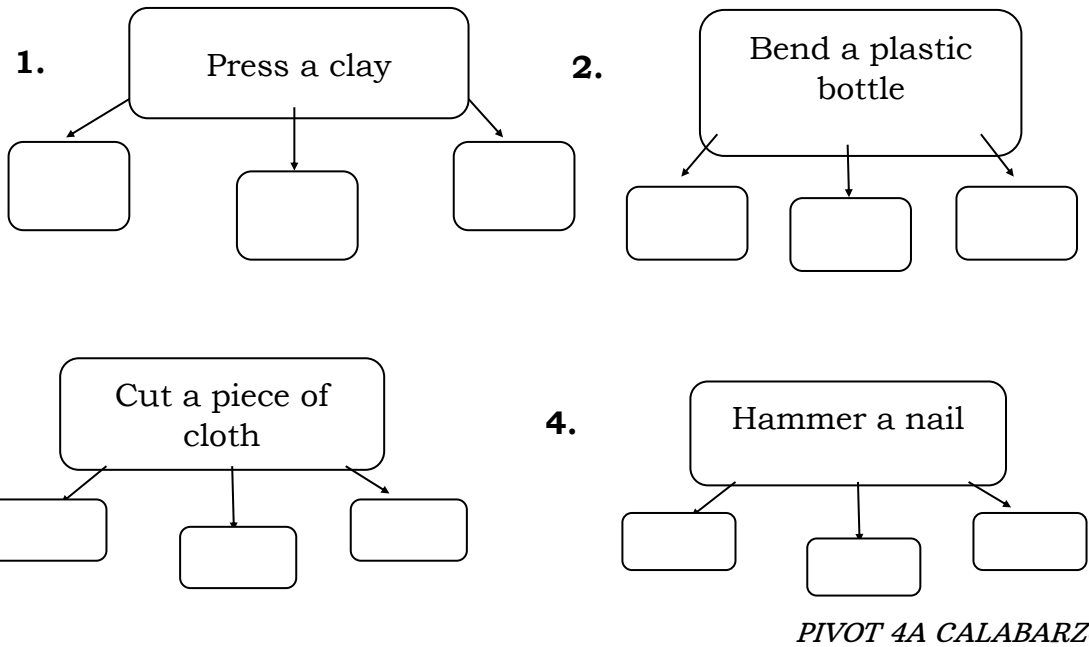
Let us try to investigate these properties of materials in the following learning task specially designed for you Hope you will enjoy learning !

I

Learning Task No. 1 : Investigate what materials have the ability to bend, hammer, cut, or pressed.

Materials: clay, bottle cap, iron nail, hammer, scissors, cloth

Steps:
1. Get all the materials needed.
2. Do the following:
   2.1. press a clay
   2.2. bend a plastic bottle
   2.3. cut a piece of used cloth
   2.4. hammer a piece of nail in a wood
3. Observe what changes happened in each material.
4. Record your observation by completing the graphic organizer below.



D

Learning Task No. 2: Do the activity below. Use only the materials that are available in your place or at home.

Materials:

1pc of candle, aluminum foil, wooden stick, plastic cup, chocolate bar, match sticks

Steps:

1. Try to bend, cut, hammer or press each of the materials listed in Table 1 below.
2. Write in column 2 what you can do to change the material.
3. Write in column 3 to describe the changes that occurred in the material.

Changes in Solid Materials

Material	What can I do to change the material?	What changed happened to the material?
Candle		
Aluminum foil		
Wooden stick		
Metal clothes line or washing line		
Chocolate bar		
Match stick		
Pencil		
Crayons		
Used paper bag		
Plastic glass		
Glass bottle		
Iron rod or stick		

E

Learning Task No. 3: Using the given materials, do the following steps below. You may choose the materials that are available at home.

Materials:

Stone, playdough, eraser, sponge, ruler, elastic band, string, ball, cloth, plastic straw, metal spoon, piece of wood

Steps:

1. With the given solid materials show ways by which you can change the characteristics of the materials.
2. Check each column where each material responds appropriately.

