



Life Systems

An Ontario Curriculum Based Unit of Study
For Middle School Students

Life Systems

Ontario Curriculum – Expectations Summary

Grade 7

Language – Expectations

- Students will:
- communicate ideas and information for a variety of purposes and to specific audiences, using forms appropriate for their purpose and topic;
 - produce pieces of writing using a variety of forms, techniques and resources appropriate to the form and purpose, and materials from other media;
 - proofread and correct their final drafts, focusing on grammar, punctuation, spelling, and conventions of style;
 - use and spell correctly the vocabulary appropriate for this grade level;
 - read a variety of fiction and non-fiction materials for different purposes;
 - read independently, selecting appropriate reading strategies;
 - use instructions and explanations to plan and organize work.

Science & Technology - Life Systems – Interactions Within Ecosystems - Expectations

- Students will:
- demonstrate an understanding of the interactions of plants, animals, fungi, and microorganisms in an ecosystem;
 - investigate the interactions in an ecosystem, and identify factors that affect the balance among the components of an ecosystem;
 - identify living (biotic) and non-living (abiotic) elements in an ecosystem;
 - identify populations of organisms within an ecosystem and the factors that contribute to their survival in that ecosystem;
 - identify and explain the roles of producers, consumers, and decomposers in food chains and their effects on the environment;
 - explain the importance of micro-organisms in recycling organic matter;
 - identify micro-organisms as beneficial and/or harmful.

Grade 8

Language – Expectations

- Students will:
- communicate ideas and information for a variety of purposes and to specific audiences, using forms appropriate for their purpose and features appropriate to the form;
 - produce pieces of writing using a variety of specific forms, techniques and resources appropriate to the form and purpose, and materials from other media;
 - proofread and correct their final drafts, focusing on grammar, spelling, punctuation, and conventions of style;
 - use and spell correctly the vocabulary appropriate for this grade level;
 - read a variety of fiction and non-fiction materials for different purposes;
 - read independently, selecting appropriate reading strategies;
 - express and respond to a range of ideas and opinions concisely, clearly, and appropriately.

Science & Technology - Life Systems – Cells, Tissues, Organs, and Systems - Expectations

- Students will:
- demonstrate an understanding of the basic structure and function of plant and animal cells, and describe the hierarchical organization of cells in plants and animals;
 - investigate ways in which unicellular organisms meet their basic needs;
 - identify organelles in cells through observation ;
 - explain the function of selectively permeable membranes in cells;
 - recognize that cells in multicellular organisms need to reproduce to make more cells to form and repair tissues;
 - describe, using their observations, the movement of gases and water into and out of cells during diffusion and osmosis.



Life Systems

Teacher Instructions

Introduction

The purpose of this school program is to help teachers develop in their students, an understanding of the complex aspects of life systems, while gaining an appreciation for the living things in the Marineland environment. This program provides students with the opportunity to study interactions within ecosystems, and examine the cell as the basic unit of life. Skill practice exercises provide students with an understanding of the interactions of plants, animals, fungi and micro-organisms in an ecosystem. Students will investigate the basic cellular processes pertaining to structure and function.

MARINELAND, as your community partner in learning, is committed to helping you apply the fundamental principles as outlined in the *Ontario Curriculum: Grades 1 to 8 - Science and Technology*. “The Life Systems strand combines the study of traditional topics in life science or biology with technology as it relates to basic human needs.” Respect for living things, and the environment is one of the “habits of mind” considered essential for meaningful work in science and technology. Students will have the opportunity to understand how this habit of mind is fundamental to Marineland.

The **MARINELAND** educational program provides the right blend of high-interest, up close study of diverse animal species and classroom resource materials. Our knowledgeable trainers captivate students with engaging marine mammal care demonstrations within facilities that provide optimal viewing for our visitors, and are purposefully designed to support the health and happiness of our animals. Our practiced beliefs about animal care as shared with each visiting school, and modeled in our daily animal interactions, align well with the *Ontario Curriculum* Life Systems expectations, and the instruction and assessment components of this classroom unit of study, to further promote the successful demonstration of these expectations. Sequenced cross-curricular learning tasks will enable students to demonstrate skills, attitudes and behaviours required by the expectations. Corresponding, subject-specific rubrics will enable teachers to effectively assess these expectations. These rich and powerful learning tasks are intended to develop a respect for living things and the environment, and a promotion of literacy.

