

# SUPPLEMENTAL LESSONS

Science Grade 8  
4th Quarter



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# 4th Quarter Grade 8

## Revised Standards on Living Things and Their Environment

**Learning Competency:** Demonstrates an understanding of the digestive system and its interaction with the circulatory, respiratory, and excretory systems in providing the body with nutrients for energy

**Lesson Focus:** Digestive System and Its Interaction with the Circulatory, Respiratory, and Excretory Systems

### Introduction

#### Quick Recall

Ask the students the following questions:

- What are the parts of the digestive system and their functions?
- What are the parts of the circulatory system and their functions?
- What are the parts of the respiratory system and their functions?
- What are the parts of the excretory system and their functions?

### Body

#### A. Direct Instruction

Discuss the parts and functions of the digestive, circulatory, respiratory, and excretory system. Address misconceptions of the students from the quick recall. Focus on the organs that link a system to the other and their interaction.

#### B. Video Presentation

Let the students watch a video clip that shows the parts and functions of each organ system to help them visualize the interaction of the four organ systems.

### Conclusion

#### Mind Map

1. The students will construct a mind map of each organ system.
2. They will connect the mind map of one organ system to another by linking it to a word of another mind map.

# 4th Quarter Grade 8

## Revised Standards on Living Things and Their Environment

**Learning Competency:** Present an analysis of the data gathered on diseases resulting from nutrient deficiency

**Lesson Focus:** Nutrient Deficiency

### Introduction

#### Four Pics, One Word

The students will group themselves such that each group has 10 members. Each group will be given a garter. Let them form a line. The game master will raise pictures of food and the students will identify the nutrient derived from food shown. The first member will wear the garter from head and take off to toe. He/She will pass the garter to the next member. The 10th member (last) will run toward the game master and whisper the correct answer. The group with the highest score wins.

### Body

#### A. Gallery Walk (Modified)

Post different photos showing different cases of nutrient deficiency in the country. Add some data about cases of nutrient deficiency. Let the students roam around the classroom and take down notes of the data gathered from the posted information.

#### B. Sharing

Ask for a volunteer to share his/her insights about what they saw and read.

#### C. Discussion

Based from the information posted around the classroom, ask the students the following questions:

1. What are the common cases of nutrient deficiency in the Philippines?
2. Which nutrient deficiency is most common? Of what age bracket of the population is this deficiency most common?
3. Which nutrient deficiency is least common? Of what age bracket of the population is this deficiency most common?
4. Which nutrient deficiency-caused disease has the highest mortality rate?

### Conclusion

#### A. Graphing

The students will make a bar graph of the data gathered on diseases resulting from nutrient deficiency.

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**B. Cause and Effect**

The students will make a cause-and-effect table.

CAUSE (Nutrient Deficiency)	EFFECT (Disease)

# 4th Quarter Grade 8

## Revised Standards on Living Things and Their Environment

**Learning Competency:** Explain ingestion, absorption, assimilation, and excretion

**Lesson Focus:** Digestive System

### Introduction

#### A. Crush to Mash

1. Show the students a clear plastic bag.
2. Place the small pieces of crackers inside the plastic bag.
3. Add water.
4. Crush the contents of the bag to make a mash.
5. Let the students observe.
6. Ask the students which organ system is mimicked in the simple activity.

#### B. Quick Recall

1. Let the students recall the parts and functions of the digestive system.
2. Let the students express their knowledge about the processes that occur during digestion.

### Body

#### Learning Stations

1. Divide the classroom such that it will have four areas. Each area corresponds to a learning station (ingestion, absorption, assimilation, and excretion).
2. Each station has the definition of the process and a simple activity that the students will perform.
3. Divide the class into four groups. Distribute them to different stations.
4. After 5 minutes, the group moves to another station.

#### A. Ingestion Station

1. The students will read the definition of ingestion.
2. The students will place huge marbles inside a medium-sized box.  
Note: The marble represents the food and the box represents the oral cavity.

#### B. Absorption Station

1. The students will read the definition of absorption.
2. The students will let a smaller marble roll in a pipe.

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Note: The smaller marble represents the nutrients that go into the bloodstream and the pipe represents the blood vessels. It will be of help if the pipe or tubing is transparent.

