

*Important Concepts . . .*

# Preview Review



**Science**

**Grade 7**

***W1 - Lesson 1: Interactions and  
Interdependencies***

## Important Concepts of Grade 7 Science

W1 - Lesson 1 .....	Interactions and Interdependencies
W1 - Lesson 2 .....	Nutrient Cycles, Energy Flows, and Changes in Ecosystems
W1 - Lesson 3A .....	Environmental Impacts of Human Activities
W1 - Lesson 3B .....	The Particle Model of Matter, Temperature, Heat, and Change of State
W1 - Lesson 4 .....	Heat Transfer
W1 - Lesson 5 .....	Understanding Heat and Temperature in Nature and Technology
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W2 - Lesson 3 .....	Plant Needs and Growing Conditions
W2 - Lesson 4 .....	Role of Plants and Controlling Plant Growth
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W3 - Lesson 4 .....	Plate Tectonics and Related Events
W3 - Lesson 5 .....	Fossils
W3 - Quiz .....	

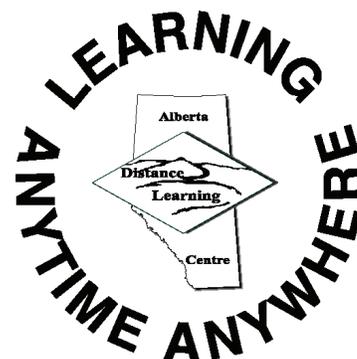
## Materials Required.

Textbook:  
*Science in Action 7*

Science Grade 7  
Version 5  
Preview/Review W1 - Lesson 1

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# Preview/Review Concepts for Grade Seven Science



*W1 - Lesson 1:  
Interactions  
and Interdependencies*

# OBJECTIVES

By the end of this lesson, you should be able to

- identify characteristics of living organisms
- identify basic needs of living organisms
- identify environmental parts as either biotic or abiotic
- identify and define various types of ecological interactions
- identify and explain the purpose of various ecological adaptations

## GLOSSARY

**abiotic** - not living

**adaptation** - a feature or behaviour that helps an organism survive certain conditions

**biotic** - living

**community** - a group of populations living and interacting in a specific area

**interact** - have contact with

**interdependent** - rely on each other for something

**population** - the members of one species in an area at one time

**species** - one kind of living thing that can reproduce

**symbiotic relationship** - a close relationship between two species

## Introductory Information for Teachers

Preview/Review courses are aimed mainly at students who have complete the regular course but who need to review before beginning the next grade. Other students may find Preview/Review courses useful in preparing for the new materials they will study in their next grade. No Preview/Review course is intended to replace the regular course because all cover only some important concepts from the Program of Studies for each grade.

Preview/Review materials are intended for use by teachers in one-subject and one-grade classrooms.

This Preview/Review course contains fifteen lessons in three sections. Each section has five lessons with homework. A short quiz is provided at the end of each section to test students' knowledge of the material studied. In a classroom, the course will likely be completed in three weeks.

Students may attend one, two, or all three sections. Because Science has five units per grade and does not divide into three sections, Sections 1 and 2 cover two units each and Section 3 covers the final unit.

In Science, textbooks are central to Preview/Review. That is, the textbook must be read and used to complete the activities proficiently.

Textbooks required:

- Grade 7: *Science in Action 7*
- Grade 8: *Science in Action 8*
- Grade 9: *Science in Action 9*



# W1 - Lesson 1: Interactions and Interdependencies

We, and a multitude of other living organisms, live on Earth. Each type of living organism has its own set of unique characteristics. However, all living things also have a common set of characteristics. Living things interact with their surroundings – living and non-living. They are interdependent with other living and non-living things around them.

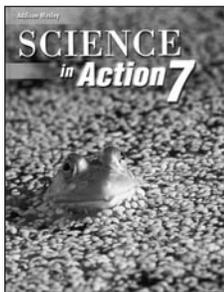


All **living** organisms have shared characteristics. To be considered living, something must

- grow
- move
- use food which it makes or eats for energy
- reproduce
- respond to stimuli

Living things do all these activities in an ecosystem where they interact with **abiotic** and other **biotic** factors.