Teacher Tips

Preview the bolded key concepts and vocabulary of each activity prior to completing each specific learning task. Discuss the different types of questions and what they mean. Discuss their interpretations of the questions and what the questions are asking them. The students should think of ways to answer the questions.

Instruct students to reread the questions and parts of the reading passages if necessary. Encourage your students to print legibly. Direct students to go on to the next question if they are unable to answer the question they are working on. Remind them that they can always go back to the question at the end of the task if there is time.

A *Skill Practise Exercises - Answers* page has been included for your convenience.

Life Systems

Interactions Within Ecosystems – Activity 1

Read the passage below.

An **ecosystem** is an environment wherein living things interact with each other and the physical world they are in. Some living things such as killer whales and polar bears live in the same places and eat the same things. Both of these predators feed on seals. The niche of the killer whale and polar bear overlaps. Sometimes this overlap can cause problems. An **ecological niche** is a way of life for an organism. This way of life includes the place this organism holds and the role it plays among all other living and non-living things that share its environment. 5

Different predators eat seal meat to build up a layer of fat. This fat keeps the animal warm when it is colder outside and provides energy for survival when food is not available. Predators must adapt to many changes in their environment. Changes in temperature, the amount of precipitation, strength of the wind, and amount of sunlight are all considered abiotic factors of an organism's environment. **Abiotic** factors are the non-living or physical factors of an environment. 10

If the quantity of fish gets smaller in one area, then the seal population in this same area will swim to a new area to find more food. As seals swim to new bays and shoreline areas to find fish, whales and bears must follow or they will starve. **Biotic** factors are the environmental factors caused by other living things within an organism's environment. 15

All organisms have relationships with all other living things and must deal with the abiotic factors of their environment. When one large creature dies, life begins for many other smaller organisms. As the carcass of an old dead bear rests in the forest, populations of bacteria, worms, fungi and millipedes work together to **decompose**, or break down, the bear carcass matter. These **decomposers** recycle matter. They break down organic matter into simpler chemicals, which in turn are used by other organisms for food. All life depends on this recycling of matter and so all ecosystems must contain decomposers. 20

Decomposed matter provides the nutrients needed for plants to grow. Healthy, grown plants use energy from the sun to create food. This process is called **photosynthesis**. Organisms that are able to make their own food are called **producers**. This food energy created by plants provides nourishment for many other living things within an environment. 25

Life Systems

Interactions Within Ecosystems – Activity 1 (Continued)

Many creatures are unable to make their own food. These living things must get their energy by eating plants or other animals that eat plants. These organisms that depend on plants for food are referred to as **consumers**. Consumers that eat plants only are known as herbivores. Consumers that feed on the animals that eat plants are called carnivores. Animals that eat plant and animal matter are referred to as omnivores. 30

Decomposers, producers, and consumers all interact with one another within an ecosystem. Worms, bacteria and millipedes feed on a large wolf carcass. The wolf matter is recycled into a usable energy source that sustains plant life. Plants grow and capture energy from the sun, thus providing food energy for creatures such as mice, deer and birds. A large deer provides food for a pack of wolves. And so the cycle works. These pathways of feeding or the transfer of energy within an ecosystem is the **food chain**. 35 40

Each organism within an ecosystem does not eat from only one food source. A wolf does not feed on deer only. A wolf will eat deer, rabbits, mice and other small animals in order to survive. Mice that are fed upon by wolves, will eat more than tree buds. Mice too will adapt to survive. They will find food in bark, seeds, and the stalks of various plants in their environment. It is possible to describe the relationships of many individual food chains within an ecosystem. The relationship of each organism with all the organisms it eats and all the organisms that eat it, is referred to as a **food web**. 45

