Earth Day Activity Brochure

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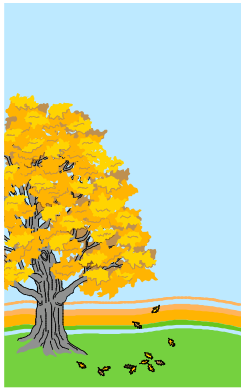
This brochure is to be used with an article written in the Spring STANYS Science Teacher 2007. A copy of the article can be found on the website www.Eastern-STANYS.org or www.focusonlearningonline.com.

This brochure describes a number of activities students can do to learn more about environmental issues and how to live more harmoniously with the environment. All of these projects are meant to be exhibits for Earth Day or an environmental-theme fair so they all should be very visual. Posters, powerpoints, models and dioramas are suggested formats to use. The choice of exhibits are categorized by the following topics: ***Ecological Processes, Ecological Problems and Ecological Solutions***. If you have an idea for a project that is not noted in this brochure, check with your teacher to see if it can be used for your project.

In order to ensure there are diverse exhibits, it is suggested that students sign up for an exhibit. Teachers should try to avoid having repeats of the same exhibit.

Ecological Processes



1. *Irrigation Systems*: Irrigation is way to bring water to land. Visit a farm or a garden that uses an irrigation system. Interview the owner. Some suggestions for questions are:
    a. What types of plants are grown with the irrigation system?
    b. How large an area does the irrigation system service?
    c. How much water is used during one day? How much water is used during the growing season?
    d. What is the source of the water?
    e. Before the irrigation system was built, what was the main source of water for the plants in that area?
    f. Describe some of the different types of irrigation systems in use today. Which ones are best for the environment?
    g. Create a model of an irrigation system for your display. Include answers to all of your questions in the display. Use illustrations whenever possible.

2. Research the habitat of an organism found in your community or elsewhere. Set up a display that answers the following questions:
    a. Describe the organism's habitat and niche.
    b. What is the organism's ecological community?
    c. Compare and contrast the community in which you live with that of the organism.

3. Describe a food chain in a land, fresh water or marine environment. Using the model of a food pyramid, describe the energy conversions in a food chain. Include a description of predator-prey relationships. What is your place in a food chain and food pyramid?

4. Study the germination of different seeds. Create a display to illustrate what happens. Do roots always grow down? Do stems always grow up? Here are some suggestions on how to go about germinating seeds.
    a. Dried seeds such as beans, peas, corn and okra, can be purchased in the supermarket. Soak the seeds overnight to soften their seed coat. Obtain a thick piece of cardboard (must be able to stand up) or a large Styrofoam cup and wrap them with paper towels. Moisten the towels. Use straight pins to attach the seeds to the cup or Styrofoam.
    b. Cover the seeds with a large plastic bag to cut down on water evaporation.

c. Place the seeds in the light.
d. Make sure the cup and cardboard stands upright to provide room for the seeds to sprout.
e. Observe the seeds daily. Sketch what happens or if you have a digital camera, take pictures. Set up a display.
f. Make sure to answer the questions about the direction in which stems and roots grow.
g. You may also want to design and conduct an experiment to see if the position a seed is planted affects the directions of the stem and root.

5. Take a nature walk and both write about what you see and do sketches of what you see. You can also use a camera. Include all living and nonliving things that you see. Describe how living things are interacting with their environment. Create a display that tells about the nature walk.

6. Construct a diorama (model) of an ecological community showing all the animal and plants that may be found in the community. Display the interactions of the living things in the community such as an animal eating a plant or another animal. Examples of communities can be a desert, forest, jungle, pond and wetland.

7. Set up a terrarium to illustrate a type of community such as a desert, wildflower, forest floor or tropical region.
   a. Research how to do it so that you provide the proper plants, types of soil and proper drainage.
   b. If possible, include animals in the terrarium. Make sure that is their natural habitat.
   c. Research what to feed the animals.
   d. Create a poster or powerpoint that explains the terrarium.

