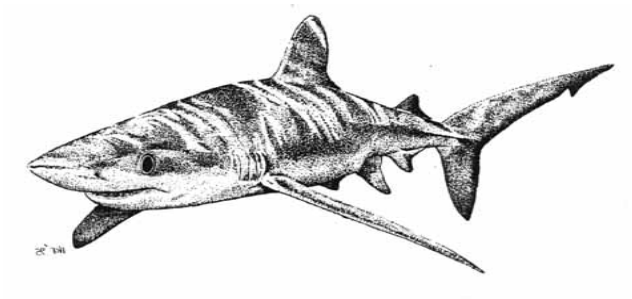

Conservation through Collaboration

With PSAs

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"Home of the Sharks"

Need for and Goals of the Program

"Learning how one person can make a difference in the world."

For information concerning IMPACT II opportunities, Adapter and Disseminator grants, contact:

The Education Fund
305-892-5099, Ext. 18
E-mail: Lvalle@educationfund.org
Web site: www.educationfund.org

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Painting by Gwen Foote

Conservation through Collaboration

with PSAs

Purpose/ Goals of the Program

This grant is designed to maximize academic learning time available to students through collaborative connections in curriculum disciplines. Students will use strategies to integrate technology in understanding that science, technology, and society are interwoven and interdependent. They will use the scientific process, critical thinking, and problem solving, understanding their findings and conclusions by checking evidence other sources.

Collaborative working teams of interdisciplinary teachers participate in professional development programs, research, and instructional technology impact student to take an interest and make a difference in environmental concerns.

Students will demonstrate the ability to read text orally with accuracy, appropriate rate, and expression. They will practice reading rate based on purpose, text difficulty, form, and style. Students will use strategies to develop vocabulary and will listen to, read, and discuss conceptually challenging text. They will use context clues to determine meanings of words, and identify key vocabulary and features to relate new vocabulary to familiar words. They will identify and understand meanings of words through understanding semantics in scientific nomenclature. Students will determine correct meaning of words with multiple meanings in context. They will determine meanings of words, etymologies, and alternate word choices by using digital tools; and identify the meaning of words and phrases from other languages, linguistically. Students will use knowledge of subject and related areas, graphic representations, and knowledge of science methods to confirm predictions of content and problem solving. They will understand meaning through inferring, paraphrasing, summarizing, and identifying relevant details. Students will identify cause-and-effect relationships and analyze text structures with graphic organizers in data collection and analysis, argument/support, lists with text features, and explain their impact on meaning in text.

In the processes of learning, students will research and understand how to describe patterns of structure and function in living things. They will understand that living things are composed of major systems that function in reproduction, growth, maintenance, and regulation. Students will exhibit evidence in their efforts to publish expository information about their knowledge of behavior that is a response to the environment and influences growth, development, maintenance, and reproduction. The nature of science promotes students to use scientific processes to solve problems.

Florida Sunshine State Standards

Language ARTS 6-8 Reading Standard 1: The student uses the reading process effectively. (LA.A.1.3)
Standard 2: The student constructs meaning from a wide range of texts. (LA.A.2.3)
Writing Standard 1: The student uses writing processes effectively. (LA.B.1.3)
Standard 2: The student writes to communicate ideas and information effectively. (LA.B.2.3)
Listening, Viewing, and Speaking Standard 1: The student uses listening strategies effectively. (LA.C.1.3)
Standard 2: The student uses viewing strategies effectively. (LA.C.2.3)
Standard 3: The student uses speaking strategies effectively. (LA.C.3.3)
Language Standard 1: The student understands the nature of language. (LA.D.1.3)
Standard 2: The student understands the power of language. (LA.D.2.3)

Science Grades 6-8 Standards Energy

Standard 1: The student understands that types of energy and motion may be described, measured, and predicted; Knows that vibrations in materials set up wave disturbances that spread away from the source (e.g., sound and earthquake waves) (SC.C.1.3) .
Standard 2: The student understands that the types of force that act on an object and the effect of that force can be described, measured, and predicted. (SC.C.2.3)

Processes of Life

Standard 1: The student describes patterns of structure and functioning living things.
The student will understand that living things are composed of major systems that function in reproduction, growth, maintenance, and regulation.
The student will know that behavior is a response to the environment and influences growth, development, maintenance, and reproduction. (SC.F.1.3)

The Nature of Science

Standard 1: The student uses the scientific processes and habits of mind to solve problems. (SC.H.1.3)
The student knows that science disciplines differ from one another in topic, techniques, and outcomes, but that they share a common purpose, philosophy, and enterprise.
The student recognizes the scientific contributions that are made by individuals of diverse backgrounds, interests, talents, and motivations.
Standard 2: The student understands that most natural events occur in comprehensible, consistent patterns. (SC.H.2.3)
Standard 3: The student understands that science, technology, and Society are interwoven and interdependent. (SC.H.3.3)

Course Outline/Overview

Students will examine the guiding question,

"What choices can I make and how can I contribute to the conservation of wildlife?"

