

# CBL BIOLOGY: LIFE SCIENCE OPTION

BSCS Green Version 10th edition

*Biology An Ecological Approach*

Lesson Plan Quarter 1, Week 3, Day 1



## Outcomes for Today

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Standards Focus: 1fgh 6def

### PREPARE

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

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The concept of "spaceship earth" and this is the only place we can call home should be discussed and reviewed.

#### 2. Vocabulary Word Wall.

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

**biosphere**  
**pollution**

**deforestation**

**fossil fuels**

**ozone layer**

- 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 of the chapter and review the concepts and vocabulary covered so far.

Humans are an important part of life on earth.

All living things interact with each other on earth forming a complex web of life.

Energy is required for all living things.

Matter is what makes all living things.

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

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**5. Read text. Chapter 1 *The Web of Life* pp 15-16**

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

setting	Characters	pages
earth	humans	16

## 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 to 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 idea that earth looks small when viewed from space.

They are part of the biosphere.

Human activity causes many problems for planet earth.

Humans can change their living situations on a small scale (air conditioning in a car) or a large scale (global warming)!

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

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## 10. Collect data and post.

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### One possible activity:

#### View our earth using Google Earth

Download **Google Earth** by going to [googleearth.com](http://googleearth.com). It is free and works on most new computers.

Once installed, spend some time first using the program. Possible class activities could begin with simple “zooming in” to familiar locations. Enlist students in a discussion on how their perception of our planet and home is better understood (or perceived differently) once it is viewed in perspective. Students can view and print their neighborhoods, living environment, and more. They could travel to their former homes, countries, or places they have been or would like to go. They can travel to other countries and many of the locations mentioned in the text. This resource will be referred to for a number of future activities, so keep Google Earth updated and ready. If you have a lab, allow students to just “play” with the program the first time or two.

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

### Bridge to a language building activity

Teach a Mini Lesson using *Write AHEAD* pages #

[The Write Ahead Activities are on individual work-pages in a separate file]

Look at the article on Famine in Africa Text p. 43. Use Google Earth to view the continent to spark interest and discussion on the worsening environmental conditions.

### Key Questions

What makes up the biosphere?

List some examples of human impact on the biosphere.

Why do humans have the greatest impact on the biosphere?

Think about your life. What is one impact you personally have on the biosphere?

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

### Key Paragraph

Because you are a living organism, you are part of the biosphere. You have interrelationships with your family, friends, and teachers. Because you are part of the web of life, you also have relationships with many other organisms.

## EXTEND

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

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As you have learned, you have relationships with many other living things. Write a short introduction of yourself from the perspective of one of the living things you have a relationship with. Note: This living organism **cannot** be another human.

**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 3, Day 2



## Outcomes for Today

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Standards Focus: 1fgh 6def

### PREPARE

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

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Observation is critical for effective data gathering.

Our experience "colors" how we view the world.

There is often confusion in understanding unbiased observation compared to personal perspective.

#### 2. Vocabulary Word Wall.

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Introduce 2 important, useful words from today's reading.

**environment**

**weather**

- 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 of the chapter and review the concepts and vocabulary covered so far.

Review simple terms used to describe living things.

Talk about "tunnel vision" when directing students to focus on specific "micro habitats" and other environmental settings.

Review the concept of anthropomorphism (applying human characteristics/qualities to organisms). An example here would be the *cute and cuddly* little rabbit!

#### 4. Read directions for investigation/activity. Ch 1 *The Web of Life* pp. 8-11

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See also: Investigation 1.3 attached to this lesson plan.

#### 5. Read text.

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

setting	Characters	pages
Wherever the teacher takes the students	Various plants and animals.	N/A

### 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 to 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:

There is life everywhere.  
 Awareness helps increase understanding of living things.  
 We can all become experts on our own little corner of the world.

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

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## 10. Collect data and post.

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### One possible activity:

Investigation 1.3 as outlined in the text pp.8-11 and modified Investigation 1.3 attached at the end of this lesson plan (page 8)

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

### Bridge to a language building activity

Teach a Mini Lesson using *Write AHEAD* pages #

[The Write Ahead Activities are on individual work-pages in a separate file]

### Key Questions

What is the environment you are studying?

Do you think the time of day makes any difference on what you might see? Why?

