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DepED
DEPARTMENT OF EDUCATION

Lesson Exemplar for Science

Quarter 2
Lesson
2

Lesson Exemplar for Science 4
Quarter 2: Lesson 2 (Week 2)
S.Y. 2024-2025

Development Team

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SCIENCE (BIOLOGY) / QUARTER 2 / GRADE 4

I. CURRICULUM CONTENT, STANDARDS, AND LESSON COMPETENCIES	
A. Content Standards	Learners learned that animals and plants have systems that function to keep them alive.
B. Performance Standards	By the end of the Quarter, learners identify that plants and animals have systems whose function is to keep them alive.
C. Learning Competencies and Objectives	***The learners describe in simple terms how the following human body systems work: muscular, skeletal, digestive, circulatory, and respiratory.*** 1. *Summarize the basic functions of the digestive system in a way that is easy for others to understand.* 2. *Outline the key components and functions of the circulatory system in a clear and simple manner.* 3. *Describe how the respiratory system works in straightforward terms.*
D. Content	**Human Body Systems** - Digestive system - Circulatory system - Respiratory system
E. Integration	• Health and Wellness / Good Health and Well-being • Indigenous Knowledge Systems and Practices

II. LEARNING RESOURCES

- Abrahams, Peter H., R M.H. McMinn, and Johannes M. Boon. McMinn and Abrahams' clinical atlas of human anatomy. Edinburgh: Elsevier, 2019. Print.
- Drake, Richard L., Wayne Vogl, and Adam W.M. Mitchell. Gray's anatomy for students. Philadelphia: Churchill Livingstone Elsevier, c2020. Print
- Netter, Frank H. Atlas of human anatomy. Philadelphia: Elsevier, c2019. Print
- Shen, G. (2020). Campbell Biology (edited by Lisa Urry, Michael Cain, Steven Wasserman, Peter Minorsky and Jane Reece).

III. TEACHING AND LEARNING PROCEDURE		NOTES TO TEACHERS
A. Activating Prior Knowledge	**Day 1- Week 2** **1.Short Review (Past Lesson)** *Muscular and Skeletal Systems*: **Guide Questions:** • What are the different activities that you do every day? • What helps you do those activities? • How do the muscular and skeletal system protect the different parts of our body? (i.e., car/motorcycle accidents, collision, hit by hard objects, sudden fall from a high place, stampede, pushing, etc.), draw out concept of dislocation, fracture, broken bone, bruises etc.) • What healthy practices should we do we to take care of our muscular and skeletal system? **Activating Prior Knowledge** **Digestive System (Day 1 and 2)** Relate to real life experience of learners by asking questions like: What food did you eat this morning for breakfast? Why did you eat them? What do you get from them? What do you think happened to the food that you ate? Where did it go? **Circulatory System (Day 2 and 3)** Let students examine their hands, palms, arms and look for the "blue colored" tube-like structures under the skin. • *Ask*: What do you think is it? What do they do? • *Relate into life experiences*: Do simple exercise such as jog in place. Breather in and breathe out. • *Ask*: How did you feel? What comes in and what comes out? • Remember that air is one of the basic needs of living things we learned before. We learned that air contains oxygen and other gases.	The time allotment presented here is ONLY suggestive. The teacher is given freedom to budget his/her time seeing to it that all the three body systems (digestive, circulatory and respiratory) are covered in one week time depending on the mental ability of the class and other factors. It is also possible that one of the three body systems here may be covered in the previous week 1 (together with muscular and skeletal systems) by the teacher.