"How can I help to reduce the progression of global warming to improve our world?"

Students will research and investigate environmental, science, and ecology issues using interactive technology, accessing global resources with journalistic interactive presentations. Students will become familiar with concepts in literacy through science by researching current events, collaboratively working on projects, writing expository articles, and using applications in their lives through documentation of familiar media, such as cameras and videos.

Students will examine the guiding question, "What choices can I make, and how can I contribute to the conservation of wildlife. How can I help to reduce the progression of global warming to improve our environment and world?"

Engaged students will use technology to demonstrate presentations for a better understanding about conservation through research and experiential learning strategies, while mentoring students with presentations. This project will inspire and cultivate this digital generation of environmental activists and innovators to access print and online publications, science, and technology, to relate it to their lives. As students collaborate and design their expository writing and video productions, they will present wildlife conservation concerns and propose solutions to global and local environmental dilemmas. Students, especially girls and minorities (80% of this school), will be encouraged to participate in, and publish, print and video interviews and presentations. Demonstrating measurable outcomes will be improved, accomplishing products, publications, and online informational dissemination will be generated by engaged students. They will use innovation and creative problem-solving skills to complement improved progress in achievements and assessments.

The language arts and science students will adopt a protected species in a marine conservation group and track their adapted responsibility online for progressive and continued lessons and participation in conservation. Marine species considered for adoption are the manatee and shark.

The program will reinforce lessons and achievements with a field trip to a local conservation exhibit where on-site podcasts can be recorded for additional online postings.

Optimizing Learning Students retain (if they focus attention on the lesson at hand):

-10% of what they read
-26% of what they hear
-30% of what they see
-50% of what they see and hear
-70% of what they say and
-90% of what they say and do.

If we want to optimize learning, it helps to learn in a multi-sensory environment.

Anticipated Project Results:

Science concepts will be reinforced by creating articles, brochures, and podcasts about issues in wildlife conservation and environmental science, affecting students locally, nationally, and globally. Students will develop skills and strategies in creating expository writing and Public Service Announcements (PSA) videos about relevant topics, interact with online conservation groups in scientific and environmental studies, compile research, data input collection, and analysis. They will become proficient in reading and writing in scientific format, with articles in digitally published and podcast distribution. Students will develop valuable writing, editing, and publishing skills through technology and have a physical manifestation of their skills to share with other students, families, community, and globally engaged student programs. Intended outcomes will be measurable through product, publication and online informational dissemination, increased student achievement and student acceptance in environmental and conservation programs. Future educational endeavors will show improved progress in student achievements and assessments.

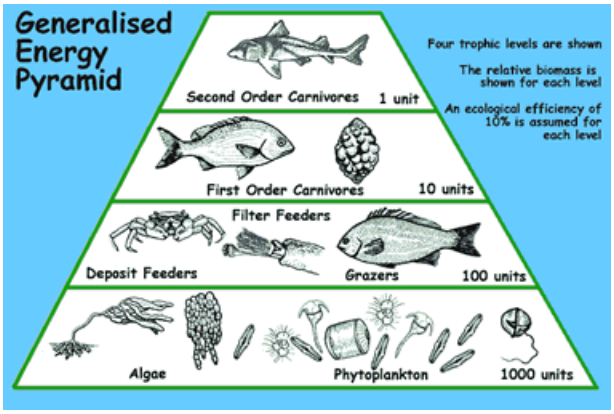
Lessons:

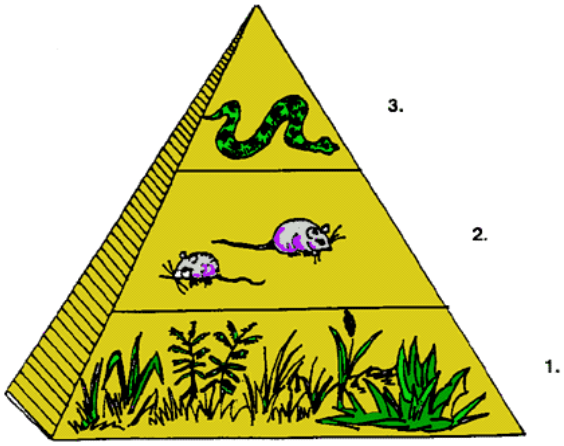
Lesson 1: Biomes and Ecology **FOOD/ENERGY PYRAMID POSTER**

TASK: Identify all Biomes of the world. Choose one and use that biome to illustrate plants, animals, and environmental climate in a food/ energy pyramid exhibiting interrelationships.

