



Republic of the Philippines  
**Department of Education**

**Regional Office IX, Zamboanga Peninsula**



# SCIENCE

## Quarter 3 - Module 5 Describing How Sound Travels



Name of Learner: \_\_\_\_\_

Grade & Section: \_\_\_\_\_

Name of School: \_\_\_\_\_

**Science – Grade 4**  
**Support Material for Independent Learning Engagement (SMILE)**  
**Quarter 3 – Module 5: Describing How Sound Travels**  
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# Lesson 5

## Describe How Sound Travels



### 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 understand and **describe how sound travels (S4FE-III-f-4)**, and part of the activities presents what is vibration, how sound travels in waves at a different speed and in different materials. The scope of this module permits it to be used in many different learning situations. This module is about;

Lesson: Describing How Sound Travels in Different materials

Objective: Describe how sound travels in solid, liquid, and gas.



### What's In

In the previous grade, you have learned about the different sources of sounds, the different ways of producing sounds and its importance. Can you still recall them? Answer the activity below.

#### Activity 1: Where does the sound come from?

**Directions:** Read each sentence carefully. Identify the source of sound, how things make sound and the importance of sound. Choose the correct answer from the word bank and write your answer in the blank space provided. (1 point each)

#### Word/Phrase Bank

Bass Drum      dog      strumming it      cellphone      an  
-----

1. I make sounds like this, "Aw! Aw! Aw!" especially when I am angry.  
\_\_\_\_\_
2. I am seen during parades and make loud sounds like this" Boom! Boom! Boom!".  
\_\_\_\_\_
3. Many people use me every day especially in sending messages through text and call and I make sounds like this, "Kriiing-kriiing-kriiing-kriiing!".  
\_\_\_\_\_

4. I'm a six-stringed instrument. How do I make music?

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5. If you hear the sound of an ambulance, what does it mean?

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## ***What's New***

Sound is fascinating—let's take a closer look at how it works.

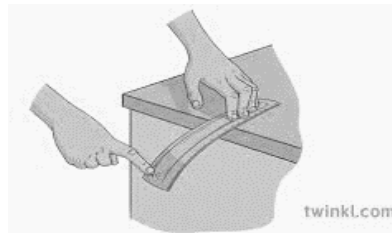
### **Activity 2: What is Vibration?**

#### **What you need:**

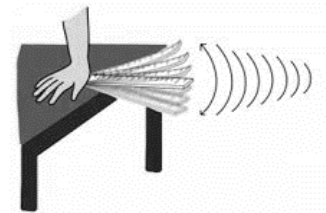
- A transparent plastic ruler
- Table

#### **What to do:**

1. Get a plastic ruler and press one end to the edge of the table by holding it down firmly
2. Push or press down the free end and then release it suddenly. Observe what happens when you release the free end of the ruler. Write your observations in your science notebook.



<https://www.twinkl.com.vn/illustration/flicking-ruler-experiment-sound-vibration-test-science-roi-ks2>



<https://www.brainyias.com/sound/>

3. Hold the ruler while it is still in motion. Observe what happens.
4. Repeat #2 and #3 several times (at least 3 times). Observe what happens.

Answer the following questions. Write your answer below.

1. What happened to the ruler when you suddenly released it?
- 

2. How do you describe the movement of the ruler?
- 

3. Did you hear a sound?
- 

4. Did the sound coming from the moving ruler suddenly stop when you held it? When you released it again?
-

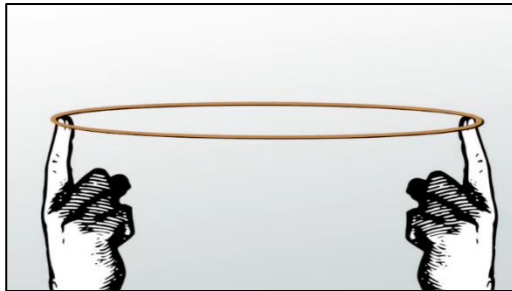
### Activity 3: Do sounds travel in waves?

Sound is the energy things produce when they vibrate (move back and forth quickly). This movement is called vibration. Sound vibrations travel in a wave pattern, and we call these vibrations sound waves.

