FAIRCHILD

Discovery PROGRAM

Biodiversity: Creating Healthy Ecosystems

Pre- and Post-Visit Activities

Grades 6-12

FTBG

Fairchild Tropical Botanic Garden

Welcome!

Dear Teacher:

Thank you for planning a field study at Fairchild Tropical Botanic Garden. The tour you have selected, **Biodiversity: Creating Healthy Ecosystems**, is designed to teach students how to measure biodiversity and how important it is for life on Earth.

Included in this document is a packet of activities. It can also be found online at: http://www.fairchildgarden.org/education/schoolprograms/discoveryprogram/. **This packet contains pre and post-visit resource materials to support and strengthen the learning experience. We encourage you to implement pre-visit activities as they will enhance and prepare students for the field study.**

Using pre-visit activities allows students to learn the vocabulary and key concepts. It also gives students time to think about what they will be learning during their field study and to start to formulate questions. Post-visit activities allow students to integrate, reflect, process and deepen their learning experience. The lesson plans correlate with the Next Generation Sunshine State Standards. **Please be sure that each teacher attending the field study receives an activity packet.** Feel free to make additional copies of this packet as needed.

The word list provided is especially important for students to study prior to their visit. An understanding of the vocabulary will be a great asset in comprehending the concepts discussed during the field study.

We look forward to your visit to Fairchild Tropical Botanic Garden and hope that you and your students will have an exciting and educational adventure.

Kind Regards,

Laura Tellez
Discovery Program Coordinator
305.667.1651, ext. 3325

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Introduction

We hear the term biodiversity everywhere, but what exactly is biodiversity and why is it important? Biodiversity is the variety of life found on Earth. It is estimated that there are 8.7 million species on Earth and about 1.3 million have been named or catalogued by scientists. Tropical forests and coral reefs are the two most biodiverse ecosystems and are home to many species. However, other ecosystems with fewer species are important as well not only because of the ecosystem services they provide, but because of their distinctive ecological composition and the evolutionary information they contain.

Biodiversity makes an ecosystem resilient giving it the ability to adapt, face and recover from challenges such as pests, diseases, temperature changes, floods, droughts, hurricanes and many more. In this way, biodiversity can be thought of as an insurance policy that protects ecosystems by buffering them against various stresses that can lead to species loss and ecosystem disturbance. Ecosystem resilience is a function of having a diversity of responses to stressors among diverse organisms.

Biodiversity also creates the opportunity for different species to fulfill and perform the same role making the ecosystem stronger. For example, if a species is lost and not able to perform its functional role such as a leaf litter decomposer, other species present that perform the same function may be able to take their place. Therefore the functionality of an ecosystem is critically dependent on the species and populations biodiversity.

As you have probably heard the number of species on Earth is declining as humans pollute and degrade the environment. But don't worry there are a lot of things you can do to help! During your biodiversity field study, you will learn about different ways scientists use to measure biodiversity, why it is important and things you can do to help preserve it. You will also learn navigational skills using different tools such as GPS units, compasses and maps.
Very interesting, right? That's why we created this packet for you, so you can dig in right now and start learning and teaching about biodiversity.

In this packet, you will find pre-visit activities to help you prepare for your field study and post-visit activities to help integrate the learning experience and acquired knowledge. We really encourage you to use these pre- and post-activities, as they will enrich and support your field study at Fairchild.

Get ready for an exciting and enriching journey through the Garden!

Words for a Day at Fairchild

Biodiversity: the variety of life on earth or in a particular habitat or ecosystem, or the number of species in a given area.

Biodiversity Plot: piece of land where biodiversity measurements are taken.

Canopy Cover: the uppermost spreading layer of a forest. consisting largely of branches.

Cone: the fruit of pines and their relatives.

Diameter at Breast Height (dbh): measure of the diameter of a tree usually taken at 4.5 feet from the ground.

Ecosystem: a biological community consisting of all the living (biotic) organisms in an area and the non-living (abiotic) components of the environment that they interact with.

Ecosystem Service: the goods, products and material and non-material benefits obtained from ecosystems, as well as the fundamental life-support processes necessary for life, such as the maintenance of air, soil and water quality, climate regulation, pollination, erosion control, etc.

Flower: the seed-bearing part of a plant.

Frequency Rate: the number of times something repeats itself in a unit of time.

Fruit: the product of a plant that contains one or more seeds.

Habitat: a place where animals, plants and humans are found.

