



Republic of the Philippines
Department of Education
Regional Office IX, Zamboanga Peninsula



6



SCIENCE

Quarter 3 - Module 3 Sound and Energy Transformations



Name of Learner: _____

Grade & Section: _____

Name of School: _____

Science – Grade 6
Support Material for Independent Learning Engagement (SMILE)
Quarter 3 – Module 3: Sound and Energy Transformations
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Lesson 3

Sound and Energy Transformations



What I Need to Know

This module was designed and written in a way that suits your understanding and needs. It is here to help you master in **demonstrating how sound energy can be transformed (S6FE-Ilid-f-2)**. The scope of this module permits it to be used in many different learning situations. This module is about;

Lesson 1: Sound and Energy Transformations

Objective: Demonstrate how sound energy can be transformed.



What's In

In the previous grade, you learned about sound energy. Let us find out if you can still remember it.

Activity 1: In a flash

Directions: Observe the pictures below. Identify how the following instruments can produce sound. Choose your answer inside the box and write it on the space provided for.

plucking

striking

blowing

_____ 1.



https://www.yamaha.com/en/musical_instrument_guide/saxophone/play/

_____ 4.



<https://www.guitarworld.com/lessons/beginner-guitar-how-to-play-fingerstyle-guitar>

_____ 2.



<https://depositphotos.com/stock-photos/drum.html>

_____ 5.



https://www.freepik.com/premium-photo/cute-pupil-playing-flute-classroom_1563405.htm

_____ 3.



<http://encyclopedia.jakarta-tourism.go.id/post/simbal--seri-musik?lang=id>



What's New

Activity 2: Noise Power

What you need:

- steel fork or spoon

What to do:

1. Strike the steel fork/spoon hard against the edge of a wooden table several times.
2. Observe what happens to the steel fork/spoon.



3. Answer the following questions.

- What was produced when the steel fork/spoon struck the edge of the table?

- What type of energy do you have to use to make the noise?

- What type of energy does the object make?

- Tell how energy is transformed when using them.



What is it

Energy is the ability to do work. It makes a bicycle run, a radio to play, and a bulb to switch on. It allows a child to ride a bike and draw pictures. It makes a plant to grow. Wherever you see motion or light, feel heat, or hear a sound, energy is being used. But what happens when all the energy is used up? How can we make more? The answer is that energy is never really used up. Energy is not created or destroyed. It just changes into a different form. This is called **energy transformation**.

Sound Energy

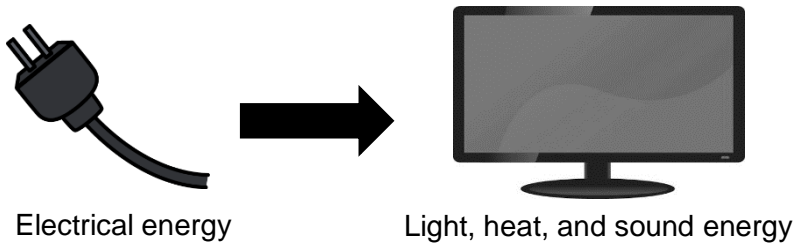
Sound energy is transmitted like a wave motion. Other people hear you when you talk because of the sound energy you produced. When you talk to your friends, air molecules vibrate, travel through the air, and hit their eardrums, which enable them to hear you.

When using microphones, sound energy is converted into electrical energy that is transmitted through the wires connected to loudspeakers. Later that electrical energy is converted back into sound energy at the receiving end.

Sound, like heat energy is easily lost. The transformation of one form of energy into another may be accompanied by losses in the form of sound and/or heat that are often not desirable.

To be able to write and demonstrate energy transformations, energy arrows are used. Here are few examples of sound energy transformations.

- Turning on a television



- Battery-powered alarm clock



Chemical → electrical → mechanical → sound

Let us see another example in action.

- Do you transform your body energy into sound energy? Yes, you do-every time you talk, yell, whisper, or sing!



Energy transformations are all around you, and you are one of the transformers!



