



ONTARIO COUNCIL
FOR TECHNOLOGY
EDUCATION

Grade 4 Habitats and Communities

ONLINE RESOURCE

June 2020

Habitats and Communities

Grade 4

Activity 1: Understanding Life Systems - Habitats and Communities

Development of Curiosity and Wonder - Develop an awareness of the impacts of human behaviour on the various habitats of plants and animals.

Scientific and Technological Concepts:

In this strand of Understanding Life Systems, students will build a connection with nature and learn of the various habitats of living things ranging from humans, plants, and the many types of animals. In the mindfulness activities, students will reflect on and learn of the benefits of natural habitats and natural resources. Students will experience a connection with Mother Earth and experience the positive effect it has on their mental health and learn of the benefits it offers to all living things. Students will develop curiosity and wonder when learning about the various ways human actions and natural factors negatively affect the habitats and communities of living things.

How can students learn to make positive changes to our environment and protect the ecosystem? First of all, humans and living things can live together by sharing the land and protecting some conservation areas as in the images to follow. Students will start by appreciating natural spaces and creating more spaces to create insects which largely impact our ecosystem. Students will build their science and technology skills to the environment by investigating that plants and animals are interdependent and a source of survival for the food chain. They will see evidence of the food chain with animals that live in their own neighbourhood. Students will learn to protect our living species and learn to share our land by building some outdoor natural habitats for insects using outdoor natural materials.

Learning Goal:

Students will

- Explore living things and natural spaces in your own neighbourhood.
- Analyse how the changes to habitat affect living things and investigate the interconnectedness of living things e.g., the food chain.
- Create a habitat out of found materials for a given insect of their choice

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Expectations (Overall & specific):

Overall:

1. Analyze the effects of human activities on habitats and communities;
2. Investigate the interdependence of plants and animals within specific habitats and communities

Specific:

- 1.1 Analyse the positive and negative impacts of human interaction with natural habitats an communities and evaluate ways of minimizing the negative impacts
- 2.3 Use scientific inquiry/research skills to investigate ways in which plants and animals in a community depend on features of their habitat to meet important needs, food and protection
- 2.5 Use appropriate Science and Technology vocabulary, including habitat, population, community, adaptation, and food chain, in oral and written communication
- 3.1 Demonstrate an understanding of habitats as areas that provide plants and animals with the necessities of life
- 3.4 demonstrate an understanding of a community as a group of interacting species sharing a common habitat
- 3.10 describe ways in which humans are dependant on natural habitats and communities

Equipment & Materials	Personal Protective Equipment (PPE)
<ul style="list-style-type: none"> ● Small seat cushion ● A device to take pictures (a camera or phone) or a notepad to record observations of living things ● Natural materials such as sand, leaves, grass 	<ul style="list-style-type: none"> ● n/a ● Gloves when touching or handling plants, trees or insects

Safety Considerations:

- When finding a sit spot outside, students should find an area covered with grass and free of debris.
- When creating a natural habitat for an insect, students need to wear gloves.

What does the teacher do?	What do the students do based on the Technological Problem-Solving Skills Continuum?
<ul style="list-style-type: none"> ● Find a spot to sit outside. A spot could be on the grass, or on a balcony. As you look 	<p><i>Initiating and Planning</i> Teacher and students have a conversation on</p>

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around, reflect on the question, “Who was on this land first?” (answer: First Nations, Métis and Inuit People). Continue to say that we thank them for sharing this land with us.

- What does the land offer us? (e.g., nature, habitat for animals, a place for animals and food to grow etc.) Mother Earth is Nature. What are the beautiful gifts Mother Earth offers us? (e.g., trees, plants, grass, flowers, lakes, rivers, streams, oceans etc.) The gifts of Mother Earth help living things survive.
 - This conversation can be through synchronous learning so the teacher can ask for student input. See Appendix A as an example of a sit spot.
- Appendix B - Discussion and brainstorm in identifying living things. Collaboratively or individually fill out Appendix B. Examples should include humans, types of plants (e.g., flowers, trees etc.) and the various types of animals (e.g., dogs, fish, ladybugs, flies, whales etc.)
- As a follow up, the teacher can show the images on Appendix C as some examples of living things. The white butterfly in the image is referred to as the cabbage butterfly. Mushrooms are a type of fungi and usually appear in gardens and lawns after rain and cooler summer weather. When we see mushrooms it means that lawns and gardens are healthy. Fungi is good food for our plants and trees. There is a female wild turkey and the infamous Canadian goose. Other pictures are of a yellow lilly, a snail, and

what is classified as a living thing? What do living things have in common? (breathe, eat, grow etc.)