Herbaceous: fleshy plants that do not have a permanent woody stem.

Herbivory: the consumption of plants.

Leaf Arrangement: the arrangement of leaves on a plant stem.

Leaf Shape: any of the various shapes that leaves of plants can assume.

Resilience: the capacity of an ecosystem to respond to disturbance.

Shrub: a woody perennial plant usually less than 20 feet tall and often with several woody stems rather than a single trunk.

Species: organisms capable of interbreeding.

Species diversity: a combination of species richness and species evenness.
- **Species richness** is the total number of species present in the community.
- **Species evenness** is the relative distribution of individuals among the species present in a community.

Tree: a woody perennial (living for multiple years) plant, typically having a single trunk growing to a considerable height and bearing lateral branches at some distance from the ground.

Vegetation Cover: the collective term for vegetation (especially low-growing plants) covering the ground.

Pre-Visit Activity 1: What Is Your Biodiversity IQ?

Objectives

Students learn important facts about biodiversity.
Students define biodiversity.

Next Generation Sunshine State Standards: LA.6.1.6.1, LA.6.1.6.5, LA.6.5.2.1, LA.6.5.2.2 LA.7.1.6.1, LA.7.1.6.5, LA.7.4.2.2, LA.7.5.1.1, LA.7.5.2.1, LA.7.5.2.3, LA.8.1.6.2, LA.8.5.1.1, LA.8.5.2.1, LA.8.5.2.2, LA.910.1.6.1, LA.910.1.6.2, LA.910.5.1.1, LA.910.5.2.1, LA.910.5.2.3, LA.1112.1.6.1, LA.1112.5.1.1, LA.1112.5.2.1, LA.1112.5.2.2, LA.1112.5.2.4 SC.912.L.15.3

Materials

- Printed copies of the Biodiversity IQ Quiz

Procedure

1. Introduce students to the term biodiversity. Ask them what biodiversity means to them. Review key vocabulary and distribute the Biodiversity IQ Quizzes.

2. Divide the class into small groups of three or four students and give each group a copy of the Biodiversity IQ Quiz. Remind students to work together within their small group and to make sure that everyone in their group is included and an active participant when answering the quiz.

3. Give groups time to complete the quiz. Assure the students that this is not a real quiz; it's simply a fun introduction to biodiversity. Ask students to circle all correct answers for each question. The purpose of the quiz is to prepare students for their guided field study at Fairchild Tropical Botanic Garden and to give them time to start to thinking about biodiversity.

4. Go over the answers to the quiz. Allow enough time for discussion so that students can expand or explain why they chose a particular answer. Then, if students don't come up with the answer themselves, share it with them.

What Is Your Biodiversity IQ?

Find out what you know about diversity while learning interesting facts. For each question, circle all the correct answers.

1. Which of the following could the fastest human outrun in a 100-yard race?
   a. Cheetah
   b. Wart hog
   c. Domestic cat
   d. Wild turkey

2. Which of the following actually exist?
   a. Ants that "herd" aphids for food
   b. Slime molds that creep across the ground
   c. Trees that can grow with their roots under water
   d. None of the above

3. Which of the following animals can consume at least half of its body weight in food each day?
   a. Little brown bat
   b. Masked shrew
   c. Ruby-throated hummingbird
   d. None of the above

4. Which of the following best describes the word "biodiversity"?
   a. Endangered species
   b. Different kinds of planets in the solar system
   c. The variety of all life on earth
   d. Biographies about famous biologists

5. Scientists studying bug zappers have learned some interesting facts. Which of the following are among them?
   a. Insects are attracted to bug zappers because of the zappers' smokey smell
   b. Bug zappers are great for ridding summer nights of mosquitoes
   c. Bug zappers could be bad news for certain bird, fish, bat and flower species
   d. There are more than four million bug zappers being used in the United States

6. Which of the following can be considered an enemy of the Everglades?
   a. Florida Panther
   b. Melaleuca
   c. American Alligator
   d. White Mangrove

What Is Your Biodiversity IQ?
(continued)

7. What is the most serious threat to biodiversity?
   a. Scientists collecting specimens
   b. Habitat loss
   c. Tourists
   d. Pollution

8. The items on the left have been (or are being) developed into important medicines for humans. Match each item with the medicine made from it by connecting them with arrows.