What's More

Activity 3: Feel Me!

Directions: Put a heart (♥) on the blank before the number if the following situation demonstrate sound energy transformation and cross (X) if not.

- _____ 1. pressing a doorbell
- _____ 2. ironing the clothes
- _____ 3. roasting a duck leg
- _____ 4. plucking on a guitar
- _____ 5. crumpling of paper
- _____ 6. sitting on a bench
- _____ 7. closing a car door
- _____ 8. boiling of water
- _____ 9. popping of balloons
- _____ 10. turning on the radio

Activity 4: Choose Me!

Directions: Choose how sound energy transformed in the following materials. Write the letter of your answer on the blank before the number.

- _____ 1. battery-powered alarm clock
- _____ 2. radio
- _____ 3. fireworks
- _____ 4. ceiling fan
- _____ 5. television set

- A. Chemical energy → heat energy → sound energy → light energy
 - B. Chemical energy → electrical energy → mechanical energy → sound energy
 - C. Electrical energy → mechanical energy → sound energy
 - D. Electrical energy → sound energy
 - E. Electrical energy → light energy → sound energy



What I Have Learned

Activity 5: Fill Me In!

Directions: Express your understanding of the lesson in this module by supplying the blanks in the following sentence with a word inside the parenthesis.

(1) _____ (Energy Transfer, Energy Transformation, and Energy Conversation) is the changing of energy from one type of energy to another. It is not created or destroyed. It changes into a different (2) _____ (form, shape, size).

(3) _____ (Heat, Light, Sound) energy is transmitted like a wave motion. Other people hear you when you talk because of the (4) _____ (light, sound, heat) energy you produced. When you talk to your friends, (5) _____ (air, liquid, solid) molecules will vibrate, travel through the air, and hit their eardrums, which enable them to hear you.



What I Can Do

Activity 6: Sharpen Your Skills!

Directions: Write on the box the correct sequence of energy transformation that happens in each of the following:

1. ringing bell

2. boiling water

3. videoke set

4. cellphone

5. motorcycle



Assessment

Directions: Read the following questions carefully. Encircle the letter of the best answer.

1. What energy transformation happens in a doorbell when pressed?
 - A. from light to heat energy
 - B. from heat energy to light energy
 - C. from electrical energy to heat energy
 - D. from electrical energy to sound energy
2. What best describes the energy transformation that occurs when you turn on a hair dryer?
 - A. chemical energy-light energy-sound energy
 - B. electrical energy- heat energy- sound energy
 - C. light energy-heat energy- sound energy
 - D. heat energy- light energy- sound energy
3. Which of the following activities shows a change from electrical to sound energy?
 - A. ironing clothes
 - B. roasting chicken
 - C. lightning a candle
 - D. turning on the radio
4. What sequence of energy transformations take place when you pluck a guitar?
 - A. heat energy- sound energy
 - B. light energy- sound energy
 - C. electrical energy-sound energy
 - D. mechanical energy-sound energy
5. What is the best example of a device that converts electrical energy to light to sound?
 - A. a flashlight
 - B. a TV set
 - C. alarm clock
 - D. ceiling fan
6. What two forms of energy are shown in a closing car door?
 - A. heat energy- sound energy
 - B. light energy- sound energy
 - C. electrical energy-sound energy
 - D. mechanical energy-sound energy
7. The following situations demonstrate sound energy transformation, EXCEPT _____.
 - A. boiling of water
 - B. tearing of paper
 - C. rusting of iron
 - D. clapping of hands
8. Which of the following situations show sound energy transformation?
 - A. crumpling of paper
 - B. roasting a chicken
 - C. ironing of clothes
 - D. sitting on the bench
9. Which of the following statements is NOT true?
 - A. Energy can be transformed.
 - B. Energy is never really used up.
 - C. Energy cannot be created or destroyed.
 - D. Energy can be created but not destroyed.
10. Henry throws a ball against a fence. What form of energy does the ball produce when it strikes the fence?
 - A. heat energy
 - B. light energy
 - C. electrical energy
 - D. sound energy



Additional Activities








Activity 6: Draw Me!