Microbes, or microscopic living things consist of viruses, fungi, bacteria and protozoans. Few of these microbes are harmful to humans. Viruses known to be harmful to people are HIV and smallpox. Strep throat, malaria and ringworm are all examples of harmful bacteria, protozoans and fungus, respectively. Many other microbes are beneficial to people. Bacteria are used to make various dairy products such as cheese and yogurt. A fungus known as yeast is used to make bread. Other microbes still, are used to produce important drugs that we use to combat disease. All microbes play an important role in their ecosystems. For example, some microbes that cause food to spoil and make us sick are essential in nature. Without such microbes life forms such as leaves and fruit would not decompose after they fall to the ground. These leaves and fruit would continue to pile up month after month and year after year. Recycling would stop and plants would not get the essential nutrients they need to live. Entire food chains would be devastated. 50 55

Other microbes we consider dangerous serve a purpose within their ecosystems. Microbes that attack weaker animals in large herds eventually kill such animals or make them easier prey for predators. These microbes help to keep herd size manageable for existing food supplies, and maintain balance within ecosystems. 60

Life Systems

Interactions Within Ecosystems – Activity 2

1. Read the sentence below.

“An ecological niche is a way of life for an organism.” (line 5)

In this sentence the subject is

- a. is a way of life for an organism
 - b. An ecological niche
 - c. way of life
 - d. niche
2. Which of the following is an example of a biotic factor of organism’s environment
- a. strong north winds
 - b. sunshine increasing temperature
 - c. snow fall accumulation
 - d. reduced food supply
3. Read the sentence below.
- “These decomposers recycle matter.”
- (line 22) In this sentence, the word “decomposers” means
- a. that which reuses
 - b. that which breaks down
 - c. that which creates
 - d. that which builds

Life Systems

Interactions Within Ecosystems – Activity 2 (Continued)

4. The author likely wrote this passage to
 - a. describe the abiotic and biotic factors that exist within an organism’s environment
 - b. tell readers about producers, consumers and decomposers of an ecosystem
 - c. describe the relationships between living things and their environment
 - d. tell readers about the role of microbes within an ecosystem

5. The passage “Interactions Within Ecosystems” is an example of which form of writing?
 - a. biography
 - b. fiction
 - c. procedure
 - d. non-fiction

6. Read the sentence below.

“These living things must get their energy by eating plants or other animals that eat plants.”
(lines 30 to 31)

In this sentence, the word “eating” is

 - a. a noun
 - b. an adverb
 - c. a verb
 - d. an adjective

Life Systems

Interactions Within Ecosystems – Activity 2 (Continued)

7. Read the sentence below.

“Microbes that attack weaker animals in large herds eventually kill such animals or make them easier targets for predators.” (lines 60 to 62)

Two adjectives used in this sentence are

- a. attack, kill
 - b. microbes, animals
 - c. that, them
 - d. weaker, large
8. Which word has the same number of syllables as “manageable”?
- a. recycling
 - b. ecosystems
 - c. decompose
 - d. ecological

9. Read the sentence below.

“An ecosystem is an environment wherein living things interact with each other and the physical world they are in.”

(lines 1 to 2)

What is a synonym for the word “interact”?

- a. fight
- b. survive
- c. relate
- d. die

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Interactions Within Ecosystems – Activity 3

1. Read the sentences below.

“An **ecological niche** is a way of life for an organism. This way of life includes the place this organism holds and the role it plays among all other living and non-living things that share its environment.” (lines 5 to 7)

Some living things, such as the killer whale and polar bear, share the same ecological niche. Explain why this can be a problem. Use information from the passage and your own ideas to support your answer.

2. Define each of the following terms and give an example of each type of organism. Use information from the passage and your own ideas to support your answers.

Decomposer - _____

Example - _____

Producer - _____

Example - _____

Consumer - _____

Example - _____

Life Systems

Interactions Within Ecosystems – Activity 3 (Continued)

3. Micro-organisms are an essential part of every ecosystem. Many provide benefits and while others are considered harmful to humans.

