

# CBL BIOLOGY: LIFE SCIENCE OPTION

**BSCS Green Version 10th edition**  
*Biology An Ecological Approach*  
 Lesson Plan Quarter 1, Week 6, Day 1



## Outcomes for Today

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Standards Focus: 6abef

### PREPARE

#### 1. Background knowledge necessary for today's reading.

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Most interactions between living things on earth create some level of change. Try to get students to understand that natural systems are just that...natural. For example, we can't "speed up" the growth and reproduction cycle of a tomato plant. Things do not happen in a half hour television episode! There are no "sound bytes" in the natural world.

#### 2. Vocabulary Word Wall.

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Introduce 5 important, useful words from today's reading.

**relationships      community      direct      indirect      ecosystem**

- show, say, explain, expand, explode or buzz about the word briefly
- show, say and define the word quickly and add to the word wall

### READ

#### 3. Review the vocabulary and concepts previously covered in this chapter.

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Start at the beginning and review the concepts and vocabulary covered so far.

- mention the setting and main ideas
- point to concept chart as you quickly review it

Everything in the natural world is connected in one way or another. Most cause and effect relationships in ecosystems are not easily understood. Living systems are not simple. Consider the rainforest ecosystem. Many interactions in the natural world take a great deal of time to complete and can therefore be very subtle and not easily understood. The **biosphere** is large. **Ecosystems** are smaller.

#### 4. Read directions for investigation/activity.

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#### 5. Read text. Ch 3 *Communities and Ecosystems* Section 3.1 pp. 62

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- Shared Reading RRP: Read, React, Predict every 2-3 pages  
 Tape  Partner  Choral  Silent  Round Robin Reading

setting	Characters	pages
Your community City dump (landfill)	dogs, cats, trees, weeds, humans mosquito	62

### RESPOND

#### 6. Fix the facts. Clarify what's important.

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Discuss the reading and add 3-5 events to the billboard

- discuss the text; clarify the most important facts, concepts, ideas and vocabulary
- decide on the 3-5 most important **concepts** and post these on the **billboard**

Students might mention:

Relationships are interactions between living things.

Dog bites mailman...this is a direct relationship.

Understanding a direct relationship is simpler than understanding an indirect one.

The non-living parts of an ecosystem can and do affect the living components.

A small part of the large biosphere is an ecosystem. Ecosystems are generally a little easier to understand and study.

#### 7. Post information on the billboard. Add new information to ongoing class projects on the wall.

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- new **concept** information can be added to the billboard
- an answer can be added to a question from the KWL Chart
- new information can be added to ongoing charts and investigations

### EXPLORE

#### 8. Explore today's investigation with inquiry activities.

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Don't forget to check the growth of the bean seedlings which you began with Investigation 3.3 earlier in this chapter study. Record your results. This activity will culminate on the last day (approx. 2 weeks total) of this chapter.

**9.** Explore today's simulation with inquiry activities.

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**10.** Collect data and post.

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**One possible activity:**

The movie [The Gods Must be Crazy](#) can be an excellent activity used to study interactions in a community of living things (the Kalahari Desert).

Here is the synopsis:

A coke bottle dropped from an airplane disrupts the quiet life of a family of African Bushmen (the San people) living in the deep isolation of the Kalahari Desert. Xi, the head of the family, takes the evil thing (bottle) and embarks on a journey to the end of the world to return it to the gods. At the same time a white teacher is fed up with city life and takes a job in Botswana. She meets a shy and bumbling scientist. Their hilarious adventures and misadventures are intertwined with Xi's journey. In the meantime we learn much about Africa and are treated to beautiful photography of its landscape, its skies and its animals.

The viewer is allowed to see himself from the Bushman's point of view and is introduced to their culture. The movie will provide an opportunity to discuss the Bushman society and societies like it, as well as the Kalahari Desert.

Here is some more helpful background:

The Kalahari is a vast expanse of arid and semi-arid land located in Botswana, Namibia and South Africa. (Locate this area on a map and add to the chart.) It is about 275,000 square miles in size. Most of the Kalahari has red soils and low growing grasses and brush. Large patches of sand are found in the eastern portion of the desert. Rainfall is about 9 inches per year.