8. Set up a live animal display. Make sure to check with your teacher for the type of animal you plant to use. Provide information about the animal's natural habitat, feeding habits, breeding, life span and anything else that may be of interest.

9. Design an ecology game. List the goals, how to play and what you are trying to teach. If you know how to write programs, it can be a computer-generated game.

10. The International Space Station is a project to learn more about living in space. How is the space station similar to a community and how is it different? Find the answers to the following questions and provide illustrations for your display.
    a. What do the astronauts eat?
    b. How do they sleep
    c. How are wastes removed (including body wastes)?
    d. How do the astronauts adapt to a microgravity environment?
    e. How does microgravity affect the health of an astronaut?
    f. How is this "space community" different than an ecological community?

11. Suppose you were asked to design an underwater city. What would you need for this to be a self-sufficient community? Build a diorama or create a poster to show what would be needed. Make sure to solve problems such as:

a. Continual source of food
b. Light source
c. Getting rid of wastes
d. Living space.
e. Fresh water supply
f. Transportation within the city

12. Create a display that compares and contrasts tree species that are native to your region. Some things that you can compare are, the leaves, flowers, fruits, sees, bark, buds and twigs.

13. Obtain a copy of your State's game laws. You may be able to download it from the Internet or it may be posted directly on the Internet. Find the answers to the following questions and create a display that illustrates this information.
    a. Which species are protected by law?
    b. Are these species protected all year?
    c. Why have laws been passed to protect wildlife?

14. Learn about erosion by taking a walk around your neighborhood. Note or take pictures of signs of land erosion such as bare soil, exposed tree roots, gullies and holes. Is the erosion caused by wind, water or the freezing and melting of ice? If water caused the erosion, where did the soil go? Speculate how human activity may have initiated the erosion such as the cutting down of trees. What can people do to prevent unwanted erosion? Create a display to teach about this concept.

15. Prepare an exhibit of game birds using models, pictures and or drawings. Describe the ecosystem in which they live; i.e. tropical, temperate, etc. Explain the role these birds play in the environment in which they live. What is their ecological niche?

16. Create a display that shows how rocks can be eroded by wind-blown sand and by water. Try to find pictures of rocks of unusual shapes such as undercut cliffs, slender carved columns or towers of rocks. Describe how the erosion occurs. Compare and contrast rocks eroded by sand with rocks eroded by water.

17. Create a forest-soil-water mural, diorama and or powerpoint that illustrates the following:
    a. How forests hold moisture in the ground
    b. Reduce evaporation
    c. Reduce erosion
    d. Nourish other plant life
    e. Shows the relationship cycle between forests, soil, water, and other plants and wildlife.

18. Using diagrams, explain the carbon-oxygen cycle. What role do plants and animals play in this cycle? What are other ways in which plants and animals are dependent on one another? Do the same for the Nitrogen cycle.

19. Research the prevention and control of animal-borne diseases such as heartworm. You may want to include an interview with a veterinarian. Create a display that tells about these diseases.

20. Create a display that illustrates what happens to the balance of nature when one living thing is removed from a food chain. Examples of food chain disruptions that can be illustrated are birds and worms in a garden, deer and bobcat in a woodland, owl and rodent in a cornfield.

21. Design habitat wheels centered upon different habitats, such as a pond, a brook, a bog, a swamp, woods, or an individual tree. Examples of habitats that can be illustrated include a tree surrounded by a bird, insect, larvae, fungi and a squirrel. Explain in the display how living things are dependent on one another for survival. Include what may happen if a pollutant was introduced into the habitat.

22. Generate a map of your state to illustrate how conservation is practiced in your state. The following are examples of the kinds of things that can be included: State parks, game refuges, fish hatcheries, significant forest areas, areas of reforestation, coal, mineral and petroleum deposits, areas where flood control projects are in operation or being built or contemplated, areas of recent forest fires, and areas where erosion is most serious. Create a recording to explain the map.

23. Prepare an exhibit to show the life story of a tree. Begin with the origin of the seed followed by its germination, how the tree grows, protecting the tree, harvesting of products from the tree, utilization of the products. Include in the display the role a tree plays in protecting soil, water management, wildlife and recreation.