CREATE A VISUALLY PLEASING POSTER OR 3-D VISUAL AID ILLUSTRATING AN **ECOLOGICAL FOOD/ENERGY PYRAMID**

REQUIREMENTS: INCLUDE 3-5 TROPHIC LEVELS. IDENTIFY PRODUCERS & PRIMARY/SECONDARY /TERTIARY CONSUMERS. DESCRIBE ORGANISMS WHICH OCCUPY EACH TROPHIC LEVEL. EXPLAIN THE "10% RULE".





Resources: Web sites that may help:
http://www.learner.org/channel/courses/essential/life/session7/closer5.html
http://www.mesa.edu.au/friends/seashores/energy_pyramid.html
http://regentsprep.org/Regents/biology/units/ecology/energy.cfm
http://earth.rice.edu/MTPE/bio/biosphere/topics/energy/40_biomass.html
http://www.cod.edu/people/faculty/fancher/TrophicPyramids.htm

Lesson 2: Ecosystems: How do I make the right Choices?

What is the Carbon Cycle? Going Green Activities and Investigations

Learning Goals: In this exercise, students will explore the carbon cycle and be able to identify carbon sources, sinks, and release agents.

Objectives:
Students will understand that carbon is critical to the biosphere and cycles to support life on earth.
Students will understand and be able to identify carbon sources and release agents in the carbon cycle.
National Science Education Standards
Grade Level/Time: Grade level: 6 to 9

- **Time:**
  - Teacher introduction: 20 minutes
  - Student brainstorming: 20 minutes
  - Student preliminary carbon cycle: 15 minutes
  - Student research time: 45 minutes to 60 minutes
  - Discussion/assessment: 30 minutes

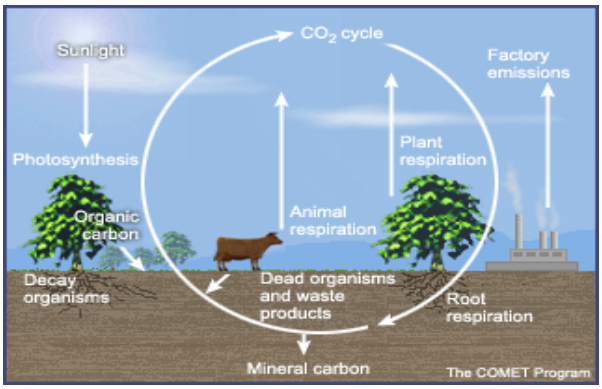
Materials (for extension activity)

- Magazines and newspapers
- Tag board or poster board for collages
- Blank paper

Background

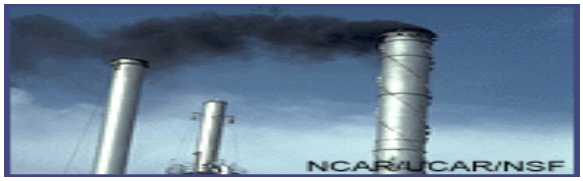
All living organisms are based on the carbon atom. Unique among the common elements of the earth's surface, the carbon atom has the ability to form bonds with as many as four other atoms (including other carbon atoms) and to form double bonds to itself. Carbon compounds can be solid, liquid, or gas under conditions commonly found on the earth's surface. Because of this, carbon can help form solid minerals (such as limestone), 'squishy' organisms (such as plants and animals), and can be dissolved in water or carried around the world through the atmosphere as carbon dioxide gas. The attributes of the remarkable carbon atom make possible the existence of all organic compounds essential to life on earth.

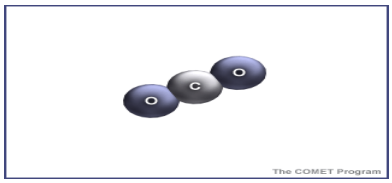
Carbon atoms continually move through living organisms, the oceans, the atmosphere, and the crust of the planet. This movement is known as the carbon cycle. The paths taken by carbon atoms through this cycle are extremely complex, and may take millions of years to come full circle.



The journey of a "typical" carbon atom existed in the atmosphere as part of a carbon dioxide molecule some 360 million years ago, during the Carboniferous Period. That CO_2 molecule drifted into the leaf of a fern growing in the tropical swamp forests of that time. Through photosynthesis, oxygen from the CO_2 molecule was released back into air and the carbon atom was removed from CO_2 molecule and used to build a molecule of sugar.

