

7

Science

Quarter 2 – Module 3: Levels of Biological Organization



CO_Q2_Science 7_Module 3

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Science – Grade 7
Alternative Delivery Mode
Quarter 2 – Module 3: Where Do I Come From?
First Edition, 2020

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Introductory Message

This Self-Learning Module (SLM) is prepared so that you, our dear learners, can continue your studies and learn while at home. Activities, questions, directions, exercises, and discussions are carefully stated for you to understand each lesson.

Each SLM is composed of different parts. Each part shall guide you step-by-step as you discover and understand the lesson prepared for you.

Pre-tests are provided to measure your prior knowledge on lessons in each SLM. This will tell you if you need to proceed on completing this module or if you need to ask your facilitator or your teacher's assistance for better understanding of the lesson. At the end of each module, you need to answer the post-test to self-check your learning. Answer keys are provided for each activity and test. We trust that you will be honest in using these.

In addition to the material in the main text, Notes to the Teacher are also provided to our facilitators and parents for strategies and reminders on how they can best help you on your home-based learning.

Please use this module with care. Do not put unnecessary marks on any part of this SLM. Use a separate sheet of paper in answering the exercises and tests. And read the instructions carefully before performing each task.

If you have any questions in using this SLM or any difficulty in answering the tasks in this module, do not hesitate to consult your teacher or facilitator.

Thank you.



What I Need to Know

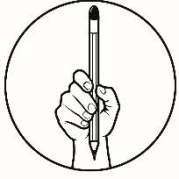
Hello, my dear young biologist! I know that you are confused of how our body is made. What are inside our body and if we study it closely what's inside? As a living organism, we are made up of different organ systems that work together to make them function. We need them to function well for us to survive. In order to maintain its function, we need to provide its basic needs. When we eat healthy foods our digestive system breaks them into simple substances which eventually are transported throughout the body by the circulatory system. But what is responsible in transporting these nutrients? Is it the circulatory system alone? Are these systems made up of smaller parts? Absolutely yes, it is made up of different organs to make it work as a system. Just like the mouth, esophagus, stomach and intestines are grouped together to form the digestive system. The arteries, heart and veins are also grouped together to form the circulatory system.

Most Essential Learning Competency

Describe the levels of the biological organization from cell to biosphere.

After going through this module, you are expected to:

- Identify the different levels of biological organization in an organism
- Describe the parts that make up each level of organization and their functions
- describe how organisms interact with their environment at several levels



What I Know

Directions: Read the questions carefully and choose the letter of the correct answer from the given choices. Write it on a separate sheet of paper.

1. The heart pumps blood throughout the body. To which organ system does heart belongs?
 - A. Circulatory System
 - B. Digestive System
 - C. Excretory System
 - D. Nervous System
2. Oxygen is an important gas for organisms. Which organ system is oxygen processed?
 - A. Excretory System
 - B. Digestive System
 - C. Circulatory System
 - D. Respiratory System
3. Which of the following parts of plants are used for reproduction?
 - A. Flowers
 - B. Leaves
 - C. Roots
 - D. Stem
4. Which is **NOT** a part of the digestive system?
 - A. Esophagus
 - B. Intestines
 - C. Kidney
 - D. Mouth
5. Which of the following is **NOT** an organ of plants?
 - A. Heart
 - B. Stem
 - C. Leaves
 - D. Flowers
6. Which of the following organs is used for the transport of nutrients in plants?
 - A. Artery
 - B. Heart
 - C. Kidney
 - D. Stem
7. What plant part is responsible in transporting organic materials?
 - A. Roots
 - B. Stem
 - C. Leaves
 - D. Flowers

