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Science

Quarter 1 - Changes in Solid Materials when Hammered or Cut

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ADM

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Science – Grade 4

Alternative Delivery Mode
Quarter 1 - Module 4B: Changes in Solid Materials when Hammered or Cut
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Science

Quarter 1 - Module 4B: Changes in Solid Materials when Hammered or Cut

This instructional material was collaboratively developed and reviewed by educators from public and private schools, colleges, and/or universities. 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.

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What This Module is About

Solid materials can be changed: bent, pressed, hammered, or cut. Solid materials when bent, pressed, hammered or cut undergo physical change. No new substance is formed. But, a change in form, size and shape is evident.

In this lesson, you will know the changes of solid materials when hammering is applied.

Notes to the Teacher

Dear Teacher,

This is a self-paced module with various activities to be done at home by the

What I Need to Know

This session is packed full of need- to –know information. Let us do with need to know based learning.

In this module, you will be able to learn to:

1. Describe what happens to the solid materials when they are hammered.
2. Describe what happens to the solid materials when they are cut.

Time duration: 4 days

How to Learn from this Module

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 exercises.

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 lesson with that of the current one.
	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
	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: Write **T** if the statement is True, Write **F** if the statement is false. Write your answers in your answer sheet.

1. _____ Solid materials can be hammered.
2. _____ Hammering and cutting a solid materials will produce with the same result.
3. _____ No new material is formed when they are hammered.
4. _____ Only physical appearance is change when material is hammered.
5. _____ Hammering of solid materials makes wood thinner.

.

Test B

Directions: Write the correct answer of your choice. Write the letter only.

1. What process took place when seeds were pulverized?

   A. bending
   B. cutting
   C. hammering
   D. pressing

2. When the carpenter flattened the crooked bar
   What did he do to the bar?
   A. bent the bar
   B. cut the bar
   C. hammered the bar
   D. pressed the bar

3. The chocolate was flatten when inserted in the bag full of packed with books. What process took place in its physical change?
   A. cut C. melt
   B. hammered D. pressed

4. Which of the following would be use to make rubber tire into a flower pot ?
   A. bending
   B. cutting
   C. melting
   D. pressing

5. You want to make four pieces of rugs from one big cloth. What should be done? How did it happen?
   A. cutting
   B. hammering
   C. melting
   D. pressing

Test C

Directions: Describe what will happen to the following materials when they are hammered. Do the activities then fill-out the table below.

Write the following in the column provided

A- size D. no new material formed

B-shape E. No change

C-size and shape

Materials	Changes in the materials
1. Chalk	
2. Stone	
3. Paper	
4. junk food wrapper	
5. Stick Broom	

Lesson 1 Describe Changes in Solid Materials When Hammered

A solid material has definite shape and volume. Solid materials have different characteristics/ properties such as size, shape, color, weight, etc.

Solid materials can be change through many ways: cutting, tearing, folding, twisting, bending, stretching, pressing, coloring, crumpling, melting, and others.

No new substance is formed but, a change in form, size and shape is evident.

In this lesson, you will know how do solid materials changes occur, what are the changes that materials undergo when this material is hammered or cut.

Week 6	Day 1

What's In

Ask: What changes in the materials indicated below when they are hammered? Provide data on the Observation Column.

Material	***Observation***
modeling Clay	
paper cup	
banana	
pandesal	
cooked rice	

What's New

Let's do it!

Directions: Hammer the materials one by one. Mark a check (/) your observation on what happened to the materials in the table provided below .

Material	Changes Observed			
	Size	**Shape**	**Texture**	**None**
hollow block				
crooked wire				
chalked				
metal spoon				
stone				

Questions:

1. What happened to the solid materials when they are hammered?
2. Was a new material formed when solid material was hammered?
3. Explain the changes that took place when hammering was applied.

What is It

Learning Circuit

A hammer is a hand tool usually consists of a solid head held on the end of a handle. It is used for beating/striking or pounding materials /objects.

Solid materials can be hammered. When hammered, these materials may change their size, and shape and even the texture. However, no new material is formed because only the physical appearance of the material is changed.

What's More

Do it yourself!

Directions: Write a check mark **(/)** if the materials can be hammered.

X if cannot be hammered.

__1. tin can

__2. door mat

__3. clay

__4. rubber slipper

__5. styro foam

__6. nail

__7. car tire

__8. old cloth

__9. chalk

__10. Crayons

Week 6	Day 2

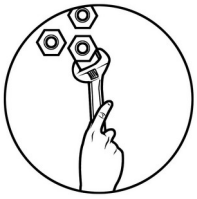
What I Have Learned

Brain Twisting!

Directions: Fill in the blanks with a correct answer from the box.

solid	new material	texture
shape	hammered	size
tool	pounding	striking

A hammer is a hand_____(1) usually consists of a _____(2)head held on the end of a _____(3) It is used to _____(4),_____(5)_____(6)or_____(7)material/objects. Solid materials can be _____(8). When hammered, these materials may change their _____(9), _____(10) and even _____(11). However, no_____(12) is formed because only the physical appearance of the material is change.