Bread mold	heart medicine
Willow tree	antibiotic
Vampire bat saliva	pain reliever
Mayapple	medicine to unclog arteries
Coneflower	immune system booster

9. Without fungi, which of the following would you not be able to do?
   a. Eat pizza topped with pepperoni and mushrooms
   b. Bake bread
   c. Live in a world free of dead things lying all over the place
   d. Put blue cheese dressing on your salad

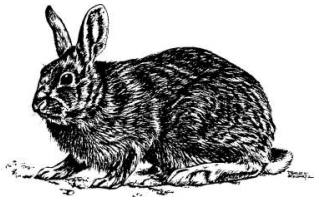
10. Which of the following statements are true?
   a. Potatoes originated in Ireland
   b. The United States grows most of its baking potatoes in Washington
   c. More than 5,000 different kinds of potatoes have been identified in South America's Andes Mountains.
   d. The French fry, invented by Madame Bonaparte during the French Revolution, became one of Napoleon's favorite snacks.

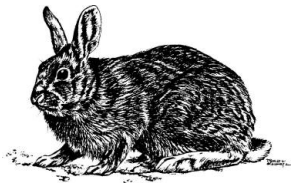
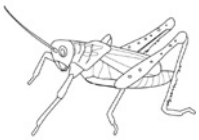
11. Which of the following are actual species of animals found in the Biscayne Bay Estuary?
   a. Sea grass
   b. Manatees
   c. Sea lion
   d. Walrus

12. If you decided to throw a party to celebrate the diversity of life on earth and wanted to send an invitation to each species, how many invitations would you need?
   a. 150
   b. About 3,000
   c. 652,983
   d. More than 1.5 million

What Is Your Biodiversity IQ?
(continued)

13. If the number of species on earth was represented by physical size, which of the following would most accurately illustrate the proportion of insects to mammals?



14. Biodiversity includes:
    a. The color of your eyes
    b. the creatures in your neighborhood soil
    c. Florida
    d. Your classmates

15. If we gave a prize for "the strongest creature for its size", which of the following would win?
    a. Bobcat
    b. Bald eagle
    c. Ant
    d. Turtle

16. Which of the following would people have to do without if there were no bees?
    a. Almonds
    b. Honey
    c. Cucumbers
    d. Apples
    e. Celery

17. Which of the following is an example of an ecosystem service?
    a. A ladybug that protects your garden by eating aphid pests
    b. A company that rakes people's yards
    c. A wetland that filters dirty water
    d. An ocean that controls the earth's climate

18. Some of the world's most fascinating creatures live in really unusual places. Which of the following is sometimes a home for another living thing?
    a. A caterpillar's abdomen
    b. A termite's gut
    c. A white-tailed deer's intestine
    d. A human forehead

What Is Your Biodiversity IQ? Answer Key

Answers

1. Which of the following could the fastest human outrun in a 100-yard race?
   c. Wild turkey

2. Which of the following actually exist?
   a. Ants that "herd" aphids for food
   b. Slime molds that creep across the ground
   c. Trees that can grow with their roots under water

3. Which of the following animals can consume at least half of its body weight in food each day?
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   c. Bug zappers could be bad news for certain bird, fish, bat and flower species
   d. There are more than four million bug zappers being used in the United States

6. Which of the following can be considered an enemy of the Everglades?
   b. Melaleuca

7. What is the most serious threat to biodiversity?
   b. Habitat loss

What Is Your Biodiversity IQ?
Answer Key

8. The items on the left have been (or are being) developed into important medicines for humans. Match each item with the medicine made from it by connecting them with arrows.

