Senior High School

DEPARTMENT OF EDUCATION

Lesson Exemplar in General Science

Quarter 1

LE 1

Lesson Exemplar for General Science
Quarter 1: Unit 1

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Republic of the Philippines
Department of Education
BUREAU OF LEARNING DELIVERY

LESSON EXEMPLAR

Learning Area	General Science	**Grade Level**	Grade 11
Semester	1st Semester	**Quarter**	Quarter 1

I. OBJECTIVES *(Identifying the Goals)*	
Content Standard	*The learners learn that physics principles apply to numerous aspects of everyday living.*
Performance Standard	*By the end of the quarter, learners identify general physics principles and their applications in daily life. They use scientific principles to solve problems, make informed decisions, and illustrate the applications of physics for self, society, and the environment. They design simple and compound machines and hydraulic systems to demonstrate applications of force, torque, center of mass, and hydraulic-related principles. They evaluate energy-efficient practices in electricity supply and consumption at home, in local businesses and in exploring advantages and drawbacks of light and sound in medical imaging, security, communication and entertainment.*
Learning Competencies	*The learners identify various ways physics enhances our quality of life across different areas, including household activities, health and safety, work productivity, and leisure.*
II. REFERENCES and MATERIALS	• *Serway, R. A., & Vuille, C. (2017). College Physics (11th ed.). Cengage Learning.* • *Hewitt, P. G. (2016). Conceptual Physics (12th ed.). Pearson Education.* • *https://www.khanacademy.org/science/physics* • *https://www.youtube.com/watch?v=_ryJK294Psw* • *https://www.youtube.com/watch?v=MU3PCau7X_k* • *https://www.youtube.com/watch?v=WtMrbxBH_JY* • *https://www.youtube.com/watch?v=SmwxFD4vK_k* • *https://www.exploratorium.edu/explore* • *https://airandspace.si.edu/anywhere*

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<u>https://www.sciencemuseum.org.uk/virtual-tour-science-museum</u>
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<tr><td colspan="3">(These shall be accomplished per topic)</td></tr>
<tr><td>III. CONTENT</td><td colspan="2">Physics in daily life</td></tr>
<tr><td>IV. OBJECTIVES</td><td colspan="2">Describe how basic physics principles are applied in common household tasks and appliances.
Explain how physics concepts contribute to safety and injury prevention in everyday situations
Identify how physics enhances efficiency in tools and machines at work and increases the functionality and quality of leisure activities.
Explain the significance of physics as a foundational branch of science.</td></tr>
<tr><td colspan="2">IV. PROCEDURES</td><td>ANNOTATION</td></tr>
<tr><td>A. Activating Prior Knowledge</td><td><u>DAY 1</u>
Activating Prior Knowledge
Conduct a simple review to gauge students' existing understanding of how physics applies to daily life. This review may be done through any of the following activities below:
Procedure:
Think: Ask students to reflect silently for 1–2 minutes on the question: “Where do you see physics in your daily life?” Encourage them to think of situations at home, in school, in transport, in entertainment and others.
Pair: Learners will pair up with a seatmate and share their thoughts for 2–3 minutes.</td><td>As you begin the lesson, consider conducting a simple review to gauge students' understanding of how physics applies to their daily lives. You can use Option 1 or 2 to help students make connections between everyday objects and basic physics principles.

Think-Pair-Share, ask students to reflect silently for 1–2 minutes on the question, "Where do you see physics in your daily life?" Encourage them to think about situations in their home, school, transportation, or entertainment. Afterward, have them pair up with a seatmate to share their thoughts for 2–3 minutes. Then, select pairs to share their answers with the class, and as they</td></tr>
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	● ***Share:*** *Selected pairs will share their answers with the class. The teacher writes key ideas on the board (e.g., motion, electricity, heat, sound).* *Invite a few volunteers to share their reflections with the whole class.* *Based on the activity, define physics and explain how it is related to everyday activities.* ***Establishing the purpose of the lesson*** *Now that we've explored how physics appears in our daily routines—such as in the appliances we use, the way we move, or how we stay safe—let's take a moment to reflect by asking the following questions:* ● *Why is it important to understand these everyday experiences through physics?* ● *Why should we care about the physics behind the things we see and use every day?* *Conduct a simple activity. Select from the options below:* ***Option 1: Physics Around Us – Why It Matters*** *Procedure:* ● *Visual Prompt: "If Physics Disappeared"*	*do, write key ideas (such as motion, electricity, heat, and sound) on the board. This reinforces the connection between real-world examples and basic physics concepts.* *The activity is designed to help students recognize how physics is an integral part of their everyday lives while reinforcing key concepts in an interactive and engaging way.* *If time is limited, the teacher may use a shorter video titled "5 Examples of Physics in Everyday Life"*

