

CBL BIOLOGY: LIFE SCIENCE OPTION

BSCS Green Version 10th edition

Biology An Ecological Approach

Lesson Plan Quarter 1, Week 7, Day 1



Outcomes for Today

Standards Focus: 6abef

PREPARE

1. Background knowledge necessary for today's reading.

What is a boundary? Many times, students really do not understand this concept. It might be a good idea to talk about these using examples of natural boundaries in the world as well as artificial boundaries. You might talk a little about crossing boundaries. Use examples that your student population will understand.

2. Vocabulary Word Wall.

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

boundaries biotic abiotic photosynthesize germination

- 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

Discuss the differences and similarities between physical boundaries (mountains, oceans, deserts, etc.).

Remind the students that humans using modern technology can cross physical barriers in the natural world.

Point out local boundaries (both natural and man made).

Talk about self- or group-imposed boundaries.

4. Read directions for investigation/activity.

5. Read text. Ch 3 *Communities and Ecosystems* Section 3.5 pp. 66-67

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

setting	Characters	pages
The Florida River setting	Turtles, herons, tall trees, frogs, fish, raccoons	66-67

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 edge of a river is a boundary.

Determining a boundary between ecosystems is not always easy.

Many ecosystems in the world are closely connected and ALL ecosystems are eventually connected.

When there is a change in one ecosystem, there will eventually be changes in the system next to it.

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

- 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:

Mapping a Local Ecosystem.

Introduction

There are ecosystems everywhere. Even in an urban environment, there are many ecosystems. This is a good book on the study of urban ecosystems.

<http://www.acornnaturalists.com/store/NATURE-IN-THE-NEIGHBORHOOD-P4028C37.aspx?UserID=230052&SessionID=Y8I8lpWfnANlljdOsaeo>

Ecosystems near your school can be large (like a park or natural stream) or small (like a garden). They can be complicated, (like a natural pond) or simple (like a strip of weeds along a wall). First, determine the availability for study of several of these communities of life. Sometimes it is simply a matter of awareness. Determine how you will assign small student groups to several distinct ecosystems nearby.

Next, divide the class into teams of 2-4 and have them map “their” ecosystem.

They can do this by making a scale model indicating the various plants, animals, and physical factors. Students might give their area a name. Perhaps they could “adopt” it and care for it by removing litter, or otherwise providing stewardship.

Note: This would be a good time to invite a resource specialist from a local environmental resource agency to speak with students about the process of resource mapping.

The maps of student-adopted ecosystems could be posted. This is also a good activity for local press.

Refer back to the book Seedfolks for more information on communities and urban caretaking.

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

Why is it difficult to assign boundaries between ecosystems?

As a general scientific rule or principle, there tends to be more (diversity and numbers) life near ecosystem boundaries. Why do you think this is so?

Here is the setting: A stream runs through a forest. A forest fire burns through the forest. How might this impact the stream? Be specific and give examples.

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

Key Paragraph

The Florida River ecosystem is not a special case. A river ecosystem is linked to a forest; a forest ecosystem is linked to a grassland, and so on. In fact, all ecosystems on the earth are connected to one another to form the biosphere. Because they are connected, a change in one ecosystem may affect many others.

EXTEND

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

Your Ideal Habitat

You currently live in a habitat. We all do. Have you ever thought about what would be your ideal habitat?

Write a description of the habitat you would like to live in. Consider the following:

What makes it ideal?

Who would live in this habitat with you?

Describe your habitat somewhat like "A Disneyland Ride into My World!"

12. Close with a short summary.

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 7, Day 2



Outcomes for Today

Standards Focus: 6abef

PREPARE

1. Background knowledge necessary for today's reading.

One thing you want to get across to students at this point is that biology is (again) not simple. Drawing conclusions on living systems takes a great deal of time and study.

Field biologists spend a great deal of time observing animals to record patterns of behavior.

Understanding the group dynamics of a particular group of animals can lead to the formation of scientific principles that can generally apply to similar groups.

“You can see a lot by observing.”
 Yogi Berra

2. Vocabulary Word Wall.

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

generalists specialists aggressive displace marsh

- 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

Very Important: A **niche** is an animal's job and its **habitat** is where it lives. Explain the difference to students again.