Give an example of how such microbes can be harmful and helpful.

Use information from the passage to support your answers below.

Harmful microbe - _____

Helpful microbe - _____

4. Explain why even the harmful microbes are needed in an ecosystem.

Life Systems

Plant and Animal Cells – Activity 4

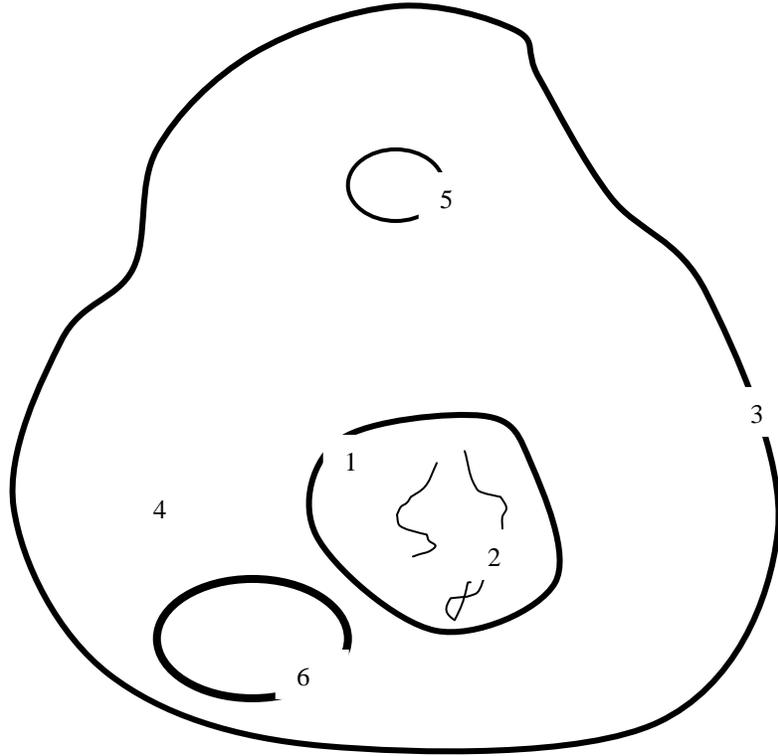
Read the passage below.

All living things are made of cells. If we understand the **characteristics** of living things we become familiar with the role of cells. All living things are composed of cells. The features of all cells, whether plant or animal are generally similar. All living things grow, repair themselves and are capable of **reproducing**. Cells reproduce by dividing in two. When cells grow and repair, new cells are needed. Living things need energy to survive. Plants get their energy from the sun. Animals get their energy from eating plants or other animals that eat plants. Living things produce **wastes**. Wastes are filtered away from living organisms. All living things respond to their environment. Organisms respond to other living things as well as the non-living features of their environment. Living things have a life span. Cells live for a period of time, then eventually die.

Plant and animal cells are very much alike as they share the same characteristics. All cells have many **structures** in common. Cells are the building blocks of life. All living things are made up of a multitude of cells that are **microscopic** in size. This is why we use a microscope to observe cells. Using a microscope we can observe the basic structures of plant and animal cells. All cells have a **nucleus**. This is the control centre of the cell. The nucleus directs all of the cell's activities. **Chromosomes** are strands of information found in the nucleus. These strands are blueprints or the genetic information that tells about all the pieces of that cell. The **cell membrane** is the outer layer of the cell. The membrane controls the movement of materials in and out of the cell. Nutrients that feed the cell would be allowed to pass into the cell, whereas wastes would be passed out of the cell. The **cytoplasm** is the watery fluid that fills most of the cell. This inner liquid transports materials from one cell structure to another. Cell wastes are also stored in the cytoplasm until they are disposed. **Vacuoles** are structures within the cell that store nutrients. All of the structures discussed above are found in all plant and animal cells. Plant cells also contain structures called **chloroplasts**. These structures contain a chemical referred to as **chlorophyll**. Chlorophyll enables plants to convert energy from the sun into food.