	• *Show a simple slide or picture of a house, a school, or a city. Ask: "What would happen if physics suddenly stopped working?"*
	• *Allow 1 minute of silent thinking, then gather quick responses. Possible answers include:*
	  ➢ *"Lights wouldn't turn on"*
	  ➢ *"Cars wouldn't move"*
	  ➢ *"We couldn't cook food"*
	• *Pose the question: "Why do we study physics?"*
	• *Connect students' answers to practical reasons for understanding physics.*
	• *Emphasize how physics helps in:*
	  ➢ *Making daily life safer and more efficient*
	  ➢ *Creating modern technologies and innovations*
	  ➢ *Understanding natural phenomena*
	
	Option 2: Why We Study Physics
	
	Procedure:
	• *Give each student a small index card or slip of paper.*
	• *Ask them to complete this sentence in 1–2 lines: "I think learning physics is important because __________."*
	• *Let them post their cards on a bulletin board or wall titled: "Why We Study Physics."*
		Link: *https://www.youtube.com/watch?v=MU3PCau7X_k*
		
		Students may pair up and share their reflections with a classmate to promote peer connection and communication.
		
		After the video, ask students to reflect on guided questions such as why physics matters in daily life, which example they found most interesting, or how they unknowingly encountered physics during their day. Encourage students to write a short reflection or discuss in small groups. Then, invite a few volunteers to share their thoughts with the whole class. This activity aims to make physics more meaningful by connecting it to their lived experiences and fostering personal insights.
		
		This definition draws from students' observations in daily life, matched concepts, and the real-world relevance emphasized by Helen Czerski's video.
		
		This part of the lesson helps learners shift from simply recalling where they see physics in daily life to understanding why it matters. Use the questions to guide a short class discussion or

	The teacher will provide relevant, everyday examples and real-life scenarios that illustrate how physics concepts operate in familiar settings, helping students make meaningful connections between theory and practice.	*small group sharing. Listen for answers that connect physics to safety, usefulness, or how things work. If students give general responses, ask follow-up questions like "Can you give an example?" or "What would happen if we didn't understand that?" This reflection prepares students for the rest of the lesson and supports the goal of helping them see physics as important and relevant in real life.* *This activity is meant to spark students' curiosity and help them understand the real-world value of physics. The visual prompt "If Physics Disappeared" is designed to make students imagine life without the basic principles that govern how things work. Their responses will help them see that many daily functions—like using lights, driving, or cooking—depend on physics. Use this moment to highlight how physics makes life safer, more efficient, and more innovative. Guide the discussion toward the idea that physics is not just about formulas but about understanding and improving the world around us. Keep the tone light and engaging to encourage all students to share their ideas.*

		This activity allows students to express their personal understanding of the importance of physics in their own words. By completing the sentence prompt, they begin to internalize the relevance of the subject in their lives. Posting their responses on a bulletin board creates a visual reminder of the lesson's purpose and promotes a sense of ownership and shared learning. Encourage sincere and thoughtful answers and validate even simple responses to build confidence. This activity also serves as a formative check of students' initial perceptions of physics, which you can revisit later in the lesson or unit. *You might consider introducing the lesson with the following statement to set the tone and relevance for students. You might say:* *"In today's lesson, we will explore how physics is not just a subject—it's something that explains and improves everything around us. From your mobile phones to how you walk, or how your fan cools the room, physics is everywhere. By the end of the lesson, you'll*

		understand how basic physics principles help us in our homes, workplaces, and even in how we have fun."
B. Instituting New Knowledge	**<u>Day 2</u>** ***Presenting Prior Knowledge*** *Begin with a short review of key concepts from Day 1, highlighting examples of physics in everyday life (e.g., motion, heat, electricity, force). Use a quick recall game to activate prior knowledge. Select from the options below:* ***Option 1: 4 Pics, 1 Word – Physics Edition*** *Prepare 4 images related to physics concepts. Each set of 4 images should represent a single physics principle or concept (e.g., motion, force, energy). How one set of 4 pictures to the class (ensure the pictures are related to a specific physics concept). "What is the one word that connects these pictures?" Encourage students to think about the common physics principle represented.* ***Option 2: Physics Charades*** *In this version of charades, students act out physics concepts (e.g., gravity, force, friction, energy transformation, etc.) without using words while the rest of the class guesses. Make a list of physics concepts for students to act out.* ***Option 3: Physics Pictionary*** *Students draw a physics concept on the board without using words while their group members guess what it is.*	*Begin Day 2 by reviewing the key ideas from Day 1, such as how physics shows up in everyday activities like motion, electricity, and heat. Use a quick game like "4 Pics, 1 Word – Physics Edition" to engage students and refresh their understanding. You can also use Physics Charades or Physics Pictionary to make the review interactive and fun.* *You might consider saying:* *"Great job recalling and acting out the physics concepts we learned yesterday! You've shown*

