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Science

Quarter 1 - Module 1: Materials that Absorb Water, Float, Sink and Undergo Decay





Department of Education • Republic of the Philippines

Science – Grade 4 Alternative Delivery Mode

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Schools Division Superintendent: Rebonfamil R. Baguio

Development Team of the Module

Authors: Janette V. Bejona

Editor: Maria Victoria C. Alvarez

Reviewers: Jimbo Russell C. Agbayani, EPS – Science

Maritel L. Agbayani, PSDS Desiree Rose Q. Allaba Fabrienne Isa M. Cabanao

Agnes M. Calibod

Illustrator: Dandy C. Batusin

Layout Artists: John Rimmon I. Taquiso

Management Team:

Chairperson: Rebonfamil R. Baguio

Schools Division Superintendent

Co-Chairperson: Eugene I. Macahis, Jr.

Asst. Schools Division Superintendent

Members:

Jayvy C. Vegafria, CID Chief ES

Jimbo Russell C. Agbayani, EPS - Science

Analisa C. Unabia, EPS – LRMS Joan Sirica V. Camposo, Librarian II

Israel C. Adrigado, PDO II

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Department of Education - Division of Valencia City

Office Address: Lapu-lapu Street, Poblacion, Valencia City 8709

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Science

Quarter 1 - Module 1: Materials that Absorb Water, Float, Sink and Undergo Decay

This instructional material was collaboratively developed and reviewed by educators from public schools. We encourage teachers and other education stakeholders to email their feedback, comments, and recommendations to the Department of education at region10@deped.gov.ph.

We value your feedback and recommendations.

What This Module is About

Do you ask yourself questions about the world you live in? Do you even wonder what lies ahead on the blue horizon or what rests beyond the seas? Your young mind may have many questions because you are so curious about how things happened.

This module will help you discover the answers to the questions you have about yourself, the environment, and everything beyond it. This will be your guide as you unlock new knowledge through various learning experiences through science process skills such as investigating/experimenting, observing, describing, tabulating/organizing data. Analyzing, interpreting, explaining, generalizing, synthesizing, and communicating results.

Answer keys to the pre-test and post-test are provided at the end of this module while answers to the questions and activities in the lessons are found at the end of every lesson.

Notes to the Teacher



Dear Teacher,

This is a self-paced module with various activities to be done at home by the learners. Clear and careful instructions must be given to the learners to ensure safety and avoid misconceptions in performing the activities.



What I Need to Know

We are all surrounded by many kinds of materials. These materials come in different forms. They can be: solids, liquids, or gases. Solids, like any other materials have different characteristics or properties. These characteristics or properties include the size, shape, color, odor, and texture.

In the next lesson, you will do activities which will help you classify solid materials based on its ability to absorb water, float or sink and undergo decay.

Learning Objectives:

- 1. Classify materials based on the ability to absorb water
- 2. Identify materials that float and sink
- 3. Describe and classify materials based on the ability to undergo decay

Time duration: 4 days

How to Learn from this Module

For you to achieve the objectives cited above, you are to do the following:

- · Take your time reading the lessons carefully.
- Follow the directions and/or instructions in the activities and exercises diligently.
- Answer all the given tests and exercise

Icons of this Module

	What I Need to Know	This part contains learning objectives that are set for you to learn as you go along the module.
	What I Know	This is an assessment as to your level of knowledge to the subject matter at hand, meant specifically to gauge prior related knowledge.
	What's In	This part connects previous lessons with that of what you are going to learn.
	What's New	An introduction of the new lesson through various activities, before it will be presented to you.
	What is It	These are discussions of the activities as a way to deepen your discovery and understanding of the concept.
	What's More	These are follow-up activities that are intended for you to practice further in order to master the competencies.
	What I Have Learned	Activities designed to process what you have learned from the lesson
	What I Can Do	These are tasks designed to showcase your skills and knowledge gained, and applied into real-life concerns and situations.
	Post Assessment	This assessment evaluates your level of mastery in achieving the learning objectives.
00	More Activities	Activities designed to increase the strength of your skills and knowledge gained and tends to induce repetitions of actions/ learning



What I Know

Test A

Directions: Read the questions carefully. Encircle the letter of the correct answer.