What I Can Do

Be a genius!

Directions: Describe the following materials when hammered. What Were the changes that happened? Record your observation on the second column.

Materials	Changes Happened
1. iron bar	
2. peanuts	
3.medicine tablet	
4. nail	
5.rice granules	

Lesson 2 Changes in Solid Materials When Cut

A solid material has definite shape and volume. Solid materials have different characteristics/ properties such as size, shape, color, weight, etc.

Solid materials can be change through many ways: cutting, tearing, folding, twisting, bending, stretching, pressing, coloring, crumpling, melting, and others.

No new substance is formed but, a change in form, texture size and shape is evident.

In this lesson, you will know how do solid materials changes occur, what are the changes that materials undergo when these materials are cut.

Week 6	Day 3

What's In

Quick Check!

Directions: Provide data on the Observation column. What happened to the materials when pressed? What changes took place?

Material	Observation/change
1. Corn grits	
2. Sugar	
3. Mongo seeds	
4. Mosquito killer	

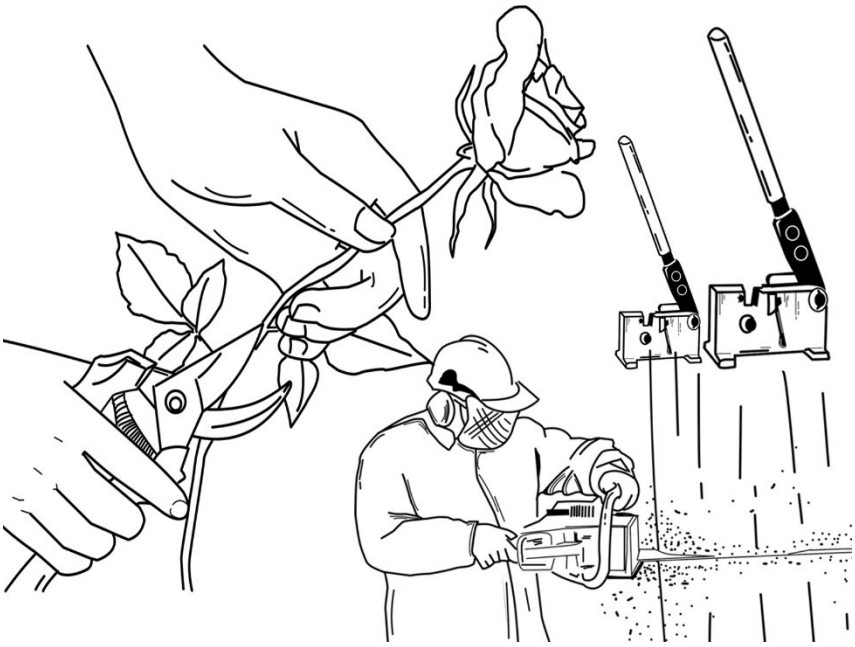
5. Biscuits	
6. Tin Can	
7. Salt	
8. Cardboard	

What's New

Let's do it!

Activity 1

Directions: Look at the pictures and answer the question.



What materials were used in cutting as seen from the pictures?

Answers:

1._____

2._____

Activity 2

Directions: Using a pair of scissors, cut each given materials. Observe what happens to the materials. Record your observations in your answer sheet

Material	What happened to the material when cut?
1.Piece of paper	
2.Piece of carton	
3.Candy wrapper	
4.leaves	
5.Piece of cloth	
6.Cardboard	
7.Cellophane	
8.Rubber band	
9.Colored paper	
10.Dry leaves	

Questions:

1. What happened to the solid materials when they are cut?
2. Was there a new material formed when solid material was cut?
3. Was there a change in the texture of the materials after being cut? Why?

What is It

Learning Circuit

- Solid materials can be cut. When cut, these materials may change their size and shape, but no new material is formed. Hence, only the physical appearance of the solid material is changed when cut.
- Not all solid can be cut using simple scissors. Some solid materials, like iron, steel etc., can be cut using sophisticated cutters(i.e. metal cutters/machine cutters).

What's More

Do it yourself!

Directions: What changes happened to the following materials after being cut? Mark a check (/) the boxes in the table below based on your observation.

Materials	Changes		
	Size	**Shape**	**Texture**
1. cellophane			
2. twigs			
3. floor mat			
4.rug			
5. scotch tape			

What I Have Learned

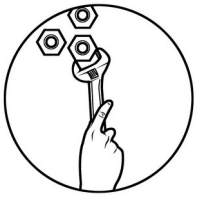
Brain twisting!

Directions: Fill in the blanks with a correct answer from the box to form a paragraph.

scissors	iron	cutters
steel	solid	new material
texture	shape	size
hammered	tool	pounding
striking	beating	handle

Solid materials can be _____(1). When cut, these materials may change their _____(2)_____(3), but no _____(4) is formed. Hence, only the physical appearance of the _____(5) material is _____(6) when cut.