8. Which gas is released by humans during respiration?
- A. Carbon Nitride
 - B. Carbon Dioxide
 - C. Carbon Trioxide
 - D. Carbon Monoxide
9. Which of the following does **NOT** belong to the sequence of the level of biological organization in an organism?
- A. Cell
 - B. Organ
 - C. Tissue
 - D. biosphere
10. From the following statements below, how will you consider yourself as an organism?
- I. My body is composed of different sets of organs.
 - II. My body is composed of cells which organs are made.
 - III. My body is composed of complete sets of organ systems.
- A. I and II only
 - B. I and III only
 - C. II and III only
 - D. I, II and III only
11. Which of the following is not a level of biological organization?
- A. organism
 - B. Population
 - C. cells
 - D. Abiotic
12. Read the statements carefully.
- Statement I: Veins are for circulation.
Statement II: Stomach is for excretion.
- A. Statement I is TRUE while statement II is FALSE
 - B. Both statements I and II are TRUE
 - C. Statement I is FALSE while statement II is TRUE
 - D. Both statements I and II are FALSE
13. Read the statements carefully.
- Statement I: Tissues are made up of cells.
Statement II: Organ system is made up of organs.
- A. Statement I is TRUE while statement II is FALSE
 - B. Both statements I and II are TRUE
 - C. Statement I is FALSE while statement II is TRUE
 - D. Both statements I and II are FALSE

14. Which of the following statements shows the difference between organ and organism?

- I. Organs are made up of organisms.
- II. Organisms are incomplete without organs.
- III. Organs are the highest level of an organism.
- IV. Organs are building block that makes up an organism.

- A. I and II only
- B. II and IV only
- C. III and IV only
- D. II, III and IV only

15. Which statements make the sequence of the level of biological organization in an organism correct?

cell- organ- tissue- organ system- organism

- I. Tissue must be place after the cell.
- II. Tissue must be placed to the last level.
- III. Organ and tissue must be interchanged.

- A. I and II only
- B. I and III only
- C. I and III only
- D. I, II and III only

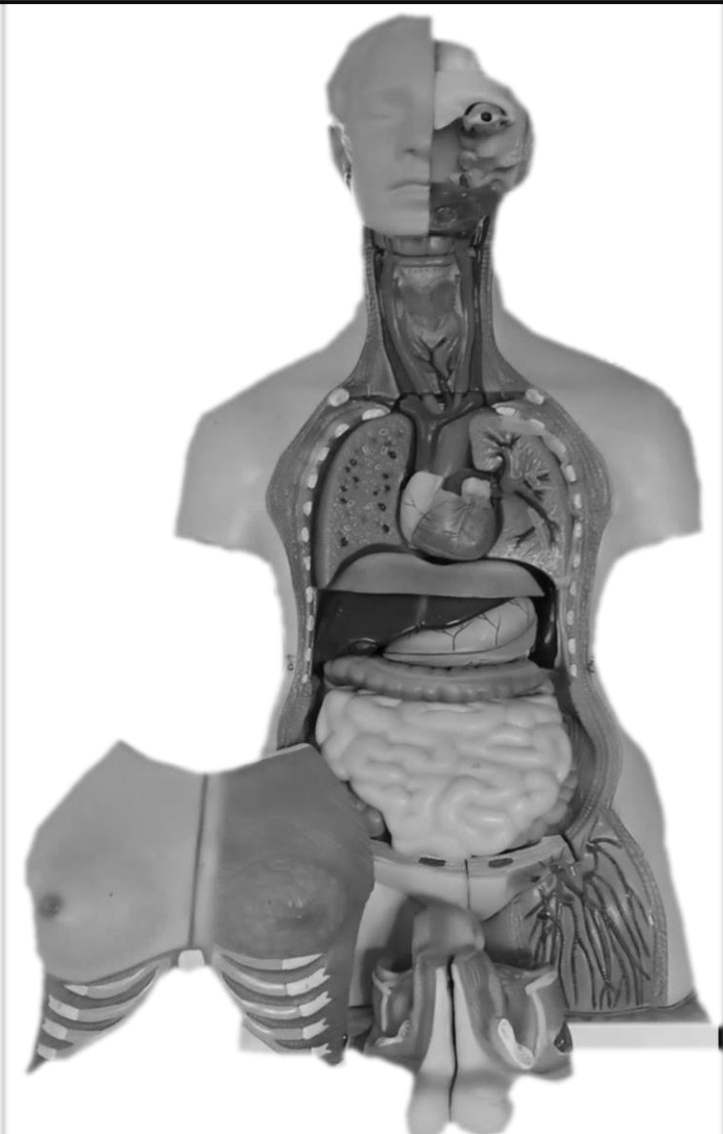


What's In

Hello learners! In the previous module, you have learned about the parts and functions of a microscope as well as the simplest unit of life that can be seen using it.