- 1) Which of the following materials float in water?
 - A. big Stone

C. empty plastic bottle

B. crystal glass

D. metal spoon

2) Using the data below, which group of materials can be used to prevent oneself from drowning?

1	II	III
Materials that	Materials that float	Materials that sink
absorb water		
 Cloth 	 Bamboo 	 Rocks
 Sponge 	• Log	 Metal bar
• Rug	 Plastic bottle 	 Hollow blocks
 Cotton ball 	 Rubber ball 	Coins
 Tissue paper 	 Balloon 	 cellphone

A. I, II & III B. I only

C. II Only

D. III Only

- 3) Why do boats float in water?
 - A. Boats are made of wood which make them float.
 - B. Boats have plastic strings which make them float.
 - C. Men use paddles to make boats float.
 - D. The sea breeze makes the boats float.
- 4) How will you dispose decaying waste materials commonly found at home?
 - A. Make them into compost fertilizer.
 - B. Throw them into the river to feed the fishes.
 - C. Keep them in the cabinet and use them again.
 - D. Mix them with the non-decaying waste materials.
- 5) A glass of water is spilled on the table. What are you going to use if you want to wipe dry the table?

A. cellophane

B. plastic mat C. rubber band

D. rug

Test B

Directions: From the given set of materials in each item below, which is a decaying material? Encircle the letter of the correct answer.

6. A. spaghetti B. toothbrush C. glass D. plastic plates

7. A. cloth B. potato C. pants D. cellophane

Test CFor numbers 8-10, refer to the table below.

	II	III
Fish bone	Water bottle	Empty soda cans
Chicken Feather	Ketchup bottle	Empty cans of meat, loaf, milo, etc.
Kangkong stem	Broken pail	
Banana peelings	Basin	Rubber slipper
Leftover meat	glass	Plastic

8. Which group of materials will undergo decay?

A. I & II B. II & III C. I only D. II only

9. Which group(s) of materials is/are recyclable?

A. I & II B. II & III C. I only D. II only

10. Which group(s) of materials can be turned into fertilizer?

A. I & II B. II & III C. I only D. II only

Lesson

Will I Absorb Water?

In our environment, there are many and different materials that can be classified according to its properties. Some materials can be classified based on its ability to absorb water while some materials can absorb water more than the others.

In this lesson, you will learn more about how to classify which materials absorb water and which that do not.

Get ready and answer the activities that follow.

Week 1

Day 1



What's In

Quick Check!

- At your age, did you help in doing home chores? Have you experienced washing the dishes?
- If you are going to wash your dishes, what are the materials you are going to use? How will you describe these materials?



Let's Play and have Fun!

What to do:

- 1. Prepare the necessary materials below.
- 2. Do the activity following the directions given.

Materials:

- 3 pieces of: medium rubber balls, cotton balls, sponge, face towel, t-shirt, rug, tissue paper
- a basin /pail of water, tray/big bowl

Directions: Folow thw given steps below:

Step 1. Put the materials one by one on the basin of water.

Step 2. Lift up the material ans queeze.

Step 3. Record your observations in the table provided.

Step 4. Do the same for each material.

Material	What happened when you squeezed the material?	Put a if the material absorbs water or if it does not.
 cotton balls 		
2. face towel		
rubber balls		
4. rug		
5. sponge		
6. t-shirt		
7. tissue paper		
8. rubber slipper		
9. plastic mat		
10.bond paper		



Learning Circuit!

Absorb - to take in (something, such as a liquid) in a natural or gradual way.

Porous - having a small holes that allow air or liquid to pass through. **Non-porous** - materials that do not allow air or liquid to pass through

*Cotton is very porous, which makes it a natural absorber of water.