Properties of Solid Materials

Solid material	Bend	Hammer	cut	press
Stone				
Playdough				
Eraser				
Sponge				
Ruler				
Copper wires				
Plastic straw				
Ball				
Cloth				
ballpen				
metal spoon				
metal roof				

Guide Questions:

1. Describe what happened to solid materials when they were cut, press, hammer or bent.
2. Did they form a new material? Why

A

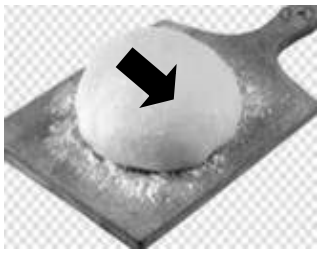
Learning Task No. 4: Examine the different solid materials given below. Choose the physical activity that will cause the material to respond. Write the letter(s) of the BEST CORRECT answer (s).

A. bent B. cut C. hammered D. pressed

1.

2.

3.



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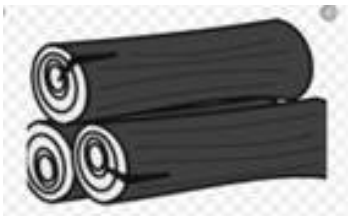
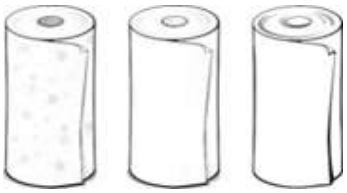


5.

6.

7.

8.



9.

10.

11.

12

13

14

15

Weeks
5-6

Changes in Materials

Lesson I

In this new lessons, you are expected to describe changes in the properties of materials when exposed to certain conditions such as temperature or when mixed with other materials.

Try to sip some iced tea or cold water while you are going through all the learning tasks in this module. What did you fell? Don`t you know that cold water have more dissolved oxygen that`s why it feels better to sip cold drinks than a non-cold drinks?

Recall what happened to ice cubes when they were exposed to heat. The ice cubes melted. What made the ice cube melted? See figure 3. below.

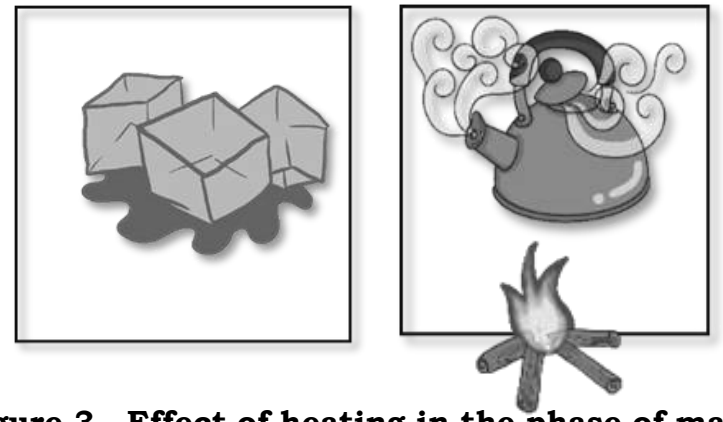


Figure 3. Effect of heating in the phase of materials

Effect of Temperature in the Phases of Materials

At constant pressure, the state of materials depends on the temperature by which they are exposed. The ice cube or the solid phase of water, as seen in Figure 3 above will melt if taken out of a freezer and stayed long at room temperature. The water that boils turned into gas or vapor that comes out of the kettle if left at high temperature for too long.

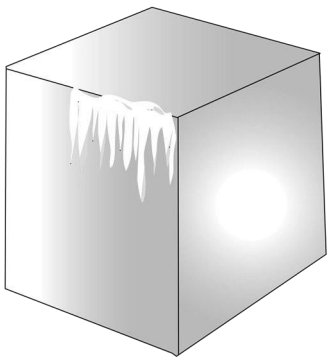
Temperature is the measurement of the amount of heat energy present in the surroundings. There is an exchange of heat between the substance and the surroundings. This means that heat can be absorbed by the materials or can be released by the materials. When the heat is absorbed by the materials, the temperature will increase, thus the material is hot. If heat is removed or released by the materials, temperature will decrease, thus it is cold.

