

8



Learning Activity Sheet for Science

Quarter 4

Lesson

1

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Learning Activity Sheet for Science Grade 8
Quarter 4: Lesson 1 of 8 (Week 1)
SY 2025-2026

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LEARNING ACTIVITY SHEET

Learning Area:	Science 8	Quarter:	4 th Quarter
Lesson No.:	1	Date:	
Lesson Title/ Topic:	Acceleration		
Name:		Grade & Section:	

I. Activity No. 1.1: Picture Analysis (10 minutes)

II. Objective(s): At the end of the activity, the students should be able to describe the motion of objects with a changing speed.

III. Materials Needed: worksheet and pen

IV. Instructions:

Study the pictures below. Answer the given guide questions.

Picture A



Picture link: <https://commons.wikimedia.org/wiki/>

Picture B



Picture link: <https://bit.ly/458PKvC>

Guide Questions:

1. What do you observe in pictures A and B?

2. What do you think is happening to the speed of the objects (jeepney and carabao with a cart) in the pictures?

3. What might be causing their change in speed?

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I. Activity 1.2: Think-Ink-Pair-Share about Acceleration (10 minutes)

II. Objective(s): At the end of the activity, the students should be able to recognize the importance of changing speed, direction, or both.

III. Materials Needed: worksheet and pen

IV. Instructions:

Answer the questions below and discuss your answers with your classmates.

Guide Questions:

1. When you travel from home to school, do you experience uniform motion (*traveling at a constant speed*) or a motion with changing speed?

2. What do you think will happen if the vehicles we ride cannot change their speed and direction?

3. Aside from safety, think of another purpose for changing speed, direction, or both.

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I. Activity No. 1.3: Exploring Acceleration Through Problem-Solving (20 minutes)

II. Objective(s): At the end of the activity, the students should be able to calculate acceleration based on a change in velocity over time.

III. Materials Needed: worksheet and pen

IV. Instructions:

Problem-Solving. Solve the problems below and provide what is being asked. Provide a complete solution.

Problem 1: A jeepney changes its velocity from 17 m/s to 23 m/s for 5 seconds. What is the acceleration of the jeepney during the 5-second interval?

Given:	Required:	Formula:
Solution:		
Answer:		

Problem 2: A car accelerates at a rate of 3.0 m/s^2 . If its initial velocity is 8.0 m/s , how many seconds will it take the car to reach a final velocity of 25.0 m/s ?

Given:	Required:	Formula:
Solution:		
Answer:		

Problem 3: An LRT train accelerates from rest at 1.25 m/s^2 . What will be its final velocity after 20 seconds?

Given:	Required:	Formula:
Solution:		
Answer:		

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I. Activity No. 1.4: Acceleration Challenge Carabao Race (35minutes)

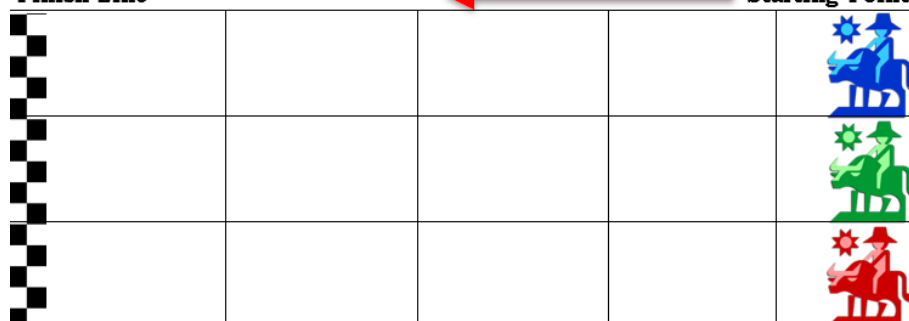
II. Objective(s): At the end of the activity, the students should be able to calculate acceleration based on a change in velocity over time.

III. Materials Needed: worksheet, pen, carabao racing field, carabao icon

IV. Instructions:

1. You will do this activity in groups.
2. Each team is provided with a carabao icon and a copy of the first problem, but you should not open it until the teacher gives the signal.
3. Once the teacher signals, your team can open your selected question and work together to answer it. When you're done, show your answer and solution to the teacher to proceed to the next problem. Each time you get the correct answer, the teacher will move your carabao icon to the next box in the racing field.
4. The first team to correctly answer all four-word problems and cross the finish line wins the race.

The Carabao Racing Field:
Finish Line



Problem 1: A student was walking at a speed of 2 m/s when a dog started chasing him. In a panic, he sprinted as fast as he could, reaching a speed of 7 m/s over a 4-second interval. What was his acceleration during that time interval?