*Plastics are non-porous materials.







Figure 1. Examples of porous and non-porous

Guide Questions:

- 1. What are the examples of materials that absorbs water?
- 2. Describe what happened to the material when it absorbs water.
- 3. What comes out as you squeeze the sponge?
- 4. How do porous and non- porous materials differ?



It's Color Time!!!

Porous or Non-Porous

Directions: Color the box beside each material **RED** if it is porous and **GREEN** if non-porous.

1.	rubber balls	
2.	cotton balls	
3.	sponge	
4.	face towel	
5.	t-shirt	
6.	rug	
7.	tissue paper	
8.	Manila paper	
9.	Styrofoam	
10	.curtain	



What I Have Learned

Brain Buster!!!

Directions: Write TRUE on the space provided if the statement is correct. If the statement is FALSE, change the underlined word with the correct answer. Select from the words inside the box.

	porous non-porous	absorb can't absorb	
1.	Plastics are porous	materials.	
2.0	Cotton is a porous	material.	
3. <u>l</u>	Non-porous materi	als have small I	holes that allow air or
,	water to pass throu	ıgh.	
4.	Materials made ou	t of cloth do not	absorb water.
5. \	Wood can absorb v	water.	



What I Can Do

Let's apply it!

Directions:Read the questions carefully and encircle the letter of the correct answer.

- __1. Why do some people prefer to use plastic bags than a paper bags?
 - A. Plastic bags easily get wet.
 - B. Plastic bags are lighter than paper bag
 - C. Paper bags easily get damaged when wet.
 - D. Paper bags are not available in the market.
- __2. You accidentally spilled a glass of water on your table and you want to get rid of the water at once. What are you going to use?
 - A. handkerchief

C. tissue paper

B. rug made of cloth

D. your dress



QUARTER 1- MODULE 1

Lesson

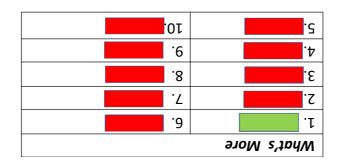
Will I Absrob Water?

2/27	1	cal	• Soft , hard, plast
T0) C	_	32i	
8(6			water
J(8		, nise , 9gnogs , qe	sos ,gnidsawdsiQ •
8(7			s9Y ●
A(6]		What's In
a(s			
∀(<i>†</i>	\vee	Water comes out	10. bond paper
A(£	0	It does not absorb water	9. plastic mat
	0	If des not absorb water	8. rubber slipper
J)C		Water comes out	7. tissue paper
Pretest	$\overline{}$	Water comes out	frids-f
		Water comes out	5. sponge
		Water comes out	gur .⁴
	0	It does not absorb water	3. Rubber balls
		Water comes out	2. Face towel
	\vee	Water comes out	1. Cotton balls
	does not.	Material?	
	yater or if it	əqş pəzəənbs	
	material absorbs	noλ uəyм	
	Put a if the	What happened	Material
			What's New

11 S	Μγατ
Cotton, sponge, clothes	τ.
It became wet, it absorbs water	.2
The water comes out	.£
Porous can absorb wayter, non-	'ቱ
porous cannot absorb water.	

J. C
What I Can Do

Ι Ηα νε Γεαιυε q	What
Non-porous	τ.
∃UЯT	٦.
Porous	3.
apsorb	ٔ ۲
TRUE	.c



Lesson

2

Will I Sink or Float?

In our environment, there are many and different materials that can be classified based on its ability to sink or float in water. There are some materials that will sink while other materials can float at first, but then sink as they absorb water through their holes.

In this section, you will learn more about how to classify things that sink or float.

Get ready to answer the activities that follow.

Week 1 Day 2



What's In

Remember!

Directions: The following are materials commonly found at home. Write <u>absorb</u> on the blank if the material absorbs water and <u>does not absorb</u> if it does not absorb water..

