# C.C.C.
# Children's Conservation Corp

Jennifer Williams
William Lehman Elementary School
305 273 2140
jgwilliams@dadeschools.net

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# Goals and Objectives

As students participate in C.C.C. Children's Conservation Corps activities, they learn that while the natural resources in Florida are growing scarcer, students can do their part by conserving both renewable and nonrenewable resources. They learn that nature furnishes people with the resources to make other things, both natural and man made. Students also identify the various Florida communities, upland (coastal strand, hammock, dry prairie, pine scrub), wetland (cypress and mangrove swamp, wet prairie, salt marsh), and aquatic (salt, brackish, water) and learn what animals need to live in each community. Students learn that litter is waste out of place and how waste becomes litter. Students learn that trash can go to open dumps and sanitary landfills and that they have an effect on the amount of trash in their school cafeteria. Students will also understand how to reduce, reuse and recycle both in school and at home.

At the end of the project, students will have knowledge that the environment contains living and non living components and that these components are related and interact. Students will be aware that resources are classified as renewable and nonrenewable and there is a limited supply of nonrenewable resources. Students will understand that it is everyone's responsibility to maintain environmental quality and properly use the earth's resources. Students will understand that critical thinking skills should be used to make decisions and that there are many things individuals can do to influence environmental quality.

**Sunshine State Standards**

SC.1.L.14.1: Make observations of living things and their environment using the five senses.

SC.4.L.17.4: Recognize ways plants and animals, including humans, can impact the environment.

SC.5.L.15.1: Describe how, when the environment changes, differences between individuals allow some plants and animals to survive and reproduce while others die or move to new locations.

LA.K.6.2.2: The student will use simple reference resources to locate and obtain information through knowledge of alphabetical order, use of pictures, and environmental print.

LA.1.6.4.1: The student will use appropriate available technology resources (e.g., writing tools, digital cameras, drawing tools) to present thoughts, ideas, and stories.

SC.912.L.17.14: Assess the need for adequate waste management strategies.

SC.912.L.17.16: Discuss the large-scale environmental impacts resulting from human activity, including waste spills, oil spills, runoff, greenhouse gases, ozone depletion, and surface and groundwater pollution.

# Course Outline/Overview

Children's Conservation Corps is a multifaceted project in which students learn about the environment and how they, as students and residents of Florida, can help take responsibility at home and in school for caring for their community. Through hands-on activities including observation, class discussions, reading and writing, students investigate solid waste, its effect on the environment, and ways to help solve the problem of too much waste. Florida's population of 12 million plus generates more than 44,000 tons of solid waste per day, with paper as the biggest component. Students learn that landfills account for 75% of waste disposal with only 4% of items currently being recycled. Students become aware of what they can do to reduce, reuse and recycle.

After an overview of Florida's physical and natural environment, students actively participate in a series of lessons focusing on various environmental issues, with plenty of time for exploration, investigation, discussion, presentations, communication, and action.

**Activities can include:**

- Litter is Waste Out of Place- students define waste and litter and explain how waste becomes litter
- Hands on Nature – students identify natural and manmade objects
- Sensory Walk – students define different environments and associate animals with their natural environment
- Where is Away? – students describe where household trash goes and construct a model landfill
- Cafeteria Waste- students tour their cafeteria and plan ways to decrease amount of waste
- Now Let's Recycle- Recycling Fair- students bring in items from home to sort and recycle or reuse. Items can be donated to local charities, such as Goodwill Industries.
- Papermaking- students investigate the benefits of recycling paper and make paper
- The Swap Box- students discuss new uses for items they no longer want or need and explain how reusing items reduces how much they throw away; students swap items in box
- Oil Spill Cleanup- students become aware of current environmental conditions in the Gulf of Mexico

# **Lesson One** – Sensory Walk

**Objective**

To determine what kind of plants and animals live around the school environment.