Is there life that you cannot see? What might it be?

What are some organisms that you might expect to see in your area but didn't?

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

### Key Paragraph

Could you take a relative or friend into the school yard or to a local park and point out several organisms in a food chain? Life is everywhere, although at times it may be difficult for you to see it.

## EXTEND

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

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Write a short cartoon story about several of the living things you observed in this activity. Write the story from the perspective of the plants and animals. Try to *anthropomorphize* a creature or two. In other words, give it human qualities. Draw a picture or two with the "cartoon bubbles" with the words.

### 12. Close with a short summary.

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



## Ch. 1 Student Investigation # 1.3

### *Field Observation Teacher Notes*

**Note:** This activity is a modification of the process outlined in the text.

**Objective:** To find and describe living things and understand how they fit into food chains and food webs.

**Materials:** Observation Form 1, pair of working eyes, pencil

#### **Introduction**

Begin with these questions: Could you take a friend, relative, or even a stranger outside and point out a number of living things (organisms)? Could you find more than one organism in a food chain and food web? The purpose of this investigation is to develop your observational skills by describing the living and non-living things in a particular area.

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 jot down a number of organisms before you take students out.

#### **\* Activity Level I (Demonstration)**

Ask students to look around them and describe the environment, including the living (biotic) and non-living (abiotic) elements. Discuss micro-habitats, those small patches of life such as a planter box, etc. What life is located there? Please provide details.

Have students answer the following questions in their Observation Form 1.

1. Describe the environment you are exploring. Please use details so that you create a visual picture for the reader.
2. Describe the weather. Talk about clouds, temperature, and the time of day.
3. What types of life do you see? Use specific examples.

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

Explain to students that experience “colors” our ability to see and describe things. For example, students may notice things about student dress and mannerisms that a teacher may not. Ask for examples. Build upon this. Use the “we are all experts” at many things. Now explain in detail what you would like students to be looking for in the way of life in one small specific area. Have them get “up close and personal” with a small environment or maybe one organism that they have found. Also have them do a diagram or make drawings of their own little specific *life area*... All of these observations should be recorded on their form.





## CBL Observation Form 1

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

\_\_\_\_\_

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

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**Lesson Plan Quarter 1, Week 3, Day 3**



**Outcomes for Today**

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Standards Focus: 1fgh 6def

**PREPARE**

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

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Observation is critical for effective data gathering.  
 Anyone can become an "expert" if the opportunity and interest are present.  
 There is often confusion in understanding the difference between unbiased observation and personal perspective.

**2. Vocabulary Word Wall.**

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

**Alcatraz      Leavenworth      Canary      breed      physiology**

- 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 of the chapter and review the concepts and vocabulary covered so far.

- Animals and plants have specific adaptations that allow them to live in specific areas (habitats).
- Habitat destruction is one of the primary factors in the decline of a species.
- Scientists (biologists) study living things.

**4. Read directions for investigation/activity. Ch1 *The Web of Life* pp. 8-11**

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See also: Investigation 1.3 attached to this lesson plan.

## 5. Read researched information on Robert Stroud, The Birdman of Alcatraz.

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

setting	Characters	pages
Alcatraz	Robert Stroud, The Birdman Canaries	N/A

## 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 to 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 Birdman was very smart.

Awareness helps increase understanding of living things.

We can all become experts on our own little corner of the world, even while locked up in jail or prison.

Even inmates can perform scientific experiments and research.

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

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## 10. Collect data and post.

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### One possible activity:

Complete investigation 1.3 (*Activity level II*) as outlined in the text pp.8-11 and modified Investigation 1.3 attached at the end of this lesson plan (page 14). In addition, have students research and record information on The Birdman of Alcatraz. One source is:

<http://www.alcatrazhistory.com/stroud.htm>

Another source is:

[http://en.wikipedia.org/wiki/Birdman\\_of\\_Alcatraz](http://en.wikipedia.org/wiki/Birdman_of_Alcatraz)

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

### **Bridge to a language building activity**

Teach a Mini Lesson using *Write AHEAD* pages # 773  
 [The Write Ahead Activities are on individual work-pages in a separate file]

Look at the birds (Class Aves page 773) and have students determine what bird is most closely related to canaries.