Life Systems

Plant and Animal Cells – Activity 4 (Continued)



Cell Structures

- 1 Nucleus
- 2 Chromosome
- 3 Cell Membrane
- 4 Cytoplasm
- 5 Vacuole
- 6 Chloroplast

Life Systems

Plant and Animal Cells – Activity 4 (Continued)

The cytoplasm is the working area of a cell. **Organelles** are special structures found in the cytoplasm of all cells. **Mitochondria** are the structures that provide the cell with energy. Energy comes from combining sugar and oxygen. This energy is used to support most other cell functions. The **endoplasmic reticulum** is a group of folded membranes that serve to carry materials through the cytoplasm. Attached to the endoplasmic reticulum are many protein particles referred to as **ribosomes**. Ribosomes are required for cell repair, growth, and reproduction. **Lysosomes** are the recyclers of cell organelles. They patrol and clean the cytoplasm. Lysosomes break down large materials into smaller particles or molecules. These smaller molecules are then reused to build other larger molecules. Lysosomes also function in destroying invading and dangerous organisms.

Cell membranes play an important role in the existence of the cell. Certain materials such as nutrients must be allowed to pass into the cell. Substances such as wastes need to be removed from the cell while other things are not permitted to enter or leave. This complex management of materials to and from the cell is handled by the cell membrane.

The permitted passing of materials through the cell membrane is referred to as **permeable**. If a substance is not allowed to pass through the cell membrane we say the cell is being **impermeable** to this substance. Since a cell allows some materials to enter a cell but not others, we refer the cell membrane as being **selectively permeable**.

If we pour red fruit punch into a glass of water we observe the water to turn a red colour. The fruit punch does not stay in one spot in the glass but eventually spreads throughout the entire glass of water. The fruit punch molecules are constantly moving and crashing with water molecules. When these molecules crash, they bounce off each other and gradually spread out. This movement of molecules from an area of high concentration to an area of low concentration is called **diffusion**. Diffusion is one of the ways that substances pass in and out of cell membranes. For example, oxygen within a cell is used up as energy is spent by the cell structures busy at work. Once this oxygen is used up it can be said that there is a low concentration of oxygen inside the cell. Higher concentrations of oxygen persist outside the cell. This imbalance in oxygen levels allows diffusion to occur and more oxygen is thus permitted to enter the cell. Diffusion is also used for the removal of waste products such as carbon dioxide. When these waste products become more highly concentrated within cells, they diffuse out of the cell.

Life Systems

Plant and Animal Cells – Activity 4 (Continued)

Water molecules are small and generally pass through cell membranes by diffusion. The diffusion of water through a selectively permeable cell membrane is referred to as **osmosis**. In normal conditions, water molecules are constantly passing in and out of cells. When there is an imbalance, more water will pass from the area of higher concentration to the area of lower concentration. This passage of water can be into or out of the cell. This movement of water continues until balance is again restored. This movement of water is essential to the survival of cells and ultimately all life. Important nutrients are dissolved in water. These **solutes** or dissolved substances are carried in water to nourish cell structures. Water acts as a **solvent** or liquid in which other substances are dissolved.

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Plant and Animal Cells – Activity 5

1. The **nucleus** of a cell is considered the
 - a. outer layer
 - b. blueprints
 - c. control centre
 - d. transport system

2. Which word from the passage means “special structures found in the cytoplasm of all cells”
 - a. chromosomes
 - b. mitochondria
 - c. ribosomes
 - d. organelles

3. Which word has a prefix added to it?
 - a. imbalance
 - b. movement
 - c. composed
 - d. within

4. The **cytoplasm** of a cell
 - a. are strands of information found in the nucleus
 - b. are structures within the cell that store nutrients
 - c. is the watery fluid that fills most of the cell
 - d. are structures that provide the cell with energy

Life Systems

Plant and Animal Cells – Activity 5 (Continued)

5. Read the sentence below.

“They patrol and clean the cytoplasm.” (lines 33 to 34)

The pronoun used in this sentence is

- a. and
- b. they
- c. clean
- d. the

6. The word **they** in the sentence above refers to

- a. ribosomes
- b. recyclers
- c. lysosomes
- d. cell organelles

7. From the context of the passage, the word **solvent** means

- a. a dissolved substance
- b. the diffusion of water
- c. the movement of molecules from an area of high concentration to an area of low concentration
- d. a liquid in which other substances are dissolved

Life Systems

Plant and Animal Cells – Activity 6

1. Describe three characteristics of living things.

Use information from the passage to support your answer.

