

TEACHER'S RESOURCE GUIDE TO RECYCLING IN OCEAN COUNTY



 Ocean County Recycles

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This Teacher's Resource Guide to Recycling in Ocean County was produced by Recycling Unlimited, Inc. with the assistance of the Ocean County Department of Solid Waste Management with Solid Waste Services Tax funding provided by the New Jersey Department of Environmental Protection.

Designed by Recycling Unlimited and Gollin & Associates

Fall, 2004



Printed on recycled paper.



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FOREWORD

Ocean County is blessed with a pleasant climate, a beautiful coastline, the unique Pinelands and lovely historic neighborhoods. Each year more and more people move to the County to live year round, and hundreds of thousands more come to enjoy the beaches in the summer. With this growth in residents, comes a growth in trash.

Ocean County educators and students have a special concern for the environment as their County is surrounded by water - the ocean, the bay and the pristine waters of the Pine Barrens. From reducing litter, to cleaning up the beaches, to recycling, Ocean County residents are concerned about their environment and their role in keeping it healthy.

This book is a basic Teacher's Guide and Resource Directory, suitable for middle and elementary grades. We look forward to your comments, and hope that you will find the information helpful, fun and informative.

Thank you for your cooperation in helping to keep Ocean County's environment safe, healthy and beautiful!

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TO THE TEACHER:

This Guide has been prepared for the Ocean County Department of Solid Waste Management by Recycling Unlimited, and Gollin and Associates with the assistance of County staff. The purpose of the guide is to provide you with background information about solid waste and recycling programs in Ocean County, to make available activities for your students, and to give you listings of web sites, organizations, state, county and federal offices where you can find additional information.

Also, the Department of Solid Waste Management produced an updated video of Ocean County's Recycling Program in 2003. Copies may be obtained from the Ocean County Department of Solid Waste Management or from the Ocean County Library. Copies are available in VHS, CD-ROM or DVD formats. Segments from the video can be viewed on-line from the Ocean County Solid Waste Management website at www.co.ocean.nj.us/recycle.

The purpose of the activities in this guide is to demonstrate to students how their actions can influence the environment in which they and their children will live. We would like to help them understand that our planet is finite, our resources are finite and land is finite. While trash is something that we all create, these activities will demonstrate to students how they can use less natural resources, return resources to the land and use the same resources over and over again.

We would like to hear your comments or suggestions on the material from this guide. Please fill out the evaluation form below and return it to:

Kathleen Avery,
Assistant District Recycling Coordinator
Ocean County Department of Solid Waste Management
PO Box 2191
Toms River, NJ 08754-2191

EVALUATION SHEET FOR TEACHERS

1. Activities were easy to implement with the resources at your school.
☐ Excellent ☐ Very Good ☐ Good ☐ Fair
2. The activities provided sufficient background information.
☐ Excellent ☐ Very Good ☐ Good ☐ Fair
3. The instructions provided were easy to follow and complete.
☐ Excellent ☐ Very Good ☐ Good ☐ Fair
4. Students enjoyed the activities and found them informative.
☐ Excellent ☐ Very Good ☐ Good ☐ Fair
5. Activities were easily incorporated into related subject areas.
☐ Excellent ☐ Very Good ☐ Good ☐ Fair
6. Concepts and vocabulary were appropriate to your class's _____ grade learning level.
☐ Excellent ☐ Very Good ☐ Good ☐ Fair
7. How could this guide be made more useful? _____

8. Other comments _____





OCEAN COUNTY HISTORY

LENNI LENAPE - OUR FIRST RECYCLERS

The area that is now known as Ocean County was first inhabited by the Lenni Lenape. They came in the warm spring and summer months to enjoy the plentiful food supply, balmy breezes and delightful seashore. Native Americans were masters at recycling, utilizing nature's gifts to the fullest.

When they returned to winter inland, however, traces of their existence remained in the waste left behind. Waste is, indeed, inevitable in all human (and plant and animal) activity. As civilization has advanced, the problems of waste have become enormous.

A DEVELOPING COASTAL COUNTY

As European nations hastened to claim fortunes in America, the Dutch discovered and charted Barnegat Bay (1614-1616). They then sailed through Barnegat Inlet, charted the Toms River, Forked River, and Great Bay. By the end of the 17th century whalers were working the coast, and gristmills and sawmills were built along the streams and rivers. Shipping schooners carried on a brisk, coastal trade in lumber, charcoal, pitch tar and turpentine, all Ocean County products. One of the greatest uses for wood was in the making of charcoal, which fueled the iron industries of the pines. The iron produced in the form of "pigs" was used to make stoves, kettles and tools.

In the eighteenth century, settlers came to build boats, fish and farm. They fought during the American Revolution, and often smuggled goods and pirated along the coast.

What is now Ocean County was once a part of Monmouth County. In 1850 the southern part felt that they were not getting their fair share of the tax monies and seceded. The six townships of the new county - Brick, Dover, Jackson, Plumsted, Stafford and Union (Barnegat) had a population of about 10,000. A Board of Chosen Freeholders was selected to govern the region. "Freeholder", a term brought to this country by the British, was a person who owned land "free and clear" and was, therefore, eligible to vote and to hold public office.

OCEAN COUNTY STILL GROWING

The County is governed by "Freeholders" - who are elected by the people. Among their many responsibilities in protecting the health and welfare of County residents, the Freeholders oversee environmental planning and solid waste management.

Today Ocean County, spread over 638 square miles, has 33 municipalities. It is the second largest County in New Jersey with the fastest growing population, estimated to have approximately 600,000 full time residents. The bay and the sea still provide a source of income drawing hundreds of thousands of visitors to their shores every summer.





OCEAN COUNTY RECYCLING PLAN



THE THREE R'S - REDUCE, REUSE, RECYCLE

The U.S. Environmental Protection Agency (EPA) and the New Jersey Department of Environmental Protection (NJDEP) recognize this hierarchy for managing our trash.

- **Reduce:** use paper on both sides, compost yard waste, and buy economy size products whenever possible.
- **Reuse:** buy rechargeable batteries, use lunch bags or boxes rather than paper bags and donate unwanted items to thrift stores.
- **Recycle:** newspapers, mixed papers, aluminum, plastic and glass containers, used motor oil, batteries, computers and yard waste. New Jersey Law mandates that 60 percent of all solid waste must be recycled. Everyone in New Jersey should be separating their trash and recycling at home, at work and at school.

OCEAN COUNTY AND RECYCLING

New Jersey's 21 counties are responsible for planning waste reduction, recycling and trash disposal in their region. In the Ocean County Recycling Plan, the County is responsible for the marketing of recyclable materials. Each of the 33 municipalities collects the materials from residents and businesses - either by municipal collection or with a contract hauler.

The Ocean County Recyclable Materials Processing Facility (MRF) in Lakewood Township is located at the County's Northern Recycling Center. This 300-tons-per-day facility accepts and processes recyclables from all 33 communities in Ocean County. The MRF plays an integral role in the County's Recycling Program because of its efficiency and the economic benefits that it extends to the County and its municipalities. Ocean County's MRF is one of the larger facilities in the region with state-of-the-art equipment.