	OR cite cases like some people die during housefire not directly by burning but due to suffocation due to less oxygen intake or during a very crowded jam-packed unventilated place or packed airconditioned room. What other situations that may happen where the body could not get the needed oxygen? **Respiratory System (Day 3 and 4)** Relate into life experiences: Do simple exercise: Jog in place. Breather in and breathe out. Ask: How did you feel? What comes in and what comes out? Remember that air is one of the basic needs of living things we learned before. We learned that air contains oxygen and other gases. OR cite cases like some people die during housefire not directly by burning but due to suffocation due to less oxygen intake or during a very crowded jam-packed unventilated place or packed airconditioned room. What other situations that may happen where the body could not get the needed oxygen?	
B. Establishing Lesson Purpose	**1.Lesson Purpose** **Digestive System (Day 1 and 2)** ● Conduct a "Digestive System Relay" game where students act out the journey of food through the digestive system using simple props. ● Share examples of favorite foods and discuss how the digestive system breaks them down into nutrients that our bodies need to stay healthy. ● Emphasize that understanding digestion helps make healthy food choices. ● Stress that food passes through different parts inside the body and are changed into a form which the body could help nourish itself to keep its parts in normal functioning. ● Prove the understanding of the bad effects of not eating healthy food/balanced diet to the body. **Circulatory System (Day 2 and 3)** ● Start with an engaging video showing how the human circulatory system transports oxygen and nutrients throughout the body.	In each engagement activity, it is essential to establish the reasons for learning about these body systems. Emphasize how this knowledge can empower students to make healthier choices, understand the importance of self and medical care, and even appreciate the incredible abilities of the human body. Encourage them to see the practical applications of what they are learning in their everyday lives.

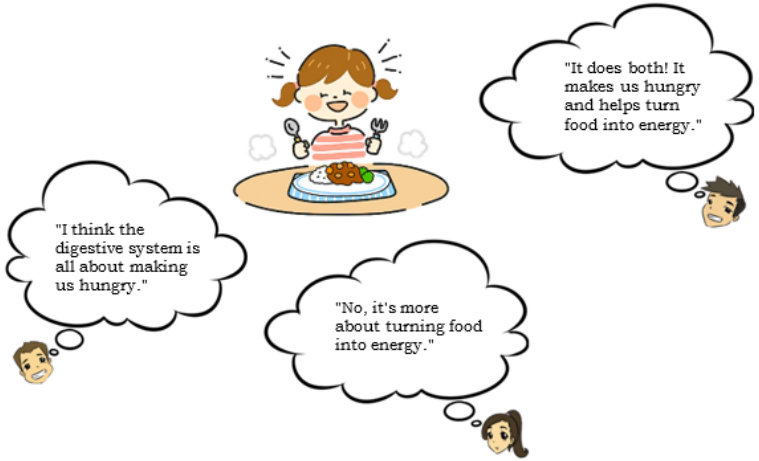
	• Organize a "Blood Flow" race where students represent blood cells and follow the path through a giant model of human circulatory system (Teacher may use a draw the track/route on the ground or by using cut-out pictures). • Emphasize that different parts inside the body are responsible for distributing food nutrients to all other parts inside the body and gets rid/removes wastes /unwanted substances out from the body. • Discuss how a healthy circulatory system supports physical activities and overall well-being. **Respiratory System (Day 3 and 4)** Use a simple model of the respiratory system to demonstrate the process of breathing. • Relate into life experiences: Do simple exercise: Jog in place. Breather in and breathe out. Ask: How did you feel? What comes in and what comes out? Remember that air is one of the basic needs of living things we learned before. We learned that air contains oxygen and other gases. • OR cite cases like some people die during housefire not directly by burning but due to suffocation due to less oxygen intake or during a very crowded jam-packed unventilated place or packed airconditioned room. What other situations that may happen where the body could not get the needed oxygen? • Share stories of extraordinary feats like deep-sea divers or mountain climbers or other professionals (i.e., miners, fire fighters, etc.) who rely on a well-functioning respiratory system. • Emphasize that the body takes in oxygen when breathing in/inhale and releases carbon dioxide in breathing out/exhale. In addition, different body parts help in taking oxygen inside the body and releasing carbon dioxide outside the body. • Explain that understanding respiration enhances our knowledge of health and fitness.	