24. Collect and classify seeds. Arrange them according to type and dispersal. Illustrate how seeds are scattered. Illustrate the role of seeds in an ecosystem.

25. Take a hike along a conservation trail to learn about the plants and animals and topography of that community. Illustrate what you have learned about the interaction of living things with both the living and non-living environment.

26. Make a model of a fishpond or preserve. Illustrate the interaction of all of the living things in this environment. Visit a nearby fish hatchery if possible to help you with your research.

27. Plan and publish a class brochure on conservation. Include maps of resources, watersheds, irrigation projects, pictures of local game, summaries of laws regulating fishing and hunting, pictures of soil conservation techniques, etc. Create a poster to summarize what is in the brochure. Make the brochure available for a download in a PDF format from you school's server.

28. Take a trip to a woodland. Examine the forest floor. Take notes concerning the layers of dead leaves, other decaying matter, and the soil make-up at various levels. List the occurrences and measure the depths of the levels. Take note of young trees and shoots of plants hidden be the matter. Determine the relative moisture levels in the types of soil; i.e. low, high, middle. Construct a cut-away model of a forest floor demonstrating your findings. Include labels.

29. Learn about the sounds of nature by recording the calls of frogs, toads, birds, insects, etc. Construct a model showing where they live. Explain why they live where they do.

Include in your exhibit strategies to recognize the calls of different wild life. Be prepared to teach those that visit your exhibit how to recognize the sounds.

30. Create a display comparing the food webs that may be found in a desert, pond, forest and wetland.

31. Research the different types of bird feeders and the birds that they attract. Design bird feeders out of recycled materials. Explain how the feeders were built and the type of birds that they should attract. Explain the role bird feeders can play in conservation.

32. Create a display that compares and contrasts the nests of birds. Look for old nests out of breeding and nesting season and include them in the display if possible. Include pictures of the birds that use the nests. Describe the materials from which the nests are built by the birds.

33. Food pyramids are used as models to illustrate the transfer of energy in an ecosystem. Create food pyramids for a marine, arctic. Forest and wetland ecosystems.

34. Create a display that illustrates the concept of "the balance of nature." Include in this display the effects of human activity on the balance of nature.

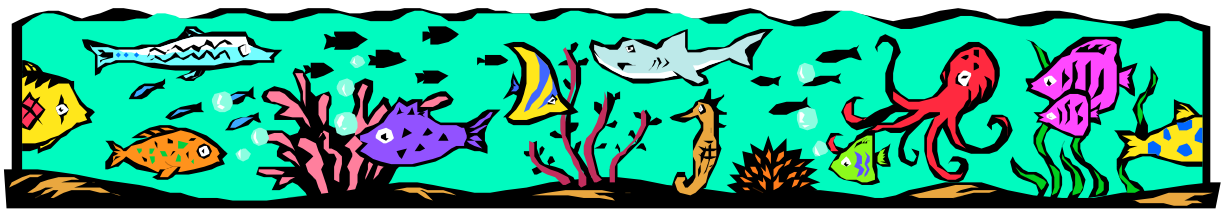
35. Construct a diorama that teaches forest conservation. Show how trees are germinated and transplanted. Describe the types of trees being conserved.

36. Create a diorama that illustrates the concept of ecological succession after a forest fire. What types of living things grow first? What types of animals move into the community during succession?

37. Many types of animals are herbivores. Create a diorama that teaches about different types of herbivores. Include in the display animal as that eat different parts of a plant such as stems, roots, flowers, fruits, seeds and bark.

38. The Intergovernmental Panel on Climate Change met in 2007. Explain the science behind global warming and how human activity has contributed to the problem. Create a poster or powerpoint presentation.