**Materials**

Notebook
Pencil
Crayons or colored pencils or markers

**Activities**

1. Take students on a walk around the school, inside the school and outside the school.
2. Observe the types of plants seen and look for different animals.
3. Draw what you see.
4. Show students pictures of Florida plants and animals to determine what was observed. Florida plants and animals http://www.landscope.org/florida/plants-animals/, Florida animals http://www.floridasmart.com/subjects/animals.htm
5. After deciding what kinds of plants and animals that were observed, such as: plants- live oak, pine tree, palm tree, bushes, grass, flowers, and animals- woodpecker, squirrel, insects, mockingbird…have students choose one and write three- five words that describe the plant or animal. Have them write a sentence or two using the words; finally, have students ask two questions on things they would like to learn about the plant or animal.

**Assessment**

Students answer following questions: What kinds of animals did you see? What kinds of plants did you see? When the season changes, what might happen to the plants and animals?

**Home Learning**

Look around your home and back yard; list the plants and animals you see. Tell where each one was found.

| **Animal** | **Plant** | **Where Found** |
|---|---|---|
| Flea | | On my dog |
| | Palm tree | In my backyard |
| Worm | | In my backyard |

# **Lesson Two** – Hands on Nature

**Objective**

Recognize the difference between man made and natural products

**Materials**

*Man Made Worksheet*
Items in classroom

**Activities**

1. Discuss with students the difference between natural and man made (from natural substances or artificially made). Wood products, such as paper or wooden furniture are made from trees, so the materials are natural although are human created. Plastics, which are made from chemical combinations of petroleum, are artificially created.
2. With today's technology, sometimes it is hard to tell what is natural or artificial. When an animal makes a home, it is natural because it is in its natural environment. When a human makes a home, it is man made, because he is controlling the environment.
3. Have students complete the *Man Made Worksheet* and discuss.
4. Answers to *Man Made Worksheet* 1. A sea star is naturally created. 2. A cork screw is human made. 3. A worm created his own home- natural. 4. A glider is human made. 5. A tree is natural. 6. Rockets are made by humans. 7. Cars are made by humans. 8. Clouds are naturally made by air. 9. A light bulb is artificially made. 10. The man is using machines to make something. 11. The tools are human made. 12. The cow is naturally made.
5. Look around the classroom and determine if items are natural or man made. Man made items are made by humans for human use (flag, paper, desk, books, computer…) Plants, trees, rocks, nests, sand…. are naturally made.