The sugar could have been broken down by the plant at a later time to release the energy stored inside, but this particular sugar molecule was transformed instead into a long-lived structural part of one of the plant cells. Soon after, the fern died and the remains sank into the muck at the bottom of the swamp. Over thousands of years, more plants grew in the swamp and their remains also sank into the swamp, forming a layer of dead plant material many meters thick. Gradually, the climate changed, becoming drier and less tropical. Sand, dust, and other materials slowly covered the ancient swamp and sealed the decaying vegetation under an ever-thickening layer of sediment. The sediment hardened, turning to sedimentary rock. The carbon atom stayed trapped in the remains of the long-vanished swamp while pressure of the layers above slowly turned the material into coals.





Some 360 million years later, in the 1900s, the coal bed was mined by humans and burned to fuel industrial civilization.The process of burning released the energy stored in the carbon compounds in the coal and reunited the carbon atom with oxygen to form CO_2 again.

CO_2 Was released to the atmosphere through the smokestack and the journey continues. Many other paths are possible, some taking only hours or days to trace, others, like the one above, many millions of years. The aggregation of the possible paths of carbon, where it may be stored for extended periods (the "sinks"), where it is likely to be released to the atmosphere (the "source"), and what triggers those sources (the "release agents"), together defines the carbon cycle.

Carbon sinks include long-lived trees, limestone (formed from the carbon-containing shells of small sea creatures that settle to the ocean bottoms and build up into thick deposits), plastic (a modern invention, but very long-lived), and the burial of organic matter (such as those that formed the fossil fuels we use today). **Carbon sources** include the burning of fossil fuels and other organic matter, weathering of limestone rocks (which releases CO_2), and respiration of living organisms. **Release agents** include volcanic activity, forest fires, and human activities.

In this activity, students will use resources provided by the teacher to construct the essential elements of the global carbon cycle. Students may work alone or in small groups, but should discuss their findings with the whole class. The goal is to develop a class consensus on the important elements of the cycle. Your role is to encourage and question, but not to give away answers or suggest that there is only one right way of looking at the issue.

Procedure

1. Distribute blank paper to students. Using class discussion, brainstorming, or question and answer methods, have students try to trace the movement of a carbon atom. You may wish to record while students come up with ideas. The result should be a version of a simplified carbon cycle, including at least eating and respiration in animals and photosynthesis in plants. It is common for the students to get stuck on the animal-to-plant-to-animal cycle because most have been exposed to the concept several times. You may need to move the cycle development along by encouraging them to think about oceans and if CO_2 plays a role. Have them consider rocks and minerals. Do they contain carbon? When you feel that they have at least several important elements of the cycle, have them work with a partner to illustrate their version of the carbon cycle.
2. Next, have students compare their cycle with more elaborate ones illustrated in texts, encyclopedias, or on-line. Have them list the differences and modify their own cycle if they think it necessary. Through class discussion, students can share what they have discovered.
3. Introduce the concepts of 'sink,' 'source,' and 'release agents.' Challenge students to label these factors on their modified cycles. Why might these be important factors to identify?
4. Have students respond to the discussion questions below.

Questions and Observations

1. What gas do humans and animals exhale? Write the formula for this exhaled gas. (CO_2)
2. Can humans be considered carbon sinks? If so, for how long? What living organisms are better long-term sinks than humans?
3. List two important 'sinks' (things that store carbon), two important 'sources' (things that release carbon), and one important 'release agent' (things that trigger sources) for carbon.
4. We are currently worried that CO_2 sources are out of balance with CO_2 sinks. If sources produce more CO_2 than sinks can remove, CO_2 in the atmosphere increases, possibly leading to global warming. What might happen if the reverse were true and sinks took up more CO_2 than sources? (Answers will vary but students may note that less CO_2 would be available for plant growth or that less atmospheric CO_2 might result in a slightly cooler atmosphere.)
5. Explain how understanding the carbon cycle helps atmospheric scientists understand and prepare for global climate changes.
6. EXTENSION: Divide the class into small groups. Ask each to develop a collage using magazines and newspapers that illustrates the carbon cycle. They should label the sinks, sources, and release agents. Each group should present its collage to the class.