"Bushman" is a South African name for the San people, also known as Khoi-San, an ethnic group of the Kalahari Desert in Botswana and Namibia. The San language uses click sounds. Traditionally the San are hunter-gatherers who live in small groups of about ten nuclear families which hold sway over about 300 square miles of territory. Home sites are changed once a month as food becomes scarce. The San use light bows and arrows tipped with poison to hunt. Some live in caves, others in huts.

The San have artistic ability and a complex religion. Each band has a hereditary leader but he has only limited powers. Many of the San have become farm laborers and are losing their cultural heritage. It is reported that when Uys found N'xau, the actor who played Xi, N'xau was working as a cook and had never supported himself by hunting and gathering.

**Notes:**

This movie could easily be used as a two or three day activity. You should preview the movie first and

- Develop your own questions for discussion.
- Have the students record events and develop a timeline for the entire movie.
- Students could record and list all direct and indirect relationships.
- Stop the movie and have students predict the outcomes.
- Perhaps you could obtain a subscription to the internet resource, *Teach With Movies*, a very good resource, which can be used with many subject areas. Here is the link:
- <http://www.teachwithmovies.com>
- 

Here is an example of a modified thought-provoking question from this resource:

*Does the culture of the San people appear to be deserving of your respect? Who has the right to answer that question, the San people or foreigners?*

If you would like more information:

<http://www.teachwithmovies.org/index.html>

Other possible activities for a class group or individual  
Bookmark Open Mind Portrait g6 Graphic Organizer  
g7 Main Idea Graphic Organizer c1-12 Cubing Postcard Prop  
Poster Ad Map Retelling Reader's Theatre Cartoon Rap

**Key Questions**

List at least five direct relationships between you and other living things.

List at least five indirect relationships between you and other living things.

What or where is a local ecosystem that has been greatly altered by man?

Why is it difficult to study the biosphere as a whole?

Look out the nearest window. Describe the ecosystem from the point of view of a biologist.

Remember to ask literal structural idea craft author literature life  
evaluate and inference questions every day.

**Key Paragraph**

All populations, including human populations, interact with one another. These interactions form a complex web of relationships. The set of interacting populations present during one time and in one place is called a community.

**EXTEND**

**11.** Prompt every student to write a short product tied to today's reading.

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In the movie, The Gods Must be Crazy, the life of an individual Bushman is altered when a Coke bottle drops from an airplane into his world. Write a short paragraph about something that has “dropped” into your “world” and how your life has been different since this incident.

**12.** Close with a short summary.

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Extend the reading to the student's lives or to the world.

**Note:** If this movie generates interest there is a sequel The Gods Must Be Crazy II. It is a good extension for further study.

# CBL BIOLOGY: LIFE SCIENCE OPTION

BSCS Green Version 10th edition

*Biology An Ecological Approach*

Lesson Plan Quarter 1, Week 6, Day 2



## Outcomes for Today

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Standards Focus: 6abef

### PREPARE

#### 1. Background knowledge necessary for today's reading.

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Life is complex and “drama” among living things is ongoing and everywhere. All of the interactions among living things are ongoing and continuous. Nothing in nature is static. Try to point out a number of examples of how this is so in the lives of students and “their individual world!”

#### 2. Vocabulary Word Wall.

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Introduce 5 important, useful words from today's reading.

**components**  
**omnivore**

**consumer**

**herbivore**

**carnivore**

- show, say, explain, expand, explode or buzz about the word briefly
- show, say and define the word quickly and add to the word wall

### READ

#### 3. Review the vocabulary and concepts previously covered in this chapter.

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Start at the beginning and review the concepts and vocabulary covered so far.

- Mention the setting and main ideas.
- All ecosystems contain living (biotic) and non-living (abiotic) components.
- Acid rain is an example of a negative human impact on the environment.
- Direct relationships between organisms (dog bites mailman) are much easier to understand than indirect relationships (dog runs away from mailman, scares a cat who drops a mouse, etc.).

