



United Nations
Educational, Scientific and
Cultural Organization



**MOUNT
ARROWSMITH**
BIOSPHERE REGION

BIOSPHERE BOOKLETS

Lesson Plans & Activities

ECOSYSTEMS

SUMMARY/OVERVIEW

Grades:
1-2

Prep Time:
1 Hour

Learning Environment:
Outdoor & Indoor

Total Lesson Length:
5 hours

DESCRIPTION:

This booklet introduces students to the topic of ecosystems. Activities involve outdoor exploration as well as indoor worksheets and discussion topics. Students will examine different types of ecosystems, focusing on the interaction between living and non-living things. The booklet includes 5 hours of activities, which can be delivered separately or on the same day.

CURRICULUM

EXPECTATIONS:

Questioning and Predicting:

- Observe objects and events in familiar contexts
- Demonstrate curiosity and a sense of wonder about the natural world

Processing and analyzing data and information:

- Experience and interpret the local environment
- Identify simple patterns and connections

Evaluating:

- Compare observations with those of others
- Consider some environmental consequences of their actions

BACKGROUND:

An ecosystem is a geographic area where plants, animals, and other organisms, as well as weather and landscape, work together to form a "bubble of life". Ecosystems contain biotic (living) parts, as well as abiotic factors (non-living parts). Biotic factors include plants, animals, and other organisms. Abiotic factors include rocks, temperature, and humidity.

Source:

<https://www.nationalgeographic.org/encyclopedia/ecosystem/print/>

LESSON PLAN

TIME	ACTIVITY	LOCATION	MATERIALS
30 mins	1. Introduction	Indoors	Dry-erase board
30 mins	2. Is this an ecosystem?	Indoors	Projector
2 hours	3. Types of ecosystems	Indoors	Matching and memory game pieces
1.5 hours	4. Ecosystem exploring	Outdoors	N/A
30 mins	5. Conclusion	Indoors	Printed worksheet

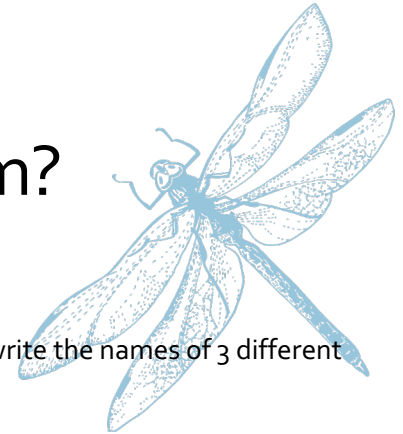
TIME
30 mins

ACTIVITY
1. Introduction

LOCATION
Indoor

MATERIALS
Dry-erase board

Introduction: What is an Ecosystem?



GOAL: Introduce students to the concept of ecosystems.

PREPARATION: Draw 3 rectangles (vertical/portrait orientation) on the board and write the names of 3 different ecosystems at the top of each rectangle (see example on the following page).

LESSON PLAN: Ask students which components they think are part of that ecosystem, based on the definitions below. Make sure to ask about the **INTERACTION** between the elements. Play a video describing what an ecosystem is (<https://youtu.be/SNF8b7KKJ2l>).

INTRODUCTION:

An ecosystem is a geographic area where plants, animals, and other organisms, as well as weather and landscape, work together to form a “bubble of life”. Ecosystems contain living and non-living parts. Living things include plants, animals, and other organisms. Non-living factors include rocks, temperature, and humidity.

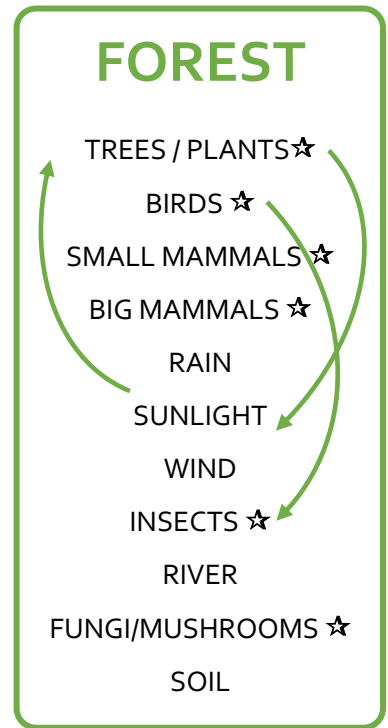
Every factor in an ecosystem depends on every other factor, either directly or indirectly. A change in the temperature of an ecosystem will often affect what plants will grow there, for instance. Animals that depend on plants for food and shelter will have to adapt to the changes, move to another ecosystem, or perish.