Procedure

5. Distribute blank paper to students.
6. Using class discussion, brainstorming, or question and answer methods, have students try to trace the movement of a carbon atom. You may wish to record while students come up with ideas. The result should be a version of a simplified carbon cycle, including at least eating and respiration in animals and photosynthesis in plants. It is common for the students to get stuck on the animal-to-plant-to-animal cycle because most have been exposed to the concept several times. You may need to move the cycle development along by encouraging them to think about oceans and whether CO_2 plays a role in them. Have them consider rocks and minerals – do they contain carbon? When you feel that they have at least several important elements of the cycle, have them work with a partner to illustrate their version of the carbon cycle.
7. Next, have students compare their cycle with more elaborate ones illustrated in texts, encyclopedias, or on-line. Have them list the differences and modify their own cycle if they think it necessary. Through class discussion, students can share what they have discovered.
8. Introduce the concepts of 'sink,' 'source,' and 'release agents.' Challenge students to label these factors on their modified cycles. Why might these be important factors to identify?
9. Have students respond to the discussion questions below.

Questions and Observations

7. What gas do humans and animals exhale? Write the formula for this exhaled gas. (CO_2)

8. Can humans be considered carbon sinks? If so, for how long? What living organisms are better long-term sinks than humans?

9. List two important 'sinks' (things that store carbon), two important 'sources' (things that release carbon), and one important 'release agent' (things that trigger sources) for carbon.

10. We are currently worried that CO_2 sources are out of balance with CO_2 sinks. If sources produce more CO_2 than sinks can remove, CO_2 in the atmosphere increases, possibly leading to global warming. What might happen if the reverse were true and sinks took up more CO_2 than sources? (Answers will vary but students may note that less CO_2 would be available for plant growth or that less atmospheric CO_2 might result in a slightly cooler atmosphere.)

11. Explain how understanding the carbon cycle helps atmospheric scientists understand and prepare for global climate changes.

EXTENSION : Divide the class into small groups. Ask each to develop a collage using magazines and newspapers that illustrates the carbon cycle. They should label the sinks, sources, and release agents. Each group should present its collage to the class.

Assessment Ideas: 1. Consider using the last two discussion questions as a short quiz. Thoughtful answers to these should indicate that the students met the learning goals.

2. Rubrics, See teacher notes**.** Consider using the last two discussion questions as a short quiz. Thoughtful answers to these should indicate that the students met the learning goals.

Modifications for Alternative Learners: English Language Limited (ELL) students should be able to grasp the concepts in this activity as long as they can express them in graphic form and are not forced to rely entirely on text resources for their information. They may be paired together and given selected ELL-appropriate reading material, if available, or paired with students who will help explain the readings.

Resources: Contributors: University Corporation for Atmospheric Research (Publisher)
Modified with permission from Global Climates - Past, Present, and Future, S. Henderson, S. Holman, and L. Mortensen (Eds.). EPA Report No. EPA/600/R-93/126, U.S. Environmental Protection Agency, Office of Research and Development, Washington, DC. pp. 59 – 64

Lesson 3: *Communication through literacy*
Writing for Persuasion and Expository writing

Big Idea: Express Yourself: Using Ideas to Explain or Persuade

Task: Students will write an article two different ways using two different writing styles: Persuasive and Expository

Learning Goals: The students will understand the difference in styles of writing. They will be able to decide whether a piece of writing is persuasive or expository, and will also be able to write in both styles themselves.

Materials: Students will need paper, newspaper articles, magazine articles, and access to the library and internet

Resources*: Write Source 2000,* www.MiamiHerald.com, www.NYTimes.com, library

Lesson: The teacher will read the material on Persuasive and Expository writing in the *Write Source 2000* book with the students.

The class will make a "T" chart together, listing the attributes of persuasive on one side, and expository on the other.

The class will discuss the purpose of writing, and the audience that they are writing for.

We will read, together, 2 articles chosen by the teacher. One will be from the front page of the paper, the other will be from the editorial section.

The students will discuss the difference between the two articles, focusing on the language used in the articles.

Students will be asked to write an informative article on the topic of their choosing. They may use the internet or library books as a resource. This paper will be for homework.

The next class, students will share articles. We will discuss whether or not they completed their objective in writing an expository article.

The teacher will then assign a persuasive article, to be written in class. Students do not need to do research for this article.

The following class, students will share their articles out loud. The teacher will allow them to debate if there is a contentious article.

The best of both the persuasive and expository articles will be submitted to the school paper for possible publication.

We will follow up with a journal outlining the differences in expository and persuasive writing.

Lesson 4: *The effect of words and illustrations*

Big Idea: Picture it! Illustration and graphic design to enhance persuasive writing.

Task: Students will enhance their persuasive articles with the use of pictures, artwork, computer illustrations, graphs and charts.

Learning Goals: Students will be able to use computers, photos, and other illustrations to better persuade their readers.

Materials: Computer, Microsoft Word, magazines, digital camera,

Resources: Miamiherald.com, *Write Source 2000,* various magazines provided by the students.

Lesson:

We will read the chapter about design and illustration in our book.

Students will review the persuasive articles they wrote in lesson 13.

