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# SCIENCE

## Quarter 3 - Module 2

### Effects of Force on the Movement of an Object



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

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

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

**Science – Grade 4**  
**Support Material for Independent Learning Engagement (SMILE)**  
**Quarter 3 – Module 2: Effects of Force on the Movement of an Object**  
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# Lesson 2

## Effects of Force on the Movement of an Object



### What I Need to Know

Wherever you are, you can see things and people moving. Have you ever thought about what makes them move?

After going through the lesson in this module, you are expected to:

- Explain the effects of force on the movement of an object (**S4FEIIIa-1**).



### What's In

In your previous lesson, you have learned to explain the effects of force on the shape and size of an object when applied into it.

### Activity 1. Still Remember These?

- A. Direction: In what way can you change the shape and size of the following objects? Write the letter on the blank.

- A. Cutting
- B. Compressing
- C. Stretching

- D. Bending
- E. Pounding

- \_\_\_\_ 1. Metal spoon
- \_\_\_\_ 2. A sheet of paper
- \_\_\_\_ 3. Piece of cloth
- \_\_\_\_ 4. Sponge
- \_\_\_\_ 5. Chalk

- \_\_\_\_ 6. bath soap
- \_\_\_\_ 7. Cooper wire
- \_\_\_\_ 8. Modeling clay
- \_\_\_\_ 9. Egg shell
- \_\_\_\_ 10. Rubber band

- B. Direction: Answer the questions and write the letter of the correct answer on the blank.



*vic-conical-beer-glass.jpg  
(1280×1280) Retrieved  
from <https://kha.com.au>*

- \_\_\_\_ 1. What will happen if you drop this drinking glass on the
- A. It will be broken into pieces.
  - B. It will be divided into halves.
  - C. Nothing will happen to it.
  - D. The glass will roll continuously on the floor.



*vic-conical-beer-glass.jpg*  
(1280×1280) Retrieved  
from <https://kha.com.au>

- \_\_\_\_ 2. How does size and shape affected by the act of dropping the glass?
- A. Size and shape stays the same.
  - B. Size and shape will change.
  - C. Shape will remain and only size will change.
  - D. Size will remain and only shape will change.



## What's New

### Activity 2. Push or Pull to Move

Direction. How can you move the objects on the pictures below? Write whether you'll **Push It** or **Pull It**.



*13979602-happy-young-boy-sitting-swinging-on-swing-at-outdoor-park.jpg*  
(870×1300) <https://previous.123rf.com>

1. What should the boy do to move the swing?

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*images (262×192) Retrieved from*  
<https://encrypted-tbn0.gstatic.com>

2. How can the girl bring his school bag towards her?

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*boy-dribbling-basketball-260nw-122906218.jpg* (190×280) Retrieved  
from <https://shutterstock.com>

3. What should the boy do to keep the ball dribbling?

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*Newtons 2<sup>nd</sup> Law of Motion*  
*[.jpg] (488×324) Retrieved from*  
<https://9044c4.medialib.edu.glogster.com>

4. What is the man doing to move the car?

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tugofwar.jpg (910×480) Retrieved from <https://cdn.shopify.com>

5. What should the children do to win in the game *Tag of War*?

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### Activity 3. Know What Am I

Direction: Arrange the jumbled letters to form a word with a given clue. Write your answer on the space before the number.

- \_\_\_\_\_ 1. **HUSP** – To move something away from you
- \_\_\_\_\_ 2. **TIONOM** – Refers to the change of position or location
- \_\_\_\_\_ 3. **ORCEF** – Pull or push of an object
- \_\_\_\_\_ 4. **LULP** – To move something towards you



### What is it

People and things move because of force. **Force** is a pull or push that acts on an object due to its interaction with another object. To *pull* means to move something towards you while *push* means to move something away from you. Force that is applied on an object may cause a change in it – either in its movement or the direction in which it is moving.



hqdefault.jpg (480×360) Retrieved from <https://i.ytimg.com>

For example, a toy car travelled farther when force is applied was stronger. It travelled nearer when lesser force is applied into it.