Living things of many types live in each ecosystem. The level of classification of most concern in this course is the **species**. When members of a species live in a particular area, they are called a **population**. Populations living in the same area interact and are called a **community**.



Regardless of where organisms live, they have certain basic needs that must be met if they are to survive. Read pages 12-15 of *Science in Action 7*.

1. List the basic needs that all living organisms have. Then, give an example of how one type of organism meets that need.

a. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

b. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

c. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

d. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

e. \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

2. Look around where you are right now, and list some biotic and abiotic things that you see.

Biotic	Abiotic



3. Can the removal of abiotic parts of an ecosystem affect the biotic parts of the ecosystem? Explain.

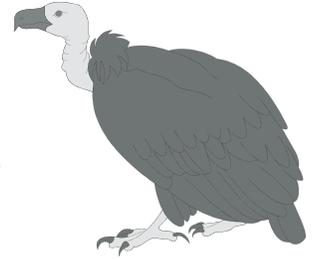
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## Interactions



There are many interactions and interdependencies between organisms. For example, one organism may depend on another to be its source of food or shelter. **Consumers** rely on **producers** for food. **Scavengers** and **decomposers** (pages 28, 31-33 in your textbook) depend on other organisms for waste or wait for them to die so they can use the remains as an energy source. In turn, other organisms rely on them to clean up wastes and return matter to a state where it can be used again.

4. Define the following terms.

a. producer \_\_\_\_\_

\_\_\_\_\_

b. consumer \_\_\_\_\_

\_\_\_\_\_

c. herbivore \_\_\_\_\_

\_\_\_\_\_

d. carnivore \_\_\_\_\_

\_\_\_\_\_

e. omnivore \_\_\_\_\_

\_\_\_\_\_

f. scavenger \_\_\_\_\_

\_\_\_\_\_

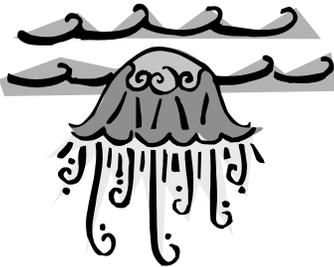
When organisms live in habitual close contact, they are in a **symbiotic relationship**. There are three types of symbiotic relationships. Some of these relationships occur over the whole lifetime of the participants, some for shorter periods of time. Read pages 16 and 17 of *Science in Action 7* for more details.

5. Name and describe the three types of symbiotic relationships. Give an example of each.

a. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

b. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

c. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



6. What will happen to a parasite if its host dies?

\_\_\_\_\_  
\_\_\_\_\_

7. In a commensalism relationship such as an orchid living on a tree, what will happen to the tree if the orchid dies?

\_\_\_\_\_  
\_\_\_\_\_

## Adaptations

Organisms must adapt to the biotic and abiotic factors they interact with. Adaptations are features such as body parts or behaviours that species develop over time to help an organism survive the conditions where it lives. For example, an animal such as an Arctic fox needs to grow a very warm coat of winter fur if it is to survive the cold Arctic winter. It would also have behaviours that would help it survive. Read page 19 of the textbook.

8. What types of adaptations would you expect the following organisms to have? Be as specific as possible.

a. A desert hare \_\_\_\_\_

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b. a plant in the muskeg \_\_\_\_\_

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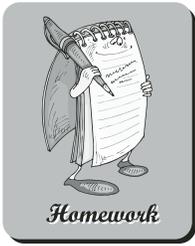
9. If organisms have adapted to a particular set of biotic and abiotic factors, but their environment changes suddenly, what would happen to them?

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You should now understand the characteristics and needs of living organisms. You should be able to discuss how living things interact with other living things and their environment. As well, you should be able to explain the adaptations of a variety of living organisms. In your homework, you are required to apply what you learned in this lesson.



## Homework

When you go home, look at an outdoor area – your backyard or somewhere nearby that has a variety of living and non-living parts.

- a. Identify as many biotic and abiotic parts as possible.

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- b. List some consumers and some producers in the area.

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- c. Describe some adaptations you have noticed. Explain what purpose they may have.

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- d. Identify some relationships you see or that you know exist there.

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