As part of its Recycling Plan, the County operates two regional recycling centers, which are the Northern Recycling Center in Lakewood Township and the Southern Recycling Center in Stafford Township. Both of these Centers have 24-hour resident recycling drop-offs for the County's mandated and traditional recyclables as well as collection areas which accept special materials such as paint, empty paint cans, computers, cell phones, telephone books, boat shrink wrap, brush and leaves. Both centers also have compost facilities. The Southern Recycling Center has a recycling transfer station, which accepts the recyclables from the County's southern municipalities. These recyclables are then transferred for processing to the MRF at the Northern Recycling Center. Residents may drop off their recyclables at either Center, and may pick up compost and wood chips at no cost. Waste that cannot be recycled is disposed of at the Ocean County Landfill Corporation, a private landfill in Manchester Township.



OCEAN COUNTY RECYCLING PLAN (CONT.)

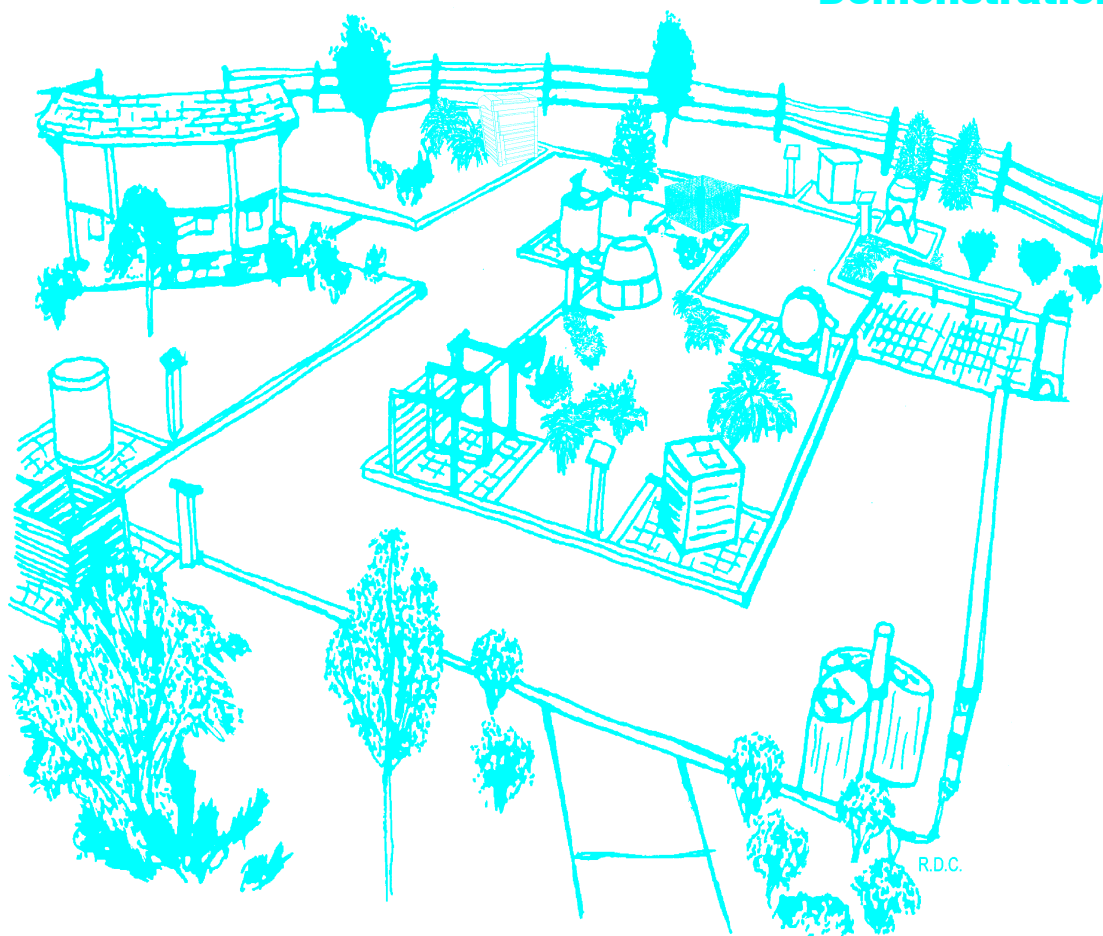
OCEAN COUNTY AND COMPOSTING

The County's Northern and Southern Recycling Centers both accept leaves and brush from residents and municipalities. Brush is ground into wood chips and leaves are composted into long windrows, kept moist and turned occasionally. The finished products are made available to homeowners, municipalities and landscapers. For those interested in purchasing their own compost bin, the Ocean County Backyard Composting Demonstration Site at the Northern Recycling Center is the source for information on some of the most current bins on the market. Literature is available on-site along with various types of units on display. For those who want to learn even more about composting, the County offers spring and fall "How to" compost classes. Classes are taught by Ocean County Master Composter volunteers who assist with public outreach, education and service to promote the benefits of home composting.



The most easily recycled material (paper) takes up the most space in U.S. landfills.

Ocean County Backyard Composting Demonstration Site





OCEAN COUNTY RECYCLING PLAN

THESE MATERIALS ARE MANDATED FOR RECYCLING:

HOMES

aluminum & tin cans ■ glass & plastic bottles ■ newspapers ■ mixed paper (magazines, catalogs, junk mail & writing paper) ■ auto batteries ■ motor oil ■ white goods ■ tires ■ leaves

COMMERCIAL, INDUSTRIAL & INSTITUTIONS, INCLUDING SCHOOLS

aluminum & tin cans ■ glass & plastic bottles ■ newspapers ■ cardboard ■ high grade office paper ■ auto batteries ■ motor oil ■ white goods ■ tires ■ concrete ■ asphalt ■ brick ■ block ■ stumps ■ tree parts ■ ferrous (steel) scrap ■ non-ferrous (aluminum, copper or brass) scrap

WHAT HAPPENS TO RECYCLABLES ?

THIS LIFE

Newspapers _ _ _ _ _
Corrugated boxes _ _ _ _ _
Soda & water bottles ■ milk jugs ■ detergent bottles _ _ _
Tin plated steel cans & white goods (stoves, etc.) _ _ _
Mixed paper, magazines, junk mail _ _ _ _ _
Glass bottles & jars _ _ _ _ _
Boat shrink wrap _ _ _ _ _
Tires _ _ _ _ _
Waste oil & oil filters _ _ _ _ _
Leaves _ _ _ _ _
Brush _ _ _ _ _
Computers _ _ _ _ _
Phone books _ _ _ _ _
Antifreeze _ _ _ _ _

NEXT LIFE

New newspapers
New corrugated boxes
New bottles, plastic lumber, carpeting, fabric
Any new steel product; cars, cans, bicycles
Facial & toilet tissue, paper towels & napkins
New bottles & jars, asphalt paving for roads
Plastic lumber
Tire chips for drainage projects & playgrounds
Re-refined oil, boiler fuel and steel
Compost
Wood Chips
Dismantled into parts; leaded glass, metals & plastic recycled into new products
Paper, napkins, facial & toilet tissue
Cleaned and re-used



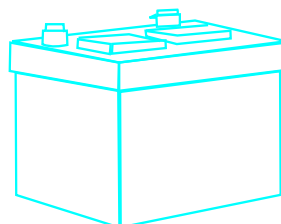
Half of all polyester carpet manufactured in the US is made from recycled soda bottles.

CLOSE THE LOOP, BUY RECYCLED. LOOK FOR THE RECYCLING SYMBOL WHEN YOU PURCHASE ITEMS TO BE SURE THEY ARE MADE FROM RECYCLED MATERIALS SUCH AS PAPER, GLASS AND PLASTIC BOTTLES OR ALUMINUM CANS.



OCEAN COUNTY SPECIAL PROGRAMS

Batteries, Tires, Oil & Oil Filters, Boat Shrink Wrap, Phone Books, Paint and Computers all have a place in Ocean County's Recycling Program.