   Bread mold --> antibiotic
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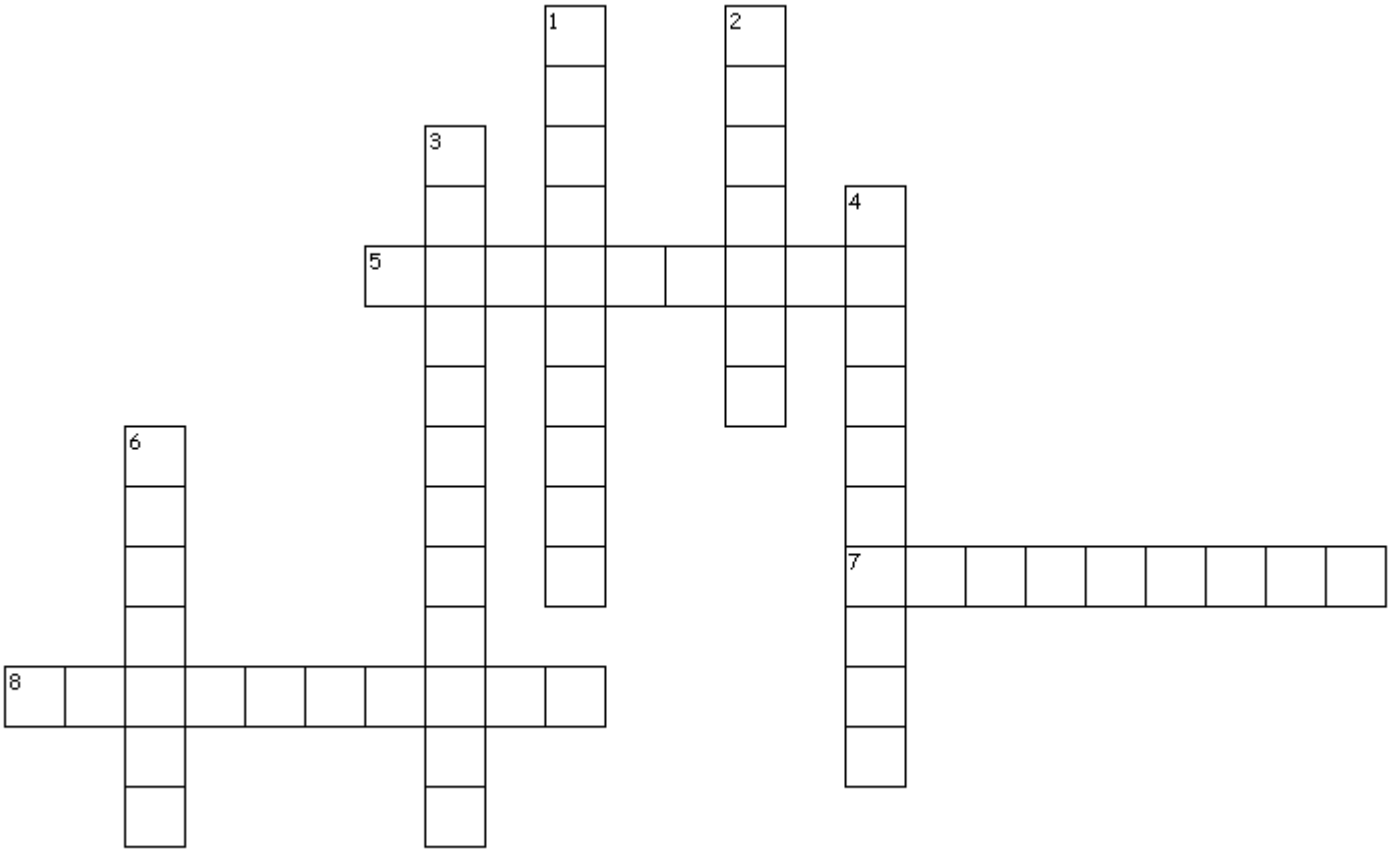
Pre-Visit Activity 2:
Biodiversity Crossword Puzzle

Objectives

Students learn and understand vocabulary related to biodiversity.

Next Generation Sunshine State Standards: LA.6.1.6.1, LA.6.1.6.5, LA.6.5.2.1, LA.6.5.2.2 LA.7.1.6.1, LA.7.1.6.5, LA.7.4.2.2, LA.7.5.1.1, LA.7.5.2.1, LA.7.5.2.3, LA.8.1.6.2, LA.8.5.1.1, LA.8.5.2.1, LA.8.5.2.2, LA.910.1.6.1, LA.910.1.6.2, LA.910.5.1.1, LA.910.5.2.1, LA.910.5.2.3, LA.1112.1.6.1,LA.1112.5.1.1, LA.1112.5.2.1, LA.1112.5.2.2, LA.1112.5.2.4 SC.912.L.15.3