Not all solid _____(6) materials can be _____(7) using simple _____(8). Some solid materials, like _____(8) , _____(9), etc., can be cut using _____(10) cutters



What I Can Do

Let's do it!

Directions: Describe what changes took place to the materials when cutting is applied. In the second column, identify the type of change that will take place and in the third column, give the best cutting tool to be used to cut the material.

Materials	Changes Happened	Materials Used
1. Papers	size, shape	scissors
2. candy wrappers		
3. meat		
4. trees		
5. lumber		
6. steel bars		
7. tie wire		
8. wooden stick		

Week 6	Day 4

Post Assessment

Test A

Directions: Identify which is the best way to turn the materials into smaller sizes. Mark a check (/) in the box provided in the table below.

Materials	Hammering	Cutting
*1.*Chalk		
2.Paper		
3. Stone		
4.Wrapper of junk foods		
5.Walis ting-ting		

Test B

Directions: Write **T** if the statement is True, Write **F** if the statement is wrong. Write your answer on the space provided.

1. _____ Solid materials can be hammered.
2. _____ When hammer is applied, these materials may change its shape and size.
3. _____ No new material is formed when hammered.
4. _____ Only physical appearance is change when material is hammered.
5. _____ hammering of solid materials is not applied in many ways like bending steel bars/ iron in industry and, etc.

Test C

Directions: Write the correct answer of your choice. Write the letter only.

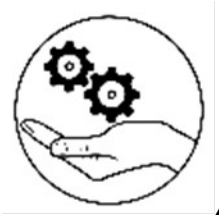
1. What process took place when seeds were pulverized?
   A. bent
   B. pressed
   C. hammered
   D. cut

2. When the carpenter flattened the crocked bar
   What did he do to the bar?
   A. hammered the bar
   B. pressed the bar
   C. cut the bar
   D. bent the bar

3. The chocolate was flattened when inserted in the bag.
   What process took place in its physical change?
   A. hammered
   B. pressed
   C. melt
   D. cut

4. The tin can was flattened. How did it happen?
   A. it was cut
   B. it was melted
   C. it was bent
   D. it was pressed

5. The chalk has turned into powder. How did it happen?
   A. It was hammered
   B. It was melted
   C. It was cut
   D. It was pressed



Additional Activities

A. Identify two solid materials that can be hammered and two materials that can be cut using scissors. Identify the finished product.

Materials that can be hammered	**Finished Product**
Palay	Rice grain
1.	
2.	
Materials that can be cut	
Candy wrapper	pillow
1.	
2.	

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

Answer Key

Post Assessment
A.
1. hammering
2. cutting
3. hammering
4. cutting
5. cutting
B.
1. T
2. T
3. F
4. T
5. F
C.
1. C
2. A
3. B
4. D
5. A

Answer Key Lesson 1

What's More
1. /
2. x
3. /
4. x
5. x
6. /
7. /
8. x
9. /
10. /

What I Know
A.
1. T
2. T
3. T
4. T
5. F
B.
1. C
2. C
3. A
4. D
5. D
C.
1. C
2. C
3. A
4. C
5. A

What I have Learned
1. tool
2. solid
3. handle
4. beating or pounding
5. beating or pounding
6. beating or founding
7. hammered
8. size
9. shape
10. texture
11. new materials

What's New
1. size ,shape, texture
2. size
3 size ,shape, texture
4. size and shape
5. size ,shape, texture
6. It changes its size and shape
7. no new material is formed
8. when hammering is applied, changes in appearance happened. (answers may vary

What Can I Do
2. Size, shape – scissors
3. Size, shape - knife
4. Size, shape – chainsaw, saw, ax
5. Size, shape - saw
6. Size, shape – iron cutter/ sophisticated cutter
7. size – plier, cutter
8. size - bolo

What's In
1. size, shape
2.size, shape
3.size, shape, texture
4.size and shape
5. size , shape, texture

Answer Key Lesson 2

What's In
1. change in size and shape
2. change in size and shape
3. change in size and shape
4. change in size and shape
5. change in size, shape and texture
6. change in size, shape and texture
7. change in size, shape and texture
8. change in size and shape

What's More
1. Size, shape
2. Size, shape
1. Size, shape
2. Size, shape
3. Size, shape

What's New
Activity 1
4. scissors
5. chainsaw
Activity 2
1. size, shape
2. size, shape
3. size shape
4. size, shape
7. size, shape
8. size, shape
9. size, shape
10. size, shape
Questions:
1. The materials changed in size and shape.
2. No
3. No. Cutting only changed the sizes and the shapes of the materials

What I have learned
1. cut
2. size or shape
3. shape or size
4. new material
5. physical
6. changed
7. cutter
8. iron or steel
9. steel or iron
10. sophisticated

What Can I Do
2. Size, shape – scissors
3. Size, shape - knife
4. Size, shape – chainsaw, saw, ax
5. Size, shape - saw
6. Size, shape – iron cutter/ sophisticated cutter
7. size – plier, cutter
8. size - bolo

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Detailed Lesson Plan Division of Valencia City

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