We will look through articles in magazines and newspapers, noting what the authors and editors use to enhance the article's appeal, i.e. illustrations, photographs, charts.

Students will get together with an illustration partner. Partners will use the classroom computers to explore the graphing and chart-making in Microsoft Word and Adobe Illustrator.

Students will be assigned to enhance ONE of the two articles with a graph, a chart, a photograph or an illustration.

Articles will be printed out and shared with the class.

The best enhanced articles will be submitted to the school newspaper.

Lesson 5: How to create a Public Service Announcement

Objectives: Students will become familiar with digital technology through the planning and designing the components of public service announcements.

Standards:
Listening, Viewing, and Speaking Standard 1: The student uses listening strategies effectively. (LA.C.1.3)
The Nature of Science –
Standard 1:The student uses the scientific processes and habits of mind to solve problems, knows that science disciplines differ from one another in topic, techniques, and outcomes, but that they share a common purpose, philosophy, and enterprise, recognizes the scientific contributions that are made by individuals of diverse backgrounds, interests, talents, and motivations (SC.H.1.3)
Standard 2: The student understands that most natural events occur in comprehensible, consistent patterns. (SC.H.2.3)
Standard 3: The student understands that science, technology, and Society are interwoven and interdependent. (SC.H.3.3)

Background:

A Public Service Announcement (PSA) can be written or presented in audio or visual form. Unlike a press release, a public service announcement is usually transmitted electronically, via radio, television, or Internet, in a short spot of ten to sixty seconds.

A requirement of the Federal Communications Commission (FCC) is that stations donate a certain amount of airtime to serve the public and the community. A public service announcement typically educates and raises awareness in a community topic, usually, but not always, for a non-profit organization.

Though the PSA covers less material than the typical press release, it requires the same "who, what, where, when and why." You have several choices when deciding what type of coverage you'd like to have. Be responsible for your audience and focus on the purpose of the PSA. An on camera interview of yourself or a personal representative can announce the issue or concern. You can submit your own video, but be sure it is appropriate and the sound can be understood. You may have to do a voice over narration. Success in delivering the message may hinge on hearing the words. Speak slowly, scan the camera slowly, and move more slowly. Have friends, family, and teachers view and critique it. Don't be afraid to make it even better with tweaking details.

Procedure

Materials:

- Paper
- Pencil
- Timer
- Digital Camera
- Computer
- PSA restrictions, limitations, and requirements

How to Write Public Service Announcements

1. Have a plan or an issue that you feel strongly about. Request information about specific requirements, restrictions and limitations of PSAs, along with a sample PSA.
2. Research other PSAs on television, radio, and Internet
3. Ascertain the length of the PSA option (30-, 60-, 90-second spots) into which the organization or business fits.
4. Write down the key points that must be covered with the PSA. Always try to answer the obvious questions of who, what, when, where, why and how.
5. Decide how to capture the audience's attention at the beginning of the PSA. This can be done with music, humor, image, or a quotation, by asking a question. Make it a thought provoking statement, by sharing a fact, or any other method that will make the audience want to listen. That will become the first part of the PSA.
6. Draft out the PSA with all of the components in place. Use words that will attract the public's attention and compel them to listen. Example: Our Ocean is our home and Florida, the only home for Manatees, and endangered species.
7. Time the drafted PSA to make certain that it fits within the timeframe allowed. If it doesn't, rewrite the PSA until it does.

The techniques of writing a PSA differ from media to media. Use the following basics as your guide. Put “PUBLIC SERVICE ANNOUNCEMENT” at the top middle of the single sheet of paper, followed by a few spaces and then the date that you’d like your announcement to air. Type your name, phone, email, and fax of the contact person. In bold letters, type the topic followed by a short, concise explanation of what you want aired. Send it about three weeks in advance. At the end, write ‘-end-’ or ‘# # #.’

You need to know your plan ahead of time. What do you want to educate or make your audience aware of? Make it legible, visually attractive and pleasing to the eye, and intense. You have 30-60 seconds to impact your audience with dramatic effect.

Assessments: Provide the rubrics based on choice of media, digital, video, PowerPoint, brochure, or type of Public Service Announcement. Assessment is based on completion of project according to guidelines and collaboration with group partners.

Lesson 6: Finding your passion in ecology with digital videos

Science Class **Eco-Cycle: Parts of an Ecosystem**

Grades 6-8

Overview: An ecosystem exists when plants and animals interact with each other and their physical environment. This lesson will introduce students to ecosystems in South Florida, as well as the plants and animals that make up the ecosystems. Students will seek out the key animals and plants as they read about the ecosystems.