	1. Unlocking Content Area Vocabulary **Digestive System (Day 1 and 2)** ● Provide students with a list of related words such as "digest," "process," "absorb," "nutrients," and "eliminate." ● Encourage the students to find and write down simplified explanations or synonyms for these words. **Circulatory System (Day 2 and 3)** ● Provide students with a list of related words such as “blood”, “heart”, “blood vessels”, “pump”, “oxygen” and “nutrients”. ● Ask the students to find and write down simplified explanations or synonyms for these words. **Respiratory System (Day 3 and 4)** ● Provide students with a list of related words such as "lungs," "breathe," "oxygen," "carbon dioxide," and "inhale/exhale." ● Encourage the students to find and write down simplified explanations or synonyms for these words.	
C. Developing and Deepening Understanding	**SUB-TOPIC 3: DIGESTIVE SYSTEM (Day 1 and 2- Week 2)** **1. Explicitation** ● Provide students with a graphic organizer with labels for different parts of the digestive system, such as the mouth, esophagus, stomach, small intestines, large intestines, and anus/anal canal. ● Ask students to fill in the functions of each part in simple terms. ● Encourage students to present their graphic organizers and explanations to the class. **2. Worked Example** ● Think of our digestive system as a 'buko salad' preparation. Just as we cut, mix, and prepare ingredients for a delicious salad, our digestive system processes the food we eat. It breaks down the 'buko' (coconut), 'sugar,' and other ingredients into smaller pieces, mixes them into “liquid” form so our body can absorb the 'nutrients.' This gives our body energy,	In presenting the worked example, the teacher may provide pictures showing farming, fishing activities to the students to augment the discussion. Other household activities might be presented as well. ***Digestive system*** The gastrointestinal tract is comprised of the mouth, esophagus, stomach, small intestine, large intestine and anus.

so our body can absorb the 'nutrients.' This gives our body energy, helps us stay strong and healthy.

3. Lesson Activity

- Create a "Digestive Adventure" game. Each student represents a piece of food and goes through a series of stations that represent different parts of the digestive system (e.g., mouth, esophagus, stomach, small intestines, large intestines and anus).
- At each station, students act out the role of that part of the digestive system and explain its function in simple terms.
- Discuss the game as a class, emphasizing the digestive system's job of breaking down food and absorbing nutrients.
- Use the concept cartoon below to generate classroom discussions where students can discuss and apply their understanding of the digestive system in a simple and engaging way. Students need to select one statement from the scenario and then let them explain why they chose the said statement.

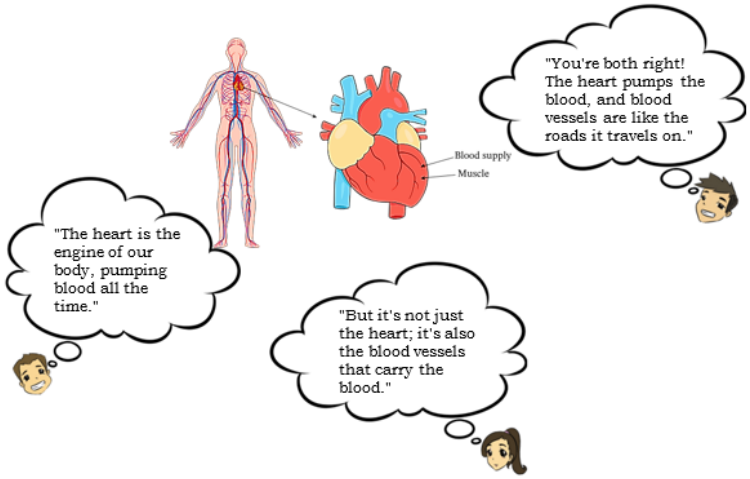


The photo at the center is obtained from:
https://www.istockphoto.com/illustrations/children-eating-school-lunch