Boundaries between habitats and ecosystems are often very rich in wildlife (numbers and variety).

The abiotic part of a habitat in this investigation is the water, soil, and air.

4. Read directions for investigation/activity. 3.2 pp. 80-81

5. Read text. Ch 3 *Communities and Ecosystems*

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

setting	Characters	pages
A marsh AKA freshwater wetland	Red Winged Blackbird Yellow Headed Blackbird	81

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:

Pipits need a tall tree for survival. If there are no trees, there will be no pipits.

Red-winged and yellow-headed blackbirds need wetlands to survive.

These birds compete for the following:

A place to find food

A place to nest

A place to feed

They don't fight just to fight.

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

- 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.

9. Explore today's simulation 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.

10. Collect data and post.

One possible activity:

Investigation 3.2, pages 80-82 in the book

Introduction

This is a relatively simple investigation to introduce students to the idea of animal competition. Read through the material on pages 80-81 to become familiar with the setting. Instruct students to do the same, guiding them with visual aids as necessary. (Note: there is a good overhead in your teacher packet.) Students should answer questions 2-4 on page 81.

Local Study

As a follow up, find a setting near the school where animals may be engaged in competition. This is not too difficult. English sparrows, and often seagulls, are everywhere around schools where there is food. Gulls will compete for leftovers wherever they are. Students could spend time watching such birds and recording what they see. Be resourceful here.

Finally, there are many examples of animal competition. Many of us have heard of the **Spotted Owl**, an endangered species. In this article, we see that competition from a cousin (the Barred Owl) is now a major threat to the Spotted Owl in certain areas. Here is the link:

<http://www.owlpages.com/news.php?article=293>

Students could research and comment on this article. This could lead to discussions on the idea of humans managing wildlife. Students could map the range of the Spotted Owl, or any animal of their choosing. Again, this may be a good time to invite a local wildlife manager or park naturalist to speak to your students.

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

Additional questions:

What can biologists learn about humans by watching animals?

Why is it important to study animal relationships like the blackbird situation?

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

Key Paragraph

Organisms need certain resources to live. For survival and reproduction, they may need food, water, light, breeding space, mates, and other substances. If these resources are in short supply, the organisms may compete for them. Sometimes the competition between the two groups is so intense that one group loses completely and no longer competes. The winner in such a contest may be able to use the resource or may prevent the loser from using it. In this situation, the losing group of organisms usually moves to another place (where the competition is less intense or where they are better competitors) or the group dies out.

EXTEND

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

Although human business competition is different from animal competition, many of the same principles may apply. In this light, prompt students with the following writing activity:

Write a little story about the competition between Ronald Mc Donald and Dave (from Wendy's). They are competing for your money. What do they have to offer? Write the argument from the perspective of each one of them and then you decide. Who wins? Why?

If you have watched Supersize Me, this could lead to interesting comments.

12. Close with a short summary.

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

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Biology An Ecological Approach

Lesson Plan Quarter 1, Week 7, Day 3



Outcomes for Today

Standards Focus: 6abef

PREPARE

1. Background knowledge necessary for today's reading.

Students should understand where their beef comes from in a literal sense (remember Supersize Me?).

They should understand the amount of energy necessary to produce one pound of beef and the use of fossil fuels to produce this pound. (Transportation, fertilizer, and other connections could be reviewed.)

A basic understanding of the history of the family farm and the transition to large corporate farming would also be helpful.

2. Vocabulary Word Wall.

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

chemical energy
10% rule

gross primary productivity
top-level consumer

energy pyramid

- 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.

Review the concepts of food chains, energy pyramids, and energy flow.

Review the concepts of living and non-living components of an ecosystem.

The complexity of natural ecosystems should be reviewed again.

Talk about the connections and relationships between organisms as you lead into this lesson.

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

4. Read directions for investigation/activity.

5. Read text. Ch 3 *Communities and Ecosystems* Section 3.6 pp. 67-69

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

setting	Characters	pages
A typical energy pyramid	Plants, grasshopper, mouse, hawk	Fig 3.10, p. 69

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:

Here we go again with the food chain.

Plants make food through photosynthesis.