Continue the brainstorm or discussion and create a list or fill the page with various examples for each type of living thing (Appendix A).

Discuss the importance of having protected spaces like conservation areas (see images of conservation areas).

Step outside of your home and observe living things (plants, animals) in the area. Students take pictures, or write, or draw what they see so that they can add it to Appendix B. Students can look in garden spaces, on trees, on sidewalks, under rocks, in the sky, if close to a stream observe from a distance the stream. Reflect and explore what living things live in these natural spaces.

Students will identify examples of the survival needs of living things (e.g., Habitat-nest, house, apartment, farm, lake),

Students will give examples for each essential need (habitat, food, water, air).

Students can build-on examples collaboratively on a shared document or individual copy of the handout Appendix D on identifying the needs to survive.

Performing and Recording

Students will find insects in spaces like under rocks or in plants. Students will act like

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an unidentified bird on a tree.

- If teachers are at school with students, this would be a great opportunity to walk outside on school grounds and find evidence of living things on the grass, on a stick, on a tree, etc.
- Discuss the importance of having protected spaces like conservation areas (see images of conservation areas on Appendix D)
- See Appendix E - Explain to students that all living things need four essentials to survive (habitat, food, water, air) but these may look differently among the various examples of living things.
- In Appendix E students will draw various examples for each living need. (Habitat: nest, house, apartment, farm, lake)
- In Appendix F, students will collect some natural materials to create small natural habitats for insects in their environment (e.g., soil, grass, small flowers, leaves would be an appropriate habitat for ants, roly pollies, or spiders). Students will create a small natural habitat for an insect of their choice. If they do decide to place the insect in the natural habitat, they must wear gloves as some insects bite as a means to defend themselves. Students may choose to also create natural habitats and wait for insects to enter them on their own. This would be an appropriate opportunity to record and share some observations on if and when insects enter their natural habitat. .
- Appendix G-Ticket out the door: If you can be any living thing which would you choose and what habitat would you

environmentalists as they create a small habitat with natural materials for an insect of their choice. This is an example of a positive affect humans can have on the environment and for living things. preserving insects is important for the ecosystem. If students choose to put insects in their natural habitats they must wear gloves as some insects may bite to defend themselves.

Communicating:

Classify the needs of living things under the correct heading e.g., habitat, food, etc.

During Ticket Out the Door, students reflect on their preferred living thing and its habitat. They will explain why they would prefer to be that living species and why they prefer to survive in that particular habitat for survival.

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prefer? Students may type their answers in the chat bar, if having a synchronous learning session, record their reflections on a document, or draw their answers as an accommodation.

Sample accommodations:

- When answering questions students can use speech to text to type answers onto a google doc or voice record answers on a device and send to the teacher or draw their examples on the appendices.

Sample Troubleshooting:

- If students cannot write on template (Appendix B or Appendix D) they can create a slideshow with pictures and names of their examples of living things. For Appendix B, students may draw or create an online document (e.g., Google slides) on the needs of living things.

Opportunities for assessment (Links to assessment pieces, organizers):

Assessment as learning:

- If in person, anecdotes of conversations and observations of sit spots and exploring the outdoors with students while looking for examples of living things
- Appendix A-identifying living things
- Appendix E-identifying the needs of living things
- Appendix F-Creating natural habitats outside for insects

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Success Criteria:

Criteria	Met	Not There Yet
1- I demonstrate appreciation and a connection with the land.		
2- I can identify various examples of living things from my neighbourhood.		
3- I can explain the needs of living things.		
4- I can explain some examples of the cycle of life which relate to the needs of living things.		
5- I can successfully fulfill the role as a student environmentalist by protecting nature, treating insects carefully, and creating habitats for insects to protect our ecosystem.		