	• The gastrointestinal tract comprises the mouth, esophagus, stomach, small intestine, large intestine and anus. • Ask the students to perform Activity No. 5 titled “Digestive System Infographic”, and let them answer the guide questions found in the work sheet. • Ask the students to perform Activity No. 6 titled “Digestive System Digest: Understanding How Our Bodies Process Food”, and let them answer the guide questions found in the work sheet. **SUB-TOPIC 4: CIRCULATORY SYSTEM** **(Day 2 and 3)** **1. Explicitation** • Show students a labeled diagram of the circulatory system, including the heart, blood vessels, and major organs. • Have students annotate the diagram with straightforward explanations of the functions of each component. • Discuss the importance of the circulatory system in providing nutrients and oxygen to the body. **2. Worked Example** • Our circulatory system is like the traffic system in our country. The 'jeepney' (local transportation) serves as the blood which carries the passengers (oxygen and nutrients) along the roads or highways (blood vessels). • The blood carries 'passengers' like oxygen and nutrients to different 'destinations' in our body, ensuring everything works smoothly. Understanding the circulatory system and taking care of it is crucial for a long and healthy life, just like caring for our streets and highways, and our beautiful archipelago.	

3. Lesson Activity

- Provide students with a blank diagram of the circulatory system (including the heart, blood vessels, and lungs).
- Ask students to label the key components and describe their functions in simple language.
- In a group discussion, have students share their diagrams and explanations, facilitating a class-wide understanding of the circulatory system's role in circulating blood and oxygen.
- Use the concept cartoon below to generate classroom discussions where students can discuss and apply their understanding of the circulatory system in a simple and engaging way. Students need to select one statement from the scenario and then let them explain why they chose the said statement.



The photo at the center is obtained from:
https://www.nagwa.com/en/explainers/937160464196/

- Introduce the concept of the link between the digestive system and the circulatory system by the distribution of food nutrients from the small intestine to all parts of the body. In addition, mention the link between the circulatory system and the respiratory system by the exchange of oxygen and carbon dioxide in the lungs carried by the blood.

- Ask the students to perform Activity No. 7 titled “Circulatory System Diagram and Function Match-Up”, and let them answer the guide questions found in the work sheet.
- Ask the students to perform Activity No. 8 titled “Heart-to-Heart: Exploring the Circulatory System”, and let them answer the guide questions found in the work sheet.

SUB-TOPIC 5: RESPIRATORY SYSTEM: (Day 3 and 4)

1. Explicitation

- Provide students with a step-by-step flowchart or diagram of the respiratory system, including the nose, larynx, pharynx, trachea, lungs, and diaphragm.
- Ask students to annotate the diagram with simplified explanations of how air enters and leaves the body and the exchange of oxygen and carbon dioxide.
- Discuss the significance of the respiratory system in breathing and oxygenating the body.
- Discuss cases when the body could not take in or deprived of oxygen such as in cases of suffocation (asphyxiation). Asphyxia can result from drowning, asthma, choking, strangulation, seizure, drug overdose, or inhaling substances. This can result to loss of consciousness, brain injury, and death.