1 _____

2 _____

3 _____

2. Cell membranes play an important role in the existence of the cell. Certain materials must be allowed to pass into and out of the cell. Describe how materials pass through the cell membrane by explaining the concept of diffusion or osmosis. Use information from the passage and your own ideas to support your answer.

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Plant and Animal Cells – Activity 7

Imagine you are a scientist on a special mission. You have been shrunken to microscopic size and placed in a miniature submarine. Your microscopic submarine will be passed through the cell membrane of a newly discovered dinosaur cell. Your task is to travel deep into the cell nucleus of this rare find and photograph the genetic information within the chromosomes. Your valuable research will help people to understand how dinosaurs lived.

Your assignment is to keep a journal of your voyage into the dinosaur cell. Describe, in paragraph form, all that you observe as you pass into the cell and travel deep to the cell nucleus.

Use your own ideas and ideas from the passage to help you plan your journal entries.

Think:

How did I pass into the cell?

What organelles did I observe on my journey?

What were these organelles doing?

How might the cell react to my submarine?

What did I photograph?

Plan:

Use this box to organize your ideas.

Journal Title: _____

Entry Date/Time:

Entry:

Entry Date/Time:

Entry:

Etc.

Life Systems

Plant and Animal Cells – Activity 7 (Continued)

Write:

Create a draft of your journal on the blank paper provided by your teacher.
Use your plan as a guide. Organize your ideas in paragraph form.
Remember to leave space between all lines of text, for editing.
Use pencil.

Edit and Revise:

Share your draft journal with a classmate. Read your work.
Ask your classmate the questions below and record suggestions in the spaces provided.

	Yes	No
1. Did I explain how I passed into the cell?	☐	☐
2. Did I describe different organelles I might see?	☐	☐
3. Did I describe how the cell might react to my submarine?	☐	☐
4. Did I use descriptive language?	☐	☐
5. Do my paragraphs have opening and closing sentences?	☐	☐
6. Do you have any other suggestions?	☐	☐

Revision Suggestions:

Life Systems

Plant and Animal Cells – Activity 7 (Continued)

Edit and Revise:

1. Read your “Revision Suggestions”.
2. Make changes on your draft copy.
3. Proofread your draft again. Check carefully for each of the following:
 - Do my words make sense?
 - Did I need to use punctuation and did I use the right punctuation?
 - . period
 - ? question mark
 - ! exclamation mark
 - “” quotation marks
 - Did I use capitals correctly? (names, sentence beginnings)
 - Did I spell the words correctly?
 - Do my printed ideas have missing words or extra words?
 - Can I make my work better by changing any words or ideas?
 - Is my work neat?

A Final Copy:

You are now ready to begin the final copy of your journal. Use the paper provided by your teacher.

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Skill Practice Exercises – Answers

Interactions Within Ecosystems (Activity 2) – Pages 5 to 7

1. (B) *An ecological niche*
2. (D) *reduced food supply*
3. (B) *that which breaks down*
4. (C) *describe the relationships between living things and their environment*
5. (D) *non-fiction*
6. (C) *a verb*
7. (D) *weaker, large*
8. (B) *ecosystems*
9. (C) *relate*