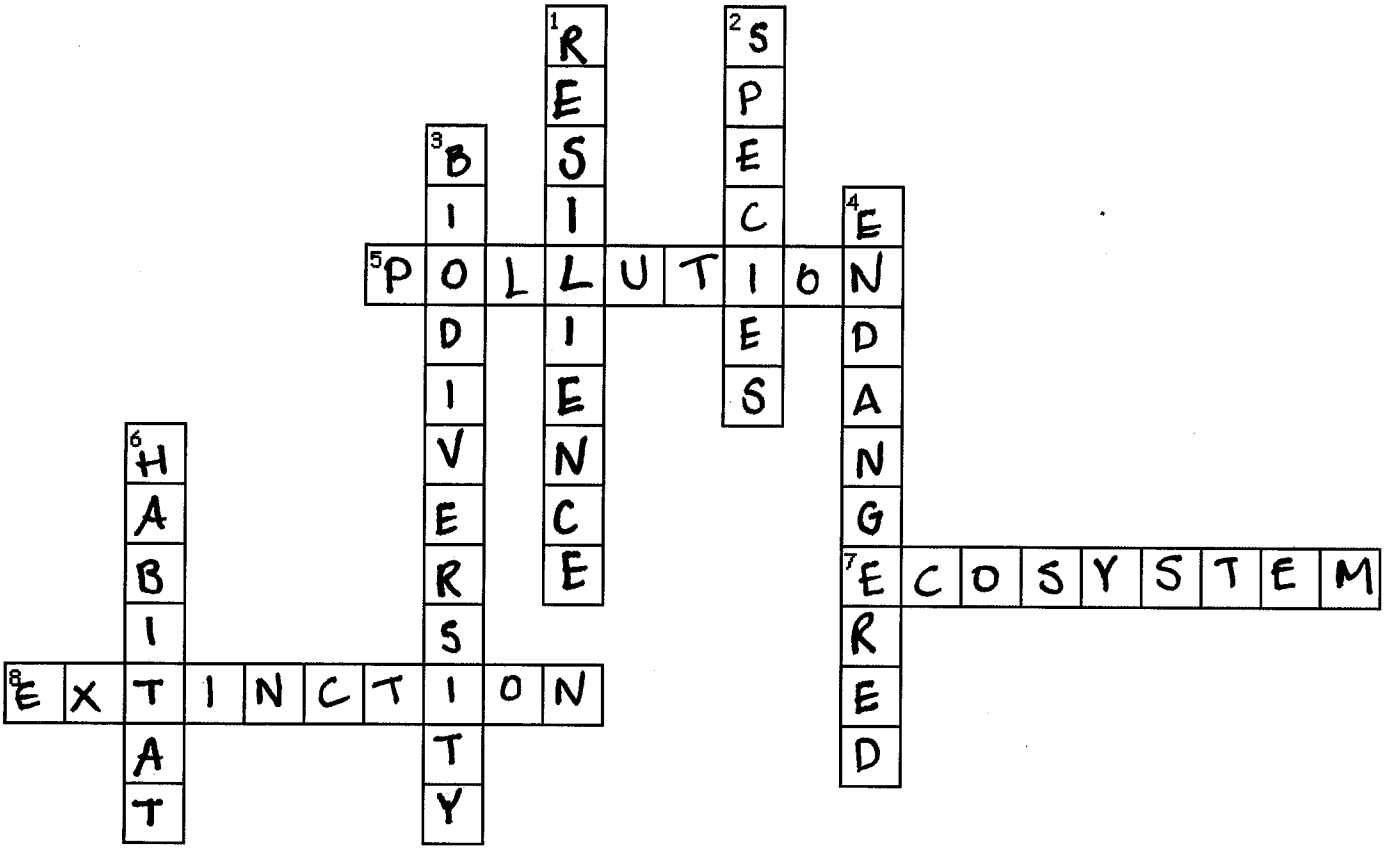
Down

1. The capacity of an ecosystem to respond to disturbance.
2. Organisms capable of interbreeding.
3. The variety of life in the earth or in a particular habitat or ecosystem.
4. In danger of extinction in the foreseeable future.
6. The place or environment where a plant or animal normally lives and grows.

Across

5. The contamination of earth's land, water or air.
7. A biological community consisting of all the organisms living in an area and the non-living (abiotic) components of the environment that they interact with.
8. The process of a species ceasing to exist.

Biodiversity Crossword Puzzle Answer Key



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7. A biological community consisting of all the organisms living in an area and the non-living (abiotic) components of the environment that they interact with.
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Post-Visit Activity 1: Ecoregional Survey: Backyard BioBlitz

Objectives

Students record observations about the natural environment.
Students learn key ecological elements about their immediate surroundings.