COUNTY RECYCLING CENTERS ACCEPT:

Waste Oil (five gallon limit)	✓
Oil Filters	✓
Tires (\$1.00/tire)	✓
Antifreeze (five gallon limit)	✓
Automobile Batteries	✓
Household Batteries	✓
Phone Books	✓
Computers	✓
Paint (Latex, Oil Based & Boat) and Empty Paint Cans (limit of 20)	✓
Boat Shrink Wrap	✓
Cell Phones	✓



Today's boat shrink wrap may be tomorrow's boardwalk! Used boat shrink wrap is baled and sold to manufacturers of plastic lumber.



RECYCLING ECONOMICS

WITH RECYCLING - EVERYONE WINS

OCEAN COUNTY WINS

The Ocean County Recyclable Materials Processing Facility (MRF) is a state-of-the-art facility that handles an average of 300 tons per day. These recyclables - glass, aluminum and tin cans, all plastic bottles, mixed paper, newspaper and corrugated - are collected from the thirty-three municipalities in the County and brought to the MRF. There the materials are sorted by air classification, magnetic separation and by hand. They are then crushed or baled and sold to vendors or manufacturers where they are turned into new products. A portion of the profits from the sale of these materials is used to upgrade the County's recycling operations.

MUNICIPALITIES WIN

In addition, Ocean County has an innovative Recycling Revenue Sharing Program with their municipalities. Each municipality receives money back from the County based upon the amount of recyclables they bring to the facility. Since its inception in 1995, \$4.5 million has been returned to the municipalities with the payout averaging from \$4 per ton to \$10 per ton. Municipalities also receive tonnage grants from the NJ Department of Environmental Protection for every ton of material they recycle. When materials are recycled they do not have to be landfilled. Dumping at the landfill costs \$60.30 per ton. Therefore, the municipalities are avoiding landfill costs of millions of dollars per year for their recycling efforts.

THE ENVIRONMENT IN OCEAN COUNTY WINS

Instead of "wasting" materials in the landfill, these materials are recycled back into new products ranging from new cars, new roads, compost for the gardens, newspapers, plastic lumber for boardwalks and park benches, aluminum cans and paper napkins. Substituting recyclables for new raw materials in manufacturing saves energy, saves resources and produces less air and water pollution.



It takes 17 trees and 16,320 kilowatt hours to make 1 ton of virgin paper. It takes no trees and 5,919 kilowatt hours to make 1 ton of recycled paper.



Making an aluminum can from recycled aluminum uses 95 percent less energy (that's enough energy to run a TV set for three hours) than making a can from virgin aluminum.



RECYCLING IN YOUR SCHOOL



Ocean County's Recycling Plan requires all schools to recycle paper, and the MRF makes it even easier because you can recycle all kinds of paper so there's no sorting involved. Materials accepted at the MRF include used construction paper, computer paper, notebook, looseleaf or writing paper, magazines, catalogs and junk mail. These materials are accepted at no charge. This paper is shipped to a paper mill where it is made into facial tissues, paper towels, toilet tissue and paper napkins.

Most schools in Ocean County already have a recycling program in place. If your school does have a recycling program, CONGRATULATIONS! You may want to look at ways to improve or expand it. If your school does not have a recycling program in place, you have an ideal situation to create a "hands-on" lesson in community action.

TO IMPROVE OR EXPAND YOUR PROGRAM

- ❖ Conduct a simple waste audit by looking into the classroom waste baskets to see if everyone is really recycling.
- ❖ Ask your municipal recycling coordinator if other materials can be added to the program, such as bottles & cans.
- ❖ Consider a special recycling program which might include materials such as laser cartridges, batteries or cell phones.
- ❖ Organize a contest to determine which class can recycle the most paper.

TO START A PROGRAM IN YOUR SCHOOL

- ❖ Contact your local recycling coordinator to find out local requirements and to get information and support (see page 41 for contact information).
- ❖ Find out who removes the school trash from the building.
- ❖ Conduct a waste audit to determine what materials are discarded as waste. A waste audit can be as simple as looking into the waste baskets at the end of the day to as complicated as collecting all the trash for one day and sorting it into categories, and weighing each category of trash.
- ❖ Form a committee from your school, which includes custodians (they are the most important element of any school recycling program), teachers, principal, business administrator and/or superintendent and (very important) students.

PUBLICIZE YOUR PROGRAM

- ❖ Announcements on the loudspeaker.
- ❖ Posters in the halls and cafeteria.
- ❖ Information in the school newsletter.
- ❖ Hold a school-wide poster, poetry, trash sculpture or recycling song contest.

RECYCLING IN YOUR SCHOOL



IN ADDITION TO RECYCLING, LOOK FOR WAYS TO REDUCE WASTE AT SCHOOL

- Bring lunch and snacks in reusable containers.
- Write or make copies on both sides of paper.
- Replace disposable coffee cups with coffee mugs.
- Avoid printing extra handouts.
- Maximize use of overhead projector and blackboard to minimize use of photocopies.
- Reuse wall decorations and exchange with other teachers.
- Write letters to manufacturers urging them to use environmentally friendly packaging. Packaging that is recyclable (glass containers, aluminum cans) or is made from recycled material (cardboard) are examples. This can be an excellent writing project for students.
- Allow students to submit homework on the back side of used paper (and give extra credit for this).
- Cover books in used newspapers or paper bags.

SCHOOL RECYCLING IN OCEAN COUNTY IS AS EASY AS 1– 2 – 3

1. Ask the students and faculty to place paper in an appropriate container separate from trash.
2. Collect paper from the classrooms and take it to a central location. This can be done by students or by custodians.
3. Deliver the paper to the County's Southern Recycling Center located in Stafford Township or the Northern Recycling Center located in Lakewood Township. This may be done in conjunction with your municipal recycling program. Check with your municipal recycling coordinator.

For more information and assistance in setting up a program:

Call your municipal recycling coordinator (see page 41 for a list of contacts) or contact the Ocean County Department of Solid Waste Management at 732-506-5047. You may want to click on www.ANJR.com for "A Manual for Recycling in New Jersey Schools", which provides an outline and guidelines for setting up a school recycling program.



Schools generate between one and one and one half pounds of trash per student per day, most of which is paper.





RECYCLING PLAY

While recycling has been mandatory in New Jersey since 1987 and actively pursued in Ocean County for many years, recycling in schools present a special challenge! Education is a priority, and environmental education is no exception. It would seem simple to recycle paper in the schools, since most of the waste is paper. It would also seem logical that recycling should be running smoothly in all schools. However, a quick look in the wastebaskets and/or dumpsters of many schools will tell a different story.

Hopefully, the characters portrayed in the following play will help to bring an understanding of the issues that make recycling programs run efficiently or not. It brings in the perspective of students, teachers, custodians as well as principals and superintendents. The hope is that the play will be written and performed by the students for other students, teachers, custodial staff, school administration, school boards and even the public. It can be as elaborate (props/staging) or as simple as the teachers/students choose. We hope the message will be clear: EVERYONE is responsible and needs to help in making the program work.

Characters:

Custodian 1: Recycling is very worthwhile and I am proud to be part of a successful recycling program in my school. I really believe that recycling is a way to save resources and money for my school district. However, I wish every class were as helpful as most classes are. Just like everything, there are always a few people who mess up the system. I would like to talk to the kids and teachers that don't understand and try to make them cooperate in helping to save our planet in this one small way.