	The teacher will provide a context-rich introduction and real-life examples (like helmets and airbags) to help students connect physics concepts such as force, impact, and safety design to everyday experiences and practical applications.	*that physics is really present in our everyday lives—from how things move to how we use energy. Now, let's look deeper at how physics actually helps keep us safe. Have you ever thought about why we need helmets when we ride motorcycles or how airbags work in cars? Today, we'll explore how materials and design use physics principles—like force and impact—to protect us. Let's see what happens when we drop an egg onto different surfaces and connect it to real-life safety tools like helmets and airbags."*
	Discussing New Concept *Perform a simple experiment to observe how materials experience forces.* *Procedure:* 1. *Drop an egg or a ball from the same height onto different materials (towel, foam, cardboard).* 2. *Observe which protects it best.*	*After the review, guide students through a simple experiment to explore force absorption. Drop an egg or ball onto various materials (like foam, towel, or cardboard) from the same height and observe which material best protects it. Use this activity to introduce and explain the physics behind cushioning, impulse, and time of impact, linking the experiment to real-life examples like helmets or car airbags.* *Ask a thought-provoking question to activate curiosity: "Have you ever wondered why helmets are required on motorcycles or how airbags protect people in car accidents?" Then*

	Relate to concepts of impulse, cushioning, and time of impact. *Ask: "Have you ever wondered why helmets are required on motorcycles or how airbags protect people in car accidents?"* *Show short video clips of car crash simulations and motor accidents showing how airbags inflate, or helmets protect the head upon impact.* *Link: https://www.youtube.com/watch?v=WtMrbxBH_JY and https://www.youtube.com/watch?v=SmwxFD4vK_k* *Explain using the concepts of impulse, momentum, and force absorption how safety tools like helmets and airbags help minimize injury during collisions or accidents. In the explanation, reflect on the following questions:* ● *Which material protected the egg or ball the best? Why do you think it was more effective?* ● *What did you observe when the object hit a harder surface compared to a softer one?* ● *How does increasing the time of impact help in reducing the force felt by the object?* ● *In what ways do helmets and airbags use this same principle to protect people from serious injury?* ● *Why is it important to understand how force and impact work in real-life situations?*	*show short video clips of actual crash simulations to provide visual context and set the stage for the lesson.* ***Feedbacking Purposes:*** *To provide formative feedback and encourage learner engagement, the teacher may use a simple star-rating system when discussing process questions. This approach helps learners understand the quality of their responses in a non-threatening and motivating way. For example, give 1 star for an attempt that shows limited understanding, 2 stars for a partially correct or nearly complete answer, and 3 stars for a fully correct and well-explained response. This method not only gives immediate feedback but also encourages improvement and effort. Be sure to affirm students' thinking regardless of the number of stars to maintain a supportive classroom atmosphere.* *For Option 1, assign role-play tasks where each group presents a real-life accident scenario and explains how a safety device works using physics concepts. Encourage students to be creative while ensuring they clearly explain how increased time of impact reduces the force*

Conduct a simple activity. Select from the options below:

Option 1: Create a Real-Life Scenario – Role-Play

In your group, perform a short role-play based on a real-life situation where a safety device prevents injury or reduces damage during an accident or high-impact event. Your scene should show how the safety device works and explains the physics behind its protective function.

Assigned Scenarios:

Group 1: A biker loses control and falls off the bike but is wearing a helmet.

Group 2: A person slips on a wet floor but avoids injury due to wearing elbow/knee pads.

Group 3: A car crashes into a wall, but airbags deploy and protect the driver.

Group 4: A gymnast falls during practice, but lands on a cushioned mat.

Group 5: A child jumps off a trampoline and hits the safety net instead of falling to the ground.

Each group must include:

- *A brief presentation of what happened and who was involved*
- *Identification of the safety device used*
- *Explanation of the physics concept involved, such as:*
  How the device increases the time of impact?
  How this reduces the force experienced by the person?
  What principle is applied (e.g., momentum, impulse, energy absorption, Newton's Laws)?

experienced, tying in key terms like Newton's Laws and energy absorption.