2. Worked Example

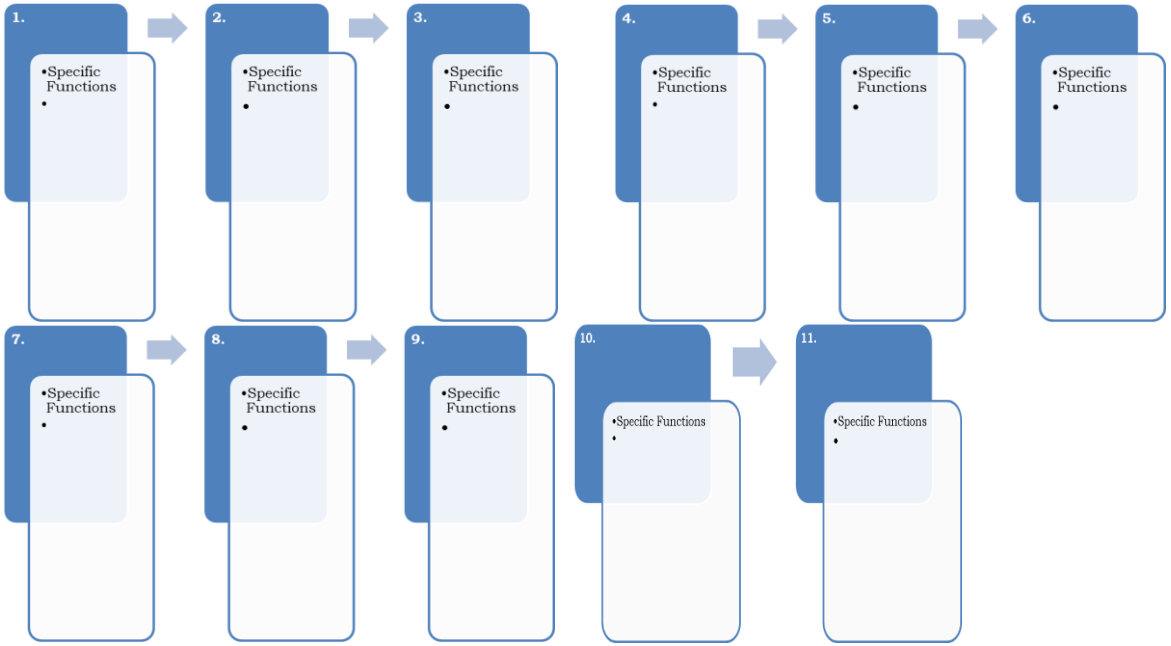
- Breathing is like blowing up a 'balloon' to celebrate a fiesta. When we inhale, it is like blowing air into the balloon, filling it with 'oxygen.' When we exhale, it's like letting the air out, but instead of the balloon, we release 'carbon dioxide.' This helps our body get the 'good air' and get rid of the 'bad air,' just like we want the balloon filled with good air for the celebration.

3. Lesson Activity

- Create a "Respiratory Relay" game where students represent oxygen molecules and carbon dioxide molecules.
- Have students pass through a "body" obstacle course representing the respiratory system, including the nose, trachea, and lungs.
- In each section, students can explain their role in simple terms (e.g., oxygen's journey into the body and carbon dioxide's journey out).
- Use the concept cartoon below to generate classroom discussions where students can discuss and apply their understanding of the respiratory system in a simple and engaging way. Students need to select one statement from the scenario and then let them explain why they chose the said statement.

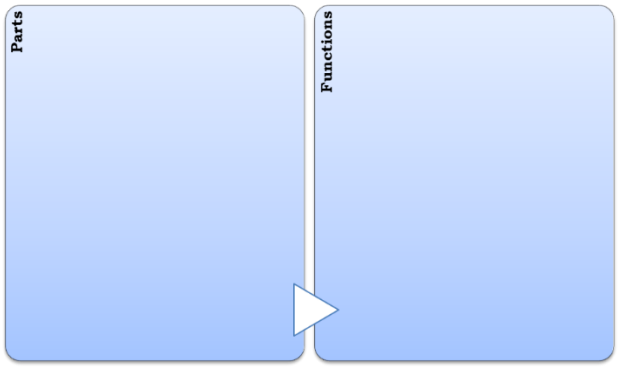
The photo at the center is obtained from:
https://www.shutterstock.com/search/breathing-exercise

- Introduce the link between the circulatory system and the respiratory system by the exchange of oxygen and carbon dioxide in the lungs.
- Ask the students to perform Activity No. 9 titled “Respiratory System Storyboard”, and let them answer the guide questions found in the work sheet.

	• Ask the students to perform Activity No. 10 titled “Breathing Easy: Understanding the Respiratory System”, and let them answer the guide questions found in the work sheet.	
D. Making Generalizations	**1. Learners’ Takeaways** ***Digestive System: Basic Functions*** **(Day 1 and 2)** **Direction**: Use the flowchart below to show the sequential process of how the important parts of the digestive system supports the process of digestion. List down the parts of the digestive system and their specific functions  	This reflection activity not only reinforces the students' understanding but also encourages peer learning and reflection. It allows students to assess their knowledge and identify areas where they may need more clarification.