Custodian 2: This recycling just creates more work for me. There is so much to do already, before I can think of going home. The kids don't seem to want to help. They mix their recyclables and garbage together and expect me to separate it out. The teachers don't help either. They don't pay attention to what the students are doing when they throw out their trash or recyclables. Full or half-full drinks are thrown away with the paper making a mess and ruining the paper for recycling.

Custodian Supervisor: I have supplied all of the right bins for each classroom. I have given my workers the correct cans for collecting recyclables, but it is not working. How *frustrating!* Hey, this isn't Rocket Science! Why don't the students and teachers use the containers we have provided? Why do they mix recyclables and garbage together? My workers should not have to sort garbage from things that should be recycled! And some of the custodians just don't want to do recycling since they think it is something extra to do. What to do?

Custodian 3: The kids and teachers are slob and they don't care about their school or the work I do to keep their school clean and safe. Not to mention recycling. It is so much more work and just not worth the effort. Why does my boss make me do this work? I will just throw everything in the garbage and nobody will be the wiser.



RECYCLING PLAY (CONTINUED)

Teacher 1: It's Earth Day....April 22. Let me think of something to show the kids how they can take charge of their environmental destiny. Oh, I know! How about recycling? It is one way that EVERYONE can help to show that they love the earth, hate to waste natural resources and want to save money at the same time. How about testing the recycling program in our school? We could do a small waste audit by checking the garbage and recycling containers in all of the classrooms in our school to see how we are doing. Also, let's talk to the custodians and see how they think we are doing and how we can improve. I know, I'll make it an extra credit assignment!

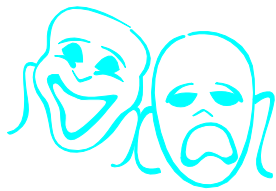
Teacher 2: Teaching is a hard job and I take it very seriously! I love my students and for the most part we have lots of fun learning. I have no time for this recycling stuff. I'm supposed to teach reading, penmanship, mathematics, environmental education, social studies and then I need to make sure that my pupils pass the State tests. Too many other important things to think about! Why worry about recycling?

Teacher 3: I love being a third grade teacher! I am very confident in my position that I have held for the last sixteen years. Hey, I am lucky enough to say that many of my old students have come back to thank me for the class they had with me. It feels good to be remembered and know that the job I am doing is remembered and important. One of my oldest students has graduated from college with a degree in Environmental Science. I am thrilled! I guess the work I did years ago in third grade with this student made a difference in her life. I remember starting our recycling program here at school and I remember making paper and talking about taking care of the planet in which we live. I'm glad that recycling is a part of my classroom activities.

Teacher 4: I love teaching! What is the problem with recycling? You mean I have to watch what the kids throw in the garbage and recycling bins? Are you serious? Don't they already know? We have had a lot of school assembly programs about recycling. I just never paid attention to see if the students were recycling properly. I will keep an eye on it all now and try to make it work better!

Student 1: Recycling. Sure, we all recycle. There are two bins in our classroom. One for paper and the other for trash. I always recycle. It's easy! (P.S. Students need to be made aware that the paper bin is for paper only, and should not be used for bottles and cans as this will contaminate the paper).

Student 2: I have been going to school assembly programs on recycling for years. Yeah, I reduce, reuse and recycle....the 3 R's. I recycle at home and at school. What's the problem?



RECYCLING PLAY (CONTINUED)

Student 3: I'm the most popular kid in the school! Why should I worry about this stupid recycling stuff? Who cares?

Student 4: When my friends recycle, I do it too. Otherwise, I don't think it is the "in" thing to do. I'll go along with the crowd! Who cares anyway? So, what's the big deal?

Recycling Coordinator for the Municipality: Obviously, I think recycling is very important! I have devoted the past ten years of my life to making recycling work well in my town. I notice that some teachers and students want recycling to work and that is good. However, it seems that many others don't consider recycling a priority and it becomes just a pain in the neck. What can I do to help make sure all of the paper is recycled in the schools in my town?

Principal: What a job! I am so happy to be the Principal! I have been a teacher in the school district for many years and am so glad to finally be a principal. Policy issues are important to me, but learning about my students is the most important thing! I know we have had some programs on recycling and I think some teachers have been involved in recycling lessons. I know that the custodians have a hard job and think they are doing a pretty good job of recycling. Although, last week, the custodian supervisor came to talk to me and told me that there is a problem with recycling in the school. How can I help?

Superintendent: I have to answer to the School Board and they expect so much of me! I have to make sure that the principals and teachers are doing a good job, and have to answer to the parents and taxpayers of my town. I have a wonderful staff, and believe our school district is doing a superb job of educating our students. Recycling? Is there a problem? I know that I faithfully recycle at home and at school. Isn't everyone recycling in school?

Garbage Driver: My company contracts with the school district to pick up garbage and I do my job well. I go to the landfill everyday and see how much is thrown away and dumped, forever to be buried. When I come to this school I see so much paper going into the garbage that should be recycled, it makes me sad and mad. I wish the school would do a better job of recycling.

Recycling Driver: I have been picking up this paper recycling dumpster for years at school. I see less and less paper recycled. Hey, you wouldn't believe what I see in the recycling dumpster when I empty it into my truck. It is a lot of stuff besides paper. I hope when I get to the recycling center they don't 'reject' my load and send me to the landfill instead. If they do, all of the hard work that many of the teachers and kids have been doing will be a waste, literally!

So who is to blame when recycling programs don't work in the schools. Everyone seems to have someone else to blame. Recycling can only work when we - **Everyone** - assumes the responsibility for making it work.

"GRASSCYCLING"

Grass

Cut it and leave it.

Grass clippings are a major part of New Jersey's trash. Nearly one-third of all summer waste can consist of grass clippings. BUT GRASS CLIPPINGS CAN BE RECYCLED. Grass clippings can be left on the lawn as you mow and nature will do the recycling. Clippings contain large amounts of nitrogen and provide a natural fertilizer for a

growing lawn. To maintain your lawn properly, mow to about 2 or 3 inches, especially in the summer. The taller grass will shade the soil, cooling roots and preventing weeds.



The average lawn generates about 75 pounds of grass clippings per mowing.

"MR. BAG-IT" AND "MR. CUT-IT AND LEAVE-IT"

"Mr. Bag-It" cuts his lawn once a week and it takes him three hours to cut the grass, collect the 75 pounds of clippings in trash bags, and lug the five bags of grass clippings to the curb for the garbage truck. His lawn is 5,000 square feet, the average size lawn in New Jersey.

"Mr. Cut-it and leave-it" also has a lawn that is 5,000 square feet. It only takes him 1.5 hours to cut his lawn, because he doesn't have to keep stopping and filling bags of clippings. The grass clippings stay on the lawn, providing a natural fertilizer for the grass. The clippings completely disintegrate in a day or two.

1. If Mr. Bag-it mows his lawn once a week for eight months of the year, how much more time will he have spent mowing than Mr. Cut-it and Leave-it? **48 hours, or two whole days**
2. If garbage bags cost 10¢/per bag, and Mr. Bag-it uses five of them each time he mows, how much money will he spend for garbage bags during the mowing season? **\$16.00**
3. Because the grass clippings provide a natural fertilizer, Mr. Cut-it and Leave-it uses only 3 bags of fertilizer, while Mr. Bag-it has to use 7 bags for his lawn. If the fertilizer bags cost \$32.00 each, how much money will Mr. Cut-it and Leave-it save? **\$128.00**
4. The average lawn produces 75 pounds of grass per mowing. Find out how many homes there are in your town. Figure out how many pounds of grass are thrown away during each week of the summer. Assume that the grass is mowed once per week.
5. It costs \$60.30 per ton to take trash to the landfill. How much would it cost to dispose of all the grass clippings each week? For the entire summer?
6. Would you rather be "Mr. Bag-it" or "Mr. Cut-it and Leave-it"?