Rubric: Real-Life Physics Scenario Role-Play

Criteria	**Excellent (5 pts)**	**Good (4 pts)**	**Satisfactory (3 pts)**	**Needs Improvement (1–2 pts)**
Scenario Clarity	Scenario is realistic, clearly presented, and easy to follow	The scenario is clear with minor details missing	Scenario is somewhat clear but lacks structure or realism	Scenario is unclear, unrealistic, or confusing
Use of Safety Device	Safety device is clearly identified and used appropriately in the role-play	Device is used and somewhat explained	Device is present but with minimal relevance or explanation	Device is unclear or not used effectively
Physics Explanation	Accurately and clearly explains physics concepts (e.g., impulse, force, time of impact, momentum)	Physics concepts are mostly accurate and explained	Physics is mentioned but explanation lacks clarity or depth	Physics explanation is missing or mostly incorrect
Group Participation	All members participate actively and equally	Most members participate; some are less involved	Some members participate; others minimally	One or two members dominate; others do not contribute

	Your performance should be 2–3 minutes long and may include props, simple costumes, or narration. Creativity is encouraged, but the physics explanation must be clear. ***Guided Questions (Role-Play):*** ● *What safety device did your group present, and how did it work to prevent injury?* ● *How did your role-play show the increase in time of impact?* ● *What physics concept did you explain in your scene (e.g., impulse, momentum, force)?* ● *Why is it important to understand the science behind safety devices?* ● *What did you learn from watching other groups' presentations?* ***Option 2: Group Cause-Effect Diagram*** *In small groups, students will create a visual diagram or flowchart that explains how physics concepts are applied in real-life scenarios involving safety devices.*	**Creativity and Effort** — Role-play is engaging, creative, and shows strong effort (use of props, enthusiasm, etc.) / Role-play is interesting with some creative elements / Minimal creativity or preparation evident / Lacks effort, preparation, or creativity *Use the same feedback strategy described in the "Feedbacking Purposes" section, applying the star-rating system to guide responses and encourage student reflection.* *In Option 2, students visually map out the process of injury prevention through a cause-effect diagram, reinforcing the science behind safety equipment. Remind students to be respectful of each other's ideas and encourage participation from all group members. Also, remind them not to record or share any group performance or visual output without consent, in accordance with the Data Privacy Act.* *Rubric: Expected Output: Group Cause-Effect Diagram*

Creativity and Effort	Role-play is engaging, creative, and shows strong effort (use of props, enthusiasm, etc.)	Role-play is interesting with some creative elements	Minimal creativity or preparation evident	Lacks effort, preparation, or creativity

Instructions:

1. *Create a Cause-Effect Diagram*

Visually illustrate the following sequence: Accident → Force Applied → Increased Time of Impact → Reduced Force → Less Injury

Examples:

- *Car crash → sudden stop → airbags deploy → force spread → less head trauma*
- *Fall while skating → impact → knee pads absorb force → no injury*

2. *Assigned Scenarios:*

Group 1: A biker loses control and falls off the bike but is wearing a helmet.
Group 2: A person slips on a wet floor but avoids injury due to elbow/ knee pads.
Group 3: A car crashes into a wall, but airbags deploy and protect the driver.
Group 4: A gymnast falls during practice but lands on a cushioned mat.
Group 5: A child jumps off a trampoline and hits the safety net instead of falling to the ground.

3. *Design Guidelines:*

- *Use arrows, boxes, symbols, or any creative visual format to represent the flow of cause and effect.*
- *Label each part of the diagram with a short explanation of what happens and why.*

Criteria	Excellent (5 pts)	Good (4 pts)	Satisfactory (3 pts)	Needs Improvement (1–2 pts)
Scenario Clarity	All physics concepts and explanations are scientifically accurate and appropriate.	Most concepts are accurate with minor errors.	Some concepts are accurate; some errors affect understanding.	Many errors or misconceptions in content.
Use of Safety Device	All parts of the diagram are labeled with clear, concise, and logical explanations.	Most parts are clearly labeled and explained.	Some parts are labeled; explanations may be vague or unclear.	Explanations are missing or very unclear.
Physics Explanation	The diagram clearly shows correct application of concepts like impulse, momentum, etc.	Concepts are applied correctly with minimal confusion.	Limited application of physics concepts is shown.	Little or no attempt to apply physics principles.
Group Participation	Diagram is highly organized, easy to follow, and visually engaging.	Diagram is organized and mostly clear.	Diagram lacks organization or is hard to follow in places.	Diagram is disorganized or confusing.
Creativity and Effort	Diagram is creatively designed and shows strong effort and originality.	Some creativity and effort are evident.	Minimal creativity; basic design and effort.	Lacks creativity; minimal effort shown.