As you have studied, cell is the basic structural unit of life. It means that life is composed of cells. Without cells, life will not be possible. Our body is made up of cells which means that we are living things. This is also a manifestation that living organisms are made up of organs. These organs are made of cells. Living things include both animals and plants.

Directions: Name the parts of the human body that can be found in the illustration. Write your answers on a separate sheet of paper.

BODY PARTS	
_____	 <p>Photo taken by: Jaypee K. Balera</p>

Directions: From the above activity, classify the organs under the given systems on the table below. Write your answers on a separate sheet of paper.

**Note: Provide separate sheet of paper if needed for the other organ system.*

DIGESTIVE SYSTEM	CIRCULATORY SYTEM	NERVOUS SYSTEM	REPRODUCTIVE SYSTEM



What's New

The previous activity shows that our body is made up of different organs. These organs are grouped into organ systems to perform specific functions.

I have here a poem that will explain more about our lesson. Let's start by reading the poem and then answer the guide questions on a separate sheet of paper.

WHAT MAKES YOUR BODY

by: Jaypee Kadalem Balera

I am your body
Made up not of anybody
Your essential organs are all in order
For you to become better

From the head you have your brain to think
Your eyes to see and nose to smell
You have your mouth to eat and tongue to taste
Your ears to hear and skin to make all organs bear

As you go deeper
You will see it clearer
The beauty of each system that works together
The lungs and heart that make you feel better

Nutritious foods are more significant
As nutrients move along to make you fine
When your body eliminates metabolic wastes
Thank your kidneys for the success

Your organs are too many
If you want to count just think one to twenty
Remember that each organ is made up of tissues
And I know you can't do it in just a day

Some organs sometimes go wrong
Because proper care was not given along
If one system fails to function
Others might as well malfunction

Eat well with nutritious foods
If you don't want to call your doctor dude
Bear in mind that disease and injury is ahead of you
If you take something that ruins you.

Guide Questions:

1. What are the organs stated in the poem?

2. What are the main parts of the organ systems stated on the poem?

3. What organs are responsible in eliminating metabolic waste?

4. What will happen if some organs malfunction?

5. What makes up an organism?

6. How can you take good care of the organ systems?

PLANT FIGURE

by: Jaypee Kadalem Balera

I am a plant
With different organs together
Even though not like animals
But I'm a living thing as my organs respond

I have my stem like animals with their bones
I have my flowers like animals that reproduce
I have my leaves like animals that respire
I have my roots for certain purpose

Flowers, leaves and
stems are my important organs
They carry the food to nourish me
If one of them can't work just fine
Surely I will die anytime

Roots are one important shoot
For absorption and for support
When this will be injured
I will be weak to stand tall

I am an organism but not like animals
I have organs made up of tissues
I have tissues made up of tiny cells
that simply make the real me.

Guide Questions:

1. Do plants and animals reproduce?

2. What is the reproductive organ of plant?

3. What are the functions of flowers, leaves and stems?

4. What will happen if plant did not produce flowers?

5. What will happen if roots are damaged?

6. What makes up a plant?

7. Do plants and animals have same organ systems?

***What is It***

Animals and plants are living things. They have organ systems made up of organs, organs that are made up of tissues and tissues that are made up of cells.

Heart, veins and arteries are organs of the circulatory system. Mouth, esophagus, intestine are organs of the digestive system. Kidneys are organs of the excretory system. These organ systems are all made up of a group of organs of the body. Each system has different functions from one another. The circulatory system is for the transport of nutrients, digestive system for the breakdown of food and kidney for eliminating metabolic wastes. These organ systems work together for a common goal. If one system fails, other systems will also be affected.

Each organ is made up of tissues. Tissues are bonded together to make an organ. These tissues are also composed of cell-the basic structural unit of life. The cells, organs, and organ systems make up an organism.

Plants are also made of cells, tissues and organs that carry out specific functions. They have organs for reproduction like the flower, organs for respiration like leaves and organs for transport of nutrients and organs for respiration like leaves. These organs are working together. Just like animals, if one part is damaged most of its organs will no longer perform its function.

Organs are not only found in animals but also in plants. They must be taken good care of because if one is damaged, the rest of the body parts will also be infected and the whole population will get affected. These two different organisms make an essential part in building a strong community that leads to a productive ecosystem and health biosphere for all.