Cross Curricular Opportunities:

Health - Mental Health awareness and strategies to calm the mind, emotions and body

Personal Skills (PS):

1.1 use self-awareness and self-monitoring skills to help them understand their strengths and needs, take responsibility for their actions, recognize sources of stress, and monitor their own progress, as they participate in physical activities, develop movement competence, and acquire knowledge and skills related to healthy living

Social Studies:

B2. use the social studies inquiry process to investigate some issues and challenges associated with balancing human needs/wants and activities with environmental stewardship in one or more of the political and /or physical regions of Canada

Language:

Writing- Write a poem of what you see, hear and smell while you are outside having a sit spot in nature

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Purpose and Audience 1.1 identify the topic, purpose, and audience for a variety of writing forms (e.g., a cinquain or shape poem)

Art:
D1. Creating and Presenting: apply the creative process to produce a variety of two- and three-dimensional art works, using elements, principles, and techniques of visual arts to communicate feelings, ideas, and understandings;
For example collecting natural materials to create ephemeral art creations. Students may take pictures of their art creations. Teachers can create google slides with a collection of everyone's art creations made of natural materials.

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Appendix A - Example of a sit spot



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Appendix B - What are living things? What examples of living things did you find outside your school or neighbourhood? There are four types. Can you classify your examples into four groups?



<p>Group 1</p>	<p>Group 2</p>
<p>Group 3</p>	<p>Group 4</p>

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Appendix C (Follow up to the living things students find in their neighbourhood.)

Moth and butterfly cocoons

Can you spot the cabbage butterfly in this picture?



Canadian Goose

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Appendix D

Conservation Areas (Sharing the Land)



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Appendix E

Living things have four needs to survive: habitat, food, water and air. Draw or write the various examples of the 4 needs of living things.

HABITAT	FOOD
AIR	WATER

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Appendix F

Making Simple Outdoor Habitats

In your search for living insects (in Appendix B) reflect on insects you may have found in your neighbourhood. Draw and create, with natural materials outside, a small habitat for insects. For example, under a rock you will most likely find “rolly pollies” rounded 14-legged insects. What natural materials can you put together (outside) to create a natural habitat for this type of insect or other insects such as ants, spiders?

List the natural materials here:

Take a picture of your insect in its new habitat and share it with the class.

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Appendix G - Ticket Out the Door

**What is your preferred living species? Explain why.
What is your preferred habitat? Explain why.**



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Activity 2: Understanding Life Systems - Habitats and Communities

Structured to develop technological problem solving skills - Students will investigate what was here before housing and commercial building. They will research ways and reasons why the land has changed. Students will assess the negative impacts of humans and construction on animal habitats. Students will learn and explore how the sun is the main source of energy needed to make plants grow and in turn, animals and humans eat the plants.

Scientific and Technological Concepts: Students will learn and understand the changes of the land and the impact on living organisms (e.g., deforestations for land development). Also students will learn to consider other perspectives to understand human actions for land development and depletion of pre-existing animal habitats such as forests. Students will explore ways to accommodate humans and animals with the use of the land.

Learning Goal:

Students will

- Reflect on the natural environment that surrounds them
- Investigate factors and reasons that have altered habitats and communities
- Learn about various examples of the life cycle
- Build their own food chain out of found materials

Expectations (Overall & specific):

Overall:

1. Analyze the effects of human activities on habitats and communities;
2. Investigate the interdependence of plants and animals within specific habitats and communities
3. demonstrate an understanding of habitats and communities and the relationships among the plants and animals that live in them.