Plants store energy in fruits, vegetables, and seeds.

A food pyramid is an artificial way to visualize energy flow in ecosystems.

A top-level consumer is at the top of the food pyramid.

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

- new **concept** information can be added to the billboard
- an answer can be added to a question from the KWL Chart (See investigation)
- 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:

The Meatrix

This is a lesson to using the principles of the food pyramid to understand factory farming. See supplemental Investigation attached to this lesson.

<http://www.thematrix.com/>

In addition to educating consumers about factory farming, the Meatrix Web site includes an Eat Well Guide with listings of local small farms (searchable by ZIP code), as well as a virtual tour of an industrial farm. To view these short films on your computer, visit <http://www.thematrix2.com>.

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 any community, what limits the size of the population?
 Why can factory farms produce so much more biomass? (What is biomass?)
 Explain the 10% rule.
 Why does the number of individuals decrease at each level of the food pyramid?
 What is a top-level consumer? Give examples.

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

Key Paragraph

The flow of energy and the amount of mass in a community is like a pyramid which is larger at the bottom than at the top. A community has many producers at its base, fewer herbivores in the middle, and even fewer carnivores at the top. Usually, the total mass of all the producers is much greater than that of the consumers.

EXTEND

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

Unhappy Cows in California

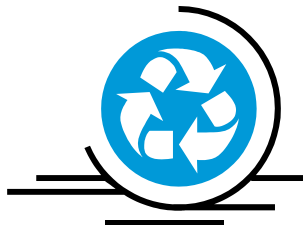
After learning about how much energy it takes to produce one pound of meat and how much energy it takes to transport it, imagine this:

You are a "cow lawyer" representing your peers. Write a paragraph to the judge (a chicken) in defense of saving cows because raising them in factory farms is:

- 1.) A waste of energy
- 2.) Unhealthy
- 3.) Other ideas...

12. Close with a short summary.

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



Supplemental Student Investigation # 2 (Ch. 3) The Food Pyramid and Factory Farms

Objective: To study factory farms as an example of a food pyramid for profit. In addition, the purpose of this lesson is to inform students of the differences between factory farming and sustainable farms.

Materials: Internet Connection

Introduction

Are you the one who can help save the world from factory farms? Find out by watching *The Meatrix*, a four-minute animated video released by Sustainable Table and Free Range Studios. This edgy, information-packed film is spreading the word about the dangers of industrial dairy farms. Students will easily understand and relate to the characters depicted in this film loosely based on the movie, *The Matrix*.

Synopsis

The Meatrix. The 2003 *Meatrix* won critical acclaim and educated more than 10 million viewers about corporate farming practices. In the first *Meatrix*, a pig named Leo is approached by a mysterious, trench coat-clad cow named Moopheus, who introduces Leo to the stark reality of modern factory farms. (In *The Matrix*, Morpheus teaches Neo that the reality humanity knows is an illusion created by machines, but that humanity can be saved if they work together to shatter this Matrix.) This short animation can stimulate much discussion. Here is where the idea of the food pyramid and the 10% rule come to play. Make sure you talk about how chemicals are concentrated as they are moved up through the food pyramid. You can also discuss the impact of factory farms on the environment and sustainable living. There are many sociological implications.

Activity Level I

1. Open the lesson with the question, "What did you have for dinner last night?" Allow responses. Ask the students a series of questions such as: Where did the food come from? Where did the store get the food?, etc.
2. Give an introduction to the mini movie "The Meatrix". Explain the correlation between the Meatrix and The Matrix. Have students tell what they remember about the movie "The Matrix", its characters, and general theme. Intro some of the characters in "The Meatrix" and parallel the likenesses.
3. View "The Meatrix".
4. Post a KWL list on the wall for use during the unit. The title should be "Factory Farms vs. Family Farms." (K = what you know, W = what you want to know, L = what you have learned.) Fill out the K and W portions.

5. Allow the students to have computer lab time to go and research factory and family farms and find out as much information as they can. Some websites the teacher can post to get the students started are:

- Factoryfarming.com
- Factoryfarm.org
- Sierraclub.org
- nffc.net
- familyfarmdefenders.com

6. While performing research, students should create a log and keep notes on the information they

have found. Prompt students to keep in mind the KWL chart. The goal for each team is to find 10 facts or opinions regarding either type of farming and three of those should include some type of numerical statistic.