	• *Clearly identify the safety device and the physics concept being applied (e.g., impulse, momentum, force absorption).* ***Guided Questions (Cause-Effect Diagram):*** • *What was the accident or risky situation in your diagram?* • *How did your group show the connection between the time of impact and force?* • *What role did the safety device play in reducing injury?* • *Which physics concept best explains how the safety device worked?* • *How can this be understanding help people in real-life situations?* ***<u>Day 3</u>*** *Begin with a short review of key concepts from Day 2.* *Perform Activity no. 1 titled "Captured Moments: Uncovering Physics in Daily Life". (See Learning Activity Sheet)* 1. *Students will connect real-life experiences shared on their social media with physics concepts by selecting personal photos that demonstrate physics in action.* 2. *Individually, students browse their social media (Facebook, Instagram, TikTok screenshots, etc.) or photo gallery and choose 5 pictures that show a real-life application of physics. If you don't have social media or a phone:*	*Use the same feedback strategy described in the "Feedbacking Purposes" section, applying the star-rating system to guide responses and encourage student reflection.* *This activity encourages students to see the relevance of physics in their personal lives by analyzing their own social media photos or images from their gallery. Begin the day with a brief review of safety-related physics concepts from Day 2, then transition into the "Physics in My Feed" activity. Guide students as they select 5 personal photos that represent a real-life physics application—such as riding a bike, using a gadget, or playing a sport. Students should analyze and explain what is happening in each photo, identify the physics concept involved and describe how it applies. Remind students that the use of personal images must comply with the Data Privacy Act, and they should not be forced to share photos they are uncomfortable with or that contain private information.*

- *You may search Google or use any generative AI for sample photos.*
- *If that's not possible, you can cut out photos from magazines and/or newspapers.*

Example photos:

- *Riding a bike or skateboard (motion, friction, inertia)*
- *Cooking or grilling (heat transfer)*
- *Using gadgets or plugging in devices (electricity)*
- *Playing sports (momentum, force, energy)*
- *Wearing a seatbelt or helmet (impulse, safety)*

Photo Analysis by completing the table below:

Picture	*What is happening in the photo?*	*What physics concept(s) are involved?*	*How is the concept applied in the situation?*

Rubric for Assessment (Total: 20 points):

Criteria	**Excellent (4 pts)**	**Proficient (3 pts)**	**Basic (2 pts)**	**Needs Improvement (1 pt)**
Relevance of Photos	All 5 photos clearly show real-life physics concepts	4 photos are relevant and physics-related	2–3 photos show basic relevance	Photos are unclear or unrelated to physics
Identification of Physics Concepts	Accurately identifies specific physics concepts for each photo	Mostly accurate, with minor errors	Some are correct, but lack depth	Inaccurate or missing concepts
Explanation and Application	A thorough explanation of how each concept is applied in the situation	Clear explanations with minor gaps	Basic attempt at explanation; lacks clarity	Incomplete or incorrect explanations
Reflection and Synthesis	Deep, thoughtful responses that show strong understanding and insight	Clear reflections with some depth	Basic responses, minimal insight	Lacks reflection or unrelated answers

Guide Questions:

- *How did you select your photos?*
- *Why is understanding the physics concept important in real-life situations?*
- *How has this activity helped you understand the role of physics in daily life?*

The teacher will provide a reflective transition statement to deepen student understanding of the real-world relevance of physics. This helps students connect experimental observations (like the egg drop activity) to broader applications in daily life, safety innovations, and technology—encouraging critical thinking and cross-domain connections.

Presentation and Organization	Well-organized, creative, and easy to follow	Organized and clear	Somewhat organized; needs improvement	Disorganized or lacks effort

You might consider saying:
"After observing how different materials absorb force in our egg drop experiment and learning how safety devices like helmets and airbags use physics principles to protect us, let's now think bigger. Physics is not just about one experiment or one device—it's all around us in many parts of our daily lives. As you work on your concept maps, consider how the ideas of force, impulse, momentum, and energy absorption appear in different domains—whether at home, in sports, or at work. How do these principles help improve safety, efficiency, and comfort in those areas? Can you find examples from your own experiences or observations where physics keeps people safe or helps machines work better? This deeper understanding will help you see the practical value of physics beyond the classroom and show how these concepts connect across different real-life situations."

	Developing Mastery *Perform the Concept Mapping by group.* *Students will form groups of 5 and collaboratively create a concept map that connects physics principles to their applications in various domains of daily life.* *Domains to Map:* • *Group 1: Household – e.g., cooking (conduction), ironing (heat transfer), electric fans (electricity)* • *Group 2: Health and Safety – e.g., helmets (force absorption), thermometers (thermal expansion)* • *Group 3: Work Productivity – e.g., machines (levers, pulleys), automation (circuits and sensors)* • *Group 4: Leisure/Entertainment – e.g., speakers (sound waves), televisions (optics, electricity), roller coasters (kinetic & potential energy)* • *Group 5: Sports – (You may want to add examples like ball motion, friction in running shoes, or force absorption in sports gear)* *Each group will present their concept map to the class, explaining the connections between the physics concepts and their real-life applications.*	*This activity allows students to synthesize and visualize their understanding of how physics is applied in different aspects of daily life. Organize the class into five groups, each assigned a specific domain: household, health and safety, work productivity, leisure/entertainment, and sports. Each group will create a concept map that connects physics principles (like heat transfer, force, energy, motion, etc.) to real-life applications within their assigned domain. Encourage creativity in using arrows, symbols, and keywords to show relationships. After completing the maps, groups will present their work and explain how each concept applies in practical scenarios. This promotes collaboration, reinforces learning, and helps students see the broader relevance of physics. Remind students to work respectfully and collaboratively and ensure that all members are involved in both the creation and the presentation.*