Ecological Problems



1. Trash Analysis: Do an analysis of trash from your classroom, school cafeteria and home. Wear gloves and a mask. Sort the trash and weigh it. Determine the percentage of each

type of trash; i.e. paper, plastic, metal. What percentage of the trash could have been recycled? You may have to check your community laws as to what is recyclable. Glass, paper, cardboard and metal can be recycled. Use the formula:

$$\% = \frac{\text{weight of trash type}}{\text{}} \times 100$$

Compare the garbage produced in your home with your peers by preparing a survey that asks them what is thrown out and what is recycled. Create a display of what you have learned.

2. Create a collage poster or powerpoint of current news items concerning environmental problems that affect human life. Some of the topics may include, pollution, water shortages, food shortages, global warming, forest fires and toxic spills, including oil spills. Note if these problems are worldwide or if they are only limited to certain parts of the world. What impact can these events have on your life and that of your peers? How might these events affect other living things? What are some suggested solutions to these problems?

3. Do a study of particulate air pollution in your school and outdoors. A simple method for determining particulate concentration in the air is using double-sided tape. Attach the tape to an object that has four sides such as a milk carton. Create different "monitoring sites" in your school and outdoors. Make sure to anchor the collection device so it cannot be moved. Note down north, south, east and west. Examine the particulates under a microscope. See if you can determine the origin of the particulates. Which locations had the highest particulate count? How can high particulate counts affect the health of humans? Create a display of your investigation.

4. Water Pollution: Set up a display to show that water pollution travels downstream. To illustrate this, set up a model of a river and track the movement of pollution. Place a large factory at the upper portion of the river. Show how the pollution affects living things as it travels downstream. Use a poster or powerpoint to explain the model.

5. Create a powerpoint or poster of pollution in your community (air, water, land and noise). Identify all major types of pollution, its source and some possible solutions.

6. Identify diseases and health problems caused by chemical and physical agents in the environment. Describe the symptoms of the disease, causes and treatments. The NYS Department of Health should be an excellent resource of information.

7. Choose one environmental factor in the environment, i.e., trees, and describe what effect the absence of such a factor would have on the lives of humankind. This can be done as a poster, report or powerpoint. Do the same display if you removed one organism from a food chain. How would it affect the other forms of life in the food chain?

8. Compare and categorize various occupations according to their disease epidemiology. The NYS Department of Health should be an excellent resource.

9. The Intergovernmental Panel on Climate Change met in 2007. Describe the impact global warming is having on the planet and its predicted impacts.

10. Collect data on varying socio-economic life styles, (poverty, poor, middle class, wealthy, etc) with regard to such health factors as disease, including obesity, infant mortality, prenatal care and childrearing, education, crime, drugs. Compare and contrast your data by socio-economic life style. What patterns do you see? What do you suggest should be done?

11. Given the following human activities; (1) clearing of forests, (2) draining of swamps, (3) damming of rivers, (4) over fishing, (5) burning of fossil fuels: Select two activities, identify what species of living things are in danger, and how these activities can endanger other forms of life on out planet.

12. Create a display about two or more of the following topics: (1) animals that are extinct (include causes), (2) animals on verge of going extinct (include causes), (3) natural causes verses human-made causes of extinction, (4) importance of wildlife, (5) ways to save wildlife from extinction.

13. Identify three living things (you may include plants) that are threatened to go extinct today. Explain the cause of the possible extinction and what can be done.

14. Identify organisms that are being threatened by global warming. What is the evidence that global warming is affecting their existence? What needs to be done?

15. Read about the La Brea Tar Pits. Create an exhibit that shows the types of organisms found in the Tar Pits. Explain how they became trapped. How were they preserved in the Tar Pits? Include a description of natural causes of animal extinction.

16. Compare and contrast health related problems of urban, suburban and rural populations of people. What are the major differences you can identify? What are the causes of the health problems?

17. If environmental pollution went unchecked; i.e. fossil fuel burning, over fishing, use of pesticides and herbicides, create a display that shows what the environment would look like in 30 years for two different types of biomes such as a tropical rainforest or a desert.

18. The Great Lakes have and have had a number of environmental problems. What are the problems? What organisms are most affected by the pollution? What has been done to curb the pollution?