Activity

COMPOSTING

BACKGROUND INFORMATION

Organic waste is waste which comes from a living thing such as grass, vegetables, fruits, trees & other plants, etc. Much of this waste can be made into a beneficial product through the process of composting.

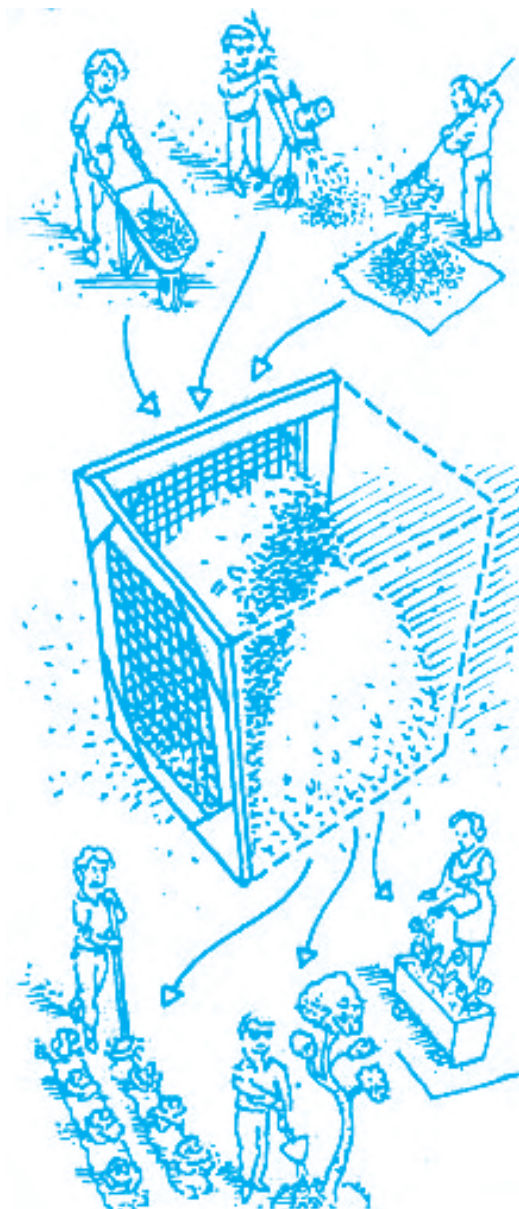
Composting is nature's way of recycling.

Leaves, grass clippings and plant waste will naturally break down into a rich, brown material commonly referred to as compost or humus. Helping the process are organisms such as bacteria and fungi, as well as critters such as centipedes, beetles and earthworms, which occur naturally in organic materials. As the material is broken down, heat is generated, which speeds up the decomposition process. Green, wet, high-nitrogen materials like grass and food scraps with dry, brown, high-carbon materials like leaves should be combined in a compost pile. To avoid odors, do not use more than 50 percent green material.

Many homeowners have set up compost bins in their backyards, and are happy that they are putting out less trash, and gaining a valuable resource for their gardens. Some gardeners call their compost "black gold".

Schools are also finding that compost bins can be an excellent learning tool for students to understand the biological composting process. This may be done in conjunction with the making of a butterfly garden, as the finished compost can be used in the garden. Bins can be as simple as tying together used wooden pallets, or stapling wire on a wooden frame. Many enclosed bins (some of them made from recycled plastic) can also be purchased. (To view some of the various types of bins, you may want to visit the County's Backyard Composting Demonstration Site at the County's Northern Recycling Center in Lakewood). The bin should be approximately one cubic yard in size. As you add materials chop them into smaller pieces and moisten them - about as damp as a wrung out sponge. A source of water should be

(Cont. next page)



Composting can reduce trash by as much as 40 percent.

Activity

COMPOSTING (CONT.)

close by, not only for the compost bin, but also for the garden. The material will decompose faster if it is turned occasionally to allow air to circulate, but it will decompose even if it is not turned. Compost happens! Be sure that any food scraps are buried in the pile.

You can compost fruit scraps, vegetable scraps, egg shells from the lunches, grass clippings from lawn mowing, leaves from trees on the school grounds, small pieces of paper, tea bags and coffee grounds. Below are listings of items okay and not okay to compost.



Ocean County Master Composter volunteers demonstrate composting to students.

You may want to bury small pieces of plastic or metal to illustrate that these materials do not decompose. However, be sure and remove these materials before using the compost for planting. Once the materials break down, you will have a dark brown, rich humus which looks like soil.

As an experiment, plant seeds in three mixtures: sand, compost that you have made and a mixture of sand and compost, and mark the pots. Sand is a poor nutrient source and does not hold water well. Therefore, the plants with the compost should be healthier than the plants in the sand, and the plants in sand and compost.

Have students read "Sarah, Cynthia, Sylvia Stout" by Shel Silverstein from Where the Sidewalk Ends. Discuss whether any of the items in the poem might be composted.

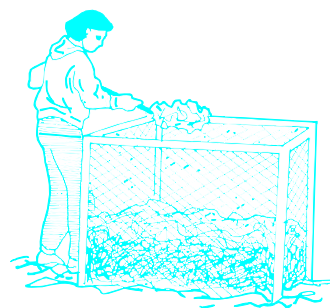
Ocean County Master Composter volunteers are available to visit your classroom and talk to the students about composting. To arrange a presentation, contact Kathleen Avery at the Ocean County Department of Solid Waste Management (732) 506-5047.

Things OK to Compost

- Egg Shells and Feathers
- Leaves
- Fruits and Veggies
- Nutshells
- Paper, in Small Pieces
- Hair
- Woodchips
- Grass Clippings
- Tea bags
- Sawdust

Things Not OK to Compost

- Meat Scraps and Bones
- Pet Waste
- Fish
- Baked goods and Pastries
- Cooking Oil
- Dairy Products
- Weeds with Seeds (there is not enough heat to kill seeds)



Activity

WORM COMPOSTING



Worm composting or vermicomposting is a type of indoor composting in which redworms break down fruit and vegetable scraps, bread products, egg shells, coffee grounds (including filters) and tea bags into a rich dark soil-like material called vermicompost. Vermicompost is composed of worm casings (worm excreta). Redworms (*Eisenia foetida*) will eat an amount equivalent to their own weight each day. One pound of redworms will eat about 4

pounds of kitchen waste in one week. Redworms start multiplying in about six weeks, and may deposit two to three cocoons every week. Each cocoon may produce two small baby worms.

MATERIALS NEEDED FOR ACTIVITY

- plastic or wood box
- newspapers for bedding
- pail for water
- small amount of sand or dirt
- redworms*
- plastic tray to go under bin
- fruit and vegetable scraps
- magnifying glass (optional)
- spray bottle
- cover for the bin (a piece of plywood works well)

*Redworms (*Eisenia foetida*) are the best worms to use for worm composting. They most efficiently eat the fruit and vegetable scraps and convert them to vermicompost. Redworms (sometimes called "red wigglers") may be obtained from your local bait shop. They may be ordered from Flowerfield Enterprises, Inc., 10332 Shaver Road, Kalamazoo, Michigan, 49024 or www.wormwoman.com. You may also contact the Department of Solid Waste Management for additional information on worm vendors.