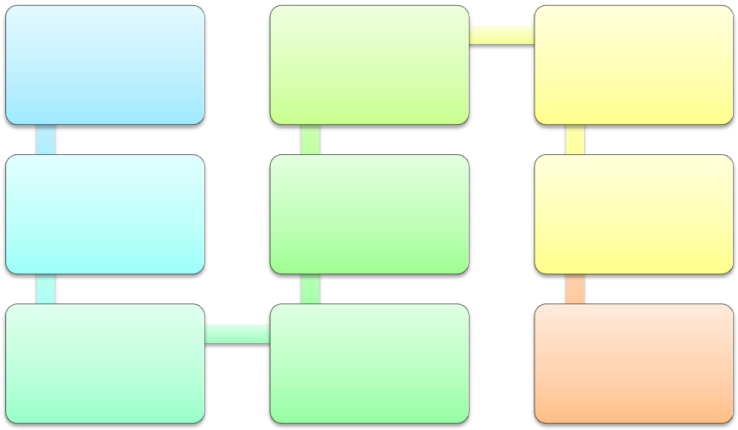
***Circulatory System: Parts and Functions* (Day 2 and 3)**

Direction: Complete the table below by listing the parts of the circulatory system on the left side and by describing their functions on the right side of the column.



***Respiratory System: How it Works* (Day 3 and 4)**

Direction: Use the graphic organizer below to illustrate how the respiratory system works. Start with "Inhale" and follow with steps like "Air enters through the nose or mouth," "Goes to the trachea," "Reaches the lungs," and "Gas exchange occurs."



	2. Reflection on Learning **My Body Systems Reflection**: Students will reflect on their learning about the muscular, skeletal, digestive, circulatory, and respiratory systems and consider their understanding in simple terms. *Materials*: ● Paper and pencils or crayons. ● A poster with the five body systems listed. *Instructions*: ● Begin by reminding students of the body systems they've learned about - muscular, skeletal, digestive, circulatory, and respiratory. ● Ask each student to take a piece of paper and draw or write one key concept or function for each of the five body systems in simple terms. Encourage them to use drawings or short phrases to make it straightforward. ● Invite students to share their drawings or phrases with a partner or in small groups. ● In their pairs or groups, students discuss their understanding of the body systems and how they've simplified the concepts. ● Each group creates a summary poster of the five body systems. They draw or write the most important functions for each system in simple terms. ● Hang the posters around the classroom. ● Organize a "Gallery Walk" where students visit each poster and reflect on the key concepts presented by their peers. ● They can add comments or questions on each poster if something isn't clear or if they have something to add. ● Have a class-wide discussion where students share what they've learned from the Gallery Walk. ● Encourage them to discuss the similarities and differences in their interpretations of the body systems. ● Ask students to reflect individually on what they found most interesting or challenging about learning and simplifying the body systems.	

	• Conclude the reflection by emphasizing the importance of being able to explain complex concepts in simple terms and the value of understanding the body systems for overall health.	