Temperature varies depending on the environment from where the materials are exposed. For example, we feel very hot during summer days because of the intense heat of the sun. Some places in our country registered a temperature of 40 ^{o}C. This is very hot because our normal body

temperature is about 37^{O}C. If your temperature is above 37 ^{O}C, you may experience fever. This is the reason why you are advised by doctor to take medicine and take plenty of water to lower the temperature.

Another changes in the materials due to the application of heat is called melting. This process that happens when solid material changes into liquid form. The heat coming from the environment made the ice cubes melted when they are removed from freezer. The temperature in the freezer is O^{0} C (read as zero degree centigrade or zero degree Celsius). Thus, when ice cubes were exposed to heat in the environment, the high temperature of the environment caused the melting of ice cubes.

Generally, an increase in the temperature turns solids into liquids (**melting**), liquid to solid (**freezing),** liquid into gases (**evaporation**), solid into gas (**sublimation**), and boils water at certain point **(boiling**).



When materials reached its melting point, solid materials changed into liquid. The temperature at which the liquid will change back to solid is called its **freezing point**. The **melting point** of ice is 0^0C, this is also the freeing point of water. The **boiling point,** or the temperature at which water boils, and turned into gas is 100 ^{0}C . Amazing! That is why water exists in three phases depending on the condition by which its exposed to different temperature. If the change is from gas to liquid as the temperature falls below it, it is the **condensation point.**

The state of substances in solid, liquid or gas phases is largely determined by its temperature. At each threshold level of temperature, the material will change its state. These changes may either be physical changes or chemical changes. Physical changes like melting of ice cubes, lighted candles, floor wax, margarine , chocolate bar, crayons, and butter resulted to changes in their shape, sizes and texture. There are no new materials formed. When cooled, these materials recover their original physical state .

Metals expand when heated and contracts when cooled. They resulted to changes in size. Some materials when exposed to heat or different conditions of temperature resulted to chemical changes. Burning of woods and matchsticks turned the materials into ashes.

Combustion of engines results to burning of fuels that causes the cars and airplanes to move or run its functions. **Combustion**, also known as burning, is the basic chemical process of releasing energy from a fuel and air mixture. In an internal **combustion engine** (ICE), the ignition and **combustion** of the fuel occurs within the **engine** itself. The **engine** then partially converts the energy from the **combustion** to work.

Change in Materials When Mixed with Other Materials

During hot weather, halo-halo is a favorite food. Have you seen and tasted halo-halo? Look at the picture of halo-halo below. What are the materials mixed together to form a mixture of halo-halo?

Mixture is a substance made by mixing other substances together. It is the product of the random distribution of one substance through another without any chemical reaction, as distinct for a compound. ike in halo-halo and wet clothes where water is mixed with the fabric.

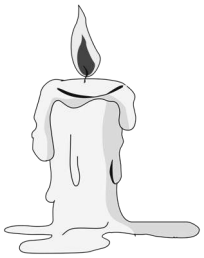
Types of Mixtures

Mixed materials can be classified depending on the appearance of the resulting mixture. When solid materials are mixed with solid materials, each of the combined/ mixed materials can be easily identified/ distinguished from one another. These mixtures are called **heterogenous mixtures.** In halo-halo, you can easily identify or distinguish the ingredients . It is a heterogenous mixture. Each property of the materials in heterogenous mixtures do not change. Their sizes, shape and color remain the same after mixing them together.

Some solid materials when mixed with other solid materials cannot be distinguished from each other. The resulting mixture looked the same all throughout. When sugar is dissolved in water, you cannot distinguish sugar in the solution. This kind of mixture is called **homogenous mixture**. Examples of these are liquid medicines, sugar and a salt solution. Examples of homogenous mixtures include salt dissolved in water or a salt solution and juice drinks.

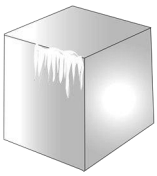
I

Learning Task No. 1: Examine the pictures below. Identify the process that cause the materials to change.

1. 

2. 

3. 