Time:
3-4 weeks
Materials Required:

- Computer(s) with Internet access
- Blank outline and topographic maps of Florida and Atlantic coast, one for each student
- Colored pencils
- Power Point Presentation Software
- Publisher Software
- Digital cameras

Objectives:
Students will

- Define terms associated with marine and coastal ecosystems
- Define terms for elements that make up these ecosystems, including vegetation, endangered and threatened animals, marine life
- Locate Florida Keys on a map of Florida and color the sections appropriately for land, water, estuaries, and coral reef.

Procedure:

Distribute the outline maps of Florida to the class. Create a list of facts students already know about Florida. Some responses might include references to the beach, the heat, surfing, Everglades, agriculture, cuisine, multicultural background, and weather. Ask students to color the topographical outline map of South Florida and the Keys noting sea coast features and coral reef. Activity booklets from Sea Grant Coast Program will be implemented and reviewed in class for feedback to students in their investigation of the targeted ecosystem being studied. This research and discussion will be applied in Power Point Presentations created by students for presentation to other student groups of symbiotic ecosystems.

Development:

As a class, view podcasts of Florida Fish and Wildlife and sea coast videos. Ask students what would happen to the ecosystem if one of the elements were removed. Students will brainstorm and discuss how the 3 ecosystems discussed interrelate and depend on each other. Ask the students if any of the animals they have learned about remind them of animals that they know about that live in different ecosystems?

Suggested Student Assessment:

Working in small collaborative learning groups, students will present their component of the lesson to the rest of the class. Each group will be assigned an ecosystem of coral reef, seagrasses, or Mangroves. One group will coordinate the other groups to connect the factors in the integration of the 3 ecosystems.

Extending the Lesson:

Working in small collaborative learning groups, ask students to send explore the Save a Manatee Website to research about adopting a Manatee for the class.

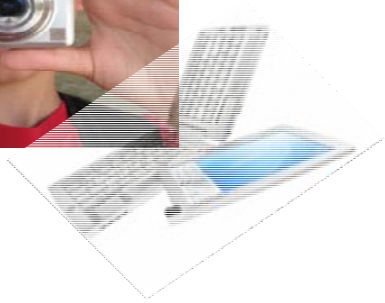
Related Links:

http://www.nationalgeographic.com/geography-action/habitats.html
http://www.nationalgeographic.com/
http://sofia.usgs.gov/flaecohist/
http://sofia.usgs.gov/flaecohist/kidscorner/
http://www.schools.pinellas.k12.fl.us/educators/tec/mitchell2/questact.htm

Lesson 7: How to create & teach Through Technology

Today's Students- Tomorrow's Leaders

Today's digital kids think of information and communications technology (ICT) as something akin to oxygen: they expect it, it's what they breathe, and it's how they live. They use ICT to meet, play, date, and learn. It's an integral part of their social life; it's how they acknowledge each other and form their personal identities.



The Kids We Work With

(Brown, 2002)

Language Arts / Science Class **Grades 6-8**

Overview: Students will use what they learn in science ecology and language arts in writing and presenting thorugh technology to create a persuaxive presentation for conservation.

Time:
3-4 weeks
Materials Required:

- Computer(s) with Internet access
- Blank outline and topographic maps of the world with resources of conservation magazines.
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- Power Point Presentation Software
- Publisher Software
- Digital cameras

Procedure:
Students will use computers and cameras to research, create a presentation of their choice related to the environments and conservation. Working in collaborative learning groups, students will present it to the class for feedback . The presentation will be improved and represented to the school.

Lesson 8: Adopting an Endangered Species as a Class.

Save the Manatee. Club

http://www.savethemanatee.org/smchist.htm

Public Awareness Activities

Public awareness waterway sign

Each year, SMC sends out press releases on manatee issues to local, state and national media. Jimmy Buffett also records public service announcements that are distributed to radio and television stations throughout the United States. SMC staff handle many requests for manatee information, and the Club maintains a toll-free telephone number for this purpose. In addition, SMC maintains a web site on the Internet, and SMC staff answers e-mail questions about manatees from the public. SMC also produces public awareness waterway signs that alert boaters to the presence of manatees. The signs are distributed free to Florida shoreline property owners through Florida Fish and Wildlife Conservation Commission district offices. Additionally, SMC produces waterproof decals for boats that have tips on how to reduce manatee injury and death. In conjunction with the U.S. Fish and Wildlife Service (USFWS) and the Florida Audubon Society, SMC has produced brochures highlighting the problems associated with feeding manatees. All three of the above projects have been funded in part by the Disney Wildlife Conservation Fund.