Given:	Required:	Formula:
Solution:		
Answer:		

Problem 2: A tricycle is moving at 8 m/s. It decelerates and comes to a stop in 5 seconds. Calculate the acceleration of the tricycle.

Given:	Required:	Formula:
Solution:		
Answer:		

Problem 3: A pedicab starts from rest and accelerates at 2 m/s². How long will it take to reach a final velocity of 6 m/s?

Given:	Required:	Formula:
Solution:		
Answer:		

Problem 4: During a race in Palarong Pambansa, an athlete accelerates at 1.5 m/s² from an initial velocity of 3 m/s. What will be his final velocity after 4 seconds?

Given:	Required:	Formula:
Solution:		
Answer:		

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I. Activity No. 1.5: Situation Analysis of Motion with Uniform Acceleration (15 minutes)

- II. Objective(s):** At the end of the activity, the students should be able to:
- Calculate acceleration based on a change in velocity over time.
 - Identify and describe examples of objects accelerating at school and in the community.

III. Materials Needed: worksheet and pen

IV. Instructions:

- Examine the change in motion per second in the situation below.
- Provide the athlete's velocity and acceleration at 1 s, 2 s, 3 s, and 4 s.
- Answer the guide questions.

Situation:

During a race in Palarong Pambansa, an athlete accelerates at 1.5 m/s^2 from an initial velocity of 3 m/s . The time taken is 4 seconds.

Table 1. Velocity, Time, and Acceleration of an Athlete

Velocity	Time	Acceleration
3 m/s	0	0
4.5 m/s	1 s	$a = (4.5 \text{ m/s} - 3 \text{ m/s}) / 1 \text{ s} = 1.5 \text{ m/s}^2$
	2 s	$a =$
	3 s	$a =$
	4 s	$a =$

Note: Use a one-second time interval to calculate acceleration.

Guide Questions:

- What do you notice with the athlete's change of velocity every second for four seconds?

- When can we say that a moving object has a uniform acceleration?

- Give one example of an object or something that changes constantly in our school or community.

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I. Activity No. 1.6: Venn Diagram Construction about Uniform Acceleration vs. Non-uniform Acceleration (15 minutes)

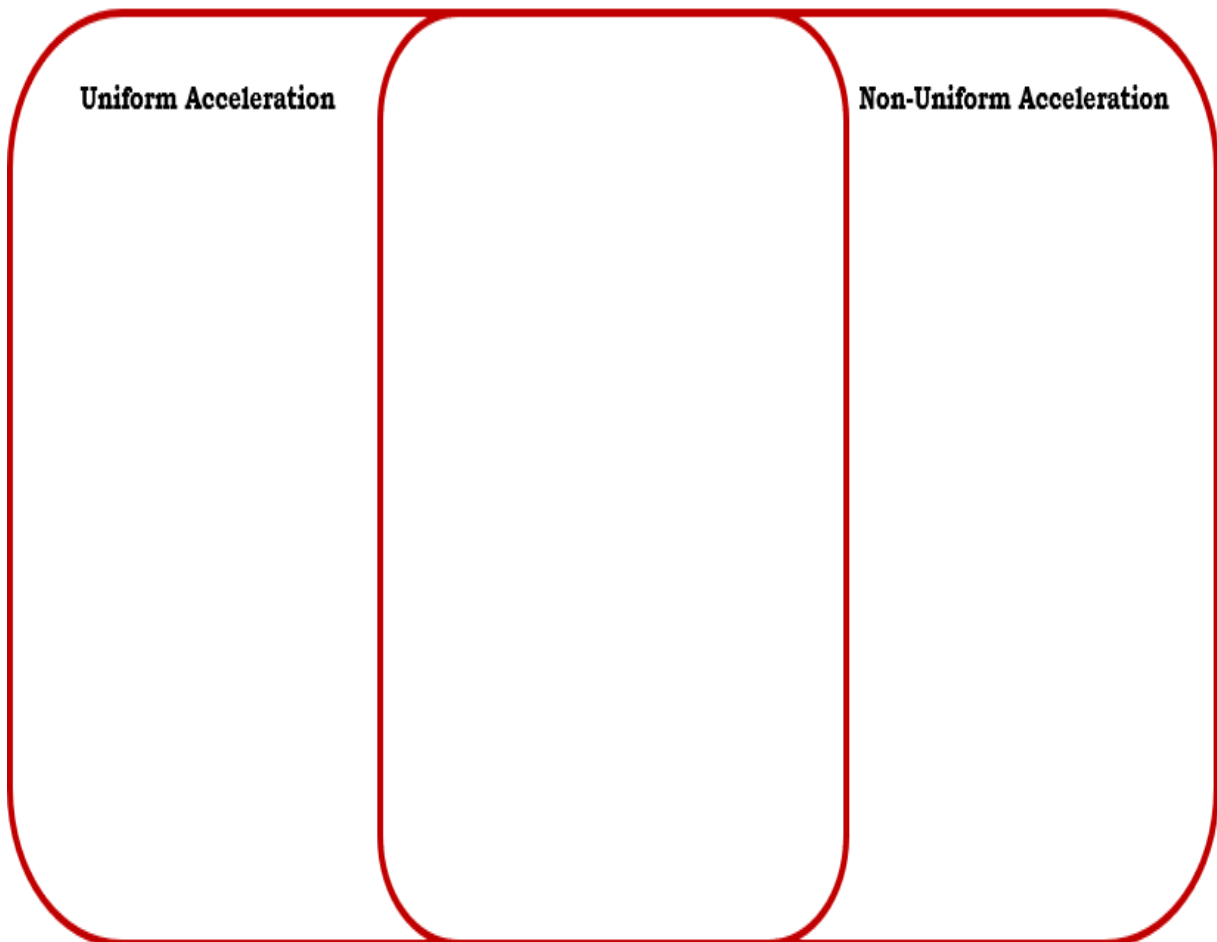
II. Objective(s): At the end of the activity, the students should be able to differentiate uniform and non-uniform acceleration.