	Extend the concept mapping activity. Select from the options below: ***Option 1: Gallery Walk*** *After creating their concept maps, groups post them around the room. Students rotate in groups, viewing each other's work and leaving comments or sticky notes with:* ***Option 2: Digital Concept Mapping*** *Use tools like MindMeister, Lucidchart, or Canva to create digital maps.* ***Option 3: Role-Play or Mini Skits (Extension Activity)*** *After presenting their maps, groups prepare a short skit or role-play showing one concept in action (e.g., someone ironing clothes and discussing heat transfer).* *Explain the physics behind the action during or after the performance.* ***Option 4: Physics Scavenger Hunt*** *Each group is given a checklist of physics concepts from their domain. Around the school or home, they take photos or describe where they are observed.*	*To extend the concept mapping activity and deepen engagement, you can choose from several interactive options.* *For Option 1: conduct a Gallery Walk where each group displays their concept maps around the classroom, and students rotate to view each one. Encourage peer feedback by having students leave sticky notes or comments on what they found insightful or questions they may have.* *For Option 2: allow students to use digital tools like MindMeister, Lucidchart, or Canva to create digital versions of their maps, which can be shared virtually or projected in class.* *For Option 3: enhance learning through Role-Play or Mini Skits by having groups act out a scenario that demonstrates a physics concept from their map, explaining the concept during or after the skit.* *For Option 4: Organize a Physics Scavenger Hunt where groups receive a checklist of physics principles and must find real-life examples around the school or at home, either by taking photos or describing observations. These extensions promote creativity, collaboration, and practical understanding of physics in daily life.*

C. Demonstrating Knowledge and Skills	***Day 4:*** ***Finding Practical Application*** *Begin with a short review of key concepts from Day 3.* *Ask the following:* ● *"What comes to your mind when you hear the word physics?"* ● *"Why do you think it's often called the 'foundation' of other sciences?"* *Highlight how physics underlies everyday phenomena:* ● *Why don't we float off the ground (gravity)* ● *How lights turn on (electricity)* ● *Why cooking works (heat transfer)* *Emphasize that physics explains both natural and man-made processes.* *Say: "Now that we've explored how physics explains everyday phenomena like gravity, electricity, and heat transfer, let's think about how these concepts are not only part of our daily lives but also the foundation for other sciences and technologies."* *Ask:* ● *Can you think of an object or technology you used today that relies on physics?* ● *How does understanding physics help us make sense of those things and even invent new tools and machines?*	*In this session, you will reinforce Day 3 concepts by prompting students to reflect on how physics is deeply embedded in their daily lives and in other fields of science. Begin with open-ended questions like "What comes to your mind when you hear the word physics?" and guide them to recognize everyday phenomena explained by physics, such as gravity, electricity, and heat transfer.*

	The teacher will provide a transition statement that helps students connect physics concepts to other scientific fields and real-world phenomena, reinforcing the idea that physics is foundational to understanding innovations and natural processes across disciplines.	*You might consider saying:* *"As we move forward, let's consider how physics supports other fields like chemistry, biology, and earth science—and why knowledge of physics is essential for scientists working in all these areas. What connections can you make between what physics explains and the innovations or natural processes you observe around you?"*
	Making Generalization *Ask: "Can you name any object you used today that involves a physics concept?"* *Explain how physics supports other sciences* ● *Chemistry: Physics explains atomic structure and bonding (quantum physics)* ● *Biology: Blood pressure, muscle movement, vision, and hearing involve physics* ● *Earth Science: Tectonic motion, weather, waves, and heat transfer* ● *Astronomy: Planetary motion, light years, black holes—all based on physics* *Ask: "Why do you think scientists from other fields need to understand physics?"*	*This segment bridges students' general understanding of physics with its interdisciplinary importance and real-world applications. The guided questions are designed to activate prior knowledge and promote critical thinking about the relevance of physics in daily life and other scientific fields. The transition to the concept mapping activity encourages collaborative learning and deeper cognitive engagement by connecting abstract physics concepts to tangible examples in technology, health, transportation, and space exploration. Teachers should facilitate discussion by prompting students to provide examples and explain connections, ensuring the concept maps reflect both conceptual understanding and*