#### 4. Read directions for investigation/activity.

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**5. Read text. Ch3 *Communities and Ecosystems* Section 3.2 pp. 62-64**

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- Shared Reading RRP: Read, React, Predict every 2-3 pages  
 Tape  Partner  Choral  Silent  Round Robin Reading

setting	Characters	pages
Florida River Ecosystem River Bank Ecosystem	turtle	62
Grass in the river	skunk, raccoon, snakes, fish, alligators, herons, snapping turtle	62 63

### RESPOND

**6. Fix the facts. Clarify what's important.**

---

Discuss the reading and add 3-5 events to the billboard

- discuss the text; clarify the most important facts, concepts, ideas and vocabulary
- decide on the 3-5 most important **concepts** and post these on the **billboard**

Students might mention:

The river system is just one example of many biological systems in the world.

Young turtles are carnivores.

Most humans are omnivores since they eat both plants and animals.

In nature, there is no waste. Everything is either food for others or a consumer of food.

Many times, we may think a relationship between living things is direct when it is really indirect.

**7. Post information on the billboard. Add new information to ongoing class projects on the wall.**

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- new **concept** information can be added to the billboard
- an answer can be added to a question from the KWL Chart
- new information can be added to ongoing charts and investigations

### EXPLORE

**8. Explore today's investigation with inquiry activities.**

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Don't forget to check the growth of the bean seedlings which you began with Investigation 3.3 earlier in this chapter study. Record your results. This activity will culminate on the last day (approx. 2 weeks total) of this chapter.

Continue with the movie *The Gods must be Crazy*.

Character Education at the Markkula Center for Applied Ethics

[www.scu.edu/character](http://www.scu.edu/character)

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9. Explore today's simulation with inquiry activities.

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10. Collect data and post.

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### One possible activity:

#### “Eco-Graphic Organizer”

The river system described in section 3.2 of the text could be graphically organized using arrows to represent the energy flow, symbols for the various organisms, and other creative student ideas.

You may also want to show the rest of The Gods Must Be Crazy (see previous lesson). In this activity, here are some thoughtful questions and ideas:

#### Timeline

Construct a timeline with all the major events in The Gods Must Be Crazy story.

#### Questions

Why couldn't Xi (the Bushman) exist for long shut up in jail? *This could be a good discussion question about how it is difficult for people used to living in an open environment to adapt, etc.*

Why did the white people seem uneducated and stupid to Xi?

Other possible activities for a  class  group or  individual

- Bookmark  Open Mind Portrait  g6 Graphic Organizer
- g7 Main Idea Graphic Organizer  c1-12 Cubing  Postcard  Prop
- Poster  Ad  Map  Retelling  Reader's Theatre  Cartoon  Rap

#### Key Questions

In addition to the previous questions, here are two more:

In the movie The Gods Must be Crazy, what is realistic and believable? What is not? Give examples of direct and indirect relationships between organisms from this movie.

Remember to ask  literal  structural  idea  craft  author  literature  life  evaluate and  inference questions every day.

#### Key Paragraph

Each of the relationships described so far is a direct one between the river turtles and the other types of organisms. Like all organisms, however, the river turtles have many indirect relationships with other organisms.



## EXTEND

**11.** Prompt every student to write a short product tied to today's reading.

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In the movie The Gods Must Be Crazy, an African Bushman "froze" when he saw the white woman.

Have you ever "frozen" in the presence of a person of the opposite sex and been unable to say anything or at least anything that is even remotely intelligent? What causes this and how can you get over it?

Write a short paragraph describing this situation for you. It will NOT be shared with the class.

**12.** Close with a short summary.

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Extend the reading to the students' lives or to the world.

# CBL BIOLOGY: LIFE SCIENCE OPTION

BSCS Green Version 10th edition

*Biology An Ecological Approach*

Lesson Plan Quarter 1, Week 6, Day 3



## Outcomes for Today

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Standards Focus: 6abef

### PREPARE

#### 1. Background knowledge necessary for today's reading.

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Before understanding micro-climates, students should first understand "regular" climates. The short version goes like this: Weather over time in a specific area is said to be the climate.

*See Teacher Notes in Modified Investigation attached to this lesson plan.*

An understanding of climates and micro-climates should be entertained now.