III. Materials Needed: worksheet and pen

IV. Instructions:

Compare and contrast uniform acceleration vs. non-uniform acceleration. Write your answers in the Venn diagram below.

Uniform Acceleration vs Non-uniform Acceleration



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I. Activity No. 1.7: Tour in Albay, Bicol

- II. Objective(s):** At the end of the activity, the students should be able to:
- Recognize and name the forces that lead to the acceleration of objects.
 - Define acceleration as the rate of change of an object's velocity.

III. Materials Needed: worksheet and pen

IV. Instructions:

- Read the story about the adventures of Sarig and Gayon as they tour around Albay, Bicol.
- Answer the guide questions.

Recall from Grade 7 Science the characters Sarig and Gayon. In their final adventure, they aim to reach the Mayon Rest House and Planetarium. Both characters travel by jeepney and keep in touch via mobile phones as they journey around Albay. During their rides, Sarig and Gayon notice three instances affecting the motion of the jeepney.



Figure 1. A jeepney changing its speed.

Hello there, *Sarig*! I'm having a great time as well. I'm on my way to Mayon Rest House and I'm also riding a jeepney going there.

I also noticed what you observed about the change in speed of the jeepney. In fact, this jeepney was traveling fast a while ago, but it slowed down when the driver saw a group of children crossing the street. I'm pretty sure the number in the speedometer dropped down as the jeep slowed down before taking a left turn.

See you later, *Sarig*!



Figure 2. A jeepney slowing down while turning.



Stay safe, *Gayon*. I'm on my way to Mayon Rest House, too. I'm really fascinated with this jeepney's speedometer.

In fact, we just took a right turn, but the speedometer stayed at 20 kph. How amazing!

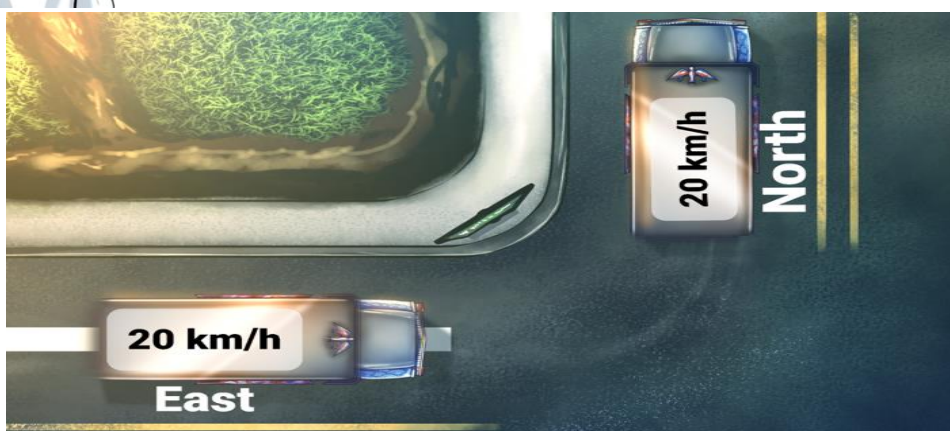


Figure 3. A jeepney turning right.

GUIDE QUESTIONS:

1. Based on the observations of Sarig and Gayon, when can we say that an object is accelerating? Give examples from the story.

2. What causes the jeepney to accelerate?

3. Why is it important to understand and recognize when an object is accelerating?