1. Fishbone	Status	
2. Bath towel		
3. Mineral bottle		
4. Rug made of cloth		
	Will Louis	•
5. Plate		
6. toy boat		
7. cup		
8. t-shirt		
9. cotton balls		
10.tissue paper		



What's New

Do this!

What to do:

- 1. Prepare the needed materials listed or given.
- 2. Follow the given directions and answer the Activity Sheet.
- 3. Answer the guide questions.

Materials: a small basin filled with water, rubber ball, ping-pong ball, pencil, metal spoon, styro cup, aluminum foil, stone, mineral water bottle with cover, saucer, plastic cup.

Directions: In the table below is a list of materials that may float or sink in water. In a small basin filled with water, slowly drop each of the material into the basin one at a time. Fill out the table below by marking a check (/) the observed characteristic of the material.

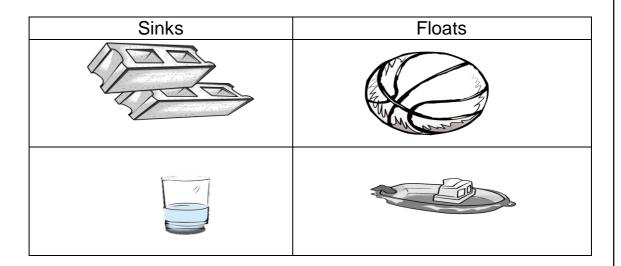
Materials	Floats	Sinks
1. Rubber ball		
2. Ping-pong ball		
3. Pencil		
4. Metal spoon		
5. Styro cup		
6. Crampled		
aluminum foil		
7. Stone		
8. Mineral water		
bottle with cap		
9. Saucer		
10. Plastic cup		



What is It

Learning Circuit!

- Sink means to go to the bottom of water, float means to stay on top.
- Some things float on the surface of water. Others submerged, partway down, while others sink because they have the ability to absorb water.
- Some things sink very fast and some things sink very slowly.
- The shape of an object's can affect its ability to float, but some materials float no matter what is their shape such as styrofoam and wood.
- Some things float at first, but then slowly sink as they absorb water through their holes.



Guide Questions:

- 1. What are the materials that sink?
- 2. What made them sink?
- 3. What are the materials that float?
- 4. What made them float?



Do this!

Directions : Identify the materials in each item. Write \underline{S} on the space provided if it sinks and \underline{F} if it floats.
1. Flower vase
2. Plastic cup
3.Basket
4.Bamboo stick
5. Pencil
6. Stones
7. Metal Spoon
8. Plastic Bottle cup
9. Drinking glass
10.Closed empty plastic bottle



Brain Buster!!!

Directions: Fill in each blank with the correct word to complete every statement. Select your answers from the words inside the box.

	absorb float	holes sink	top		
		On in			
Son	ne things	C	on	_of water,	, some
		(1)	(2)		
things sta	y partway down,	and some t	things		
			(3)		
Son	ne things float at	first, but the	en sink as the	еу	water or
				(4)	
take wate	r on through		•		
		(5)			



What I Can Do

Directions: Read the statement below and answer the question carefully. Encircle the letter of the correct answer.

MV Montenegro accidentally bumped a cargo ship. The incident caused a big hole to the passenger ship. What do you think will happen to this passenger ship?

- A. The ship will still float in the water.
- B. The collision will cause fire inside the ship.
- C. The ship sinks as it absorbs water through its holes.
- D. It will not be affected by the accident.



Figure 2. A passenger ship bumping into a cargo ship



Lesson 2

Will I Sink or Float?