Ecosystems can be very large or very small. Tide pools are complete tiny ecosystems. Tide pools generally contain seaweed, a kind of algae, which uses photosynthesis to create food. Herbivores such as abalone eat the seaweed. Carnivores such as sea stars eat other animals in the tide pool, such as clams or mussels. Tide pools depend on the changing level of ocean water. Some organisms, such as seaweed, thrive in an aquatic environment, when the tide is in and the pool is full. Other organisms, such as hermit crabs, cannot live underwater and depend on the shallow pools left by low tides. In this way, the biotic parts of the ecosystem depend on abiotic factors.

The whole surface of Earth is a series of connected ecosystems! This video will help further explain ecosystems to students: <https://youtu.be/SNF8b7KKJ2l>.

Source: <https://www.nationalgeographic.org/encyclopedia/ecosystem/print/>

EXERCISE EXAMPLE:



Use arrows to exemplify interaction between the elements of each ecosystem!

ADDITIONALLY: Ask students to classify each word as LIVING ☆ or NON_LIVING

TIME
30 mins

ACTIVITY
2. Is this an Ecosystem?

LOCATION
Indoor

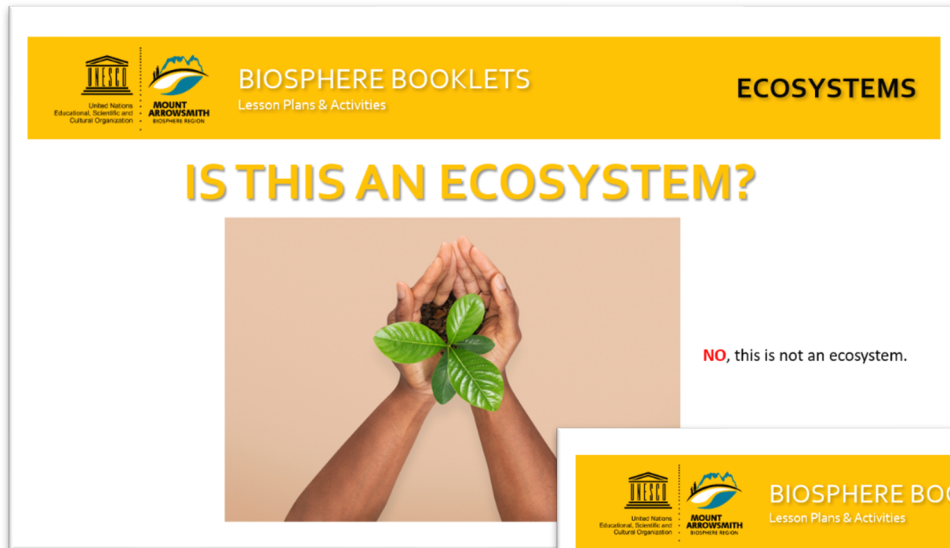
MATERIALS
Projector

Is this an Ecosystem?

GOAL: To identify which images represent an ecosystem and which ones do not - like a visual “True or False”.

PREPARATION: Download slides available from the Teaching Resources webpage.


LESSON PLAN: Go through each of the slides and ask the students to tell you if the image (or which of the images) represents an ecosystem. For each image, ask for their explanation: are there any interactions between living and non-living components in this ecosystem? Are there food chains? Etc.