19. Make a list of contemporary health problems, which either did not exist before 1900 or were unimportant. What caused the problems?

20. Given the following ways by which human activity has destroyed resources (1) farming methods (including those used in tropical rain forests); (2) hunting, (3) pollution, (4) construction (blacktopping of America), (4) extracting of fossil fuels (oil, gas, coal); Identify what resources are destroyed by these methods, and the way these resources are destroyed.

21. Explain at least one way in which each of the following contributed to the economic development of the United States (1) Beaver, (2) muskrat (3) salmon (4) bison (5) deer. Which of these animals were once threatened by extinction and describe the environmental practices that saved these animals from extinction.

22. Given examples of the following wildlife...rabbits, deer, elephant, fox, skunk, woodchuck and rattle snake, explained how four have either aided or harmed humans in their efforts to produce crops.

23. Create an exhibit of 4 or more animals and/or plants that are threatened to go extinct due to human activity. Include a description of the human activity and how it may be responsible for the organism's extinction.

24. Given a list of the following respiratory diseases...identify three that are directly related to air pollution, and tell how pollution causes these diseases. (1) Emphysema (2) Black lung (3) silicosis (4) Tuberculosis (5) asthma.

25. If we could speed up evolution, develop a display that shows what you predict a human would look like in the year 10,000 to adapt to years of air pollution. Use both internal and external diagrams. Make sure to back up the "adaptation" you show with some real science; i.e. larger nose to filter more particulates in air.

26. As with all living things, there is a carrying capacity. The carrying capacity would be all of the resources needed to support a form of life. Human population has been growing exponentially since the Industrial Revolution. More and more people are moving to urban areas. Create an exhibit that shows what you believe a city would look like in 100 years when world population may be over 18 billion. In 2007, it was 6.6 billion. Include housing, transportation, food, air quality, and ridding of wastes.

27. Air Pollution History...choose one of the cases below for your exhibit.

Case 1: Create an exhibit that tells that story of the 1971 air pollution disaster in Birmingham, Alabama. Include in your exhibit the effects of industrial pollution combined with a temperature inversion aggravated by the topography of the land, reaction of the public to emergency health problems, and the significance of the Federal response (such as bills passed).

Case 2: London Smog Disaster of 1952. Describe the effects of the temperature inversion and the science behind. What health problems resulted from this temperature inversion? What caused it to be such a disaster killing over 4000 people? What can be done to lessen the effect of such as occurrence?

28. Many jobs have health issues. Describe the environmental health issues for each of the following jobs: (1) Police directing traffic, (2) coal miner, (3) fire worker, (4) oil refinery (5) chemical plant, (6) farming.

29. Create a picture exhibit that shows the cause and effect relationships of one or more of the following types of land pollution (a) deforestation, (b) blacktopping, (c) landfills, oil exploration and drilling, mining for minerals and coal. Let the pictures tell the story. Use descriptions to add clarity to the exhibit.

30. Do people who live in the city suffer from more respiratory problems than people who live away from the city? Do a study and exhibit your findings. You may want to dsign a survey. If your subject is under the age of 18, you must have parent permission to interview that person. No names should be used in your report. However, you can categorize people by age and sex.

31. Create a dramatic play that shows how land development threatens the life of a particular species. Use puppets to tell the story. Name the species being threatened and what it tries to do to survive. As humans take away land, some wildlife have "adapted" by becoming a pest to humans. Include this in your story. Also include in the story how a development can be better planned so that wildlife and humans can live more harmoniously together?

32. Given the following industries...(1) farming, (2) lumbering, (3) fishing; describe two or more ways by which each would suffer because of poor forestry practices.

33. Identify the major sources of air and water pollution in your community and what is being done to curb it.

34. Research recent stories that deal with the relationship between disease and food. This can include both food for humans and pets. What diseases resulted? What caused the food contamination? What is being done?

35. Research the causes of malnutrition both in the United States and Africa. Create a display to tell the story. Are the causes in the U.S. the same as for countries in Africa? Explain.