Next Generation Sunshine State Standards: SC.6.N.1.1, SC.6.N.1.2, SC.6.N.1.5, LA.6.1.6.1, LA.6.1.6.5, SC.6.N.1.5, LA.6.5.2.1, LA.6.5.2.2, SC.7.N.1.1, SC.7.N.1.3, LA.7.1.6.1, LA.7.1.6.5, LA.7.4.2.2, LA.7.5.1.1, LA.7.5.2.1, LA.7.5.2.3, SC.8.N.1.1, SC.8.N.1.6, LA.8.1.6.2, LA.8.5.1.1, LA.8.5.2.1, LA.8.5.2.2, SC.912.L.15.3, SC.912.L.17.4, SC.912.L.17.7, SC.912.L.17.20, LA.910.1.6.1, LA.910.1.6.2, LA.910.5.1.1, LA.910.5.2.1, LA.910.5.2.3, LA.1112.1.6.1, LA.1112.5.1.1, LA.1112.5.2.1, LA.1112.5.2.2, LA.1112.5.2.4

Materials

- Paper or journals
- Pens, pencils, color pencils or markers

Introduction

What do you think about when you hear the word biodiversity? Many times we think of tropical rainforests. However, biodiversity is everywhere and plays a very important role no matter what ecosystem you are in. Every species has a niche or a specific function or role they play in an ecosystem. In a bigger scale, every ecosystem also has a function in the regulating processes of the Earth as a whole.

This activity will help you learn about the natural environment that you live in. We hope that it will inspire you to continue learning about the environment and to dig deeper into concepts of biodiversity, ecology and sustainability. Enjoy this exploration journey!

Procedure

1. What major habitat type do you live nearby or used to exist where you live now?(subtropical forest, wetland, mangrove...)
2. Name three native trees that live in your area. Draw a leaf from each one.
3. Name five native edible plants that grow in your region, and list in which season(s) each is available.
4. Name one poisonous plant that lives in your area.
5. Name five native animals that live in your region.
6. Name three native animals that you can see that you can see in your area at any time of the year.
7. Name three migratory animals that live in your area, and list in which season(s) you are able to see them.
8. Do deer live in your area? If so, when during the year do they give birth?
9. How much average rainfall does your community get each year?
10. When (during what season or month) does your community normally get the most precipitation?

Ecoregional Survey: Backyard BioBlitz (Continued)

11. How long is the growing season in your community?
12. What is the average temperature in July? In December?
13. What are some natural signs in your community that show that the seasons are changing?
14. What body of water -lake, pond, stream, or river-is closest to your school?
15. How has your area changed in the past 25 years? (Ask your parents or neighbors.)
16. What types of plants and animals lived in your area 10,000 years ago? What was the climate like then?
17. What species in your area -if any- are threatened or endangered?
18. What natural events or processes influence the land around your community? How have they affected the land? (For example, have there ever been glaciers, earthquakes, or volcanic eruptions in your area? Do frequent fires, high winds, or flooding shape where and how things grow?)
19. Are there any threatened ecological areas in your community? (Are any wetlands, rivers, or forests, for example, in trouble?)
20. Name a non-native species that has created problems in your community.

Closing

What did you find most interesting? Did you discover anything that surprised you? Choose a couple of answers that were more outstanding to you. Write a report about it and use this as an opportunity to expand and learn more in depth about those topics.

Finally, divide the classroom in small groups of three or four students.

- Ask students to read their reports within their small groups.
- Ask students to discuss and reflect in their small groups about their ecoregional survey.
- Was a question particularly challenging? Why?
- Did this exercise encourage you to spend more time outside?
- Did you enjoy the ecoregional survey activity?
- Did you learn about a plant or animal that is around where you live, but you had overlooked?

Post-Visit Activity 2:
Biodiversity Action Plan: Count Me In!
Long-Term Classroom Activities

Objectives

Students learn how to make an action plan and how to track its progress over time.
Students modify actions and/or behaviors to reduce their impact in the environment.
Students are introduced and understand consensus as a decision-making process.
Students use reflection activities as a tool to integrate learning.

Next Generation Sunshine State Standards: SC.6.N.1.3, SC.6.N.1.4, SC.6.N.1.5, SC.6.N.2.1, LA.6.1.6.1, LA.6.1.6.5, LA.6.5.2.1, LA.6.5.2.2, SC.7.N.1.3, SC.7.N.1.6, LA.7.1.6.1, LA.7.1.6.5, LA.7.4.2.2, LA.7.5.1.1, LA.7.5.2.1, LA.7.5.2.3, LA.8.1.6.2, LA.8.5.1.1, LA.8.5.2.1, LA.8.5.2.2, LA.910.1.6.1, LA.910.1.6.2, LA.910.5.1.1, LA.910.5.2.1, LA.910.5.2.3, LA.1112.1.6.1,LA.1112.5.1.1, LA.1112.5.2.1, LA.1112.5.2.2, LA.1112.5.2.4 SC.912.L.15.3 SC.8.N.4.1, SC.912.L.15.3,

Overview

This is an extension activity for the pledge card distributed and filled in at the *Biodiversity: Creating Healthy Ecosystems* field study at Fairchild Tropical Botanic Garden. This activity was designed to create a supportive structure for students, so they can concretely see their biodiversity conservation action plan progress. It can also be used for community building in the classroom.