**Motion** refers to the changing of position or location of an object. But motion requires a force to cause that change. When we think of motion we often think of cars, bicycles, kids running, basketballs bouncing and airplanes flying. Motion is important to our lives and affects so many things that we do.





## What's More

Hey kid! There's another activity for you to answer.

### Activity 4. True or False

Direction: Write **T** in the box if the statement is true and **F** if it is false.

- ☐ 1. To move an object from one place to another, you need to apply force.
- ☐ 2. An object stays on its position if applied with force.
- ☐ 3. Force makes things move.
- ☐ 4. Force that is applied on an object may cause a change in it – either in its movement or the direction in which it is moving.
- ☐ 5. If lesser force is applied on an object, it goes farthest.
- ☐ 6. People and things move because of force.
- ☐ 7. Force is a pull or push that acts on an object due to its interaction with another object.
- ☐ 8. Motion does not require a force to cause a change in position of an object.
- ☐ 9. Motion is important to our lives and affects so many things that we do.
- ☐ 10. Kids running, basketballs bouncing and airplanes flying are in motion.



# What I Have Learned

## Activity 5. Fill In the Blank

Direction: Fill in the blanks with the correct words.

<b>motion</b>	<b>pull</b>	<b>weaker</b>	<b>change</b>	<b>direction</b>
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Force is a (1) \_\_\_\_\_ or push that acts on an object due to its interaction with another object. (2) \_\_\_\_\_ refers to the changing of position or location of an object. Force that is applied on an object may cause a (3) \_\_\_\_\_ in it – either in its movement or the (4) \_\_\_\_\_ in which it is moving. When stronger force is applied to an object, it travels farther. It travelled nearer when force applied is (5) \_\_\_\_\_.

## Activity 6. Check Me

Mark check (✓) the boxes below each picture that show movements because of force.



a8d90762adba3efecd5d6129fa74fd3a.jpg (1967×1311) Retrieved from <https://i.pinimg.com>

1.

☐


children-running.jpg Retrieved from <https://images.app.goo.gl/pmMeb4Z6LaCRzjs8>

2.

☐


car-park.jpg (1200×900) Retrieved from <https://manchestereveningnews.co.uk>

3.

☐


Man-dragging-a-stone [.jpg photo]. January 9, 2021. Retrieved from <https://bit.ly/3bqsTlg>

4.

☐


TableandBall.jpg (1000×377) Retrieved from <https://sites.google.com>

5.

☐



# What I Can Do

## Activity 7. Do It and Answer It

Now, you have already learned that force affects the movement of an object. Let us use what have you learned in answering the activity below.

**Materials:** dining table, paper, bag

**Do These:**

1. Push your dining table.
2. Pull a paper out of your bag.
3. Lift your bag.

**Answer these questions. Encircle the letter of the correct answer.**

1. Which of the situations you were able to apply **least** force to move the object?
  - A. Lifting your bag
  - B. Pulling a paper out of the bag
  - C. Pushing your dining table
2. What did you do to move your bag?
  - A. Raising it
  - B. Pulling it
  - C. Pushing it
3. Did you apply greater force to move the table?
  - A. I don't know
  - B. No, I don't
  - C. Yes, I do
4. How will you move the dining table?
  - A. Apply lesser force
  - B. Exert greater force
  - C. No force will be applied
5. Why do you think it's easy to move a paper from one place to another?
  - A. because the paper is heavy
  - B. because the paper is light
  - C. because the paper is thin

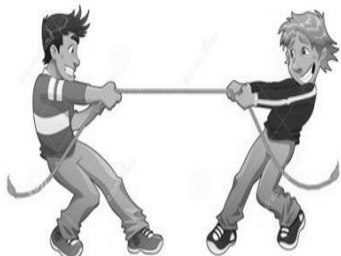




## Assessment

Direction: Write the letter of the correct answer on the blank.