Directions: Draw inside the box 5 materials in your home that demonstrate sound transformation.
The given rubric will be used in giving points of your output.

Rubric

Criteria	Excellent (4 points)	Good (3 points)	Poor (2 points)	Needs Improvement (1 point)
Neatness	Clear from errors	Some errors were observed	Many errors were observed	Too many errors were observed
Relevance to the concept	Clearly shows the concept	Fairly shows the concept	Poorly shows the concept	Failed to show the concept

Answer Key-Gr6Q3W3 Science

What's In Activity 1: In a Flash	What's New Activity 2: Noise Power	What's More Activity 3: Feel Me!	Activity 4: Choose Me!
1. blowing 2. striking 3. striking 4. plucking 5. blowing	1. sound 2. mechanical/ motion energy 3. sound energy 4. From mechanical to sound energy	1.  2. X 3. X 4.  5.  6. X 7.  8.  9.  10. 	1. B 2. D 3. A 4. C 5. E
What I have Learned: Activity 5: Fill Me In!	What I Can Do Activity 6: Sharpen Your Skills	Assessment	Additional Activities
1. Energy Transformation 2. form 3. Sound 4. sound 5. air	1. mechanical - sound 2. heat – sound 3. electrical- light- sound 4. chemical- light- sound 5. chemical-mechanical-sound	1. D 2. B 3. D 4. D 5. B 6. D 7. C 8. A 9. D 10. D	Answers may vary.

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Shout. Retrieved from <https://images.app.goo.gl/HRPeTUiT9QRrR4hi7>

Whisper. Retrieved from <https://images.app.goo.gl/12jvmG9AKueT7UGd8>

Man Singing ClipaArt. Retrieved from <https://images.app.goo.gl/bBkvoEvB7VCtwrXV8>

Region IX: Zamboanga Peninsula Hymn – Our Eden Land

Here the trees and flowers bloom
Here the breezes gently Blow,
Here the birds sing Merrily,
The liberty forever Stays,

Gallant men And Ladies fair
Linger with love and care
Golden beams of sunrise and sunset
Are visions you'll never forget
Oh! That's Region IX

Cebuanos, Ilocanos, Subanonos, Boholanos, Ilongos,
All of them are proud and true
Region IX our Eden Land

Here the Badjaos roam the seas
Here the Samals live in peace
Here the Tausogs thrive so free
With the Yakans in unity

Hardworking people Abound,
Every valleys and Dale
Zamboanguenos, Tagalogs, Bicolanos,

Region IX
Our..
Eden...
Land...

My Final Farewell

Farewell, dear Fatherland, clime of the sun caress'd
Pearl of the Orient seas, our Eden lost!
Gladly now I go to give thee this faded life's best,
And were it brighter, fresher, or more blest
Still would I give it thee, nor count the cost.

On the field of battle, 'mid the frenzy of fight,
Others have given their lives, without doubt or heed;
The place matters not-cypress or laurel or lily white,
Scaffold or open plain, combat or martyrdom's plight,
T is ever the same, to serve our home and country's need.

I die just when I see the dawn break,
Through the gloom of night, to herald the day;
And if color is lacking my blood thou shalt take,
Pour'd out at need for thy dear sake
To dye with its crimson the waking ray.

My dreams, when life first opened to me,
My dreams, when the hopes of youth beat high,
Were to see thy lov'd face, O gem of the Orient sea
From gloom and grief, from care and sorrow free;
No blush on thy brow, no tear in thine eye.

Dream of my life, my living and burning desire,
All hail ! cries the soul that is now to take flight;
All hail ! And sweet it is for thee to expire ;
To die for thy sake, that thou mayst aspire;
And sleep in thy bosom eternity's long night.

If over my grave some day thou seest grow,
In the grassy sod, a humble flower,
Draw it to thy lips and kiss my soul so,
While I may feel on my brow in the cold tomb below
The touch of thy tenderness, thy breath's warm power.