4. water in ice cube maker kept in the freezer 

5. Moth balls placed in the clothes cabinet disappeared after one week exposure in the air

Learning Task No. 2: Write the change in the state of matter/materials in the above pictures.

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

Learning Task No. 3: Tell what type of mixtures are formed when these materials are mixed together.

1. salt dissolved in water
2. mixed toys in the room
3. paper clips and pins
4. soy sauce
5. halo-halo

D

Learning Task No. 4: Do the steps below. Write your observation in the chart . Based on your observations, answer the guide questions.

Materials: spoon, margarine, butter

Steps:

1. Heat the spoon in a lighted candle. (Seek help from elders.)
2. Put some margarine in the spoon.
3. Heat the spoon with the margarine on it.
4. Observe what happens.
5. Wait for 5 minutes when the margarine cools off. Observe what happens.
6. Place the margarine in a cool place. If you have refrigerator, place it in the chiller.
7. Observe what happened to the margarine.
8. Repeat the same procedure, this time using a butter.
9. Record your observation in the table below.

Changes in Materials when Exposed to Temperature

Material	Before heating	After heating	After Cooling
margarine			
butter			

Guide Questions:

1. Describe the changes that happened to the margarine and the butter after heating?

2. What cause them to change from solid to liquid?

3. How would you describe the changes that happened to the materials when heated?

4. What happens to the material when cooled? Why?

5. What type of change happened in the material when cooled?

6. Describe the changes in the properties of the materials when they are heated and cooled.

E

Learning Task 5 : Do the activity below. Answer the guide questions after doing the task.

Materials:

Mixed solution of sugar/condensed milk, water and bits of mango (or any fruit that is available at home)

Steps:

1. Use a funnel to pour in the ice candy plastic the mixed solution of sugar/condensed milk, water and bits of mango.
2. Place it in the freezer overnight.
3. Observe what happens to the mixed solution.
4. Describe the changes that happened to the mixed solution when placed inside the freezer/refrigerator.

Guide Questions:

1. What changes happened to the mixed solution placed in the freezer overnight?

2. What cause them to change from liquid to solid?

3. What type of mixture was made in mixing sugar/condensed milk in water? Sugar solution with bits of mango?

4. Describe the changes in the properties of the materials when they are heated and cooled.

A

Learning Task No. 6 : Fill in the blank with the correct answer.

When some solid materials are heated, it absorbed heat. The heat absorbed/added to the material caused the material to change its form from 1._____ to 2._____. The materials also changed its 3._____, 4._____ and 5._____, when heated.

When some materials are cooled, it removed/released heat. The heat removed/released from the materials caused the materials to change its form from 6._____ to 7._____. The material also changed its 8._____, 9._____ and 10._____, when cooled.

Learning Task No. 7: Choose the letter of the best answer.

1. When a material was cooled, what happens to its temperature?
   a. disappear
   b. remain the same
   c. increased
   d. decreased

2. Mark heated a chocolate bar to make a chocolate syrup. Which of the following described the changes that happened in the property of the chocolate bar when it is heated?
   a. shape
   b. size
   c. A and B
   d. size but not the shape

3. What will happen to metals when heated?
   a. expanded
   b. frozen
   c. contracted
   d. melted

4. When solid material is mixed with other solid material, the materials can be easily identified from one another. What type of mixture is formed?
   a. homogeneous mixture
   b. heterogeneous mixture
   c. solid materials
   d. mixed materials

5. What do you call the type of mixture in which the resulting mixture looked the same throughout?
   a. solid mixture
   b. mixed materials
   c. homogeneous mixture
   d. heterogeneous mixture

Weeks 7-8

Identifying Changes that are Useful and Harmful in the Environment

Lesson I

The learning tasks in the previous lessons will help you to identify the changes in materials whether useful or harmful to one`s environment which is the focus of this lesson.

See figure 4 below. Is the place clean? Have you seen places like these in your community or in other places that you have been?