The biological organization does not stop with the organism, as an organism interacts with the environment in many ways. Beyond the organism, the levels of organization are population, community, ecosystem and biosphere.

Population is a group of individuals belonging to the same species and living in a particular geographical area. An example is all the mahogany trees in a particular forest.

Community consists of all the populations of different species that inhabit a particular area. For example, all the plant and animal species in the forest constitute a community.

Ecosystem includes all the life forms existing in a certain area and all the nonliving factors as well. The nonliving or abiotic factors include water, gases, minerals, nutrients and other chemicals. The organisms making up the community of species are called the biotic factors.

The biosphere is the total of all the Earth's ecosystems. The biosphere includes the atmosphere to an altitude of several kilometers, the land down to about 1500 meters deep, bodies of water and oceans to a depth of several kilometers.



What's More

Directions: List, describe and draw the levels of biological organizations of a living organism in proper order on the table below. Write your answers on a separate sheet of paper.

LEVELS OF BIOLOGICAL ORGANIZATION	DESCRIPTION	DRAWING OR PICTURE

Rubrics	8 pts.	6 pts.	4 pts.
A. Drawing Technique and Understanding of Concepts	Drawing shows good technique and understanding of clear concept.	Drawing shows some technique and understanding of concept is not so clear.	Drawing lacks technique and understanding of concept is vague.
B. Craftsmanship	Drawing is neat and shows very little evidence of marks, rips, tears, or folds. A few erasure lines showing.	Drawing is somewhat messy and shows marks, rips, tears, or folds. A few erasure lines showing.	Drawing is messy and shows marks, rips, tears, or folds. Many erasure lines showing.
C. Creativity	Art work reflects originality.	Art work shows some evidence of originality.	Art work shows little or no evidence of original thought.