36. Create your own cartoons to tell the story of air, water, land pollution, global warming, and threats to species. Explain what you are trying to convey in each cartoon.

37. Do a study of the use of pesticides and herbicides. Why are they used? How toxic are they? What would happen if they were not used?

38. Create an exhibit that describes the problems related to the disposal of wastes. What types of waste do human activity produce? What is the most common and least common waste? Compare and contrast the problems associated with incineration, sanitary landfalls and open dumps. Are there open dumps still left in the U.S.? In the world?

39. Organic foods vs non-organic foods. Compare and contrast these types of foods. Choose specific types of foods to compare. How are each produced? Which type use preservatives? What is the purpose of preservatives? Which is more expensive?

40. Make a list of the 10 leading causes of death in 1900 and today. Compare the etiologies of the diseases found on the different lists.

41. Chart and graph the birth rates of five major countries. If population growth continues at this rate, what are some of the ecological problems that will develop?

42. Collect and graph pollution indices from a daily paper or off the Internet. Compare the pollution level with regard to weather conditions on a weekly basis. Create a display. What patterns did you find? When were the indices highest?

43. Type II diabetes is now the major cause of amputation. It is directly related to obesity. Identify what life style factors are causing obesity. What other health problems are associated with this disease?

44. One form of water pollution promotes the growth of algae. What causes this and why does algae add to water pollution?

45. Invasive species: Milfoil weed, zebra mussels and purple loose strife are all examples of invasive species. What are invasive species and how do they threaten the environment? Other types of invasive species can also be described.

46. Create an exhibit on the circumstances surrounding the impact of Hurricane Katrina, Include the impact of global warming on storms. Why was this storm so devastating to New Orleans and surrounding areas? What type of steps did the government take and how effective were they?

Ecological Solutions

1. The Intergovernmental Panel on Climate Change met in 2007. Describe potential solutions to slowing down global warming. Create a poster or powerpoint.

2. Solid waste management follows a 3 R's strategy: reduce, reuse and recycle. Explain what this is. Set up a display to show how common items can be reduced, reused or recycled.

3. *Solar cooker*. Design and build a working solar cooker. Explain the science behind it and demonstrate how it works.

4. Create a cookbook using only naturally grown foods. Prepare samples of the food for Earth Day. Create copies of the cookbook or collect email addresses and send the cook book to those who request a copy.

5. Research and identify 4 animals and or plants that are being threatened. Explain why they are being threatened and what steps are being taken to preserve these living organisms.
6. Assume you are a forest ranger in charge of restoring a burned-over area to a useful, productive forest preserve. Design an exhibit using models and/or poster and a powerpoint to illustrate how this is to be done. Think about how you would prevent erosion, water run-off from completely escaping and restoring animals and other living things to the forest.

7. Create an exhibit that tells the story of the types of important wildlife found in the United States. Explain how they are important to us and what may happen if they became extinct.

8. Become a roving reporter for the environment. Interview people to find out the following:
   - What do they think is the main problem facing our environment?

- What should be do about the problem?
- Summarize your findings.
- When possible create a video of the interview. All people who agree to be in a video must sign a release form that they can be used in your video. Ask your teacher to help you with this.

9. Prepare a video script on conservation of wildlife. Show what is being done in your state to protect wildlife. Show the video on a laptop computer at the exhibit.

10. Research types of woods. Create a display that shows the uses of different types of woods. Include woods used for furniture, construction and sports. Are the woods being used a renewable resource? Technically, wood is considered a renewable resource, but find out if this is true for all woods being used. For example, woods from tropical rainforests may not be considered renewable if new trees are not replanted.

11. Research and create an exhibit that shows the major enemies of trees, and how they can be combated. For example, the gypsy moth and the tent caterpillar.

12. Research the rare and common wildflowers in your region. Create a display and explain their importance to nature. Do not include invasive species.

13. Given the importance of soil conservation, show how it protects or contributes to the following: soil erosion, animal habitat, recreation and products produced from the soil. Conduct your own experiment to see how certain plants cut down on erosion such as trees and grass. Make sure to include a control in your experiment.