**Assessment**

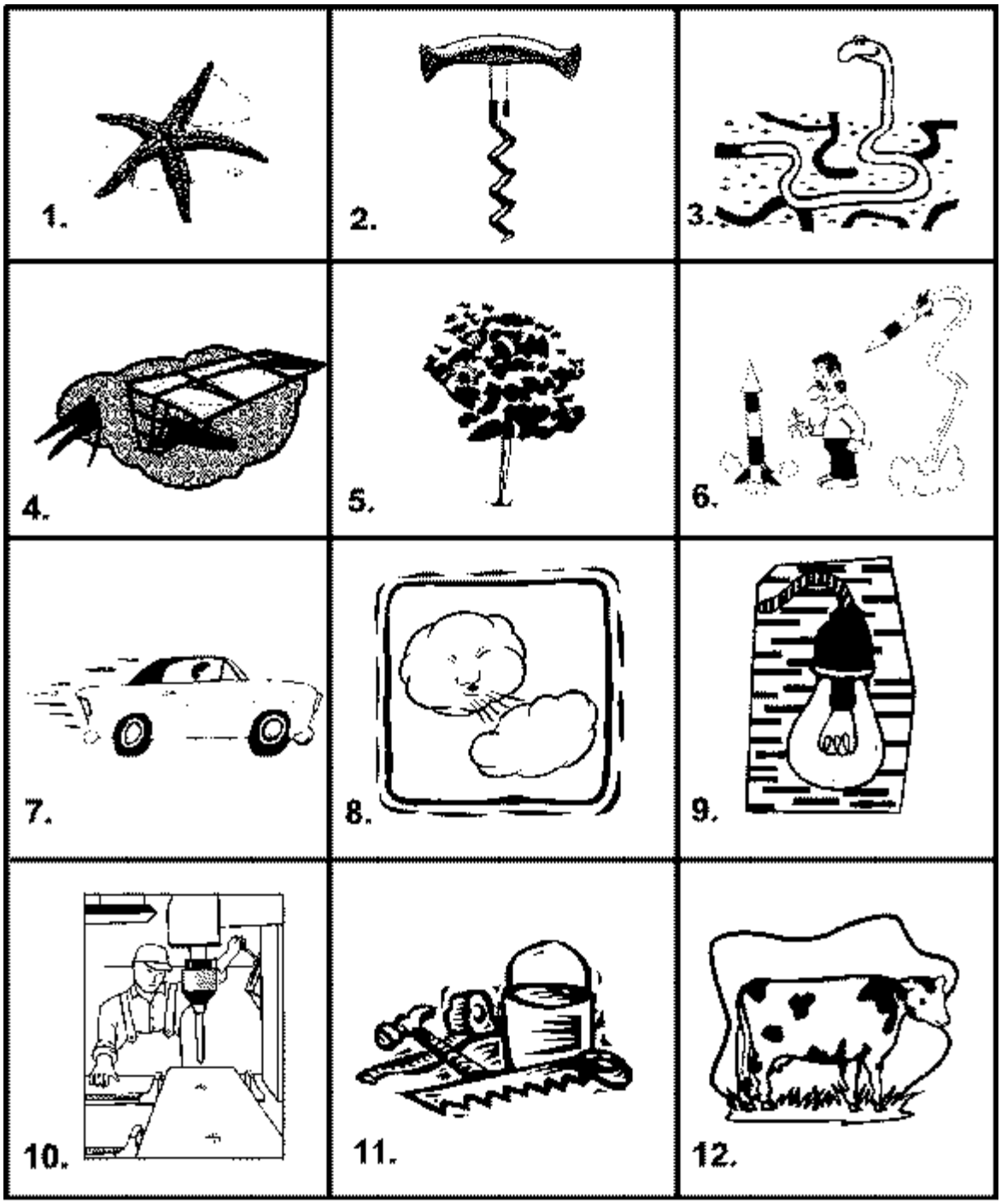
Have students draw classroom items and label as man made or naturally made.

**Home Learning**

Have students draw items at home and label as man made or naturally made.

# Circle the Man Made Items

Name _____



# **Lesson Three -** Let's Think About Recycling

**Objective**

To determine if juice boxes and milk cartons are easy to recycle

**Materials**
For each student:
1 empty juice box
1 empty milk carton
Scissors
Paper towel
Water

**Activities**

1. Cut apart the juice box and the milk carton. Look at the inside and outside; decide if they are made of different materials.
2. Look at and feel the inside layers. Think about how they feel; what the inside layer made of?
3. Look at and feel the outside layers. Think about how they feel; what is the outside layer made of?
4. Put a drop of water on the paper towel. Describe what happens.
5. Put a drop of water on the outside of the juice box and milk carton. What happens?
6. From your observations, can you guess what the outside layer is made of?
7. Now peel apart the inside and outside layers. What is the middle layer made of?
8. Answer the question: Will a juice box and milk carton be easy to recycle?

**Assessment**

Name three things you could use instead of juice boxes and milk cartons that are better for the earth.

**Home Learning**

Write sentences using reduce, reuse and recycle. Reduce- to use less energy, such as do not hold open the refrigerator door too long. Reuse- to use again and again, such as use washable containers for school lunches. Recycle- to use materials to make new things, such as giving away old clothes to the Salvation Army.

# **Lesson Four** - What Can I Recycle from Lunch?

**Objective**

To determine how much garbage is in one's lunch

**Materials**

Student lunches from home or from cafeteria

**Activities**

1. After getting student lunches from the cafeteria and walking back to the classroom, ask students to put their lunches on their desks.
2. Have students count the number of boxes, bags and bottles. Record. Remind students to count their lunch bag or box or tray.
3. Count the number of boxes, bags and bottles that students will keep and reuse. Record on board.
4. Count the number of boxes, bags, trays and bottles students will throw away. Record on board.

| | |
|---|---|
| Total number | |
| Number that will be reused | |
| Number that will be thrown away. | |

5. Discuss results.

**Assessment**

Have each student chose one item that would be thrown away. Ask them how they could reuse it.