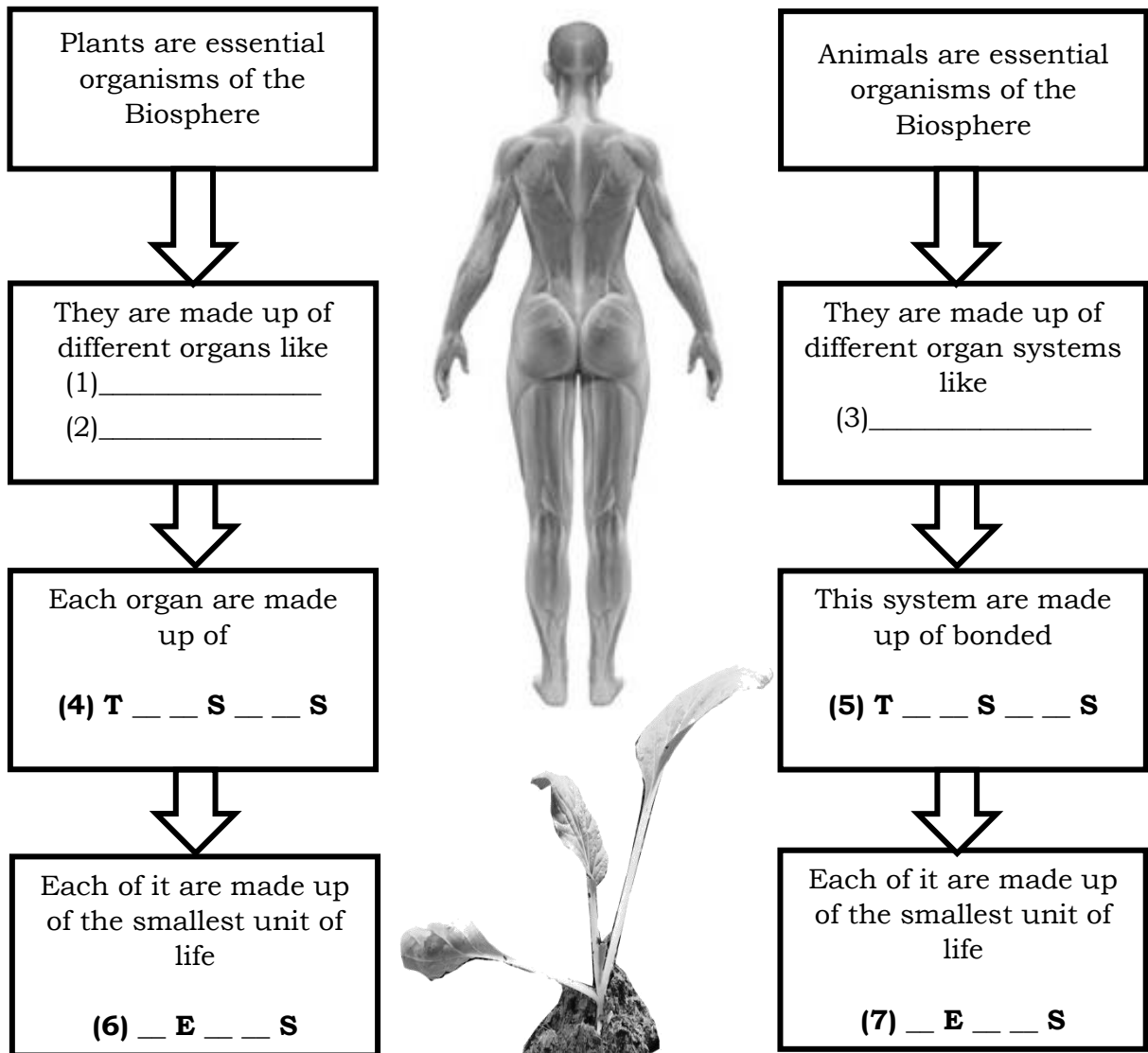


What I Have Learned

Directions: Let us test your familiarity by simply completing the Graphic Organizer. Choose the missing words from the box below. Write your answer on a separate sheet of paper.

FLOWERS	CIRCULATORY	DIGESTIVE
TISSUES	CELLS	ORGAN SYSTEM
RESPIRATORY	LEAVES	

GRAPHIC ORGANIZER:





What I Can Do

The Corona virus pandemic currently affects all of us. Make a poster/slogan showing how can we protect ourselves from Covid-19, with special emphasis on taking care of the various body organs.

Your work will be graded using the rubric below.

Rubrics	8 pts.	7 pts.	5 pts.
A. Drawing Technique and Understanding of Concepts	Drawing shows good technique and understanding of clear concept.	Drawing shows some technique and understanding of concept is not so clear.	Drawing lacks technique and understanding of concept is vague.
B. Craftsmanship	Drawing is neat and shows very little evidence of marks, rips, tears, or folds. A few erasure lines showing.	Drawing is somewhat messy and shows marks, rips, tears, or folds. A few erasure lines showing.	Drawing is messy and shows marks, rips, tears, or folds. Many erasure lines showing.
C. Creativity	Art work reflects originality.	Art work shows some evidence of originality.	Art work shows little or no evidence of original thought.



Assessment

Directions: Read the questions carefully and choose the letter of the correct answer. Write it in a separate sheet of paper.

1. Which of the following organs does **NOT** belong to the digestive system?
 - A. Ears
 - B. Esophagus
 - C. Mouth
 - D. Nose
2. Which of the following organs does **NOT** belong to the Circulatory system?
 - A. Artery
 - B. Heart
 - C. Nose
 - D. Vein
3. Which of the following is **NOT** an organ system?
 - A. Digestive
 - B. Population
 - C. Excretory
 - D. Respiratory
4. What do you call a group of individuals belonging to the same species and living in a particular area?
 - A. organism
 - B. community
 - C. Population
 - D. Ecosystem
5. Which of the following is **NOT** a plant part for reproduction?
 - A. Petals
 - B. Pistil
 - C. Stamen
 - D. Stem
6. Which of the following organs are used for pumping of blood and nutrients throughout the body?
 - A. Artery
 - B. Heart
 - C. Stem
 - D. Vein