10. absorb
9. absorb
8. absorb
7. Does not absorb
6. Does not absorb
5. absorb
4. absorb
3. Does not absorb
Z.absorb
1.Does not absorb
What's In

10. F	2. F
S. ₆	4.F
F.8	3.5
S.T	7.F
S [.] 9	J. S
	What's More

4. because of their shape, it's light weight
3.styro, log, wood
λ.it absorbs water, it's heavy weight
T.hollow bocks, nail, sponge
Il si It

səlod.Z
4. absorb
3.Sink
Z. top
1. float
Μγρατ Ι Ηανε Learned

J. C
What I can Do

I		3. Pencil
	,	4. Metal spoon
/		5. Styro cup
		6. Crampled aluminum foil 7. Stone
		8. Mineral water bottle with
ı		cap
		9. Saucer 0. Plastic cup

Lesson

3

Materials that Undergo Decay

All living things eventually die and later on undergo decay. Decaying is a process that cause changes among biodegradable solid materials. The process of decay is very important. Without it, dead organisms and waste materials would pile up and interfere with the habitats of living things.

In this activity, you will learn to describe and classify materials based on their ability to undergo decay.

Week 1

Day 3



What's In

Recall!

Directions: Write **F** on the blank if the material floats and **S** if the material sinks.

- 1. rubber slipper 3. stone 5. rubber ball



Do this!

What to do:

- 1. Prepare the needed materials listed in the table below.
- 2. Follow given directions and answer the activity sheet.
- 3. Answer the guide questions.

Materials: banana, kangkong stalks, camote leaves, left over foods, rotten mango

Directions: Put a check mark (/) if the materials will undergo decay and mark (x) if not.

Activity Card

Materials	Undergo decay or not?
1. banana	
2. kangkong leaves	
3. cellophane	
4. leftover food	
5. rotten mango	

Guide Questions:

- 1. What are the two kinds of materials used in the activity?
- 2. Describe the characteristics of each materials.



Learning Circuit!

- Only materials from living things undergo decay.
- The process of decay is not uniform among plants and animals.
 Some materials will decay fast, some will take a long time.
- The organic matter in the soil come from decayed plants and animals. It becomes organic fertilizer.
- Organic fertilizer from compost pit enriches the soil supplying nutrients for plant growth.
- Some factors that contribute to the decaying process of the materials are: sunlight, water, soil and action of microorganisms.
- Some decayed materials were compressed under water and thick layers of soil over millions of years. They were converted into fossil fuels such as coal, oil or natural gas. These fuels are used by power stations, factories and motor vehicles.

Guide Questions:

- 1. How will you dispose the materials that undergo decay? Explain your answer.
- 2. What are the factors that contribute to the causes of the decay?



Answer the following:

___6. Sayote

, and the factor and		
Test A.		
Directions: Read the que correct answer.	estions carefully. Encir	cle the letter of the
1. Which of these mate A. mango fruit E	erials will decay fast? 3. string beans	C. pechay
2. Which of these mate A. sponge		-
3. Why is the process environment? A. Sanitizes the soin B. It enriches the soin B.	il. C. Preserve	important to the e materials from decay. eserve water.
Test B.		
Draw a on the space if does not decay.	provided if the materi	als undergo decay and
4. mahogany twigs 5. tires		



Brain Buster!

Directions: Directions: Complete the journal by writing your answers on the space provided.

I learned that ______ I realized that ______ I promised that ______



Sorting Out Materials!

Directions: Look and analyze the illustrations below. Answer the given questions. Write your answers on the space provided.

1. Identify materials that undergo decay.	

2. What can be done with the materials which do not decay?



Figure 3. Different types of garbage found in our surroundings



Lesson

3

Materials that Undergo Decay

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S	٦.
S	3.
4	.2
Н	Τ.
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1. C

٦.

What's More

Decaying and non-decaying
 Decaying can be turned into organic
 fertilizer. Non-decaying can be re use or

/	.c
/	٦.
Χ	3.
/	.2
/	τ.
What's New	

1. Make a compost. Decayed material can be useful and can be turned into organic fertlizer
2. sunlight, water, soil, action og microorganisms

What is It

What I Have Learned (answers may vary)

What I can Do 1. paper, fruit peelings, left overs 2. recycle, reuse



Post Assessment

Test A

Directions: From given the set of materials in each item below, which is a decaying material? Write the letter of your chosen answer in your Answer Sheet.