#### 2. Vocabulary Word Wall.

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Introduce 5 important, useful words from today's reading.

**micro-climate**      **transpiration**      **albedo**      **shade**  
**urban environment**

- show, say, explain, expand, explode or buzz about the word briefly
- show, say and define the word quickly and add to the word wall

### READ

#### 3. Review the vocabulary and concepts previously covered in this chapter.

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Start at the beginning and review the concepts and vocabulary covered so far.

- Mention the setting and main ideas.
- Point to concept chart as you quickly review it.
- Non-living components of an ecosystem are referred to as **abiotic**.
- These are also referred to as the **physical aspects** of an ecosystem.

**4. Read directions for investigation/activity 3.1 pp. 78-80.**

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Directions for a modified investigation 3.1 can be found at the end of this lesson plan.

**5. Read text. Chapter 3.**

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- Shared Reading RRP: Read, React, Predict every 2-3 pages  
 Tape  Partner  Choral  Silent  Round Robin Reading

setting	Characters	pages
Your School	Your team mates	

## RESPOND

**6. Fix the facts. Clarify what's important.**

---

Discuss the reading and add 3-5 events to the billboard

- discuss the text; clarify the most important facts, concepts, ideas and vocabulary
- decide on the 3-5 most important **concepts** and post these on the **billboard**

Students might mention:

- A climate has to do with the weather over a period of time.
- Dark surfaces "attract" heat. (Make sure you help them with this concept.)
- I never heard of a heat island before!
- Global warming is heating us all up!

**7. Post information on the billboard. Add new information to ongoing class projects on the wall.**

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- new **concept** information can be added to the billboard
- an answer can be added to a question from the KWL Chart
- new information can be added to ongoing charts and investigations

## EXPLORE

**8. Explore today's investigation with inquiry activities.**

---

Don't forget to check the growth of the bean seedlings which you began with Investigation 3.3 earlier in this chapter study. Record your results. This activity will culminate on the last day (approx. 2 weeks total) of this chapter.

**9. Explore today's simulation with inquiry activities.**

---

## 10. Collect data and post.

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### One possible activity:

**Student survey of micro-climates and the “heat island” effect of their local environment. Investigation 3.1 (text) and/or Modified Investigation 3.1 (attached).**

Other possible activities for a class group or individual

- Bookmark Open Mind Portrait g6 Graphic Organizer  
g7 Main Idea Graphic Organizer c1-12 Cubing Postcard Prop  
Poster Ad Map Retelling Reader’s Theatre Cartoon Rap

### Key Questions

Explain, in detail, how the heat island effect impacts local **micro-climates**.

Examine your observations and identify characteristics that seem to contribute to the heat island effect. List and describe them.

Examine your observations and identify characteristics that seem to decrease the impact of the heat island effect. List and describe them.

What are some of the possible health implications of the urban heat island effect?

Based on your observation of micro-climates on the school grounds, how might students be affected?

Explain how a school or homeowner could help to reduce the impact of the heat island effect on the microclimate around their property.

Prepare a list of steps your school should undertake to reduce the impact of the heat island effect.

Remember to ask literal structural idea craft author literature life  
evaluate and inference questions every day.

### Key Paragraph (from modified investigation 3.1)

Urban areas are often noticeably warmer than the surrounding region. Why? Many of the activities and land uses in urban areas combine to create a “heat island.” Various research has indicated that urban areas may be heated by as much as 10 degrees Celsius in the summer as a result of high concentrations of concrete, human activities such as industrial process and cars, and the absence of tree cover. It is also believed that areas as small as 1000 people may generate a heat island.

**EXTEND**

**11.** Prompt every student to write a short product tied to today's reading.

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With each new understanding of data-gathering techniques, there is an increase in your knowledge. What is meant by the statement, "Knowledge is power"? What is one area in which you have powerful knowledge that could be used to help our world? Think about it and write a short paragraph on this idea.

**12.** Close with a short summary.

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Extend the reading to the students' lives or to the world.



## Ch. 3 Modified Student Investigation # 3. 1 Microclimates

**Note:** This activity is a greatly modified version of the process outlined in the text for Investigation 3.1 in the text.