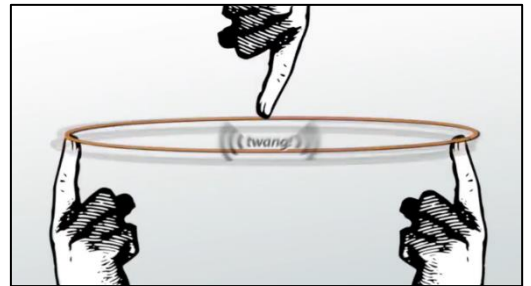
#### What you need:

- rubber band
- your left and right fingers

1. Hold a rubber band tightly between your fingers.



2. Let someone pluck the rubber band.



<https://www.teachengineering.org/activities/view/>

Answer the following questions. Write your answers below.

1. Did you feel the vibrations of the rubber band in your hand as it was plucked? \_\_\_\_\_.
2. When plucked, was there a sound made?  
\_\_\_\_\_.
2. How do you describe the movement of the rubber band when plucked slow? \_\_\_\_\_.
3. How do you describe the motion of the rubber band when plucked fast?  
\_\_\_\_\_.
5. Are waves still produced when the rubber band stopped moving?  
\_\_\_\_\_.

### Activity 4: How does sound travel in different materials?

Can sound travel anywhere? If sound travels, where would it travel better- in solids, liquids, or gases? Well, let's get to find out with these following activities which may help you get the answers. Are you ready?

#### What you need:

- table/desk
- ruler/stick
- a large bowl or pail filled with water
- two stones

## What to do:

### Activity 4.a

Steps:

1. Place your ears on a desk or table.
2. Tap or scratch on the top of the table.
3. Do this for at least 3 times with different strengths of tapping from gentle to hard tap.
4. Then compare that to the same sound made when your ear is not pressed to the table.

Can sound energy travel through solids? (Tick  one)    ( ) Yes    ( ) No

### Activity 4.b

Steps:

1. Fill a large bowl or pail with water.
2. Tap two stones together under the water.
3. Observe and compare the tapping sound you hear, as heard through the air and as heard by placing your ear against the bowl or pail.

Can sound energy pass through liquids? (Tick  one)    ( ) Yes    ( ) No

### Activity 4.c

Steps:

Put your hand gently on your throat during each of these tasks:

1. Hum with your mouth and nose open.
2. Hum with your mouth open and nose closed.
3. Hum with your mouth closed and nose open.
4. Hum with your mouth and nose closed.

Can sound energy travel through air? (Tick  one)    ( ) Yes    ( ) No



## What is it

Sound is the energy things produce when they vibrate (move back and forth quickly). This movement is called vibration. Sound vibrations travel in a wave pattern, and we call these vibrations **sound waves**. Without vibration, there will be no sound.

When vibration is slow, slow moving waves are produced, When the vibration is fast, fast moving wave is produced until such time that the vibration stops. Particles made up of matter are very close to each other, hence, sound wave passes quickly. This is observed in solid materials. Unlike most liquids, their particles are not attracted as strongly to each other as those in solid particles resulting to sound waves moving a little less quickly and bounce back less easily than in a solid. In gases such as air, sound waves travel most slowly. The particles of gas are not as attracted to each other as strongly as the particles in a liquid.

In the different activities, we could say that sound travels differently in different types of materials such as solids, liquids and air.



## What's More

**Directions:** Match the correct word/s in Column A that best described in Column B. (1 point each). Choose the letter of the correct answer.

### Column A

- \_\_\_\_ 1. vibration
- \_\_\_\_ 2. sound waves
- \_\_\_\_ 3. sound.
- \_\_\_\_ 4. solid
- \_\_\_\_ 5. air

### Column B

- a. The energy things produced when they vibrate.
- b. The back-and- forth movement when objects make sound.
- c. A matter where sound travels quickly.
- d. The imaginary waves produced when an object vibrates
- e. A matter where sound travels most slowly.



## What I Have Learned

### Activity 6. Complete Me!

Direction: Fill in the blank the missing word to make the sentences complete and meaningful. Choose the correct answer from the word bank below.

\_\_\_\_\_ is a form of energy things produce when they vibrate. When objects make sound, they move back and forth. This movement is called Without vibration, there will be no sound. When a sound is produced, \_\_\_\_\_ are also produced.