**Home Learning**: Students ask parents: Why do we use throw-away boxes, bags or bottles for family lunches or why do we use reusable containers?

# **Lesson Five** – Is There Too Much Packaging?

**Objective**

To discover if some products have too much packaging

**Materials**

*Packaging List*
*Packaging Work Sheet*
Box of cereal
Package of cookies
Carton of juice
Box of popcorn
(Other kinds of packaged products)

**Activities**

1. Discuss with students the amount of packaging used for different products. Ask: Is there too much? Is there too little? Is there just enough?
2. Pass around box of cereal, package of cookies, tooth paste tube in box, box of popcorn, and carton of juice; ask students to share what they think about the packaging of each.
3. Have students help complete *Packaging List* on board.

**Assessment**

Answer the question: Do all products need to come in boxes?
Discuss: Maybe some products could come in different kinds of packages that are friendlier to the environment.
How can you package things in new ways to reduce trash? Complete *Packaging Work Sheet*.

**Home Learning**

List different products that must be put into packages and tell why they are. For example: milk to keep it in a container that can be refrigerated or toothpaste in a container to keep it clean.

## Packaging List

There are many kinds of wrapping and containers that are used to package goods sold in stores. Write three things that come in each kind of packaging.

| | | | |
|---|---|---|---|
| **Paper** | | | |
| **Plastic** | | | |
| **Styrofoam** | | | |
| **Metal** | | | |
| **Glass** | | | |

# Packaging Work Sheet

Name _____

How can you package the following things in new ways that will reduce trash? Write the ways or draw a picture.

Juice

_____

_____

Picture

Cereal

_____

_____

Picture

Cookies

_____

_____

Picture

# **Lesson Six** – Paper Making

**Objective**

To make recycled paper

**Materials**

Used newspapers
Large bowl
Four cups of water
Eggbeater or whisk
Flat baking pan
Piece of window screen that fits inside of baking pan
Two thick layers of newspaper
Rolling pin or 1 liter plastic bottle

**Activities**

1. Brainstorm ways to reuse or recycle trash, such as making a necklace from an old shoelace and buttons. Draw a picture of something than can be reused.
2. Make recycled paper: (for primary grades, demonstrate)
3. Tear used newspaper into very small pieces. Put pieces into bowl. Pour water over paper. Let sit overnight.
4. The following day, use eggbeater or whisk to beat the water and paper mixture until it looks like mush. This is pulp; pour pulp into the baking pan.
5. Slide the screen into the pan. Gently move the screen from side to side until it is covered with pulp.
6. Lift the screen out of the pan, keep it level. Let it drain for a few minutes. Place the screen, pulp side up, on a thick layer of newspaper. Put another layer on top.
7. Roll the rolling pin or bottle over the newspaper to squeeze the water out. Turn the pile over. Remove newspapers and then the screen. Let the pulp dry.
8. Brainstorm ways to use recycled paper in classroom.

**Assessment**

List three ways to use old items to create new items; examples: toys, jewelry, art…

**Home Learning**

Make a list of ways to use recycled paper.

# **Lesson Seven** – What is in the Landfill?

**Objectives**

To determine what happens in a landfill
To identify which kind of trash breaks down faster

**Materials**

1 milk carton
1 piece of plastic bag
1 piece of lettuce
1 cup of water
Dirt and 1 Fork
*Landfill or Compost Pile Work Sheet*

**Activities**

1. Fill the milk carton half way with dirt.
2. Lay the lettuce and the plastic on top of the dirt next to each other.
3. Cover the "trash" with more dirt.
4. Water the landfill.
5. Wait one week. Use fork to dig up trash and observe.
6. Discuss what happened to the buried trash.
7. Fill in:

| | | |
|---|---|---|
| | Breaks down faster than | |
| Food or plastic | | Food or plastic |

8. Define compost pile and discuss what things should go into a compost pile.

**Assessment**

Students complete table.

| Has the trash changed? | Yes | No |
|---|---|---|
| Lettuce | | |
| Plastic | | |
| Explain how | | |