7. Once all the information has been gathered, teams should discuss what they have found and create a poster that contains the requirement stated in the objective.

8. The groups should then take the information they retrieved and fill in the rest of the KWL chart for the whole class to review.

Closure

Note: Students can share their work through a “pair share” or class discussion format. Student work should be collected for display.

Activity Level II

View *The Meatrix II*, in which Leo and Moo-pheus, together with Chickity, their partner in the resistance, visit a commercial dairy farm and learn the ugly truth about how dairy cows are raised — including an unnatural diet that feeds the dead back to the living; overcrowded, unsanitary living conditions; injections of genetically engineered hormones that increase milk production; and the antibiotics cows must be fed to survive in these conditions. The trio also learns about the pollution generated by the massive quantities of waste that industrial dairies produce, and finally face the truth about factory farming, rather than subscribe to “the lie we tell ourselves about where our food comes from.”

CBL BIOLOGY: LIFE SCIENCE OPTION

BSCS Green Version 10th edition

Biology An Ecological Approach

Lesson Plan Quarter 1, Week 7, Day 4



Outcomes for Today

Standards Focus: 6abef

PREPARE

1. Background knowledge necessary for today's reading.

Humans have been altering their living environment for many years. In the last 200 years, the pace and demands humans have put upon the earth have increased exponentially. Many scientists are convinced that this cannot continue and we need to look at the sustainability of our planet.

2. Vocabulary Word Wall.

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

perturbations homeostasis nutrients biocides DDT

- 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.

When nature is in balance, there is homeostasis or stability.
Organisms living in close proximity experience a wide range of interactive relationships.

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

4. Read directions for investigation/activity.

5. Read text. Ch 3 *Communities and Ecosystems* Section 3.7 pp. 69-71

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

setting	Characters	pages
Field of corn	Birds, insects, humans, minnows	70
Marsh or wetland	clams, snails, eels flukes, needlefish, ospreys, pelicans	70-71

RESPOND

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

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

- discuss the text and 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 community with more connections between living things is more stable.

Humans disrupt the stability of natural systems.

Humans change ecosystems for many reasons including:

Food production

Living space

Recreation

Biocides are human made chemicals used to kill or control pests that compete with humans.

Sometimes biocides like DDT remain in the ecosystem and flow up the food chain becoming more concentrated with each step. This can have very detrimental effects on the top-level consumers.

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

- 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:

My Place in the Universe

Review the concept of **niche** with students. Give examples of various animal niches that might be familiar to your specific population. The goal here is to have students think about and describe their niche (their place in the universe). This could be done several ways including narrative, graphic, or a combination of formats. (For example, students can use magazine....appropriate of course....cut outs to graphically depict their respective niches.) First have students think about and make a list of every interaction they have with any living thing. They could write short statements or single words. They need to think and go beyond their communication with friends and even adults. Help them understand the difference between direct and indirect interactions.

Swatting a mosquito = **direct**
Eating a hamburger = **indirect**

Review the concept that no two organisms can occupy the same niche (even a couple).

How they carry out this activity is sort of open ended. The goal here is to help students understand that that everyone's niche is different, and complete a graphic representation of their niche. Students will need to share their final projects which should be posted in the classroom.

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

Why is a community with more diversity more stable?

Is this true in the human world? Why or why not?

Why is a field of one type of crop (monoculture) much more susceptible to large outbreaks of pests and/or disease?

What are biocides and how are they used?

Explain the relationship of biocides and the food chain.

Character Education at the Markkula Center for Applied Ethics

www.scu.edu/character

©SCU 2013

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

Key Paragraph

Some pest populations include some individuals that are resistant to a biocide. These individuals vary in their ability to tolerate, detoxify, or avoid the poison. When most of the pests are killed by the biocide, these few individuals may survive and reproduce. They pass the biocide resistance to their offspring. When people try to kill the offspring with the same biocide, the poison has little effect. To be effective, the strength of the amount of the spray must be increased, which then affects other organisms.