It's very important that students are engaged, please try to use a participatory teaching approach. The more engaged the students are the more likely this project will be sustained and successful long-term. Ideally, this activity should last the rest of the semester, but it can be adjusted to be shorter if necessary.

The following activities are a guide for you to facilitate the Biodiversity Action Plan process in your classroom. You can do one activity or several of them. Feel free to modify them if needed.

Materials:

Butcher paper (or a large pierce of paper)
Pledge cards
Markers, colored pencils, watercolors…
Printed copies of the Biodiversity Action Plan Worksheet

Action Plan Classroom Map

Procedure:

Part 1: Creating Biodiversity Affinity Groups

o Ask students to bring their biodiversity conservation pledge cards to class. If you have students in your classroom that were unable to come to the fieldtrip, please give them a pledge card and make sure they have the opportunity to fill it in.

Biodiversity Action Plan: Count Me In!
Long-Term Classroom Activities
(Continued)

o Ask one student to be the note taker. Using a large piece of paper, the student note taker will record the main idea for everyone's action plan, including both students and teacher(s). We will call this the Biodiversity Action Plan Classroom Map. For this part of the exercise and for time's sake, only record the actions and not the frequency of their action. Ask the note taker to group together similar actions by themes. For example: transportation, consumption, energy use, trash/ waste, habitat protection, etc. It might help to write each student's initial under their action for the second part of this activity.

o Students will use these themes and sub-themes to work together in affinity groups.

o Once everyone's action has been recorded on the Biodiversity Action Plan Classroom Map. Ask the class to look at it again; maybe some themes need to be changed or added. Every theme should have between 3 to 5 actions in it. This will be a biodiversity affinity group. If a theme has more than 5 actions, create sub-themes. If a theme has less than 3 actions, group them together with another small group.

Part 2: Biodiversity Action Plan Development

o Divide the classroom using the affinity groups and ask each group to sit together.

o Ask each affinity group to come up with a name for their group.

o Tell students that they will be working with their affinity groups for the rest of the semester or as long as you plan on doing this activity.

o Distribute one Weekly Action Plan Worksheet for each student.

o Give each small group 10 minutes to fill in their worksheets.

o Ask each small group to report back to the class highlights of what they will be doing during the upcoming week.

o Repeat Part 2 once a week.

o At the end of your action plan project, make sure to **celebrate everyone's contributions.** Highlight to your students the cumulative long term impact of their actions. Encourage them to continue taking positive actions. Even though the classroom project ended, you can keep working on your biodiversity action plan or create another action plan related to another environmental issue.

Biodiversity Action Plan: Count Me In!
Long-Term Classroom Activities
(Continued)

Community and Consensus Building Variation

o Instead of every student having their own specific action, your classroom could choose one area to focus on and a few specific actions you want to take together.

o For choosing the biodiversity focus area, you could introduce your classroom to different ways of decision making. Ask your students what are some ways groups of people make decisions? Students will probably say majority rule, voting, etc.

o Ask the students if they know what consensus is? It's a process of decision-making where every individual is included in the final decision. It seeks the agreement and inclusion of all individuals participating in the decision process. Usually that agreement is achieved through a process of cooperation and collaboration. In consensus decision-making, the group tries to find the best possible solution for both the group and each of the individuals involved, instead of competing for personal preferences. This process can be time consuming, but usually the decisions that come up are creative solutions that promote community growth and trust.

o Tell the students that they will be learning about consensus decision-making by using it to choose one focus area for the Biodiversity Action Plan. Make sure your classroom understands that they will be working together to come to a decision and that everyone is happy and in agreement with.

o If possible, ask students to rearrange the classroom and make a circle.

o You could frame the conversation with different questions. For example: *If you could pick one area to focus for our classroom Biodiversity Action Plan, what would you choose?* Some example focus areas are: transportation, consumption, energy use, air and water quality, gardening, sustainability, habitat restoration, habitat protection, trash/waste, recycling, raising environmental awareness, education, etc.

o There should be one student note taker recording the conversation and all the answers. Make sure that the note taker has an opportunity to voice her/his answers and that she/he is part of the decision-making process.

o Depending on the group this process is different, and some students might need more support facilitating it. If you see that the consensus process is taking time, then remind students that it might take some time and ask them to be patient. If necessary remind them of the benefits of consensus and how they will have the opportunity to listen to their classmates and learn from them, as well as having the opportunity to voice their ideas and concerns.