**Home Learning**

Students complete *Landfill or Compost Pile Work Sheet.*

# Landfill or Compost Pile Work Sheet

Name _____

Next to each item, check if it should go into a landfill or compost pile.

| Item | Landfill | Compost Pile |
|---|---|---|
| Slice of pizza | | |
| Used markers | | |
| Apple core | | |
| Tooth paste tube | | |
| Coffee grounds | | |
| Aluminum foil | | |
| Old lettuce | | |
| DVD or CD | | |
| Banana peel | | |
| Watermelon rind | | |
| Cardboard box | | |
| Egg shells | | |
| Your choice | | |

# **Lesson Eight -** Florida Habitat- Wetlands…

**Objectives**

Identify types of wetlands
Determine what wetlands do

**Materials**
A deep pan
A piece of carpet
Modeling clay
A pitcher/container of water
*Wetlands Work Sheet*

**Activities**

1. Locate Florida Everglades on map or globe; define wetlands as land that is wet for all or most of the year. Talk about problems of the Florida wetlands; overbuilding, draining of water, and pollution.
2. Discuss types of wetlands: marsh- fresh or salt shallow lakes filled with plants such as cattails and rushes; they are dry at times; bog- filled with fresh water with spongy lands covered with moss; swamp- found along coastline, always flooded with water with trees and shrubs, fresh or salt water. Complete *Wetlands Work Sheet* using computers/books.
3. Brainstorm what wetlands do: they can stop floods, provide a home for plants and animals, and they can absorb sewage.
4. Demonstrate how wetlands can stop floods. Put modeling clay along one side of pan. The clay is land. The open space in the pan is the ocean.
5. Put the piece of carpet along the edge of the clay. This is the wetland.
6. Slowly pour water into the ocean and watch what happens.
7. Drain the water, remove the wetland, and pour the same amount of water again. Observe the difference in the way the water collects in the open part of the pan and floods the land.

**Assessment**

Answer: How does the model show how the wetlands help stop flooding?

**Home Learning**

Answer: If you had to live in a swamp, marsh or bog, which would you choose and why?

# Wetlands Work Sheet

Name _____

Write names of or draw pictures of the kinds of plants and animals that live in each wetland.

| | Plants | Animals |
|---|---|---|
| Swamp | | |
| Marsh | | |
| Bog | | |

# **Lesson Nine** – Oil Spill Cleanup

**Objective**

To identify ways to clean up oil spills

**Materials**

1 shallow pan
Sand
¼ cup cooking oil
Water
Items for clean up: paper towels, feathers, liquid soap, sponge, newspaper….
*Oil Spill Worksheet*

**Activities**

1. Locate the Gulf of Mexico on map or globe. Discuss recent oil spill accident and its affect on plants and animals. Oil is covering the birds, sea gulls, ducks, oysters, fish and plants in the Gulf of Mexico and along shoreline. Many plants and animals are dying.
2. Talk about water pollution from the oil.
3. Ask: How can the oil spilled get cleaned up?
4. Demonstrate:
5. Put about one inch of sand in one end of the pan to make a beach.
6. Gently pour water into the other end of the pan.
7. To make the oil spill, pour oil on the water and gently slosh pan around.
8. Try different ways to clean up the spill
9. Discuss results.

**Assessment**

Complete *Oil Spill Work Sheet*

**Home Learning**

Answer: What might be done to reduce the amount of oil that is accidentally spilled in the environment?

# Oil Spill Work Sheet

Name _____

Write on the chart the different things you used to try to clean the oil spill. Write what happened.

| | |
|---|---|
| Paper towels | |
| Sponge | |
| Feather | |
| Liquid soap | |
| Newspaper | |
| | |
| | |
| | |

# **Lesson Ten** – Litter is Waste Out of Place

**Objectives**

To determine what litter is
To discover ways to reduce litter

**Materials**

Work gloves or gardening gloves or plastic gloves (one set per child)
Trash Bags
*Litter Chart*
Paper and supplies for No Littering signs