### **Key Questions**

What scientific methods do you suppose the Birdman used in his studies of canaries?  
 Was the Birdman a generalist or a specialist? Explain your answer.  
 What good came out of the Birdman's work?

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

### **Key Paragraph**

This is information on Robert Stroud, the "Birdman of Alcatraz."  
 Over the course of Stroud's thirty years of imprisonment at Leavenworth, he developed a keen interest in canaries, after finding an injured bird in the recreation yard. Stroud was initially allowed to breed birds and maintain a lab inside two adjoining segregation cells, since it was felt that this activity would provide for productive use of his time. As a result of this privilege, Stroud was able to author two books on canaries and their diseases, having raised nearly 300 birds in his cells, carefully studying their habits and physiology. He even developed and marketed medicines for various bird ailments. Although it is widely debated whether the remedies he developed were effective, Stroud was able to make scientific observations that would later benefit research on the canary species.

**EXTEND**

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

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By utilizing his powers of observation, the Birdman of Alcatraz, Robert Stroud, became an expert on canaries. Essentially he was a bird biologist in a very specific area. After doing a little research on The Birdman, write a little introduction on him from the perspective of the canary that flew into the prison yard.

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

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



## Ch. 1 Student Investigation # 1.3

### *Field Observation Teacher Notes*

**Note:** This activity is a modification of the process outlined in the text.

**Objective:** To find and describe living things and understand how they fit into food chains and food webs.

**Materials:** Observation Form 1, pair of working eyes, pencil

#### **Introduction**

Begin with these questions: Could you take a friend, relative, or even a stranger outside and point out a number of living things (organisms)? Could you find more than one organism in a food chain and food web? The purpose of this investigation is to develop your observational skills by describing the living and non-living things in a particular area.

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 jot down a number of organisms before you take students out.

#### **Activity Level I (Demonstration)**

Ask students to look around them and describe the environment, including the living (biotic) and non-living (abiotic) elements. Discuss micro-habitats, those small patches of life such as a planter box, etc. What life is located there? Please provide details.

Have students answer the following questions in their Observation Form 1.

4. Describe the environment you are exploring. Please use details so that you create a visual picture for the reader.
5. Describe the weather. Talk about clouds, temperature, and the time of day.
6. What type of life do you see? Use specific examples.

**\* Activity Level II (Extension...day 2)**

Explain to students that experience “colors” our ability to see and describe things. For example, students may notice things about student dress and mannerisms that a teacher may not. Ask for examples. Build upon this. Use the “we are all experts” at many things. Now explain in detail what you would like students to be looking for in the way of life in one small specific area. Have them get “up close and personal” with a small environment or maybe one organism that they have found. Also have them do a diagram or make drawings of their own little specific *life area*...

Here is where you can introduce the story of The Birdman of Alcatraz and how he became a specialized biologist through a simple twist of fate (the canary in the prison yard).

All of these observations should be recorded on their form.



**CBL Observation Form 1**

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

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



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 Lesson Plan Quarter 1, Week 3, Day 4



## Outcomes for Today

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Standards Focus: 1fgh 6def

### PREPARE

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

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Observations and data gathering are very important in science. We can make an "educated guess" about the reasons things are the way they are in the living world. This guess should be based on observable information.

#### 2. Vocabulary Word Wall.

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

**science    systematic    interpret    hypothesis**  
**scientific method**

- 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 of the chapter and review the concepts and vocabulary covered so far.

All living things interact with other living and non-living things.  
 A food web is more complex than a food chain?  
 How does energy get from the sun to animals?  
 What is the biosphere?

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

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**5. Read text. Ch1 *The Web of Life* pp 16-19**

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

setting	Characters	pages
Rain forest	Dr. Lugo	18

### RESPOND

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

---

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

- discuss the text to 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 verifiable observation is something we can see.

We ask questions to begin the scientific process of investigation.

A possible “educated guess” is a hypothesis.

Using the scientific method is a way to begin to solve scientific problems and challenges.

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

---

## 10. Collect data and post.

---

### One possible activity:

Scientific Method

Review the scientific method with students.

For a review go to:

[http://physics.ucr.edu/~wudka/Physics7/Notes\\_www/node6.html#SECTION02121000000000000000](http://physics.ucr.edu/~wudka/Physics7/Notes_www/node6.html#SECTION02121000000000000000)

Walk students through the scientific method using this link as a teaching aid.