In addition, SMC has created a brochure with manatee protection tips for divers, swimmers and boaters with support from the Professional Association of Diving Instructors (PADI)'s Project Aware Foundation and the USFWS. SMC and the Army Corps of Engineers produced a brochure with tips for boaters to help reduce manatee mortalities at Florida's canal lock structures. SMC also produces outdoor signs discussing the problems of feeding, touching and giving manatees water that have been distributed at manatee viewing areas throughout Florida.


Public awareness brochures

SMC also initiated programs in Broward County and the Florida Keys to recycle monofilament fishing line and to educate the public about the dangers of discarded line to manatees and other wildlife.
To direct questions about manatees to SMC staff members or to request any of the educational materials listed above, send an e-mail to education@savethemanatee.org

Nautilus Middle School Shark Bites Newspaper & Science Club adopts 2 Manatees in a conservation collaboration for making our world a better place.

LILY is one of the few adult females to regularly winter at the park. She has returned each year since 1974 and has ten calves.

WHISKERS is a male manatee who frequents Blue Spring in the winter. He is the son of Dana, another Blue Spring adoptee. She introduced him to Blue Spring in 1996, and he has been visiting the park ever since that time.

http://www.seaturtle.org/

seaturtle.org

Satellite Tracking

Loggerhead Turtles: Bald Head Island 2006

A project of the **Marine Turtle Research Group**.

Species: Loggerhead **Life Stage:** Adult **Gender:** Female **Release Date:** 2006-07-28 03:00:00 **Release Location:** Bald Head Island **Last Location:** 2007-08-13 03:54:16

Adoptive Parents: includes Foote's Science Class Nautilus MS

Lesson 9: Closing Activity with Field Trip to Nature Center

Big Idea: Up close and personal: getting to know our own backyard.

Tasks: The students will take a trip to the Biscayne Nature Center to further their learning about conservation. In groups of 4, Students will conduct an interview with one knowledgeable person from the Biscayne Nature Center.

Learning Goals: Students will learn about conservation, ecology, and ecosystems of South Florida, and also work on their interviewing skills.

Materials: video cameras, tape recorders, digital cameras, notebooks and pens, sunscreen, hats, tennis shoes.

Resources: *Write Source 2000*, Miamiherald.com
http://www.nationalgeographic.com/geography-action/habitats.html
http://www.nationalgeographic.com/ and http://sofia.usgs.gov/flaecohist/

Lesson 10: Students in the Nautilus Science and Newspaper clubs will go on a collaborative trip to the Biscayne Nature Center.

The field trip will be in 3 parts: Nature walk along the bay, Indoor sea turtle discussion, squid dissection

Students will be briefed on the ecosystems of South Florida by their science teacher, and will be looking for certain types of wildlife (ie dolphins, sea hare, etc)

Students will bring their cameras, video cameras and notepads in order to interview one member of the BNC staff.

Students will learn all about the ecosystems and conservation efforts while on a nature walk with an expert from the BNC.

One group of students will interview the staff member conducting the walk.

Next, the students will learn about sea turtles, their breeding habits, and how humans have affected their habitats.

A group of students will interview the staff member giving the sea turtle talk.

The students will dissect squid as a group. Students will video tape the dissection, for later editing.

Students will share their knowledge with others at Nautilus Middle through articles and videos that will be shown on the school news and published in the school paper.

Resource List

Supplemental materials (suppliers)
Carolina Supplies
Ward Science Company
Parade of Life: Animals. Prentice Hall
http://yucky.discovery.com/flash/worm/
http://www.carolina.com/category/teacher+resources/classroom+activities.do?page=all
http://wardsci.com/category.asp_Q_c_E_807_A_Animals
http://www.nwf.org/frogwatchUSA
http://tolweb.org/tree/ Tree of life Website
http://www.naturewatch.ca/english/wormwatch/index.html
http://iitc.tamu.edu/lessons/lesson23.html
http://www.savethemanatee.org
http://www.seaturtle.org
http://ephemeris.sjaa.net/0805/g.html
http://www.learner.org/channel/courses/essential/life/session7/closer5.html
http://www.mesa.edu.au/friends/seashores/energy_pyramid.html
http://regentsprep.org/Regents/biology/units/ecology/energy.cfm
http://earth.rice.edu/MTPE/bio/biosphere/topics/energy/40_biomass.html
http://www.cod.edu/people/faculty/fancher/TrophicPyramids.htm
http://www.epa.gov
http://www.nationalgeographic.com/geography-action/habitats.html
http://www.nationalgeographic.com/
http://sofia.usgs.gov/flaecohist/
http://sofia.usgs.gov/flaecohist/kidscorner/
http://www.schools.pinellas.k12.fl.us/educators/tec/mitchell2/questact.htm

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