**Objectives:** To measure and compare temperature variations in different micro- ecosystems in order to identify what factors are involved in creating the “Heat Island” effect.  
To evaluate the impact of human life on natural systems;

**Materials:** Observation Form (attached) , thermometer, paper

### Introduction

In this activity, students will measure and compare variations in temperature in various micro-ecosystems in order to identify factors involved in creating the heat island effect. Students will need to have access to most of the school grounds and may even need to leave the school property briefly. Decide on the boundaries before embarking on this lesson with students.

**Teacher Note:** It is always good to do a “reconnaissance walk” through a potential area first. Check for obvious distractions (such as the adult book store) and at least make a “mental note” before you take students out.

### Background Student and Teacher Notes

Urban areas are often noticeably warmer than the surrounding region. Why? Many of the activities and land uses in urban areas combine to create a “heat island”. Much research has indicated that urban areas may be heated by as much as 10 degrees Celsius in the summer as a result of high concentrations of concrete, human activities such as industrial process and cars, and the absence of tree cover. It is also believed that such areas as small as 1000 people may generate a heat island.

Some of the reasons for the heat island are concrete, asphalt, and glass that have replaced natural vegetation. The vertical surfaces of buildings that are added to a normally flat natural rural landscape absorb great amounts of incoming radiation. Furthermore, urban surfaces have a lower **albedo** and a greater ability to conduct heat.

This results in a high capability to store heat. In addition, many human activities in urban areas can add large amounts of heat energy to the local energy balance through transportation, industrial processes, and the heating of buildings. For example, in winter, 2.5 times more heat is generated from the burning of fossil fuels in New York City than the heat absorbed from the sun. Conversely, in rural areas, evaporation and transpiration act to cool the land just as perspiration does for humans. In this activity, students can see this effect and perhaps find heat islands in their own school setting.

### **Procedure (Modify accordingly)**

1. Brainstorm with the class a list of sites on the school grounds (and beyond if permission is granted) that have a variety of characteristics. They may differ in exposure to UV radiation and shade, surface cover, topography, proximity to a building, human activities (e.g. parking lot versus playing field), etc.
2. As a class, choose 8 different sites around the school ground to investigate the air temperature. Hypothesize as to which sites will have higher and lower temperatures and explain why.
3. Divide the class into 8 groups. Assign a study site to each group.
4. Discuss the objectives and procedures for the investigation.
5. Outdoors, each group will record a detailed description of the physical characteristics of their study site on the worksheet.
6. Each group will measure the temperature 5 to 10 times throughout their study site and calculate the average temperature. Results are recorded on the worksheet.
7. Back in the classroom, share the site data collected by each group. Provide time for the students to respond to the discussion questions.

Invite student groups to discuss their findings as a class. These questions may be discussed as a group and/or presented in student reports or presentations.

### **Activity Level II (Extension)**

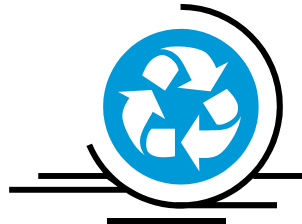
Several ideas

Students could research and develop a Shade Strategy for your school grounds, including landscape design drawings and maps. Document the benefits of shade, the approximate cost of implementing this strategy, and a proposed timeline. If possible, arrange to present this idea to school officials “higher up the food chain!”

Students could research and write a report about the impact of the heat island effect on their micro-ecosystem. They should include a detailed sketch map with the sites clearly labeled.

Students could research the literature available on the heat island effect and write a report that investigates the impact of the heat island on urban climatic conditions and the potential for larger scale or even global impacts.

And finally, another learning activity would be to write a creative story about what learning would be like in a less comfortable non-climate controlled environment (e.g.; desert, jungle, mountainous region, and remote South American mission orphanage). Ask them to be specific as they write a short creative story about life in school and how schools in America waste resources. Imagine living in a country which has limited energy and resources. How would their learning be different if no temperature control was used?



**CBL Observation Form  
The Heat Island Effect**

Name \_\_\_\_\_ Date \_\_\_\_\_

Group Members \_\_\_\_\_

**Directions: Complete observations and recordings as outlined by your teacher as well as the investigation directions.**

**Draw Maps**

Draw a location map of your micro-area.