BUILDING THE BIN: Use a box (plastic or wood) approximately 2 feet wide by 2 feet long by 1 foot high. Drill small holes on the sides and bottom to provide aeration. Place the worm bin on a tray or plastic cover to prevent moisture from damaging any shelves. Shred newspaper, wet it thoroughly (wet, but not dripping) and fill box. Add a small amount of soil to provide grit. Finally, add your redworms. Cover the bin with a piece of scrap wood. This will keep the box dark and the worms happy. They will not crawl out of the box because they have everything they need - darkness, food and warmth.

NOTE: Many students will want to look at and hold the redworms. Magnifying glasses help them to look closely. Only hold them for a short time as they dry out quickly.

WORM COMPOSTING (CONT.)

FEEDING THE WORMS: Worms do not have teeth but digest the food by grinding it in their gizzards. When you add food to the worm bin, bury it under the newspaper. This prevents smells and fruit flies. Food for the worms includes fruit and vegetable scraps, tea leaves, coffee grinds, bananas (their favorite food) and coffee filters. Also acceptable are cereal, biscuits or stale bread, pizza crust, popcorn, houseplant clippings, broken up egg shells (for calcium). DO NOT feed the worms meat, dairy products, bones, oils or fats. Do not give them too much food, or it may rot before the worms eat it, causing a smell and fruit flies. Students may want to put some of their food waste from lunches in the worm bin, such as apple cores, orange peelings, crusts of bread and crackers, but remember NO meat or dairy products.



Ocean County Master Composter volunteers explain worm composting.

MAINTAINING THE WORM BIN: Gently turn all of the material in the bin at least once a week. Be sure the bedding stays moist especially in a warm environment, such as a classroom. Check the bin to be sure that the worms have not been given more food than they can eat. Worms need a temperature of 55 to 77 degrees fahrenheit so they must be kept inside. A shelf in the classroom is fine, but not one in direct sunlight.

The worm bin can be left for a week of vacation, as long as it is given plenty of food before and after the break. You may want to start a worm bin in the fall, keep it over the winter and in the spring remove the worms and compost to a garden. Maintenance staff should be made aware of the bin so they don't throw it away.

HARVESTING THE VERMICOMPOST:

1. Dump all materials from box onto plastic sheet.
2. Divide into small piles.
3. Worms migrate to bottom of pile.
4. Remove vermicompost from top of pile and place in pail.
5. Return worms to the bin with new bedding, or add to garden.

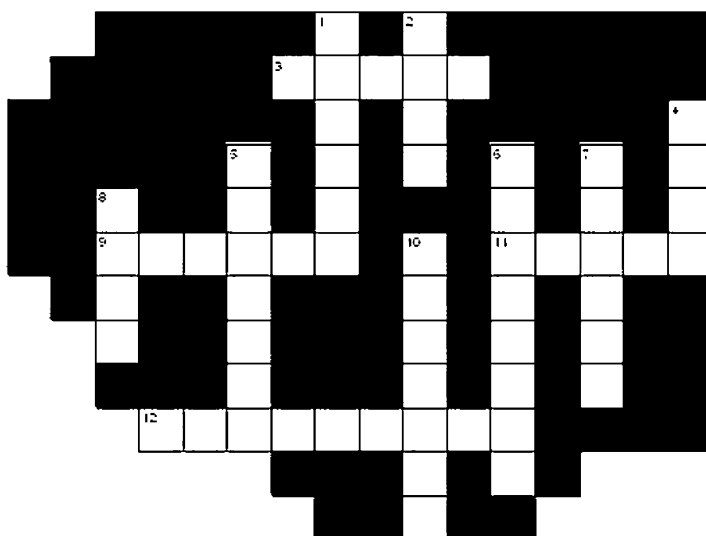
USING THE VERMICOMPOST: Have the students plant seeds in vermicompost, and in soil. Compare the rate of growth and health of the two sets of seeds. Seeds that grow quickly such as beans or marigolds are the most successful.

EXTENSION OF ACTIVITY

1. Have students draw pictures of worms and what they do. They may also want to give the worms names.
2. Have students write a poem or story in the shape of a worm.
3. Have students make puppets of worms and food they eat such as lettuce, carrots, etc. and put on a puppet show or skit.
4. Have each student create a small worm bin from bottoms of milk containers. Provide them with bedding and two or three worms and let them take the bin home - with parents' permission, of course.

COMPOST CROSSWORD

Compost



Down

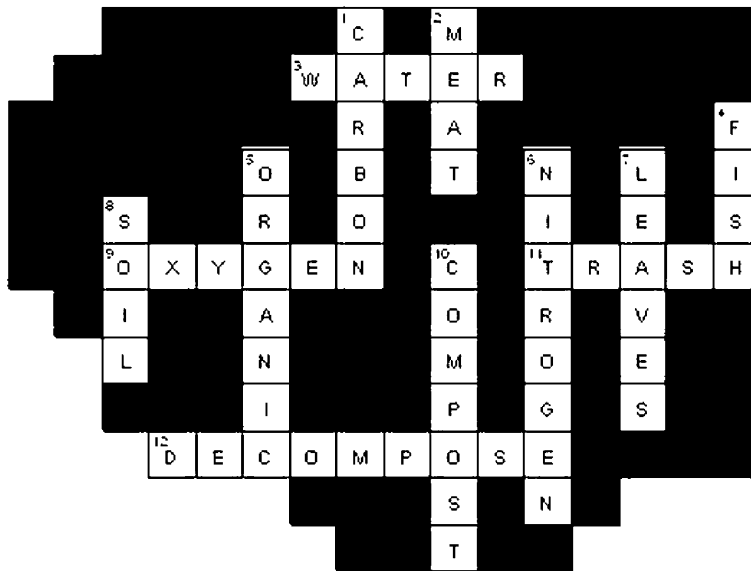
1. Cardboard, leaves and straw provide _____ in your compost pile.
2. _____ should not be put in a compost pile.
4. Do not put _____ in your compost pile.
5. Composting breaks down _____ materials.
6. _____ comes from fresh cut grass, plants and garden trimmings.
7. _____ belong in a compost pile.
8. Finished compost looks like dark _____.
10. When you _____ your waste you preserve landfill space.

Across

3. Keep your compost pile moist by adding _____.
9. Turning your pile mixes in _____.
11. 20-40% of your _____ can be composted.
12. Small microorganisms help to _____ yard waste.

COMPOST CROSSWORD ANSWERS

Compost



Down

1. Cardboard, leaves and straw provide _____ in your compost pile.
2. _____ should not be put in a compost pile.
4. Do not put _____ in your compost pile.
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Across

3. Keep your compost pile moist by adding _____.
9. Turning your pile mixes in _____.
11. 20-40% of your _____ can be composted.
12. Small microorganisms help to _____ yard waste.

Map Activity

WHERE DOES YOUR LITTER GO?

Every piece of litter does hurt - it looks ugly, it pollutes and it takes a long time to decompose. Plastic takes up to 500 years to decompose. Worst of all, litter that is scattered along our roads eventually gets washed down the storm drains, and guess where those storm drains end? In the bay or in the ocean. You could be swimming in that litter in the bay or in the ocean!

What can you do to help?

Never throw anything down storm drains. They are for rainwater only.

Don't litter. That litter will end up in the storm drain.

If you walk your pet, "scoop the poop".

Use trash and recycling cans, and encourage others to do the same.