Figure 4. The clean environment

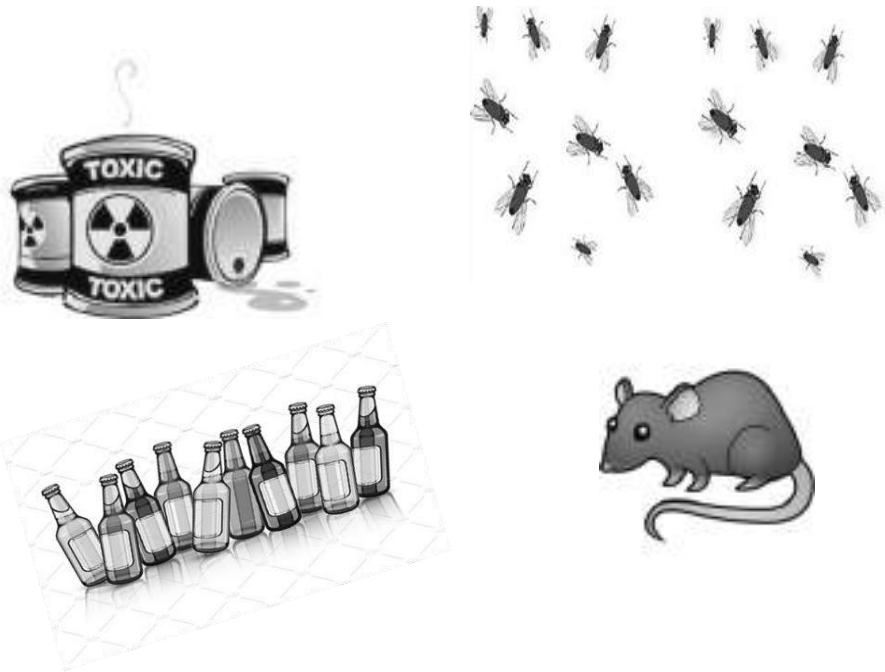
You probably have spent time with your friends and other relatives in a swimming or playing in a clean and safe playground before pandemic occurred. Have you enjoyed your activities in this kind of place?

The immediate place where you are exposed to is your environment. In a sea or river, there are different things that you may see. There are living and non-living things found in them. The natural environment where you are now is your home with your family and other organisms as the living component. In the sea, there are rocks, stones, sand and water that are found . These are the non-living things where humans and other living organisms interact. What are the living and non-living things found in the playground? Are there activities that may be useful or harmful in your environment?

There are interactions that lead to changes in the materials found in our home and in our environment. Seas are the habitat or environment for fish and other marine organisms. The playground has some benches and slides where you may rest or play . These materials making up the environment are always changing. Do want to know why?

When land or bodies of water are dumped with garbage of any kind such as empty bottles, plastics, toxic wastes, chemicals from the factories, and others, the land and bodies of water become polluted. Land and water pollution are not useful in the environment. Water pollution is very harmful because the fish will be harmed as their habitat will be destroyed. Trees when cut can be harmful because some animals live on trees. This will also cause flood in the area. It causes soil erosion, loss of habitat to animals, rapid change in temperature and affects the quality of air that we breathe.

Polluted land serves as breeding places for flies, cockroaches and rats. These pests carry germs that cause diseases, hence hazardous to one's health.