Specific:

1.1 analyse the positive and negative impacts of human interactions with natural habitats and communities taking different perspectives into account and evaluate ways of minimizing the negative impacts

2.2 build food chains consisting of different plants and animals, including humans

2.5 use appropriate science and technology vocabulary, including habitat, population, community, adaptation, and food chain, in oral and written communication

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- 3.1 demonstrate an understanding of habitats as areas that provide plants and animals with the necessities of life
- 3.2 demonstrate an understanding of food chains as systems in which energy from the Sun is transferred to producers (plants) and then to consumers (animals)
- 3.3 identify factors example availability of water or food, amount of light, type of weather that affect the ability of plants and animals to survive in a specific habitat
- 3.5 classify organisms, including humans, according to their role in a food chain (e.g., producer, consumer, decomposer)
- 3.6 identify animals that are carnivores, herbivores, or omnivores
- 3.10 describe ways in which humans are dependent on natural habitats and communities (e.g., for water, medicine, flood control in wetlands, leisure activities)

Equipment & Materials	Personal Protective Equipment (PPE)
<ul style="list-style-type: none"> • Outdoor materials such as sticks, rocks 	<ul style="list-style-type: none"> • Gloves when touching outdoor materials

Safety Considerations:

- Students are reminded to wash their hands thoroughly after touching or handling outdoor materials

What does the teacher do?	What do the students do based on the Technological Problem-Solving Skills Continuum?
<ul style="list-style-type: none"> • Start the lesson by pointing out 3 factors you appreciate about the land that is personal to you and show that you are thankful to First Nations, Métis, Inuit people for sharing this land with us. (Possible answers for teaching us to respect the land, for helping us take care of the animals etc.) See Appendix G- to personalize what we appreciate about our land • Teacher reads Land Acknowledgement (See your board website for treaty map) • Appendix H: Reflection question 1: What 	<p>Initiating and Planning Students will refer to Appendices I and J as reference sheets to help students understand the three types of animals (herbivores, omnivores, carnivores)</p> <p>In Appendix K, Students will create their own examples of a food chain. Part A an example with animals from their neighbourhood.</p>

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was on this land before these houses, buildings and stores in our area? (answer: trees, forests, many plants, bears, deer, fox etc)

- Reflection question 2: What happened to the animals that used to live here?
- Reflection question 3: How has the land changed? These questions are answered in the format of Knowledge Community Building. Each student adds their reflection building the answer for each question.

- Teachers refer to reference sheet on Sun, producer or consumer (Appendix I)
- Teachers refer to Appendix J to explain to students the 3 types of animals: herbivore, omnivore, carnivore
- Appendix K- is the template for students to create and build their own food chain. They will demonstrate two examples. Part A is an example of a food chain with animals from their neighbourhood (e.g., ants, spiders, birds etc) and Part B involves building a food chain using materials such as sticks or rocks to build the frame into the shape of a pyramid, using string to divide the levels of the food chain pyramid. Then students insert pictures of animals that they may get from magazines or print from a computer or draw, and insert them in the correct level of the food chain pyramid.

Sample accommodations:

- speech to text on google documents
- voice record answers/ reflections

Performing and Recording

Part B, students are asked to build the frame of a food chain and insert pictures of animals to place in the correct place in their food chain. Students may draw pictures, cut them out from a magazine or print them from a computer and place them in their constructed food chain. Students may use rocks or sticks to build the frame of their food chain in the shape of a pyramid. They can use string to divide the levels of the food chain pyramid.

Communicating

Students express their answers using appropriate science terms

Students will take pictures of their food chain to share with their class.

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- When building the food chain students may use any materials to create the form of their food chain pyramid (e.g., rocks, sticks, lego, straws, popsicle sticks etc.)

Sample Troubleshooting:

- If students cannot write on hand outs they can record answer on paper or on a google docs to share with their teacher

Opportunities for assessment (Links to assessment pieces, organizers):

Assessment for and as Learning:

Appendices G - reflection questions. Ability to articulate the negative impacts on the land and the reasons for which they happen.

Assessment of Learning:

Appendix K - Creating and building their own Food Chain with rubric (2 examples)

Success Criteria:

Criteria:	Met	Not There Yet
1- I use appropriate science and technology vocabulary in my responses.		
2- I classify organisms in the correct category of producer and consumer starting with the sun as the main source of energy.		
3- I can identify animals as herbivores, carnivores and omnivores.		
4- I can describe and build examples of the food chain with varied species.		