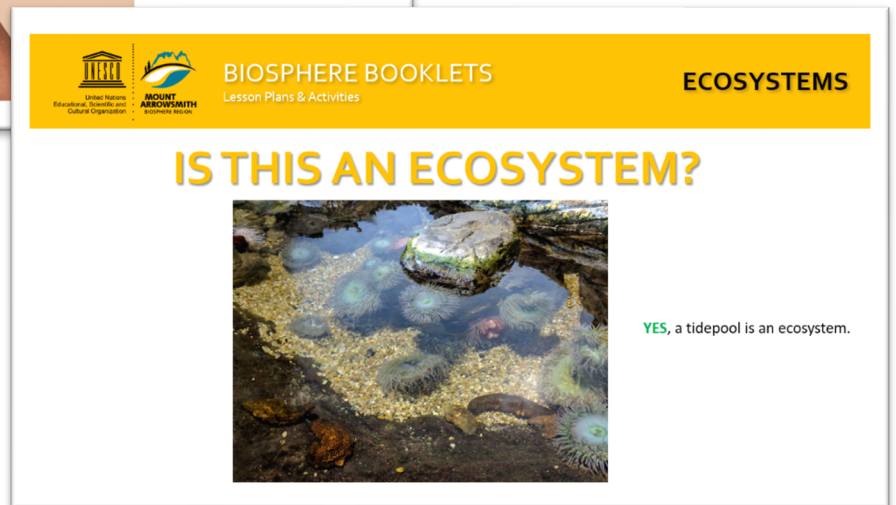
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IS THIS AN ECOSYSTEM?




NO, this is not an ecosystem.



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IS THIS AN ECOSYSTEM?



YES, a tidepool is an ecosystem.

TIME	ACTIVITY	LOCATION	MATERIALS
2 hours	3. Types of Ecosystems	Indoors	Matching game cards

Types of Ecosystems

GOAL: Introduce students to the different types of ecosystems.

PREPARATION: Print off and cut out the pieces from the **Ecosystem Matching Game** (available for download from the Teaching Resources Webpage).

LESSON PLAN: Students will explore different types of ecosystems by playing a memory/matching game. This game is a fun way to get students connecting the names of different types of ecosystems to visuals that illustrate key components of each ecosystem.



DESERT



OCEAN



WETLAND



CITY

TIME	ACTIVITY	LOCATION	MATERIALS
1.5 hours	4. Ecosystem exploring	Outdoors	N/A

Ecosystem Exploring



GOAL: For students to observe and engage with their surroundings and understand how it works (focus = interaction within the ecosystem).

PREPARATION: N/A

LESSON PLAN: Students will go to an outdoor place (beach, lake, river or forest) as a class and have a guided walk by their teacher or an environmental specialist, who will talk to the students about the different parts of the ecosystem they are in.

Prompts:

- What are the living things around us?
- What are the non-living things around us?
- What type of water is nearby? Stream, river, lake?
- What type of plants are in this ecosystem? Trees, grass, bushes?
- Can you see any animals in this ecosystem?
- What animals do you think live here?
- How do you think all of these different things interact with each other?
- Do you think a lot of people come here?



TIME
30 mins

ACTIVITY
5. Conclusion

LOCATION
Indoor

MATERIALS
Printed worksheet

Conclusion



GOAL: For students to review/reflect on what they have learned about ecosystems.

PREPARATION: Activities 1-4. Print page 8.

LESSON PLAN: Ask students to draw the ecosystem that you visited as a class and include as much as they remember from the trip (plants, animals, non-living things, etc.). Finish the lesson with the follow-up questions below to review what they have learned.

CONTENT:

1. **What is one thing you learned that surprised you?**
2. **What was something that was hard to understand?**
3. **Which ecosystems would you like to visit?**
4. **What human activities threaten ecosystems?**
Pollution of rivers and air, overfishing, habitat destruction, climate change, wild fires (and accidental human-caused fires) are some examples.
5. **Do ecosystems have many or few parts? Many.**

Source: <https://www.nationalgeographic.org/encyclopedia/ecosystem>

My Ecosystem Drawing

Name: _____



MountArrowsmithBR



@mtarrowsmithbr



@MountArrowBR



Mabr.ca

Show us your results! Snap a picture and share it with us on social media,
or email it to the MABR Coordinator at



mandy.hobkirk@viu.ca