Draw a map of your assigned “micro-area.” And the locations you are taking your temperature readings.



## Temperature Readings

# CBL BIOLOGY: LIFE SCIENCE OPTION

BSCS Green Version 10th edition

*Biology An Ecological Approach*

Lesson Plan Quarter 1, Week 6, Day 4



## Outcomes for Today

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Standards Focus: 6abef

### PREPARE

#### 1. Background knowledge necessary for today's reading.

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*The natural world is a stage and all the living things are actors. Put another way, we all have a job to do. What have been and will be our jobs (student, worker, leader) in our past, present, and future? This is just one way to think about the world we live in.*

#### 2. Vocabulary Word Wall.

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Introduce four important, useful words from today's reading.

**niche**

**role**

**habitat**

**occupy**

- show, say, explain, expand, explode or buzz about the word briefly
- show, say and define the word quickly and add to the word wall

### READ

#### 3. Review the vocabulary and concepts previously covered in this chapter.

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Start at the beginning and review the concepts and vocabulary covered so far.

- mention the setting and main ideas
- point to concept chart as you quickly review it

All living things are interdependent.

Ecosystems are complex groups and associations of living and nonliving components.

Biologists have created terms for associations and processes of living things.

#### 4. Read directions for investigation/activity.

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**5. Read text. Ch 3 *Communities and Ecosystems* Section 3.3 p. 64**

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- Shared Reading RRP: Read, React, Predict every 2-3 pages  
 Tape  Partner  Choral  Silent  Round Robin Reading

setting	Characters	pages
River environment	Turtles, snails, aquatic insects, fish	64

**RESPOND**

**6. Fix the facts. Clarify what's important.**

---

Discuss the reading and add 3-5 events to the billboard

- discuss the text; clarify the most important facts, concepts, ideas and vocabulary
- decide on the 3-5 most important **concepts** and post these on the **billboard**

Students might mention:

- An organism's role or "job" is known as its niche.
- An organism's home (where it lives) is its habitat.
- Only one type of organism can occupy the same exact niche.
- In other words, two different organisms cannot occupy the same niche.
- There are many interactions among organisms in each community.

**7. Post information on the billboard. Add new information to ongoing class projects on the wall.**

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- new **concept** information can be added to the billboard
- an answer can be added to a question from the KWL Chart
- new information can be added to ongoing charts and investigations

**EXPLORE**

**8. Explore today's investigation with inquiry activities.**

---

Don't forget to check the growth of the bean seedlings which you began with Investigation 3.3 earlier in this chapter study. Record your results. This activity will culminate on the last day (approx. 2 weeks total) of this chapter.

**9. Explore today's simulation with inquiry activities.**

---

## 10. Collect data and post.

---

### One possible activity:

#### Niches

Determining various animal niches is one task of a field biologist. Birds are very interesting animals to study because their various niches are a little easier to understand than other organisms. For information on birds and their niches, go to: <http://www.pbs.org/lifeofbirds/champions/index.html>

**Have students spend time on this site as they study the various bird champions. Have them develop a study guide for use with future students.**

Once students have determined such “bird champions” as the fastest, the longest flyer, the highest flyer, and so many more, they will be in a better position to understand the concept of niche.

Here is the activity:

#### What is Your Niche?

After reviewing the concept of niche with students by sharing and examples, assist students in describing their personal niche. A graphic organizer can be a good start. Develop a template using descriptive “niche-type” words to describe a human’s individual niche. You could begin by doing one for yourself (the teacher niche). Once students have an example, help them develop their niche description.

Next, have students describe their “habitat” in terms their peers and adults will understand. If they use slang words, have them define the words. Develop questions for this activity such as:

How many students have the same habitat?

How many students have the same niche?

Be careful as you assist students with this concept so that it follows the scientific principles covered and defined in Section 3.3 of the text.

Other possible activities for a class group or individual

- Bookmark Open Mind Portrait g6 Graphic Organizer
- g7 Main Idea Graphic Organizer c1-12 Cubing Postcard Prop
- Poster Ad Map Retelling Reader’s Theatre Cartoon Rap

## Key Questions

What are the components that make up each organism's niche?