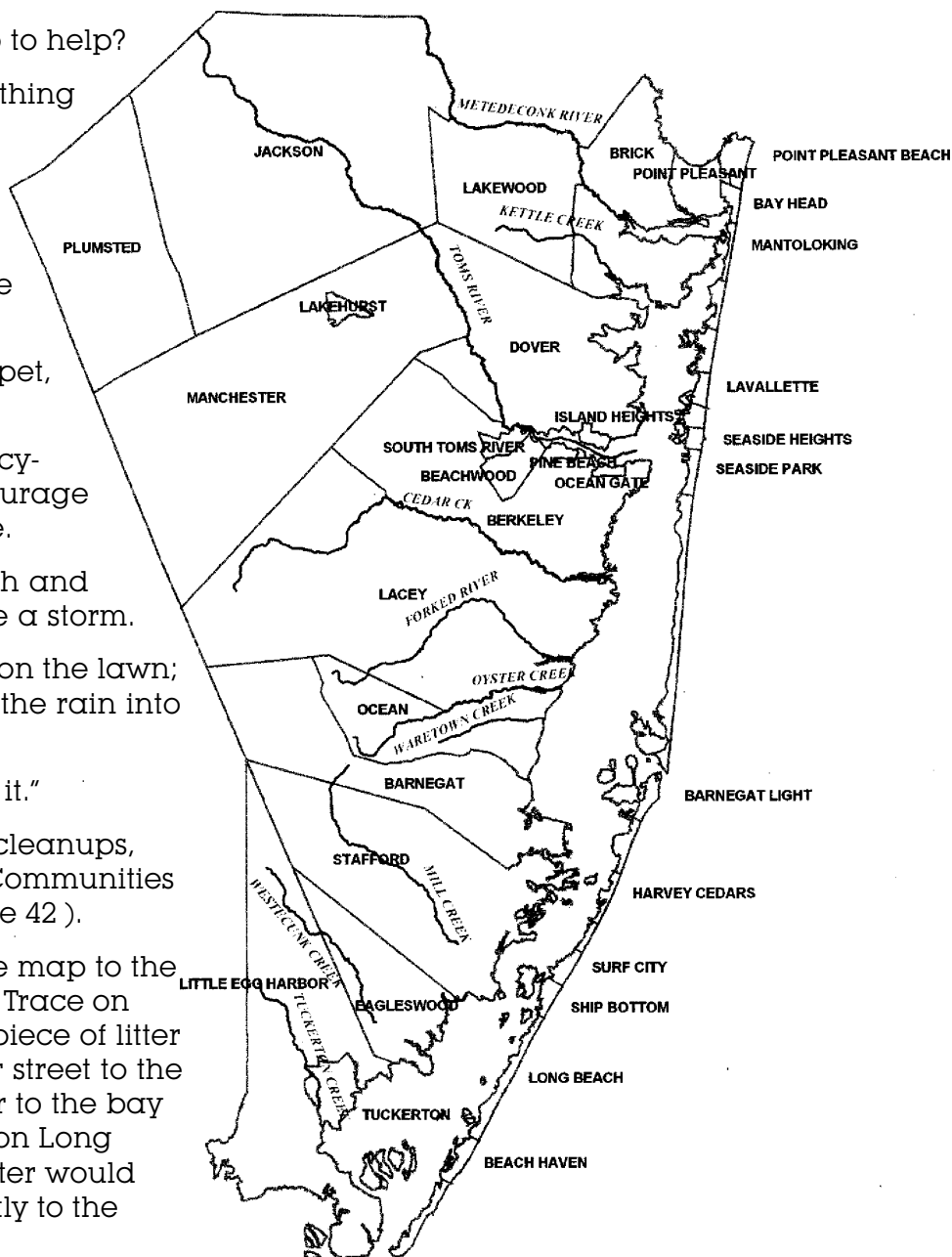
Don't put out trash and recycling cans before a storm.

Use less fertilizer on the lawn; the excess flows with the rain into the storm drain.

"Cut it and leave it."

To help in your local cleanups, contact your Clean Communities Coordinator (see page 42).

Find your town on the map to the right. Color it green. Trace on the map the route a piece of litter would take from your street to the storm drain, to a river to the bay or ocean. If you live on Long Beach Island, your litter would probably head directly to the ocean.



Math Activity

OCEAN COUNTY AND MUNICIPALITIES – PERFECT TOGETHER!

BACKGROUND INFORMATION. Ocean County is the only County in New Jersey that shares the revenue from the sale of recyclables from the Recyclable Materials Processing Facility (MRF) with its municipalities. Starting in 1995, municipalities received two checks per year from the County based upon the number of tons they have brought to the MRF.

Listed on the next page are the tonnages from each municipality in Ocean County. They are listed by material with a total in the second to last column. Assume the payout is \$9.37 per ton and have the students answer the questions on page 24. Answers are given on page 25.



Math Activity

OCEAN COUNTY AND MUNICIPALITIES – PERFECT TOGETHER! (CONT.)

Tons of Material Recycled by Ocean County Municipalities						MUNICIPAL POPULATIONS
	Cardboard	Commingled	Mixed Paper	Newsprint	Total	
Barneгат	309	692	33	736	1,770	16,405
Barneгат Light	89	110	38	101	338	790
Bay Head	57	119	65	140	381	1,251
Beach Haven	268	427	0	130	825	1,302
Beachwood	143	575	71	417	1,206	10,628
Berkeley	326	1,740	207	1,728	4,001	41,946
Brick	2,383	3,202	410	2,442	8,437	76,705
Dover	6,175	5,563	1,003	3,813	16,554	92,890
Eagleswood	52	92	17	87	248	1,501
Harvey Cedars	34	101	9	66	210	368
Island Heights	26	98	35	73	232	1,807
Jackson	841	2,120	388	389	3,738	47,580
Lacey	914	1,278	367	1,196	3,755	26,170
Lakehurst	69	140	15	42	266	2,564
Lakewood	4,728	2,819	675	1,773	9,995	65,220
Lavallette	57	262	61	228	608	2,689
Little Egg Harbor	352	760	86	565	1,763	17,695
Long Beach	136	749	33	373	1,291	3,393
Manchester	166	1,230	119	572	2,087	41,431
Ocean Gate	3	107	14	60	184	2,097
Ocean Township	108	382	71	224	785	6,726
Pine Beach	31	117	40	111	299	1,991
Plumsted	90	214	81	130	515	7,920
Pt. Pleasant Beach	273	421	55	259	1,008	5,379
Pt. Pleasant Boro	583	1,108	433	311	2,435	19,668
Seaside Heights	296	459	21	87	863	3,166
Seaside Park	133	313	80	242	768	2,285
Ship Bottom	207	256	23	108	594	1,408
South Toms River	24	165	23	76	288	3,678
Stafford	1,777	1,497	416	1,366	5,056	23,785
Surf City	163	249	2	240	654	1,477
Tuckerton	222	192	32	130	57677	3,580
County Total	20,436	27,558	4,926	18,215	71,730	537,065

Note: Mantoloking is not on this list because, at the time, they were not using the County MRF.