Activities

1. Talk about what litter is: when people leave trash on the ground, in the water, on the sand; they do not place trash in bin or container.
2. List kinds of litter: plastic cups and bottles, cans, metal foil, bottle caps, jar lids, paper plates and cups, and candy wrappers.
3. Take students outside to school grounds and wearing gloves, pick up litter and place in plastic bags.
4. Complete *Litter Chart*
5. Older students can sort litter into boxes: plastic, paper, metal… determine best way to get rid of each type of litter.
6. Brainstorm what happens to trash. Some trash is recycled. Paper, plastic, bottles and cans can go to recycling centers. Some factories make plastic shopping bags from old plastic jugs. Some factories use old newspapers to make cardboard.
7. Students can design No Littering signs for classroom and school.

**Assessment**

Answer: Why might one kind of litter be in a certain place? What things collected on school grounds can be recycled or reused?

**Home Learning**

Answer: List three things than can be done to stop littering.

## Litter Chart

Name _____

| Kinds of Litter Collected | How Many Pieces |
|---|---|
| | |
| | |
| | |
| | |
| | |

Total _____

Which items can be recycled or reused?

_____

_____

What is the best way to get rid of each kind of litter?

_____

_____

# Trash Background Information

- Americans throw away an average of more than four and one half pounds of trash per person each day.
- Americans throw away more trash than any other country in the world.
- Each year, we throw away enough garbage to fill a line of garbage trucks that would reach half way to the moon.
- Aluminum cans that are not recycled stay in landfills for up to 500 years.
- Only one tenth of solid garbage in the United States gets recycled.
- Almost one third of the waste in the United States is packaging.
- Americans throw away 2.5 million pounds of plastic bottles each year.
- Forty-three thousand tons of food is thrown out in the United States each day.
- Sixty-five billion aluminum soda cans are used each year.
- Americans throw out about 270 million tires every year.
- Each year, Americans trash enough office paper to build a 12-foot wall from Los Angeles to New York City.
- In one day, Americans get rid of 20,000 cars and 4,000 trucks and buses.
- Americans receive almost 4 million tons of junk mail every year. Most of it winds up in landfills.
- The average American office worker goes through around 500 disposable cups every year.
- In the U.S., an additional 5 million tons of waste is generated during the holidays. Four million tons of this is wrapping paper and shopping bags.
- Throwing away one aluminum can wastes as much energy as if that can were 1/2 full of gasoline.
- Every year, Americans make enough plastic film to shrink-wrap the State of Texas.

# Resources List

- Delta Science http://www.delta-education.com/ offers many environmental classroom and supplemental kits and items for use during this project.
- Recycle City http://www.epa.gov/recyclecity/ - recycling games and information
- Earth 911 http://earth911.com/ - recycling 101 and learn where to recycle
- National Institute of Environmental Health Science http://kids.niehs.nih.gov/recycle.htm - learn all about the three R's
- Free materials and ideas can be found at Kids for Saving Earth http://www.kidsforsavingearth.org,
- Making Friends http://www.makingfriends.com/recycle.htm - ideas for recycling
- Kinder Art http://www.kinderart.com/recycle/ - art projects
- Students can go on a field trip to the Environmental Center at Miami Dade College to observe a compost pile with live worms and a pesticide-free garden
- Students can participate in Baynanza and Adopt a Tree through DERM Department of Environmental Resources Management http://www.miamidade.gov/derm/
- Weekly Reader: Exploring the Environment
- Trash Bashers Handbook http://www.galaxy.net – experiments on recycling
- Examples of materials than can be used for projects:

| Item | Where to Purchase | How Many | Cost |
|---|---|---|---|
| Paper for activities | Office Depot | 1 case | $50 |
| Printer Ink | Office Depot | 3 cartridges | $295 |
| Materials for landfill activity | Office Depot | 1 | $25 |
| Pictures of Florida Environments | Delta Science | 1 | $25 |
| Video-Reduce, Reuse, Recycle | Delta Science | 1 | $30 |
| Papermaking Kit | Delta Science | 1 | $25 |
| Help the Environment Classroom Library | Delta Science | 1 | $75 |
| Young Scientists Recycling Kit | Delta Science | 1 | $75 |