Learn the steps of the scientific method and discover how Francesco Redi and Louis Pasteur used the scientific method to disprove the idea of spontaneous generation. Go to:

[http://biology.clc.uc.edu/courses/bio104/sci\\_meth.htm](http://biology.clc.uc.edu/courses/bio104/sci_meth.htm)

Have students design a simple process to determine the answer to a question that they develop with your assistance. Make sure questions relate to their lives and interests.

After you demonstrate and discuss this with students ask them to develop a question that could be addressed with the scientific method.

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 is the difference between a value judgment and a verifiable observation?

Give examples.

List the steps to the scientific method.

Is there an area of biology that you might be interested in pursuing as a career ?

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

### Key Paragraph

Humans, however, have a greater effect on the biosphere than do other organisms because their activities often result in permanent changes in the environment.

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

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Sometimes we don't care as much about the future when we are just concerned with ourselves. Many times one's concern for the future changes dramatically after becoming a parent. Why do you think this is so? Write a short paragraph about the type of world you would like your son or daughter to inherit from this generation.

**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**  
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 Lesson Plan Quarter 1, Week 3, Day 5



## Outcomes for Today

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Standards Focus: 1fgh 6def

### PREPARE

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

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All living things make up populations.

Populations change in numbers.

Populations are members of the same (or very similar) species.

*Note: Relate this to real time populations in the world today. For example the increasing industrialization and energy consumption in China and India.*

#### 2. Vocabulary Word Wall.

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

**population**

**mortality**

**birthrate**

**immigration**

**emigration**

- 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 (not applicable on day 1)

mention that earth has a wide variety of populations

ask students to explain what specific population they are part of

point to concept chart as you quickly review it

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

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### 5. Read text. Ch2 Populations pp.28-32 (2.1 & 2.2)

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

setting	Characters	pages
Shallow lake	Pink flamingos	28
Log	Ladybird beetles (Ladybugs)	30
Mountain hillside	Pine trees	31

## 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:

The needs of one population might conflict with the needs of another population in the same area.

If more individuals die than are born in a population, the population decreases.

The reverse is also true.

Members of a population can leave or come into an area. This also causes the population to grow or shrink.

A population consists of very similar individual members.

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

---

## 10. Collect data and post.

---

### One possible activity:

Ask students to think of their current school setting and the students present and attending as a **population** of individuals. Have them determine the number of students present (daily attendance) today as data gathering project. Have them develop a graph to chart population fluctuation changes. Use the typical time-growth ( $X, Y$ ) format with numbers going up the left side and time along the base. Make this graph for approximately two weeks as that is the timeline for this chapter. Ask students to predict the student population fluctuations. Have them consider such variables as holidays, Mondays and Fridays, and other related factors. Have them update their population graphs each day as there will be a concluding activity on the last day of this chapter (Week 5 Day 4).

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 four factors determine whether a population increases, decreases or stays the same?

What factors define a population?

What population are you a member of? Is there another population that you are a member of as well? How about yet another?

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

### Bridge to a language building activity

Teach a Mini Lesson using *Write AHEAD* pages # 37

[The Write Ahead Activities are on individual work-pages in a separate file]

Have students look at Figure 2:10 and without reading the text, try and figure out what it is all about.

### Key Paragraph

A group of individuals of the same type that lives in a particular area is called a population. Some populations are made up of individuals that reproduce asexually by simply dividing (like bacteria) or by producing offshoots (like strawberry plants). Among sexually reproducing organisms (those requiring both parents to produce offspring), the individuals of a population breed among themselves (like scrub jays or coyotes).

**EXTEND**

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

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**Quick Write about Populations****Give students these directions:**

Get out a pen or pencil and several sheets of scratch paper. Glance through Chapter 2 in your textbook for a minute or two. Close the book and for the next five minutes, write down what you know about populations. Include topics from the textbook and topics you know about from other sources. Do not worry about spelling or grammar; just write freely, getting your ideas on paper. Do not worry about whether your ideas are correct. Write any questions you have about populations on a separate sheet of paper or underline them to make them stand out from the rest of what you have written. When the time is up, go back and organize what you have written.

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

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