14. Create an advertisement that promotes conservation. Do both a print ad and a TV promo. Prepare brochures that can be distributed at your exhibit.

15. Visit some local zoos if possible and also do a virtual tour on the Internet of zoos. Prepare a report and display that compares and contrasts how the zoos maintain their animals. What are the characteristics of the best zoos? What would be your recommendations on how to improve a zoo?

16. The American bison also known as the American buffalo has a long history in our country with humans. What happened to the bison? How was it important to people? What conservation lessons did we learn from our treatment of the bison? Create a display that traces the importance of this animal and why there are so few left in North America today.

17. Many scientists believe that global warming is the major environmental problem facing us today. Watch Al Gore's, "An Inconvenient Truth." Create an exhibit that shows ways to advertise the importance of this problem so that action is taken. Begin a campaign to bring awareness about global warming to your community.

18. Obtain a copy of the air and water pollution bills in your State or local community. Investigate if there are loopholes in the bill. Identify businesses that are not adhering to the bill because of loopholes. Rewrite the bill to close the loopholes and send copies to your representatives in government. The amendments included in the document should

outline personal, corporate, and environmental responsibilities for prevention and control of air or water pollution. Have copies of this bill available at your exhibit.

19. Create a display that shows how certain diseases are transmitted and how they can be controlled. Include diseases that are transmitted by contact, through the air, or by vectors.

20. Research protected flowers in your State. Set up a display showing the flowers. Describe the characteristics of each flower. Find pictures of the flowers to include in your exhibit and or create models of the protected flowers.

21. *Down in the Dumps*: Design and conduct an experiment to see what things we bury are biodegradable. You may want to set up your experiment to test the effect factors such as sunlight, moisture and temperature have on biodegradation.

22. Design and conduct an experiment that uses composting to produce soil. Experiment with different techniques. You can research techniques on the Internet. Compare and contrast what you consider the best ones. You may want to try to grow something in the compost.

23. Create a display that explains the different types of alternative (renewable) energy. Create at least one working model such as a wind machine that can left things. Examples of alternative energy are: solar, wind, geothermal and biomass.

24. Design a bird calendar composed of birds from New York State. Tell about each bird and how to attract them to your backyard if they are that type of bird. Provide copies of the calendar, which you may sell only for the cost of printing them.

25. Our Federal government has a long history of setting aside national parks, wilderness areas, bird sanctuaries, wetlands, etc. Create a display of some of these conserved pieces of land and explain why the government feels it is important to preserve the land.

26. Research reforestation. Create a display that explains and illustrates how it is done in both temperate and tropical climates.

27. History: During the 1930's under the leadership of F.D.R., a shelter belt of trees were planted in the west. What were the conservation problems that the trees were to address? Explain and illustrate how the planting of the trees solved the problem.

28. Research birds of prey in the United States. What role do these birds play in the environment? Which ones are threatened? What is being done to preserve them. Create a display that shows the different types of birds of prey in N.A, Which birds are found in NYS?

29. Create a display that explains and illustrates the following conservation practices:
    a. Sustained yield
    b. Selective cutting
    c. Fire line
    d. Crop rotation
    e. Contour farming

30. Create bird feeders from recycled materials. Set up a display. Include in the display the type of birds that the feeder attracts. Include copies of directions on how to build the feeders.

31. Create a display that shows how we all benefit from our system of parks and preserves. In your display create a map of the U.S. that identifies some of the preserves. Using a powerpoint, allow visitors to be able to click on a preserve or park to learn more about it.

32. Research noise pollution laws in your community. Create a display that tells about the laws. Do a survey to find out who knows about the laws. Why were these laws created? When does noise become a pollutant?

Below is the scoring rubric that will be used to evaluate your project.

TABLE C

Judge's Scoring Rubric Provide a score of 1-5 with 5 being the highest	Points
1. Information clearly presented	_____
2. Evidence of research (experiments, Bibliography)	_____
3. Quality of execution of exhibit	_____
4. Student understands concepts in exhibit	_____
5. General effort	_____