1. A. glass	B. plastic plates	C. spaghetti	D. toothbrush
2. A. cup	B. rubber	C. plastic	D. potato

Test B

Directions: Choose the letter of your answer and write it in your answer sheet.

3. Using the data below, which group of materials can be used to prevent oneself from drowning?

1	II	Ш
Materials that	Materials that float	Materials that sink
absorb water		
 Cloth 	 Bamboo 	 Rocks
 Sponge 	• Log	 Metal bar
• Rug	 Plastic bottle 	 Hollow blocks
 Cotton ball 	 Rubber ball 	Coins
 Tissue paper 	 Balloon 	 cellphone

- A. I,II & III B. I only C. II Only D. III Only
- 4. Which of the following materials float in water?
 - A. big stone

C. empty plastic bottle

B. crystal glass

D. metal spoon

- 5. Why do boats float in water?
 - A. Boats are made of wood which make them float
 - B. Boats have plastic strings which make them float.
 - C. Men use paddles to make boats float
 - D. The sea breeze makes the boats float

- 6) How will you dispose decaying waste materials commonly found at home?
 - A. Make them into compost fertilizer.
 - B. Throw them into the river to feed the fishes.
 - C. Keep them in the cabinet and use them again.
 - D. Mix them with the non-decaying waste materials.
- 7) A glass of water spilled on the table. What are you going to use if you want to wipe dry the table?
 - A. cellophane
- B. plastic mat
- C. rubber band D. rug

Test C For nos.8-10, refer to the table below

	II	III
Fish bone	Water bottle	Empty soda cans
Chicken Feather	Ketchup bottle	Empty cans of meat, loaf, milo, etc.
Kangkong stem	Broken pail	moat, roar, rimo, oto.
Banana peelings	Basin	Rubber slipper Plastic
Left over meat	Glass	riasiic

- 8. Which group(s) of materials will undergo decay?
 - A. I & II
- B. II & III
- C. I only
- D. II only
- 9. Which group(s) of materials is/are recyclable?
 - A. I & II
- B. II & III
- C. I only
- D. II only
- 10. Which group(s) of materials can be turned into fertilizer?
 - A. I & II
- B. II & III
- C.I only
- D. II only

Exercise 1

Directions: Classify the materials written inside the box below whether they sink or float on water. Write your answer on the correct column.

styrofoam	hand towel	stone
pebble	marble	rubber slipper
rubber ball	logl	fork
pencil	glass	plastic plate

Sink	Float

Exercise 2

Direction: Give five materials that decay and 5 materials that do not undergo decay that can be found in your kitchen.

Decaying Materials	Non-Decaying Materials
1.	1.
2.	2.
3.	3.
4.	4.
5.	5.

Exercise 3

Directions: Study the pictures below. Which materials do not absorbed water. Encircle the letter/s of the correct answer.

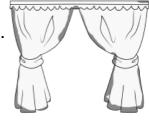
Α.



B.



C.



D.



E.



Congratulations for working diligently with this module. Try to share your experience with your teacher or elder brother or sister at home.



Answer Key

J (ОТ
а (6
S) (8
a (Ł
A (9
A (2
7 (t
3) C
a (z
л) с
Post Test

(Answers may vary in everybuil)

Plastic plate	fork
gol	Marble
rubber ball	əlqqəd
rubber slipper	Stone
meofonyts	lawot bnaH
Floats	Sinks
Additional activities Exercise 1	

neq gniγrł.2	Səldetəgəv.Z
4. Plastic cup	4. bones
3. rug	3. food left overs
2. plate	2.egg shells
1. plastic spoon	2.fruit peelings
Mon- Decaying	Decaying
	Example of answers
Exercise 2	Additional activities

3	3.	
D	۲.	
A	τ.	
Additional activities Exercise 3		

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For inquiries and feedback, please write or call:

Department of Education – Division of Valencia City

Lapu - Lapu Street, Poblacion, Valencia City 8709

Telefax: (088) 828 - 4615