EXTEND

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

Trapped on a Desert Island

Suppose you were marooned (trapped) on a desert island with 12 chickens and a bushel of corn as your only food. You will not be rescued for a month, which is not long enough to grow more corn. Which would you do to survive?

- a) Eat the corn first, then the chickens
- b) Eat the chickens first, then the corn
- c) Feed the corn to the chickens and eat the eggs laid by the chickens

Explain your answer in a little written argument.

12. Close with a short summary.

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

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Biology An Ecological Approach

Lesson Plan Quarter 1, Week 7, Day 5



Outcomes for Today

Standards Focus: 6abef

PREPARE

1. Background knowledge necessary for today's reading.

For many years, the balance of life on earth has remained stable and relatively constant. Species have come and gone (dinosaurs, etc.) but stability has remained constant. That is until recently (the last 200 years). Try to point this out to students with examples that they would understand.

2. Vocabulary Word Wall.

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

biocide-resistant organism
extinct

biodiversity

species

deforestation

- 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

The primary life-altering force on earth is human activity.

Food webs are complex and complicated. Human actions to mass produce food are not without consequences.

Humans alter their environment intentionally and unintentionally.

4. Read directions for investigation/activity.

5. Read text. Ch 3 *Communities and Ecosystems* Section 3.8 pp. 71-73

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

setting	Characters	pages
Mountains in Southern California	Pine trees	72
Everglades	Many living things	
North American Prairie		
Oregon	Whooping Crane Wilamette Daisy	73

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:

Biodiversity is the number of different types of life on earth.

Biodiversity decreases with the extinction of each living thing.

Increasing number of humans take up habitat and living space on earth.

Extinction is irreversible. It means gone forever with no replacement.

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

- 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:

Students are always interested in endangered species. A great resource to find out more about endangered species is the World Wildlife Fund:

<http://www.worldwildlife.org/endangered/index.cfm>

Have students select a particular animal that is in danger of extinction and create a poster to advertise the situation. Make sure students do adequate research on their animal so that they may weave some facts into their project. These posters could be displayed where appropriate.

As a follow up, show the movie **Duma**.

Here is the synopsis:

When 10-year-old Xan and his father, Peter, come across an orphaned cheetah cub, they name their new friend "Duma," the Swahili name for cheetah, and he quickly becomes a member of the family. But, when Duma is almost fully grown, to Xan's dismay, his father tells him that it's time to take his friend to his real home before he grows too old to survive in his native habitat. Xan reluctantly agrees, but their plans must be put on hold when his father suddenly falls ill and Xan and his mother must move to Johannesburg. When Duma escapes and pays a disastrous visit to Xan's school, the two of them must flee the city to keep Duma from being put into captivity. Not knowing where to go, Xan gets an idea -- he'll carry out the plan his dad had outlined, taking Duma home to a safe and lush place hundreds of miles across South Africa, over the scorching Makgadikgadi Salt Pans, through the Okavango Delta and into the Erongo Mountains. Entering the lush jungles of the Okavango Delta, Xan finds himself surrounded by danger -- lions, crocodiles and deadly poisonous creatures. But it's far too late to turn back now as Xan faces the true test of love, attempting to cross the wilds to return his best friend to his rightful home.

This movie puts a *face* on an animal headed for extinction.

Here is another website with good information on endangered species:

<http://www.tramline.com/tours/sci/endanger/ tourlaunch1.htm>

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 several examples how human activity has simplified and reduced biodiversity.

What is deforestation?

What is meant by this statement: “Although extinction is a natural process, the process has been greatly accelerated due to human activity.”

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 30 and 31

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

Have students read page 249 on the possibility of extinction for the cheetah.

Key Paragraph

At the same time human activities are raising the number of biocide resistant organisms, Many potentially important organisms are disappearing. This disappearance results in a decrease in biodiversity. Biodiversity is the number of different types of organisms that live on earth. As our human population grows and we expand our activities, we occupy more land and therefore destroy the habitats of many organisms.

EXTEND

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

As a writing exercise, have students make a written plea from their "chosen animal" from the lesson activity. The words should be from the perspective of their endangered animal. It is asking for help so that its kind may live well into the future.

12. Close with a short summary.

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