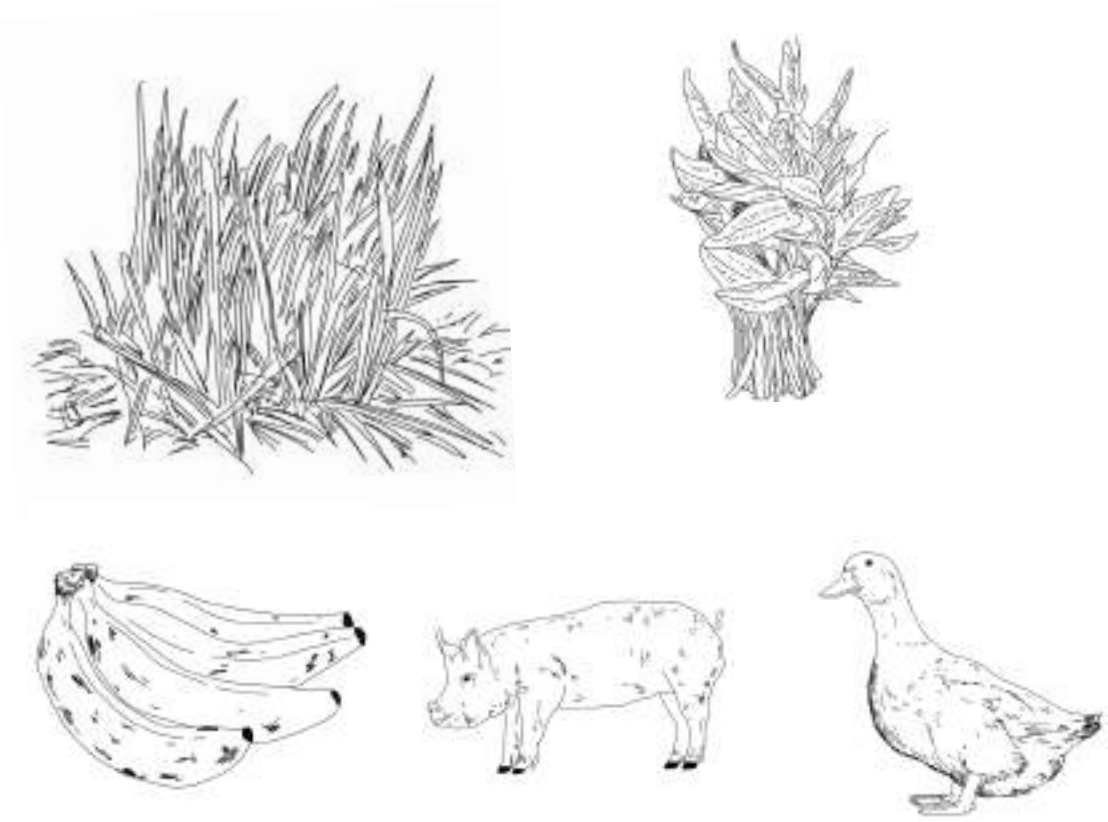


The use of fertilizers and other chemicals in plants harm our environment. This will lead to problem of air, water and soil pollution. The nutrient enrichment phenomenon known as eutrophication will deteriorate the water quality leading to death of fishes. In addition to this, the seepage of fertilizers and pesticides also pollutes the ground water that we use for our daily household use.

The harmful effects of changes in the environment are oftentimes caused by human activities. When the surrounding air is blanketed with smoke from factories and motorized vehicles, ashes and other dust particles, the air becomes polluted. Polluted air causes skin itchiness, lung infections, cancer and other respiratory diseases. Burning of garbage such as plastic materials, rubber and other wastes is harmful also to the environment. Many items in household garbage when burned release dangerous toxic materials that contribute to global warming.

Because the smoke is close to the ground, it can also settle on fruits, vegetables and other vegetation that becomes dangerous for humans consumption and destruction of wildlife.

However, there are changes in the environment that are found to be useful. The flowering of trees into fruits, utilization of left over foods into compost, the use of animal manure for fertilizers and the recycling and upcycling of different local materials are helpful to keep the environment clean and more adaptable for human, plants and animals to live. This will lead to activities in food production and maintenance of a clean and green environment.



I

Learning Task No. 1: There are human activities that are either useful or harmful in the environment. Complete the table below by examining the situation/picture.

Picture/ Situations of Human Activities	Human activities shown in the picture	Useful or Harmful	Effect in the Environment
 https://images.app.goo.gl/wc4vL93yrtVrxMbQ9			
Planting of vegetables in a vacant lot			
 https://images.app.goo.gl/sdm9DpR1oK69jYXy9			

D

Learning Task No. 2 : Draw a happy face if the given situation states changes in the materials that are useful in the environment and sad face if it states harmful effect.

1. Cutting and shaping pieces of used wood/lumber into chair.
2. Water on rivers and streams become contaminated with plastic wastes.
3. Lung infections and other respiratory diseases become rampant due to excessive smoke from factories and motorized vehicles.
4. Recycling of waste for organic fertilizers.
5. Dumping of garbage in bodies of water..
6. Cutting of trees in the community.
7. Vegetable gardening.
8. Flowering of trees for early onset of fruiting.
9. Clean up drive in the community.
10. Flies, cockroaches and rats breed on garbage thrown on the street.