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Cross Curricular Opportunities:

Language:

Reading Suggestions:

I am Raven by David Bouchard

Sometimes I Feel Like a Fox by Danielle Daniel

Reading: Reading non-fiction texts on animals to build on background knowledge, extending understanding, text features, reading fluency

Social Studies:

-Canada and the World Connections: Canada's Provinces, Territories and Regions

Art:

Building a 3-dimensional spirit animal that has similar characteristics as you.

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Appendix G

Our Land Acknowledgement - We appreciate...

(Each student adds their answer to build our Land Acknowledgement personal to our class.)

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Appendix I: Reference Sheet on Sun, Producer, Consumer



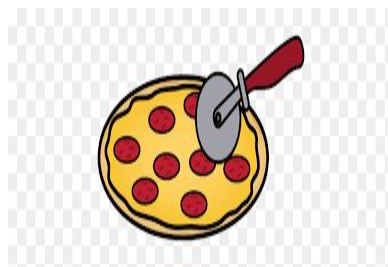
The sun  gives **energy** to the plants and animals.

Plants are the **producers**.

Animals eat the plants. Some animals eat other animals.

Humans eat plants and animals.

Animals and humans are **consumers**.



Humans and animals are both **consumers**.

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Appendix J:

Three types of animals



HERBIVORES

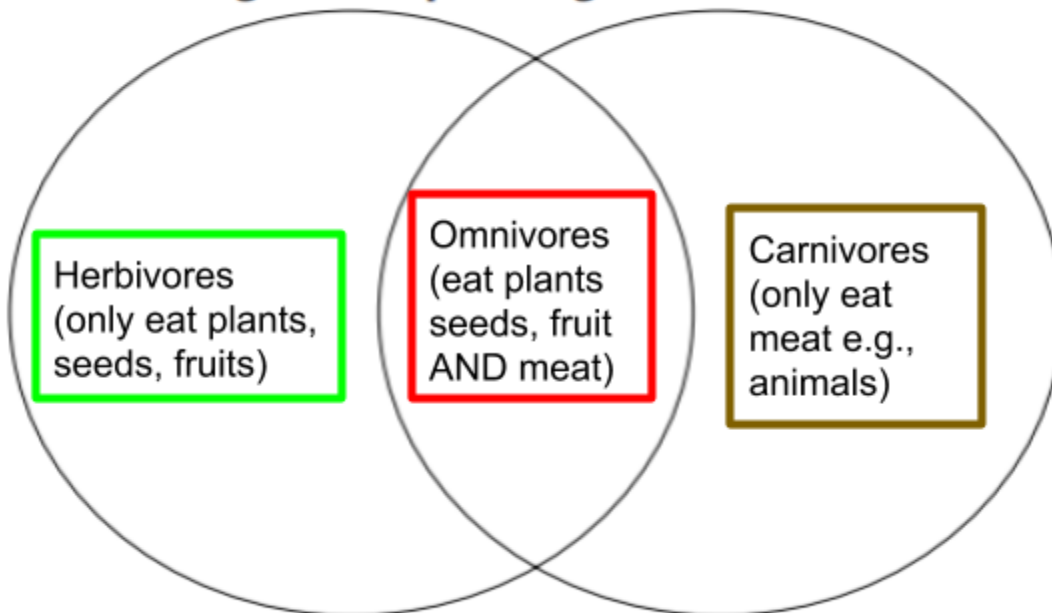
CARNIVORES

OMNIVORES

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Venn Diagram Graphic Organizer



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Appendix K

Examples of Food Chain

Part A: Here is an example of a food chain. (e.g., sun gives energy for grass to grow → rabbit eats grass → fox eats rabbit or humans eat rabbit). Create your own food chain example, with animals from your neighbourhood. For example, where would you place a spider or bird in the food chain? What other animals can you find to create a food chain of animals that live in your neighbourhood? Don't forget about humans or insects. Use your knowledge of carnivores, herbivores and omnivores to help you.

Part B: Build your own food chain in the shape of a pyramid using sticks or rocks for the outline and string to separate the levels of the food chain. Once you have created your pyramid, cut out pictures of animals and place them in the appropriate place in the pyramid.