	Explain Physics drives innovation and technology • *From light bulbs to smartphones, vehicles, and medical machines* • *Physics leads to the development of safe infrastructure, transportation, and clean energy* *Ask: "Can you think of a technology you use that would not exist without physics?"* *The teacher will provide clear instructions and examples to guide students in creating their concept maps, encouraging collaboration and critical thinking about real-life physics applications.*	*practical relevance. Affirm students' contributions and provide formative feedback to support their learning progress. This approach fosters meaningful learning and appreciation of physics as a foundational science driving innovation.* *The teacher will provide a motivating transition statement to help students shift from conceptual understanding to practical application. You might consider saying:* *"Now that we've seen how physics not only explains everyday objects and natural phenomena but also supports other sciences and drives technological innovation, let's take a closer look at how these physics principles are applied in various fields. In your groups, create a concept map that links key physics concepts—like force, energy, and electricity—to real-life applications in areas such as technology, health, transportation, or space exploration.* *As you build your map, think about how physics shapes the tools and inventions that impact our daily lives. Be ready to share your group's insights with the class and show how*

	Evaluating Learning *Group Discussion and Concept Mapping* 1. *Divide the class into small groups.* 2. *Ask each group to create a concept map or visual diagram that links key physics concepts (e.g., force, motion, energy, light, electricity) to real-life applications or discoveries.* 3. *Each group should focus on how physics principles influence a specific field such as:* ● *Technology (e.g., how circuits work in electronics)* ● *Health and medicine (e.g., X-rays, MRIs, radiation)* ● *Transportation (e.g., cars, airplanes, trains)* ● *Space exploration (e.g., rocket propulsion, satellites)* *Make real-world connection:* ● *Ask each group to present their concept map to the class, explaining how physics underpins the applications or inventions in their chosen area.* ● *Encourage students to think about how their daily lives are impacted by these concepts.* *The teacher will provide an opportunity for open class discussion, prompting students to share reflections and encouraging critical thinking about the broader impact of physics on daily life and future innovations.*	*understanding physics helps us appreciate the world around us in a deeper way."* *For the main task, divide the class into small groups and ask them to create a concept map linking physics concepts to applications in specific fields like technology, medicine, transportation, or space. This encourages critical thinking, collaboration, and the practical application of theoretical knowledge.* *You might consider saying:* *"After your group presentations on how physics principles apply to various fields, let's take a moment to reflect as a class. Think about the role physics plays not just in specific technologies, but in everyday life as a whole. Let's discuss your thoughts and insights together."*

	Additional Activities *As a class, reflect on the following questions:* ● *"What would life be like without the principles of physics?"* ● *"How does understanding physics improve the efficiency, safety, and functionality of devices we use every day?"* ● *"Why is it important to continue learning and researching in the field of physics?"* *To deepen their appreciation and understanding of how physics shapes everyday life, the teacher encourages the class to visit a virtual science museum. This experience will allow students to explore*	*Consider questions like:* ● *What would life be like if the principles of physics didn't exist?* ● *How does a deeper understanding of physics help improve the devices and systems we rely on daily?* ● *Why is ongoing learning and research in physics important for future innovations?* *To connect physics with real-world applications, have each group present their concept map to the class, clearly explaining how physics supports the inventions or processes in their assigned field. Encourage them to use examples and discuss how these concepts affect their daily lives. After all presentations, facilitate a whole-class reflection using questions like "What would life be like without the principles of physics?" and "How does understanding physics improve the efficiency, safety, and functionality of the devices we use?" End with a discussion on the importance of continuous learning and research in physics, helping students appreciate its relevance to innovation, problem-solving, and progress.* *This activity is designed to help students connect classroom physics lessons with real-life*

	interactive exhibits and discover real-world applications of physics concepts. *Suggested virtual museum link (free and accessible):* ● *Exploratorium (San Francisco, USA) – Science of Everyday Life Link: https://www.exploratorium.edu/explore* ● *Smithsonian National Air and Space Museum – STEM in 30 & Virtual Tours Link: https://airandspace.si.edu/anywhere* ● *Physics Central – Physics at Home (American Physical Society) Link: https://www.physicscentral.com/* ● *The Science Museum (London, UK) – Virtual Tour Link: https://www.sciencemuseum.org.uk/virtual-tour-science-museum* ● *CERN Virtual Tour (European Organization for Nuclear Research) Link: https://visit.cern/virtual-visit*	*experiences. By encouraging them to visit a virtual science museum, students will gain a more meaningful understanding of physics concepts as they see how these principles are applied in everyday situations.* *The goal is to deepen their appreciation, curiosity, and engagement by exploring interactive exhibits that showcase motion, force, energy, light, sound, and other physical phenomena in action.* *You may guide the class in exploring the following suggested virtual museums (all free and accessible).*
V. ASSESSMENT	***I. Encircle the letter of the correct answer.*** *1. How does a rice cooker cook food?* *A. By light B. By magnetism C. By conduction D. By convection* *2. Why is metal used in cookware such as frying pans?* *A. It's cheaper B. It's shiny C. It conducts heat well D. It's lighter* *3. How does a fan cool a room?* *A. Lowers room temp B. Evaporates sweat C. Absorbs heat D. Adds cold air* *4. How does a fridge keep food cold?* *A. Blows cold air B. Uses ice C. Absorbs heat D. Uses fans* *5. How does a pulley help lift loads?* *A. Reduces weight B. Adds force C. Increases size D. Changes direction*	