- \_\_\_\_\_ 1. What makes objects change its position? It is due to \_\_\_\_\_.  
A. force                      B. motion                      C. pounding                      D. cutting
- \_\_\_\_\_ 2. Maria drags the vase found on the table. What do you think will happen to it?  
A. become shiny                      C. remain in its place  
B. change its position                      D. will disappear
- \_\_\_\_\_ 3. When you type on the letters on your computer keyboard you are using a \_\_\_\_\_.  
A. push                      B. pull                      C. motion                      D. none
- \_\_\_\_\_ 4. It means to move something towards you.  
A. push                      B. pull                      C. motion                      D. none
- \_\_\_\_\_ 5. Which is TRUE about force?  
A. A pull or a push of an object  
B. It makes things move  
C. Only letter B is correct  
D. The choices A & B are both correct
- \_\_\_\_\_ 6. When an object is in motion, it changes its \_\_\_\_\_.  
A. color                      B. position                      C. shape                      D. size
- \_\_\_\_\_ 7. An object can't move unless there is a \_\_\_\_\_ causing it to move.  
A. chair                      B. force                      C. fork                      D. speed
- \_\_\_\_\_ 8. You know something is in motion when it....  
A. changes position    B. disappears                      C. falls apart                      D. breaks

- \_\_\_\_\_ 9.   
Boy **A**      Boy **B**      If these boys are pulling with the same amount of force. What will happen?
- A. Boy A will win  
B. Boy B will win  
C. They will not move at all  
D. Both will fall down

- \_\_\_\_\_ 10. A person is riding a car. He did not wear his seatbelt and then suddenly the car stops. What will happen to the person?  
A. The person will disappear.  
B. The person will keep moving forward.  
C. The person will move backward  
D. The person will stop.



## Additional Activities

Draw a picture of a moving object. And explain how force affect its movement. You will be graded using the rubrics shown.

Category	Description		
	5	3	1
1. Creativity	The drawing is very unique and visually attractive.	The drawing is moderately unique and attractive.	The drawing shows little creativity and appeal.
2. Explanation	Explain very clearly how force affects the movement of the object.	The explanation is vague but the idea is there.	The explanation is out of topic.
3. Neatness	The drawing and penmanship are very neat with no erasures.	The drawing and penmanship are neat with few erasures.	The drawing and penmanship have several erasures.

*Draw your moving object here.*

*Explained how force affects the movement of this object.*

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# Answer Key

## Science 4 Q3 – Module 2

<b>What's In</b>	<b>What's New</b>	<b>What I Have Learned</b>	<b>What I Can Do</b>
<i>Activity 1 - A</i>	<i>Activity 2</i>	<i>Activity 5</i>	<i>Activity 7</i>
1. D	1. Push It	1. pull	1. B
2. B	2. Pull It	2. Motion	2. A
3. A	3. Push It	3. change	3. C
4. B	4. Push It	4. direction	4. B
5. E	5. Pull It	5. weaker	5. B
6. B	<i>Activity 3</i>	<i>Activity 6</i>	<b>Assessment</b>
7. D	1. PUSH	1. ✓	1. B
8. B	2. MOTION	2. ✓	2. B
9. E	3. FORCE	3.	3. A
10. C	4. PULL	4. ✓	4. B
<i>Activity 1 – B</i>	<b>What's More</b>	5.	5. D
1. A	<i>Activity 4</i>		6. B
2. B	1. T 6. T		7. B
	2. F 7. T		8. A
	3. T 8. F		9. C
	4. T 9. T		10. B
	5. F 10. T		

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children-running.jpg Retrieved from <https://images.app.goo.gl/pmMeb4Z6LaCRzjjs8>



## 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, Subanon, 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."