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Rubric - Food Chain

Categories	Level 1	Level 2	Level 3	Level 4
Knowledge and Understanding – Subject-specific content acquired in each grade (knowledge), and the comprehension of its meaning and significance (understanding)				
Understanding of content (e.g., concepts, ideas, theories)	demonstrates limited understanding of content	demonstrates some understanding of content	demonstrates considerable understanding of content	demonstrates thorough understanding of content
Thinking and Investigation – The use of critical and creative thinking skills and inquiry and problem solving skills and/or processes				
Use of critical/creative thinking processes, skills, and strategies (e.g., interpreting the food chain, evaluating the process of the food chain, forming and justifying conclusions of the food chain)	uses critical/creative thinking processes, skills, and strategies with limited effectiveness	uses critical/creative thinking processes, skills, and strategies with some effectiveness	uses critical/creative thinking processes, skills, and strategies with considerable effectiveness	uses critical/creative thinking processes, skills, and strategies with a high degree of effectiveness
Communication – The conveying of meaning through various forms				
Expression and organization of ideas and information (e.g., clear expression/ explanation of the food chain, logical organization) in visual and or written forms	expresses and organizes ideas of the food chain with limited effectiveness	expresses and organizes ideas of the food chain with some effectiveness	expresses and organizes ideas of the food chain with considerable effectiveness	expresses and organizes ideas of the food chain with a high degree of effectiveness

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Activity 3: Understanding Life Systems - Habitats and Communities

Guided development of technological problem solving skills- Students will develop an understanding and personal appreciation of living organisms by creating their own diorama or a terrarium for a living species of their choice. Students will build on their learning by reflecting on the needs for survival for living species. Students will transfer the concepts of survival needs to real life. In creating a terrarium students will be in contact with earth materials such as soil, moss, flowers, twigs etc. They will use creativity in making a terrarium with necessary components and reflect on what species could survive in this environment. If students decide to add real insects to their terrarium they need to observe their species to ensure it is in a healthy habitat to grow and thrive.

Scientific and Technological Concepts:

As a culminating task in this unit on Habitats and Communities, students will create a terrarium or diorama for a species of their choice. They will apply their learning of habitats for a specific living species. They will investigate and establish the thriving environment needed for their living organism. Students will follow safety procedures for working with soils and natural materials by wearing gloves while setting up their terrarium or diorama. Once they've created their terrarium they can decide if they want to add small living species to it e.g., grasshoppers, crickets.

Learning Goal:

Students will

- 1-to apply their learning on essential needs to survive (habitat, food, water, air)
- 2-design and create a terrarium or diorama for their living species (adding real species is optional)
- 3-use critical thinking skills and creativity to design a space that provides the essential needs for their species to survive and that is specific to their species (adding live species/insects is optional)

Expectations (Overall & Specific):

Overall:

1. analyse the effects of human activities on habitats and communities;
2. investigate the interdependence of plants and animals within specific habitats and communities;
3. demonstrate an understanding of habitats and communities and the relationships among the plants and animals that live in them

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Specific:

- 2.4 use scientific inquiry/research skills to create a living habitat containing a community, and describe and record changes in the community over time
- 2.5 use appropriate science and technology vocabulary, including habitat, population, community, adaptation, and food chain, in oral and written communication
- 3.2 demonstrate an understanding of food chains as systems in which energy from the sun is transferred to producers (plants) and then to consumers (animals)
- 3.3 identify factors (e.g., availability of water or food, amount of light, type of weather) that affect the ability of plants and animals to survive in a specific habitat
- 3.4 demonstrate an understanding of a community as a group of interacting species sharing a common habitat (e.g., the life in a meadow or in a patch of forest)
- 3.5 classify organisms, including humans, according to their role in a food chain (e.g., producer, consumer, decomposer)
- 3.6 identify animals that are carnivores, herbivores, or omnivores

Equipment & Materials	Personal Protective Equipment (PPE)
<ul style="list-style-type: none"> ● Recyclable materials (juice cartons, yogurt containers etc.) ● Shoe box for diorama ● Plastic container, plastic tupperware or 2L pop bottle (for terrarium) ● Pebbles, rocks ● Soil ● Moss ● Charcoal (optional) if adding real insects to the terrarium ● Flowers and small plants, leaves ● Small twigs ● Construction paper if student does not have access to natural materials 	<ul style="list-style-type: none"> ● Gloves ● Access to soap and water for frequent handwashing (before and after touching living species and the materials in the terrarium/ diorama)