Sound has the ability to travel through solids, liquids, and gases/air. As observed, the particles in a solid are very close to each other and sound travels very \_\_\_\_\_. In most liquids, the particles are not strongly close to each other as those in solid particles so sound waves travel \_\_\_\_\_ quickly. In gas such as air, sound waves travel \_\_\_\_\_ slowly since its particles are not as close to each other as strongly as the particles in a liquid.

most      Sound      quickly      less      vibration      sound waves



## What I Can Do

### Activity 7: Share your Idea!

Directions: Answer the questions briefly. (2 points each)

1. A bird perching in the tree hears the chirping of another bird. A whale hears the songlike sound made by another whale swimming near it. Which sound travels faster, the bird's chirping or the whale's singing? Explain your answer.

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2. Two of your friends made a sound. One strongly tapped the table while the other clapped his hands in the air. Which sound would you hear first? Explain your answer.

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## Assessment

Direction: Encircle the letter of the best answer.

- When the sound travels through solids, the vibration of the particles happens \_\_\_\_\_.
  - quickly
  - slowly
  - less quickly
  - most slowly
- How does sound travel through air?
  - very fast
  - very slowly
  - in jumping motion
  - fast and opposite direction
- In which medium can sound wave travel faster?
  - solids
  - liquids
  - gases
  - both in solids and liquids
- When sound vibrates, it travels in \_\_\_\_\_.
  - wave pattern
  - bunches and groups
  - bouncing motion
  - side-to-side pattern



5. Which of the following about sound is correct?
- A. Sound cannot travel through a solid.
  - B. Sound travels faster in air than in solids.
  - C. Sound travels faster in solids than in liquids.
  - D. The travel of sound is not affected by the medium through which it travels.
6. When a vibration of an object is slow, \_\_\_\_\_ waves is produced.
- A. slow moving
  - B. fast moving
  - C. spiral moving
  - D. moderate moving
7. What do we call the energy things produce when they vibrate?
- A. sound waves
  - B. vibration
  - C. sound
  - D. particles
8. Which material will allow sound to travel fast?
- A. ice
  - B. paper
  - C. stick
  - D. drum
9. When we are in the classroom, which of the following sound may reach our ears first?
- A. Sound of tapping the table inside the classroom.
  - B. Ring of a bell from the principal's office.
  - C. Whisper of your classmate seated behind the room.
  - D. Chirps of the bird in a nearby acacia tree.
10. It is the back-and- forth movement when objects make sound.
- A. sound waves
  - B. vibration
  - C. sound
  - D. particles



## ***Additional Activities***

### **Activity 8: Learn More!**

Direction: Give your idea.

Astronauts in outer space have to talk to each other using a communication device even if they are facing each other. What could be the reason?

Bye for now buddy! Let us learn more in the next module

# **Answer Key-Gr4Q3W5 Science**

## **Activity 1: Where does the sound come from?**

1. Dog
2. Bass Drum
3. Cellphone
4. Strumming it
5. An emergency

## **Activity 2: What is Vibration?**

1. The ruler moved up and down
2. It moved up and down
3. Yes, a sound was produced after the free end was released.
4. The sound stopped when the movement of the ruler was stopped. A sound was heard again when it was released.

## **Activity 3. Do sounds travels in Waves?**

1. Yes, I feel the vibrations in my hand.
2. Yes, I heard the sound 'twang' as the rubber band was plucked.
3. A slow-moving wave is produced.
4. A fast-moving wave is produced.
5. No more waves are seen. The rubber band goes back to original position.

## **Activity 4: How does sound travel in different materials?**

Activity 4.a

1. Yes

Activity 4.b

2. Yes

Activity 4.c

3. Yes

## **Activity 5: What's More**

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

## **Activity 6: Complete Me!**

1. Sound
2. vibration
3. sound waves
4. quickly
5. less
6. most

## **Activity 7**

1. The sound made by whale since sound travels faster in liquid than in air.
2. The sound made from tapping the table. Sound travels faster in solids than in air.

## **Assessment**

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

## **Additional Activities**

Answers may vary.

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## 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 centuried 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.”