Interactions Within Ecosystems (Activity 3) – Pages 8 to 9

1. *Answers may vary. When two different predators share the same ecological niche there may be problems. Both animals compete for the same food. The stronger predator or more adaptable predator may get food and the other may not survive. Both predators may eliminate the food supply and both may starve or need to move to a new environment. The food chain may be thrown off balance.*
2. *Answers may vary.*
Decomposer – recycles organic matter e.g. bacteria, worms, fungi and millipedes
Producer – make their own food / convert energy of sun into food e.g. various plants
Consumer – living things that get their energy by eating plants or other animals that eat plants e.g. polar bear, wolf, killer whale
3. *Harmful microbes - Viruses known to be harmful to people are HIV and smallpox. Strep throat, malaria and ringworm are all examples of harmful bacteria, protozoans and fungus, respectively.*
Helpful microbes - Bacteria are used to make various dairy products such as cheese and yogurt. A fungus known as yeast is used to make bread. Other microbes still, are used to produce important drugs that we use to combat disease. All microbes play an important role in their ecosystems.
4. *Microbes maintain balance in ecosystems. Some cause fruit to spoil and thus break down this matter to feed plant life. Some microbes attack weak or old animals and eventually kill them. This helps to control animal populations.*

Plant and Animal Cells (Activity 5) – Pages 14 to 15

1. (C) *control centre*
2. (D) *organelles*
3. (A) *imbalance*
4. (C) *is the watery fluid that fills most of the cell*
5. (B) *they*
6. (C) *lysosomes*
7. (D) *a liquid in which other substances are dissolved*

Plant and Animal Cells (Activity 6) – Page 16

1. *Characteristics of living things – living things are made of cells, living things grow, repair self, and reproduce, living things need energy, living things produce wastes, they respond to their environment, living things have a life span. (Answers may vary)*
2. *Diffusion - the movement of molecules from an area of high concentration to an area of low concentration. Students describe how oxygen diffuses into a cell or how wastes diffuse out of a cell.*
Osmosis - the diffusion of water through a selectively permeable cell membrane. Students explain how water is used as a medium for bringing in food / removing wastes. (Answers may vary)

Plant and Animal Cells (Activity 7) – Pages 17 to 19

Accurately use journal plan to effectively organize the ideas from the reading and own experiences as appropriate for the grade level. Convey ideas from the plan to produce a piece of writing using a specific form (summaries of information, paragraph writing). Revise and edit their work in collaboration with others, seeking and evaluating feedback, and focusing on content, organization, and appropriateness of vocabulary for audience as appropriate for grade level. Use correctly the conventions specified for this grade level. Communicate ideas and information for a variety of purposes (to present, inform, explain) and to specific audiences.

Life Systems

Grade 7 - Skill Practice Exercises Assessment Rubric

Expectations for this Assessment are from *The Ontario Curriculum: Grades 1 to 8 - Language*

Skill Practice Exercise	Level 1 Students will:	Level 2	Level 3	Level 4
Interactions Within Ecosystems (Activity 2)	Identify and name major parts of the sentence with limited accuracy.	Identify and name major parts of the sentence with some accuracy.	Identify and name major parts of the sentence with considerable accuracy.	Identify and name major parts of the sentence with thorough accuracy.
Interactions Within Ecosystems (Activity 2)	Select appropriate reading strategies with limited accuracy.	Select appropriate reading strategies with some accuracy.	Select appropriate reading strategies with considerable accuracy.	Select appropriate reading strategies with thorough accuracy.
Interactions Within Ecosystems (Activity 3)	Make judgements and draw conclusions about ideas in written materials on the basis of evidence, with limited success.	Make judgements and draw conclusions about ideas in written materials on the basis of evidence, with some success.	Make judgements and draw conclusions about ideas in written materials on the basis of evidence, with considerable success.	Make judgements and draw conclusions about ideas in written materials on the basis of evidence, with thorough success.
Plant and Animal Cells (Activity 5)	Limited use of special terminology in a particular area of study, as necessary.	Some use of special terminology in a particular area of study, as necessary.	Considerable use of special terminology in a particular area of study, as necessary.	Thorough use of special terminology in a particular area of study, as necessary.
Plant and Animal Cells (Activity 6)	Identify the main ideas in information materials, and explain how the details support the main ideas with limited accuracy.	Identify the main ideas in information materials, and explain how the details support the main ideas with some accuracy.	Identify the main ideas in information materials, and explain how the details support the main ideas with considerable accuracy.	Identify the main ideas in information materials, and explain how the details support the main ideas with thorough accuracy.
Classifying Living Things (Activity 7)	Proofread and correct their final drafts, focusing on grammar, punctuation, spelling, and conventions of style with limited accuracy.	Proofread and correct their final drafts, focusing on grammar, punctuation, spelling, and conventions of style with some accuracy.	Proofread and correct their final drafts, focusing on grammar, punctuation, spelling, and conventions of style with considerable accuracy.	Proofread and correct their final drafts, focusing on grammar, punctuation, spelling, and conventions of style with thorough accuracy.