**C. Assimilation Station**

1. The students will read the definition of assimilation.
2. The students will let the smaller marble (same size with absorption station) roll into a smaller box.

Note: The marble represents the nutrients and the smaller box (smaller than that of ingestion station) represents the cells.

**D. Excretion Station**

1. The students will read the definition of excretion.
2. The students will open the cap of a bottle (upside down position) to eliminate the contents of the bottle.

Note: The bottle represents the rectum, the cap represents the anus, and the contents represent the undigested food.

3. Allow the students to take down notes or keywords that best describe the process represented by each station.
4. The students will share to the class what they have learned.
5. Reinforce what they have learned and address misconceptions.

**Conclusion**

Ask the students to explain the processes ingestion, absorption, assimilation, and excretion by filling in the table.

PROCESS	HOW

# 4th Quarter Grade 8

## Revised Standards on Living Things and Their Environment

**Learning Competency:** Demonstrates understanding of meiosis as one of the processes producing genetic variations of the Mendelian pattern of Inheritance.

**Lesson Focus:** Meiosis and Genetic Variation

### Introduction

#### K-W-L (Know-Want-Learn)

The students will make three columns. They will write the things that they know about Mendelian Genetics/Mendelian Pattern Of Inheritance on the first column. On the second column, they will write the things that they want to learn about the topic and reserve the last column for the things that they have learned to be filled out at the end of the lesson.

### Body

#### A. Process Illustration

Ask the students to draw the important events that occur in each phase during meiosis. Let them label the structures present in their illustration.

#### B. Discussion

Choose the best illustration and discuss the process in each phase of meiosis. Emphasize that meiosis ensures genetic variations among species through crossing over of genes during meiosis. This is the reason why no two organisms are exactly alike.

### Conclusion

#### K-W-L (Continuation)

The students will continue answering the third column of the K-W-L table.

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# 4th Quarter Grade 8

## Revised Standards on Living Things and Their Environment

**Learning Competency:** Compare mitosis and meiosis and their role in the cell division cycle

**Lesson Focus:** Mitosis and Meiosis

### Introduction

#### Game Ka Na Ba?

Make groups consisting of four to five members. Allow them to brainstorm and review their assignment about the topic. Let the students select their best member to represent their group and answer series of questions. The representatives must raise their hand if they want to answer the question. The first representative to raise his/her hand answers the question. In every correct answer, the representative steps forward. But in every wrong answer, the representative steps backward. The first representative to reach the game master wins.

### Body

#### A. Video Presentation

The students will watch a video presentation of mitosis and meiosis. Encourage them to take down notes.

#### B. Direct Instruction

Discuss the process of cell cycle and the difference of mitosis and meiosis.

### Conclusion

#### Compare and Contrast

The students will compare mitosis and meiosis using the table below.

POINT OF COMPARISON	MITOSIS	MEIOSIS
1. Number of Divisions		
2. Number of daughter cells produced		
3. Chromosome Set (=n)		
4. Purpose		
5. Site		

# 4th Quarter Grade 8

## Revised Standards on Living Things and Their Environment

**Learning Competency:** Predict phenotypic expressions of traits following simple patterns of inheritance

**Lesson Focus:** Punnett Square

### Introduction

#### Unlocking Unfamiliar Terms

The students will decode the word being described using their answer in the assignment given prior to this lesson.

1. P\_\_\_\_TY\_E – It is the observable characteristics of an organism.
2. \_E\_O\_Y\_\_E – It is the genetic make-up of an organism.
3. HO\_OZ\_\_O\_S – It is having identical alleles.
4. \_ET\_\_OZ\_\_O\_S – It is having different alleles.
5. A\_L\_L\_S – These are genes that occur in the same locus.

### Body

#### Discussion

Discuss how to use the Punnett Square in determining the phenotypes expressed in a cross.

### Conclusion

#### Think-Pair-Share

Let the students find their partner in answering sample problems about determining the traits of offspring from a cross of traits. Allow them to brainstorm and solve the problem together. The students must also identify the type of Mendelian Pattern of Inheritance exemplified by the result of the cross using the Punnett Square.