7. Which organ is responsible for eliminating metabolic waste?
- Digestive System
 - Excretory System
 - Circulatory System
 - Respiratory System
8. Which organ system responsible in processing oxygen into our body?
- Nervous System
 - Circulatory System
 - Respiratory System
 - Integumentary System
9. Which is the correct sequence of the level of biological organization in an organism?
- cell- tissue –organ- organ system- organism
 - cell- organ system–organ- tissue - organism
 - cell- organ – tissue organ system- organism
 - cell- organ- organ system- organism-tissue
10. Which of the following is **NOT** correctly matched?
- Roots-Excretion
 - Stem-Circulation
 - Leaves-Respiration
 - Flower- Reproduction
11. Plants benefits from animals. Do animals benefits from plants?
- No, animals can produce its need.
 - No, because plants and animals can live alone.
 - Yes, because it provides shade during summer.
 - Yes, because it provides food and oxygen for respiration.
12. Read the statements carefully.
- | |
|--|
| Statement I: Heart is an organ for circulation.
Statement II: Kidney is an organ for excretion. |
|--|
- Both statements I and II are TRUE
 - Both statements I and II are FALSE
 - Statement I is FALSE while statement II is TRUE
 - Statement I is TRUE while statement II is FALSE
13. Read the statements carefully.
- | |
|--|
| Statement I: Organs are made up of tissues.
Statement II: Tissues are made up of cells. |
|--|
- Both statements I and II are TRUE
 - Both statements I and II are FALSE
 - Statement I is FALSE while statement II is TRUE
 - Statement I is TRUE while statement II is FALSE

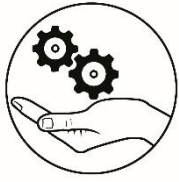
14. Smoking causes disease that affects our respiratory system. How can we make our self free from the negative effects of cigarette smoking?

- I. Keep away from persons who are smoking
- II. Smell all the smoke coming from the cigarette
- III. Make an advocacy showing negative effects of smoking

- A. I and II only
- B. I and III only
- C. II and III only
- D. I, II and III

15. Which of the following is NOT an abiotic factor in an ecosystem?

- A. Gases
- B. Minerals
- C. Temperature
- D. bacteria



Additional Activities

Directions: Draw a plant and human body, showing the different organ system of an organism. Write your answer on a separate sheet of paper.

HUMAN	PLANT
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Rubrics	10 pts.	7 pts.	5 pts.
A. Drawing Technique and Understanding of Concepts	Drawing shows good technique and understanding of clear concept.	Drawing shows some technique and understanding of concept is not so clear.	Drawing lacks technique and understanding of concept is vague.
B. Craftsmanship	Drawing is neat and shows very little evidence of marks, rips, tears, or folds. A few erasure lines showing.	Drawing is somewhat messy and shows marks, rips, tears, or folds. A few erasure lines showing.	Drawing is messy and shows marks, rips, tears, or folds. Many erasure lines showing.
C. Creativity	Art work reflects originality.	Art work shows some evidence of originality.	Art work shows little or no evidence of original thought.



Answer Key

What I Know

1. A
2. D
3. A
4. C
5. A
6. D
7. B
8. B
9. D
10. D
11. D
12. A
13. B
14. B
15. B

What's In

The learners may write the following possible answers

and add more.

Digestive System

Intestine, Stomach, Mouth

Circulatory System

Heart, Veins

Nervous System

Brain

Reproductive System

Penis, Vagina

Assessment

1. A
2. C
3. B
4. C
5. D
6. B
7. B
8. C
9. A
10. A
11. D
12. A
13. A
14. B
15. D

What's New

POEM 1

Q1. Eyes, Nose, Mouth, tongue, Ears, skin, Lungs, Heart, kidneys

Q2. Skin, Lungs, Heart, kidneys

Q3. Kidneys

Q4. Systems will failed to function

Q5. Organs

Q6. Eat well with nutritious food

POEM 2

Q1. Yes

Q2. Flower

Q3. Carries food for nourishment

Q4. It will never reproduce

Q5. It will be weak and not to stand tall

Q6. Organs like roots, flower, leaves and stem

Q7. No

What's More

The answers may vary.

What I Can Do

The answers may vary.

Additional Activities

The answers may vary.

What I have Learned

1. Flowers
2. Leaves
3. Respiratory, Digestive
4. Tissues
5. Tissues
6. Cells
7. Cells

References

Asuncion, Alvie J., et al. 2017. *K to 12 Science Grade 7 Learner's Material*. First Edition. Pasig City: Bureau of Learning Resources (DepEd-BLR).

Campbell, Neil A, Lawrence Mitchell and Jane Reece. *Biology: Concepts and Connections*. 2nd ed. The Benjamin/Cummings Publishing Company.

Poems

Balera, A Poem. The Plant Figure

Balera, A Poem. What Makes up Your Body

Images

(https://cdn.pixabay.com/photo/2017/05/02/06/38/muscles-2277447_1280.png
n.d.)

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