How is an animal's niche different from an animal's habitat?

Why can't two different organisms occupy the same niche?

Why is it such a challenge to study the interactions in each organism's niche?

Remember to ask literal structural idea craft author literature life  
evaluate and inference questions every day.

## Key Paragraph

Understanding a community requires understanding all the interactions among the organisms in all their niches. This is not an easy task, even for a small community.

## EXTEND

**11.** Prompt every student to write a short product tied to today's reading.

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In the business world, there is a common saying:

"Find a niche and fill it". What is something you think the world needs, but has not been developed? You are the inventor and you are going to find a niche and fill it. Write about your new product or invention and who would benefit.

**12.** Close with a short summary.

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Extend the reading to the students' lives or to the world.

# CBL BIOLOGY: LIFE SCIENCE OPTION

BSCS Green Version 10th edition

*Biology An Ecological Approach*

Lesson Plan Quarter 1, Week 6, Day 5



## Outcomes for Today

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Standards Focus: 6abef

### PREPARE

#### 1. Background knowledge necessary for today's reading.

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In nature, nothing happens in isolation. All living things impact other living things in one way or another.

In nature it isn't necessarily a "bad thing" if one organism harms another.

We need to be careful about assigning "human values" to nature. We need to be careful about "animal anthropomorphism" also known as the "Bambi syndrome."

#### 2. Vocabulary Word Wall.

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Introduce 5 important, useful words from today's reading.

**predator-prey relationship    competition    symbiosis    parasitism**  
**scavenger**

- show, say, explain, expand, explode or buzz about the word briefly
- show, say and define the word quickly and add to the word wall

### READ

#### 3. Review the vocabulary and concepts previously covered in this chapter.

---

Start at the beginning and review the concepts and vocabulary covered so far.

- mention the setting and main ideas
- point to concept chart as you quickly review it

A wide variety of complex relationships among living things take place in ecosystems everywhere.

The terms niche and habitat describe an organism's role and where it lives.

**4. Read directions for investigation/activity.**

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**5. Read text. Ch3 *Communities and Ecosystems* Section 3.4 pp. 64-66**

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- Shared Reading RRP: Read, React, Predict every 2-3 pages  
 Tape  Partner  Choral  Silent  Round Robin Reading

setting	Characters	pages
The African Savannah The Florida River	rhinoceros and tick bird	65
The Florida River ecosystem	leech and turtle	65
	snapping turtle and river turtle	66

### RESPOND

**6. Fix the facts. Clarify what's important.**

---

Discuss the reading and add 3-5 events to the billboard

- discuss the text; clarify the most important facts, concepts, ideas and vocabulary
- decide on the 3-5 most important **concepts** and post these on the **billboard**

Students might mention:

A **predator** eats other animals that it catches and kills.

In **symbiosis**, both organisms benefit from the relationship between them.

A **parasite** lives off of another living thing but does not do any good for the **host**.

**Scavengers** live off of dead animals that they did not kill.

Humans can be **carnivores** (Big Mac), **herbivores** (salad), or **omnivores** (taco salad with hamburger).

Sometimes we tend to look down upon certain animals (scavengers) and up to others (predators like eagles). We judge them based on "human values."

**7. Post information on the billboard. Add new information to ongoing class projects on the wall.**

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- new **concept** information can be added to the billboard
- an answer can be added to a question from the KWL Chart
- new information can be added to ongoing charts and investigations

## EXPLORE

### 8. Explore today's investigation with inquiry activities.

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Don't forget to check the growth of the bean seedlings which you began with Investigation 3.3 earlier in this chapter study. Record your results. This activity will culminate on the last day (approx. 2 weeks total) of this chapter.

### 9. Explore today's simulation with inquiry activities.

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### 10. Collect data and post.

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#### One possible activity:

These two websites are very helpful in understanding habitats. This one is a great resource for looking at the life in a pond. You can download clips of the many creatures living in a pond. If there is any pond nearby, you could collect some pond water and have student look at their findings through a microscope.