Learning Task No. 3 : What kind of pollution is described in each situation? Choose the letter of the best answer.

A. **Air pollution** **B. Water pollution** **C. Land pollution**

_____1. Farmers can no longer harvest vegetables.

_____2. Red tide is affecting the northern coast of the country.

_____3. The smell of the garbage is suffocating the villagers.

_____4. Mine tilling are thrown in rivers.

_____5. Garbage is thrown in empty spaces in residential areas.

_____6. Factories release harmful smoke.

_____7. Chicken manures release foul odor all over the town.

_____8. Villagers dump their trash on a vacant lot at the back of the school.

_____9. Fishermen use dynamite while fishing.

_____10. Using detergent soap while washing clothes in the river.

Learning Task No. 4. : Identify the following changes that will happen in the materials in each activity or situation. Tell whether they are useful or harmful in the environment. Write the correct answer in the proper column.

1. Cutting of trees
2. Shaping of wood to make furniture
3. Hammering/shaping iron to make bolo
4. Burning of old tires
5. Shredding paper for paper mache
6. Cooking of food
7. Throwing detergents into the sewage
8. Killing animals in the forest
9. Sewing fabric to make clothes
10. Dumping garbage into the river

Useful	Harmful

E

Learning Task No. 5. : Read the situation below. Write your reflection in a separate sheet of paper/notebook**.**

Materials: paper/notebook pen color pens/crayons

1. Recall a situation at home or in the community where you participated in keeping the environment clean. If there are no experiences yet, try to make a plan of joining any clean up drive or doing some household activities that will be useful and help to save the environment.
2. Write a 3-5 sentences regarding your experiences. Use the template below:

I understand that_____.

I realized that_____.

A

Learning Task No. 6: Read each situation carefully. Choose the letter of the ***BEST CORRECT*** answer.

1. The following activities done in the materials are useful to the environment, EXCEPT _____.

   A. both sides of the bond paper were used when writing.

   B. old newspapers were used in wrapping gifts.

   C. eco bag was used in buying groceries.

   D. insecticides were used in killing insects.

2. Which activity caused change that has harmful effect in the environment?

   A. carved wood

   B. landscaped land

   C. molded clay pot

   D. deforested mountain

3. Which of the following changes in the materials is NOT harmful to the environment?

   A. Throwing garbage in the canal.

   B. Using paper bags when shopping.

   C. Throwing hospital wastes into the river.

   D. Using detergents in washing clothes in the river.

4. Which activities are useful in the environment?

I. Burning of garbage
II. Vegetable gardening
III. Deforestation
IV. Composting

A. I and III
B. II and IV
C. I, II and III
D. II, III and IV

5. What is/are the harmful effect of melting of ice/glaciers in other parts of the world?

I. flood
II. Destruction of habitat of some animals
III. forest fires
IV. Drought

A. I, II and III
B. II and IV
C. I and II
D. IV only

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Answer Key

Weeks No. 1-2

Learning Task No 1

Table 1. Ability of the materials that absorb water, sink or float

Materials	Absorb water (I)	Sink (II)	Float (III)
1. paper towel	/	/	
2. styro cup			/
3. piece of bread	/	/	
4. glass		/	
5. spoon		/	
6. facial tissue	/	/	
7. plastic cup			/
8. detergent soap	/	/	
9. clothes pin		/	
10. rice grains	/	/	

Learning Task No. 2

Porous Materials	Non-porous Materials
Wood table	Plastic container
Food/rice	glass
fish	spoon
	Bottle
	fork
	plastic chair

Learning Task No. 3:

Situation 1:
1. use cloth or tissue paper to dry the table
2. They absorb water

Situation 2:
1. Remove about 1/4 or less water in the jar to allow space for other materials
2. Juice crystals will be dissolved in water
3. float