IV. EVALUATING LEARNING: FORMATIVE ASSESSMENT AND TEACHER'S REFLECTION		**NOTES TO TEACHERS**
A. Evaluating Learning	**Summative Assessment** **Multiple-Choice Questions**: Encircle the letter of the best answer. 1. While lifting a heavy suitcase, which function of the muscular system is most evident? a) Breaking down food for digestion b) Regulating body temperature c) Supporting your body's structure and enabling the lifting d) Controlling the heartbeat 2. You're standing upright without collapsing under your own weight. This demonstrates the role of the skeletal system in: a) Aiding digestion b) Carrying oxygen to cells c) Filtering impurities from the air d) Supporting the body's structure 3. After a hearty meal, your body begins to extract nutrients from the food. This is an example of the digestive system's function to: a) Regulate body temperature b) Pump blood to different body parts c) Break down food for nutrients and energy d) Control voluntary muscle movements 4. While running a marathon, your body needs a consistent supply of oxygen and nutrients to your muscles. This relates to the circulatory system's role in: a) Digesting food and breaking it down b) Regulating the body's temperature c) Transporting oxygen and nutrients while removing waste products d) Filtering the air, you breathe	**Answers:** 1. c) Supporting your body's structure and enabling the lifting 2. d) Supporting the body's structure 3. c) Break down food for nutrients and energy 4. c) Transporting oxygen and nutrients while removing waste products 5. d) Allows for the exchange of oxygen and carbon dioxide in the lungs 6. b) Supporting the body's structure and enabling lifting 7. c) Muscular system 8. d) Circulatory system in providing oxygen and nutrients to muscles 9. b) Break down food into smaller molecules 10. c) Exchange oxygen and carbon dioxide in the lungs

	5. You take a deep breath after sprinting. This is a direct result of how the respiratory system: a) Regulates body temperature b) Controls digestion c) Filters blood d) Allows for the exchange of oxygen and carbon dioxide in the lungs 6. Imagine a weightlifter lifting a heavy barbell. In this scenario, which function of the muscular system is primarily at work? a) Regulating blood circulation b) Supporting the body's structure and enabling lifting c) Breaking down food for digestion d) Filtering impurities from the air 7. When you accidentally touch a hot stove and quickly pull your hand away, which body system is responsible for this fast reaction? a) Digestive system b) Circulatory system c) Muscular system d) Respiratory system 8. You're in a race, and your heart is beating rapidly to pump oxygen to your muscles. This exemplifies the role of the: a) Digestive system in fueling your body b) Respiratory system in cooling you down c) Muscular system in maintaining balance d) Circulatory system in providing oxygen and nutrients to muscles 9. After a big meal, you start to feel full and satisfied. This is a result of the digestive system's function to: a) Regulate body temperature b) Break down food into smaller molecules c) Provide structural support to your body d) Filter impurities from the air you breathe 10. You take a deep breath before giving a presentation. This action is directly related to the respiratory system's function to: a) Regulate your body temperature b) Support your body's structure c) Exchange oxygen and carbon dioxide in the lungs d) Help digest the food you ate	

	1. Unlocking Content Area Vocabulary **Fill-in-the-Blank Questions**: Write the correct word on the space provided. 1. The main function of the muscular system is to enable _____. 2. The skeletal system provides support to the body by creating a _____. 3. The basic function of the digestive system is to break down food and absorb _____. 4. The key components of the circulatory system include the heart, blood vessels, and _____. 5. In simple terms, the respiratory system works by exchanging oxygen and carbon dioxide in the _____. 6. The muscular system allows us to perform tasks like walking, running, and lifting objects, giving our body _____. 7. The skeletal system's role in supporting the body is similar to how a _____ provides structure to a building. 8. The digestive system processes food, extracting nutrients to provide _____ for the body's functions. 9. The circulatory system's main components, the heart and blood vessels, are responsible for pumping _____ throughout the body. 10. The primary function of the respiratory system is to exchange _____ from inhaled air for carbon dioxide in our body.			**Answer key:** 1. movement 2. framework 3. nutrients 4. blood 5. lungs 6. strength and power 7. frame or structure 8. energy 9. blood 10. oxygen
B. Teacher's Remarks	*Note observations on any of the following areas:*	**Effective Practices**	**Problems Encountered**	
	strategies explored			
	materials used			
	learner engagement/ interaction			
	others			

C. Teacher's Reflection	***Direction:*** *Answer briefly the following questions.* 1. *What principles and beliefs informed my lesson?* 2. *Why did I teach the lesson the way I did?* 3. *What roles did my students play in my lesson?* 4. *What did my students learn? How did they learn?* 5. *What could I have done differently?* 6. *What can I explore in the next lesson?*	