	6. How does a speaker produce sound? *A. Uses vibration* *B. Reflects waves* *C. Stores sound* *D. Uses air pressure* *7. Why is a roller coaster a good example to show how energy works?* *A. Uses fans* *B. Shows energy change* *C. Only uses potential* *D. Makes sound* *8. How does a thermos prevent heat loss to the surroundings?* *A. Air flow* *B. Metal lining* *C. Vacuum layer* *D. Ice inside* *9. Why do wires heat up as current passes through them?* *A. Sunlight* *B. Resistance* *C. Plastic coating* *D. Air friction* *10. Which of the following best describes how bulbs behave in a series circuit compared to a parallel circuit?* *A. In series, bulbs shine brighter* *C. In series, if one bulb goes out, all bulbs go out* *B. In series, bulbs work independently* *D. In parallel, there is no current flowing* ***II. Describe the role of physics in each of the following situations. Write your answers in 2-3 sentences. Include the specific physics principle involved and how it improves safety, comfort, or function.*** *Pointing System:* • ***2 pts*** *– The answer is accurate, complete, and clearly demonstrates understanding of the physics principle using appropriate science terms or examples.* • ***1 pt*** *– The answer is partially correct, related to the question, and shows basic understanding, but lacks depth or clarity.* • ***0 pt*** *– The answer is incorrect, incomplete, or not related to the question.* *1. A car crash where the airbags deploy* *2. A biker falls but wears a helmet* *3. A person uses insulated gloves while cooking* *4. A child jumps on a trampoline with safety netting*

	5. *A person uses a magnifying glass to read small text*
VI. REFLECTION	*Teachers are encouraged to record relevant observations or any critical teaching events that influence on the attainment of the lesson objectives. You can also note tasks that will be continued the next day or additional activities needed. Entries on this section are teacher's reflection on the implementation of the entire lesson which will serve as inputs for the LAC sessions.*

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BUREAU OF LEARNING DELIVERY

KEY TO CORRECTION

Part I.

Item Number	Correct Answer	Rationalization
1	C	*A rice cooker cooks food by conduction, transferring heat directly from the heating element to food.*
2	C	*Metal is used because it conducts heat well, allowing even and efficient cooking.*
3	B	*A fan cools the room mainly by evaporating sweat from the skin, which removes heat from the body.*
4	C	*A fridge keeps food cold by absorbing heat from inside and releasing it outside using a refrigerant.*
5	D	*A pulley changes the direction of the applied force, making lifting loads easier.*
6	A	*A speaker produces sound by vibrating a diaphragm that creates sound waves in the air.*
7	B	*A roller coaster is a good example because it shows the transformation between potential and kinetic energy.*
8	C	*A thermos prevents heat loss by using a vacuum layer that reduces heat transfer by conduction and convection.*
9	B	*Wires heat up due to electrical resistance, which converts electrical energy into heat.*
10	C	*In series circuits, if one bulb goes out, the entire circuit breaks and all bulbs go out.*

Part II.

1. *Airbags work based on the principle of impulse and momentum. During a crash, the airbag increases the time over which the passenger's momentum is brought to zero, thereby reducing the force experienced and increasing safety.*
2. *The helmet protects the head by spreading out the force of the impact and absorbing energy, based on the principle of energy transfer and impulse. This reduces the pressure and impact on the skull, minimizing the risk of injury.*

3. *Insulated gloves reduce heat transfer through thermal insulation, which is governed by the principle of heat conduction. By using materials with low thermal conductivity, they protect the person from burns and improve safety.*
4. *The trampoline uses the principle of elastic potential energy to provide bounce, while the safety net uses Newton's laws to stop the child safely if they fall off the center. This prevents injury and increases safety during play.*
5. *A magnifying glass uses the physics of refraction and lens optics to bend light rays and form a larger, virtual image of small objects. This improves vision and comfort for the reader.s*