Life Systems

Grade 8 - Skill Practice Exercises Assessment Rubric

Expectations for this Assessment are from *The Ontario Curriculum: Grades 1 to 8 - Language*

Skill Practice Exercise	Level 1 Students will:	Level 2	Level 3	Level 4
Interactions Within Ecosystems (Activity 2)	Select and use their words with limited sophistication and effectiveness.	Select and use their words with some sophistication and effectiveness.	Select and use their words with considerable sophistication and effectiveness.	Select and use their words with thorough sophistication and effectiveness.
Interactions Within Ecosystems (Activity 2)	Select appropriate reading strategies with limited accuracy.	Select appropriate reading strategies with some accuracy.	Select appropriate reading strategies with considerable accuracy.	Select appropriate reading strategies with thorough accuracy.
Interactions Within Ecosystems (Activity 3)	Make judgements and draw conclusions about ideas in written materials on the basis of evidence, with limited success.	Make judgements and draw conclusions about ideas in written materials on the basis of evidence, with some success.	Make judgements and draw conclusions about ideas in written materials on the basis of evidence, with considerable success.	Make judgements and draw conclusions about ideas in written materials on the basis of evidence, with thorough success.
Plant and Animal Cells (Activity 5)	Limited use of special terminology in a particular area of study, as necessary.	Some use of special terminology in a particular area of study, as necessary.	Considerable use of special terminology in a particular area of study, as necessary.	Thorough use of special terminology in a particular area of study, as necessary.
Plant and Animal Cells (Activity 6)	Identify the main ideas in information materials, explain how the details support the main ideas, and question and evaluate the ideas in the material with limited accuracy.	Identify the main ideas in information materials, explain how the details support the main ideas, and question and evaluate the ideas in the material with some accuracy.	Identify the main ideas in information materials, explain how the details support the main ideas, and question and evaluate the ideas in the material with considerable accuracy.	Identify the main ideas in information materials, explain how the details support the main ideas, and question and evaluate the ideas in the material with thorough accuracy.
Classifying Living Things (Activity 7)	Proofread and correct their final drafts, focusing on grammar, punctuation, spelling, and conventions of style with limited accuracy.	Proofread and correct their final drafts, focusing on grammar, punctuation, spelling, and conventions of style with some accuracy.	Proofread and correct their final drafts, focusing on grammar, punctuation, spelling, and conventions of style with considerable accuracy.	Proofread and correct their final drafts, focusing on grammar, punctuation, spelling, and conventions of style with thorough accuracy.



Life Systems

Teacher Feedback Form

Marineland is committed to providing you with fun, education and value. Please take a few minutes and complete this feedback form. Your recommendations will be reviewed closely as we continue to strive towards supporting your educational needs, by providing you with unsurpassed program value.

Describe the element/s of our attractions you found most beneficial for your students:

Describe the element/s of our attractions you would like to see improved. Please include your suggestions for improving these elements:

Describe the element/s of our *Ontario Curriculum Based Classroom Unit of Study* you found most beneficial for your students:

Describe the element/s of our *Ontario Curriculum Based Classroom Unit of Study* you would like to see improved. Please include your suggestions for improving these elements:

School:

Thank you for suggestions. We look forward to responding to your feedback.