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Safety Considerations:

- Tie hair back
- Remove loose jewellery or long earrings
- Wear gloves (optional)
- Wash hands before and after touching earth materials or real species

What does the teacher do?	What do the students do based on the Technological Problem-Solving Skills Continuum?
<ul style="list-style-type: none"> ● Teacher explains to students that we need to take responsibility to take care of the land that has been shared with us. <ul style="list-style-type: none"> ○ We understand each organism on Mother Earth has an important role to play. In creating a terrarium or diorama we need to consider taking optimal care of the living species in our environment as we have been taught by the First Nations, Métis and Inuit people. ● Teachers can view this video on how to create a terrarium to better guide their students. https://safeYouTube.net/w/IO2P ● In creating a terrarium students can decide if they would like to add a small insect (e.g., snails, ants, spiders, crickets, beetles etc.). ● In Appendix L, the Teacher will give students instructions to create their own terrarium by providing them with a couple of examples of what materials to include in a terrarium or diorama (list of materials included for teacher use) ● Teacher will explain to students to sketch their terrarium or diorama before creating it (Appendix M). ● Appendix N-Is a description of the 	<p>Initiating and Planning: Students will reflect on what they would like to create a terrarium (with or without insects) or a diorama (based on any animal of their choice)</p> <p>Students will brainstorm a list of materials they think they will need to create a terrarium or diorama</p> <p>Students will explore their immediate outdoors for materials they will need for their terrarium or students will create a list of materials they will need for their diorama</p> <p>Appendix M-students will sketch and label their terrarium or their diorama</p> <p>Performing and Recording: Students will create their terrarium</p> <p>Students will analyse the elements in their terrarium</p> <p>Students will think critically if their terrarium offers a natural environment to a living species</p> <p>Students creating a diorama will reflect on the habitat and other species needed for their animal</p>

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- terrarium or diorama and information or concepts to include in their presentation.
- Appendix O-Presentation Outline. This will guide students with the necessary components to include in their presentation of their dioramas or terrariums.
 - Appendix P-Rubric for the terrarium or diorama assignment

Sample accommodations:

- Students may choose to add insects or not
- In creating a diorama students are creating an environment for an animal of their choice
- Students will generate their own list of materials, but teacher may support students further by providing them with a list of materials to collect to create their terrarium or diorama
- If students cannot collect natural material they can draw them or make them with construction paper, however natural materials are preferred.

Sample Troubleshooting:

- Students can use any materials in their natural environment or they can create the environment out of paper and colouring or drawing the necessary elements.

to survive (hypothetical not real animals). They will add creativity by designing a space that provides nature, water and animals of a food chain for their animal to survive.

Students will make modifications to ensure their terrarium or their diorama is a reflection of a natural habitat

Analysing and interpreting:

Students can reflect on their terrarium or diorama to ensure that it is an environment that is rich for a species to survive.

They can observe changes (if there is a real species) of growth and movement.

Communicating:

Students can present on synchronous learning (or record themselves) explaining the elements in their terrarium and explaining how an insect would survive, they would also explain the food chain of that insect.

Students can present on synchronous learning (or record themselves) explaining the elements in their diorama and explaining the needs for living things present in their diorama as well as explain the food chain for their species.

Students can take a picture and post on google slides. Pictures should include a description of their terrarium / diorama. Students may add a voice recording to their google slides describing the natural environment created.