Biodiversity Action Plan: Count Me In!
Long-Term Classroom Activities
(Continued)

o One important component of consensus is that everyone involved in the decision making should be able to be part of the conversation and able to easily enter the conversation. At the beginning of the consensus process, you might make students aware that some people are more vocal and others are usually quiet. This is a great opportunity for students to self-reflect and learn about group dynamics. For example, some students might have to step back a little to give room for other students to participate in the conversation and other students might step up to become more involved in the decision-process.

o There are several tools that you could use to help students learn about group dynamics and become self-aware of ways they contribute to these dynamics. One of my favorite tools to use for this is what I call the "seed bank". Refer to the Seed Bank Instructions below for more information.

o After your class has chosen their focus area, distribute to each student a copy of the Biodiversity Action Plan Worksheet. Ask students to fill it out.

o Repeat this process once a week to track the class progress.

o At the end of your action plan project, make sure to **celebrate everyone's contributions.** Highlight to your students the cumulative impact of their actions long term. Encourage them to continue taking positive actions. Even though the classroom project ended, you can keep working on your biodiversity action plan or create another action plan related to another environmental issue.

<u>Seed Bank Instructions</u>

o Distribute the same number of seeds to each student.

o Tell students that they can use one seed for each time they speak in the group. Once they have used up all their seeds, they won't be able to speak anymore. This gives all participants an equal opportunity to speak and also helps them be more mindful of what they want to say.

o Place a bowl in the middle of the room and ask students to place a seed in the bowl each time they speak.

Biodiversity Action Plan: Count Me In!
Long-Term Classroom Activities
(Continued)

Strategies: Taking Action at Various Levels
Individual, Community, Local, Regional and Global Level Variation

Part 1: Introduction
o After each student in your classroom has chosen their action for their Biodiversity Action Plan, introduce students to the different levels actions and solutions can take place: individual, community, local, regional and global.

o You could start by asking students to define and give examples of these different levels.

o Create a poster or sheet for them to track progress both at the individual and community level. Encourage them to create an Action Plan Portfolio.

Ask them the following reflection questions:
- Why is it important to act both at an individual level and at a community level?
- How did you feel knowing that your actions were part of something bigger than just yourself?
- How do individual actions impact the community, local and/or regional level(s)?
- How are local issues connected to global issues?
- Are these different levels isolated or interconnected?

Part 2: Scenario
o Another variation could be to create a scenario and break the classroom in small groups giving them time to think about what they would do if they were in that situation. For example, one scenario could be:

You are a land planner; you work in a city where there are limited open areas remaining to build on. Your city is thinking about building an airport, but because the city is so big there aren't as many options for places to build it. The airport would create new jobs and help the local economy. On the other hand, that natural area is home to one endangered species of birds that come lay their eggs and create their nests there.

Ask them the following reflection questions:
- If you were that land planner, what would you do?
- What are some of the things you think are important to consider in that situation?
- Who are some of the stakeholders directly affected in this situation?
  (Hint: Think of humans, as well animals, plants and elements in nature impacted by this decision)
- Who should be involved in the decision making process?
- What are some of the ways you could encourage and ensure that these groups of people are involved in the decision making process?
- How could you solve this problem in the best possible way so that all stakeholders are included, taken into account and benefited?
- Can we create local jobs and preserve habitat?
- Remember there are no right or wrong answers. This is an opportunity to think about the complexity of some issues and to think creatively when problem-solving.

Biodiversity Action Plan Worksheet

Group Name	
Theme	
Week Number	
Weekly Activity Goal	
What action(s) related to your goal did you do during this week?	
What was most challenging about sticking to your action plan?	
What would make your action plan easier and more enjoyable? Don't forget that you can ask your group for support, ideas and help.	
What was your favorite thing about this week's action plan?	
Have you noticed any interesting observations or patterns since you started your action plan?	
Is your current action fun and challenging? If you answered no, maybe it's time to expand it and come up with a new, creative and fun action.	