Let the moon beam over me soft and serene,
Let the dawn shed over me its radiant flashes,
Let the wind with sad lament over me keen ;
And if on my cross a bird should be seen,
Let it trill there its hymn of peace to my ashes.

Let the sun draw the vapors up to the sky,
And heavenward in purity bear my tardy protest
Let some kind soul o'er my untimely fate sigh,
And in the still evening a prayer be lifted on high
From thee, O my country, that in God I may rest.

Pray for all those that hapless have died,
For all who have suffered the unmeasur'd pain;
For our mothers that bitterly their woes have cried,
For widows and orphans, for captives by torture tried
And then for thyself that redemption thou mayst gain

And when the dark night wraps the graveyard around
With only the dead in their vigil to see
Break not my repose or the mystery profound
And perchance thou mayst hear a sad hymn resound
'T is I, O my country, raising a song unto thee.

And even my grave is remembered no more
Unmark'd by never a cross nor a stone
Let the plow sweep through it, the spade turn it o'er
That my ashes may carpet earthly floor,
Before into nothingness at last they are blown.

Then will oblivion bring to me no care
As over thy vales and plains I sweep;
Throbbing and cleansed in thy space and air
With color and light, with song and lament I fare,
Ever repeating the faith that I keep.

My Fatherland ador'd, that sadness to my sorrow lends
Beloved Filipinas, hear now my last good-by!
I give thee all: parents and kindred and friends
For I go where no slave before the oppressor bends,
Where faith can never kill, and God reigns e'er on high!

Farewell to you all, from my soul torn away,
Friends of my childhood in the home dispossessed!
Give thanks that I rest from the wearisome day!
Farewell to thee, too, sweet friend that lightened my way;
Beloved creatures all, farewell! In death there is rest!

I Am a Filipino, by Carlos P. Romulo

I am a Filipino—inheritor of a glorious past, hostage to the uncertain future. As such I must prove equal to a two-fold task—the task of meeting my responsibility to the past, and the task of performing my obligation to the future.

I sprung from a hardy race, child many generations removed of ancient Malayan pioneers. Across the centuries the memory comes rushing back to me: of brown-skinned men putting out to sea in ships that were as frail as their hearts were stout. Over the sea I see them come, borne upon the billowing wave and the whistling wind, carried upon the mighty swell of hope—hope in the free abundance of new land that was to be their home and their children's forever.

I am a Filipino. In my blood runs the immortal seed of heroes—seed that flowered down the centuries in deeds of courage and defiance. In my veins yet pulses the same hot blood that sent Lapulapu to battle against the first invader of this land, that nerved Lakandula in the combat against the alien foe, that drove Diego Silang and Dagohoy into rebellion against the foreign oppressor.

The seed I bear within me is an immortal seed. It is the mark of my manhood, the symbol of dignity as a human being. Like the seeds that were once buried in the tomb of Tutankhamen many thousand years ago, it shall grow and flower and bear fruit again. It is the insignia of my race, and my generation is but a stage in the unending search of my people for freedom and happiness.

I am a Filipino, child of the marriage of the East and the West. The East, with its languor and mysticism, its passivity and endurance, was my mother, and my sire was the West that came thundering across the seas with the Cross and Sword and the Machine. I am of the East, an eager participant in its spirit, and in its struggles for liberation from the imperialist yoke. But I also know that the East must awake from its centuries sleep, shake off the lethargy that has bound his limbs, and start moving where destiny awaits.

I am a Filipino, and this is my inheritance. What pledge shall I give that I may prove worthy of my inheritance? I shall give the pledge that has come ringing down the corridors of the centuries, and it shall be compounded of the joyous cries of my Malayan forebears when first they saw the contours of this land loom before their eyes, of the battle cries that have resounded in every field of combat from Mactan to Tirad Pass, of the voices of my people when they sing:

“I am a Filipino born to freedom, and I shall not rest until freedom shall have been added unto my inheritance—for myself and my children and my children's children—forever.”