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Opportunities for assessment (Links to assessment pieces, organizers):

Assessment for and as learning:

-Sketch of their terrarium or diorama (Appendix M)

Assessment of Learning:

-Appendix N (description of assignment)

-Appendix P (rubric) for the assignment on creating and building your own terrarium (with or without insects) or diorama

Cross Curricular Opportunities:

Language:

Oral Communication - Presentation skills

Writing-Research skills, sentence fluency, spelling, developing vocabulary, punctuation, grammar, proofreading

Reading-Reading non-fiction texts on animals to build on background knowledge, extending understanding, text features, reading fluency

Social Studies:

-Canada and the World Connections:Canada's Provinces, Territories and Regions

Health:

-Learning self regulation strategies to calm emotions by learning to meditate or deep breathe during a sit spot

-Learning to care for a living species based on its specific needs

-Learning to build creativity in creating an environment suitable for a living species

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Appendix L

List of Materials for a Terrarium or a Diorama



What materials do you think you will need to collect to create a terrarium (e.g., plastic tupperware container or 2L pop bottle):

<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>

Or what materials do you think you will need to create your diorama (e.g., shoe box):

<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>
<hr/>	<hr/>



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Appendix M

Sketch of my terrarium or diorama:



How will my habitat provide the essential living needs (water, food etc) for my animal? Draw or explain in the table below.

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Appendix N: Assignment Description and Requirements

When you are creating your terrarium or diorama for your living species you need to include the following:

1. A representation with the appropriate characteristics of the habitat (for dioramas e.g., forest, ocean, stream etc.,
2. When creating the habitat, ensure that it includes at least 3 plants and 3 animals.
3. Include other species that are part of your animals food chain as a food source or as a threat to your animal (prey and predator).
4. Where or what is the source of water for your species?
5. What is the source of food for your species?
6. Only use natural materials for your terrarium.
7. You may make certain components of your diorama (e.g., a tree out of play dough or construction paper). No purchase of plastic materials.



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Appendix O

Presentation Outline

Below are questions to guide your presentation of your terrarium or diorama. Remember to speak loud and clearly. You may refer to some notes as you are speaking.

1.
 - a. Did you make a terrarium or a diorama? Your habitat is for what living species?
 - b. Describe your habitat? (Describe the materials that are in your terrarium or diorama).
 - c. If you made a terrarium: Explain the steps or the process you followed to create the terrarium.
 - d. If you made a diorama: Describe at least three different plants that are in your diorama.
2. What is your animal's source for water?
3. What is your living species' source for food?
4. Describe your species' food chain(s).
5. Talk about other animals that are also present in this habitat. Is your species a prey (the food source for another animal, the hunted) or a predator (the one who hunts for food)?
6. What is your personal connection with the species you chose? Why did you choose this species?
7. How have you learned to be an environmentalist in studying about habitats, sharing spaces and the food chain?
8. First Nations, Métis and Inuit have taught us to share and respect the land. How have you learned to appreciate the land we are on thanks to the teaching of First Nations Métis and Inuit? Explain three examples.
9. What is your message to other students or family members?

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Science Rubric: Creating a Terrarium or a Diorama

Categories	Level 1	Level 2	Level 3	Level 4
<u>Knowledge and Understanding</u> E.g., facts, terminology, concepts, ideas, processes of habitat	Demonstrates limited knowledge of habitat characteristics.	Demonstrates some knowledge of habitat characteristics.	Demonstrates considerable knowledge of habitat characteristics.	Demonstrates thorough knowledge of habitat characteristics.
<u>Thinking</u> Use of critical/ creative thinking processes, skills, strategies to design an effective terrarium or diorama	Uses critical/ creative thinking processes with limited effectiveness	Uses critical/ creative thinking processes with some effectiveness	Uses critical/ creative thinking processes with considerable effectiveness	Uses critical/ creative thinking processes with a high degree of effectiveness
<u>Communication</u> Expression and organization of ideas and information in oral, visual and or written forms	Expresses and organizes ideas and information with limited effectiveness	Expresses and organizes ideas and information with some effectiveness	Expresses and organizes ideas and information with considerable effectiveness	Expresses and organizes ideas and information with a high degree of effectiveness
<u>Application</u> Making connections between science, technology, society, and the environment (e.g. the impact on living things, and the environment)	Makes connections between science, technology, society, and the environment with limited effectiveness	Makes connections between science, technology, society, and the environment with some effectiveness	Makes connections between science, technology, society, and the environment with considerable effectiveness	Makes connections between science, technology, society, and the environment with a high degree of effectiveness