Learning Task No. 4

1. / sink
2. / sink
3. /float
4. / float
5. / float

Learning Task No. 5

1. A 2. B 3. A 4. A 5. B

Weeks No. 3-4

Learning Task No.1

1. Clay became thinner, changed in size and shape
2. Plastic bottle was deformed, changed in size and shape
3. Cloth changed in size and shape
4. The nail was displaced in to the wood

Learning Task No.2

Material	What can I do to change the material?	What changed happened to the material?
Candle	bend, cut	Shape, size
Aluminum foil	cut	Shape, size
Wooden stick	Bend, cut	Shape, size
Metal clothes line or washing line	Bend, cut, hammered,	Size
Chocolate bar	Bend, press, cut	Shape, size
Match stick	Bend, cut	Shape, size
Pencil	Bend, cut,	Shape, size
Crayons	Bend, cut	Shape, size
Used paper bag	Cut	Shape, size
Glass bottle	cut	Shape, size
Plastic bottle	Cut, bend	Shape, size
Iron rod or stick	Bend, hammered	Shape, size

Learning Task No. 3

1. They changed in size and shape.
2. No, because the change is only in the physical state.

Learning Task 4

:

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

Learning Task No. 5:

Solid material	Bend	Hammer	cut	press
Stone			/	
Playdough	/		/	/
Eraser	/		/	/
Sponge	/		/	/
Ruler	/		/	
copper wires	/	/	/	
Plastic straw	/		/	/
Ball			/	/
Cloth	/		/	/
bullpen	/	/	/	
metal spoon	/	/	/	
metal roof	/	/	/	

Answer Key

Weeks 5-6

Learning Task No.1

1. Melting
2. Melting
3. Boiling
4. Freezing
5. flammability

Learning Task No.2

1. solid to liquid
2. Solid to liquid
3. Liquid to gas
4. Liquid to solid
5. Solid to gas

Learning Task No.3

1. homogenous mixture
2. Homogenous mixture
3. Heterogenous mixture
4. Heterogenous mixture
5. Heterogenous mixture

Learning Task No.4

Material	Before heating	After heating	After cooling
butter	solid	liquid	solid
margarine	Solid	liquid	solid

Learning Task No. 5

1. change in state from Liquid to solid
2. Freezing, heat is absorbed, the temperature is low
3. Homogenous mixture, heterogenous mixture
4. Changed in state from Liquid to solid and rfrom solid to liquid

Learning Task No. 4.

Answers in the Guide Questions:

1. change in color, size and shape
1. Heat exposure
2. Physical change
3. Became solid again, because heat is absorbed when the materials are exposed to high temperature
4. Physical change
6. they changed in state from solid to liquid and from liquid to solid again

Learning Task No. 6.

1. solid to liquid
2. Shape, size and texture
3. Liquid to solid, size, shape and texture

Answer Key

Weeks 7-8

Picture/ Situations of Human Activities	Human activities shown in the picture	Useful or Harmful	Effect in the Environment
	Burning of garbage, tires	harmful	Air pollution, Respiratory ailments
Planting of vegetables in a vacant lot	Vegetable gardening	useful	Food production, flood control or prevents soil erosion
 https://images.app.goo.gl/sdm9DpR1oK69jYXy9	Cutting of trees or kaining (slash and burn)	harmful	Flood, soil erosion, landslides, loss habitat of animals and plants

Learning Task No. 2

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

Learning Task No: 3

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

Learning Task No. 4

HARMFUL	USEFUL
1.Burning of old tires	2.Shaping of wood to make furniture
4.Cutting of trees	3.Hammering/ shaping iron to make bolo
7.Throwing de-tergents into the sewage	5.. Shredding paper for paper mache
8.Killing animals in the forest	6.Cooking of food
10.Dumping garbage into the river	9.Sewing fabric to make clothes

Learning Task No. 5:

Learning Task No. 4:

Answers may vary depending on the experiences shared by the pupils.

Possible answers:

I understand that clean up drive is that I need to join clean up drive to help save the environ-ment.

Learning Task No. 3:

1. D
2. D
3. B
4. B
5. C

Learning Task No. 6:

For inquiries or feedback, please write or call:

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