<http://micro.magnet.fsu.edu/moviegallery/pondscum.html>

This is a site with links to the various habitats at the Monterey Bay Aquarium. You could do a virtual study of the habitats before or after a field trip or as an independent activity.

<http://www.mbayaq.org/efc/>

**Here is an activity you could do right at your school site:**

#### Ant Families

**See Supplemental Investigation (attached to this lesson plan)**

Preparation

Other possible activities for a  class  group or  individual

- Bookmark  Open Mind Portrait  g6 Graphic Organizer
- g7 Main Idea Graphic Organizer  c1-12 Cubing  Postcard  Prop
- Poster  Ad  Map  Retelling  Reader's Theatre  Cartoon  Rap



## Key Questions

Give an example (not in the text) of each of these relationships between organisms:

- predator-prey
- symbiosis
- parasitism

What happens to the parasite if its host dies?

Look at the picture (Fig 3.7 on p. 66). What kind of relationship does the mistletoe have with the pine tree?

Remember to ask literal structural idea craft author literature life evaluate and inference questions every day.

## Key Paragraph

There are many symbiotic relationships. In some, both partners benefit, and at least no one is harmed. Figure 3.6 shows tickbirds sitting on a rhinoceros. The tickbirds eat parasites off the skin of the rhinoceros. This helps the rhinoceros and provides food for the bird.

## EXTEND

**11.** Prompt every student to write a short product tied to today's reading

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### Metaphors Be With You

#### Introduction

After reading about and discussing the various relationships between organisms, think about the relationships between humans that could be classified in similar terms as the scientific ones you have learned in this section. Using the terms **symbiosis**, **predator-prey**, and **scavenger**, write a short little story about people you know who may fit these terms (metaphorically of course). You could begin with a sentence somewhat like this:

I know a couple who have a symbiotic relationship....

**Good luck. "Metaphors be with you!"**

**12.** Close with a short summary.

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Extend the reading to the students' lives or to the world.



## Supplemental Student Investigation Ant Families Human Families

**Objective:** To gain an introductory understanding of ant families and habitat and relate this understanding to human social structure.

### Introduction

Ants are considered a superorganism, that is, the many individual ants make up the parts of a complex society and no individuals (or even small groups) can live in isolation. They engage in complex interactions between the various individuals in each colony as well as with other colonies. They have been the subject of many scientific studies. Your students will be asked to set up a little study to record ant interactions.

### Activity Level I

Brainstorm and discuss the roles of each family member and their contribution to the family unit (emphasizing cooperation and the contribution to the family unit). Include traditional families, single parent families, blended families and extended family members in one household [grandparent(s), cousin(s)] as part of the discussion. Record student thoughts and ideas on butcher paper. Ask the students to graphically represent themselves and their families. Display the pictures around the room or in the hall.

Using the notes from the discussion in the Introduction, work with the students to create a list of the jobs done by each person in his/her family. Incorporate this information into a web connecting how each person influences everybody else. Working in teams, ask the students to add in other people, including aunts, uncles, neighbors and friends (and pets) on an outer circle who play a significant role in their lives. What role do these people have in their lives? Allow time for the students to share with their teams and report back to the whole class. Talk about families and community. Compare similarities and differences.

Introduce students to ants and their societies. You could use the internet as a resource for this short introduction.

### Activity Level II

Locate active ant trails or nests on the school grounds. Over a one week period, have different teams (4-6 students) observe ant trails and colonies at various times of the day (once in early morning and once mid-day or late afternoon). Have the students record observations on an observation form (attached). Have the students write their predictions on their forms about what they think the ants are doing, and how it contributes to the colony. Offer food (sugar, tuna, dry pet food, popped popcorn, peanut butter, etc.) to the ants and observe their response (communications, cooperation). Have the students record observations. Have the students write their predictions about what they think the ants are doing, and how it contributes to the colony.

**Activity Level III**

Review what the students have learned about the roles of ants in colonies and people in families. Reflect on the book, Seedfolks and how the people in this story are like the ants



**CBL Observation Form 1**

**Name** \_\_\_\_\_ **Date**

\_\_\_\_\_

**Directions: Complete observations and recordings as outlined by your teacher as well as the investigation directions.**