TWENTY QUESTIONS

1. Which town recycled the most material?
2. Which town recycled the most cardboard, the most newsprint, the most mixed paper and the most commingled (glass, plastic, aluminum & tin cans)?
3. Why do you think Dover Township recycled the most materials?
4. Which town recycled the least cardboard?
5. Which town recycled the least commingled (glass, plastic, aluminum & tin cans)?
6. How many pounds per person of newsprint did Jackson residents recycle?
7. How many pounds per person of newsprint did Long Beach Township residents recycle?
8. Why do you think Long Beach Township recycled so much more newsprint per person?
9. Calculate the average tons of mixed paper each town recycled.
10. How many pounds per person per year was recycled in Ocean County? How does this compare with your town? Why is there a difference?
11. How many pounds of recyclables per person did Seaside Park residents recycle?
12. How many pounds of recyclables per person did Harvey Cedars residents recycle?
13. How much money did Lacey Township receive from the County?
14. How much money did Little Egg Harbor receive for their cardboard?
15. What town did not recycle any mixed paper?
16. What is the Countywide pounds per person per year recycled for cardboard, commingled, newsprint, mixed paper? Why do you think the number for commingled is so high?
17. It costs \$60.30 per ton to landfill materials in Ocean County. If all the material was landfilled instead of being recycled, how much would it cost?
18. How much money did Tuckerton receive for their newsprint?
19. Which town recycled 2435 tons of material and how much did they receive for it?
20. How much money did your town receive? How did your town compare to another town with a similar population?

ANSWERS TO TWENTY QUESTIONS

1. Dover Township
2. Dover Township
3. It has the largest population.
4. Ocean Gate
5. Eagleswood
6. 16.35 pounds
7. 219.86 pounds
8. Their population jumps in the summer. Their residents like to read more. Perhaps they are more conscientious recyclers?
9. 149.27 tons
10. $264.9 - \text{total tons} \times 2000 \text{ divided by population } (537,065)$. Answers will vary with parts 1 & 2.
11. 672.2 pounds
12. 1,141.3 pounds
13. \$35,184.35
14. \$3,298.24
15. Beach Haven
16. Corrugated 76.10 pounds, commingled 102.62 pounds, newsprint 67.83 pounds, mixed paper 18.34 pounds. The commingled is high because the population increases tremendously in the summer, and people tend to drink more in warm weather.
17. \$4,289,440.50
18. \$1,218.10
19. Pt. Pleasant Boro, \$22,815.95
20. Answers will vary, number of tons \times \$9.37

MAKING PAPER FROM PAPER

Papermaking is an ancient art. Paper consists of many tiny fibers that are connected by a bond that is activated by water. Paper can be made from trees, but it can also be made from paper. When paper is made from waste paper, 60 percent less water and 70 percent less energy are used. Since paper is one of the largest components of our waste stream, especially in schools, it just makes good sense to make new paper from old paper. To complete the recycling loop it is important that we, as consumers, buy recycled paper. Paper mills have perfected their ability to use old paper, and now just about any type of paper you want to buy, is made from recycled materials - file folders, envelopes, greeting cards, post-it notes, writing paper and newspapers.

This activity allows the students to make new paper from the scraps of paper used in their classroom. It will show them how the actual recycling process works.

MATERIALS NEEDED FOR ACTIVITY

- electric blender
- scrap paper
- piece of window screen, approximately 7" x 7"
- stack of newspapers to blot
- sponge
- water
- rolling pin
- blotting paper
- plastic dish pan

Collect scrap paper from classroom activities. Rip paper into one inch pieces. Fill blender container one third full of paper bits. Add one third more water and blend until paper bits have turned to pulp. It should be the consistency of oatmeal - you may need to adjust the amount of water and paper. Pour the mixture into the dishpan. Add one or two blender containers of water. Blend the mixture until smooth.

Lower the screen into the pulp and move it around to coat the screen. Raise it from the water slowly. Place it on a piece of blotting paper with some newspapers under it. Place another sheet of blotting paper on top and a second section of newspaper. Press excess water from paper by running the rolling pin over it. Take off the top newspaper. Turn the blotting paper sandwich over and take off the top piece of blotting paper and the screen. Let paper dry for 2 hours, then loosen it from the blotting paper and gently peel it off. Let the recycled paper dry overnight before writing on it.

Students may want to make colored paper using food dyes, or add flower petals or leaves, or press shells against the paper for a sculptured effect.

Activity

LUNCH WASTE

THE LUNCH BUNCH: CAN WE REDUCE THE WASTE?

The average person in Ocean County generates 6 pounds of trash every day and spends 18 cents per day to dispose of it. Trash from Ocean County is sent to the Ocean County Landfill Corporation. The cost to dispose is \$60 per ton or 3¢ per pound. The money for disposal is paid for by each homeowner in the county, either through local taxes or directly to a garbage hauler. If we decrease the amount of trash that each one of us generates, we can lower the cost of our garbage disposal. We can do this by utilizing more reusable items. For example: using lunch boxes rather than lunch bags, plates instead of paper plates and rechargeable batteries in place of single-use batteries.

For many years, reuse has been a common practice - milk was delivered in reusable bottles, diapers were washed and used over and over, and jars and bottles were commonly washed out to be reused. In more recent years, the emphasis has been on disposables, with items like cameras to razors to batteries to pens to diapers. These items are now used once and thrown away. In spite of the emphasis on disposables, many common events encourage reuse of materials such as garage sales, flea markets and secondhand/thrift stores.

MATERIALS NEEDED FOR ACTIVITY

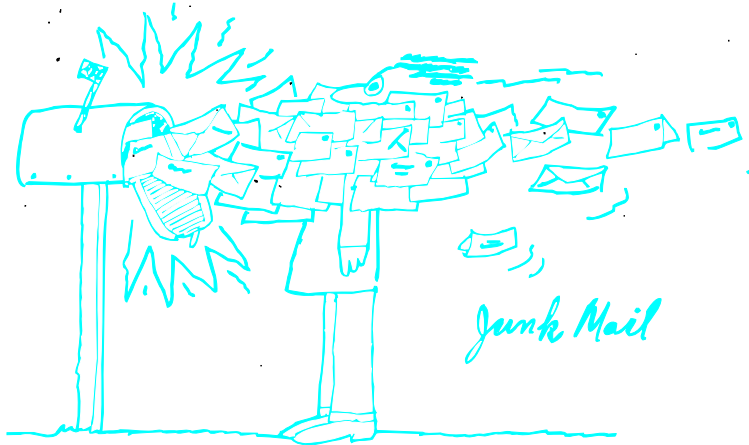
- a scale, either a postage or a diet scale; one that will register ounces
- samples of reusable containers, such as canvas lunch bags or lunch boxes, thermos, plastic sandwich containers, plastic dessert containers, cloth napkins, plastic drinking cups with covers
- calculators
- plastic ziploc bags for each student's lunch waste

Have each student save the trash from their lunch. Save only the wrappings (including the paper bag), but not the actual food waste. Each student will weigh their waste on the scale, and write the amount on the blackboard. After all the bags have been weighed, add up the amounts on the blackboard. The sum will be in ounces. Have students convert them to pounds (reminding them that there are 16 ounces in each pound). The number will probably be fairly small, not much more than a pound. Students will use their class as a sample, and calculate how much lunch waste their school generates in one day (number of classrooms x weight for sample classroom). This figure will still be fairly small. Multiply this number by the number of school days in a year (amount for school/day x 180 days). This figure will be fairly large, and will need to be converted to tons (divide by 2000).

Discuss how much it costs to dispose of this waste at \$60 per ton. Discuss better ways to spend that amount of money.

Activity

JUNK MAIL LETTER



Have your students write and ask to have their names, and their family's names, removed from lists used by companies that send out junk (direct) mail to consumers. It may take a few months but the amount of unwanted mail they receive will decrease. The following can be copied onto a postcard for students to send.

Dear Sir/Madam

I am concerned about the amount of paper I get in my mail every day. Direct mail is recycled and not read. Please remove the following name(s) from your direct mail preference list. Thank you.

Name _____

Address _____

City/State _____ Zip _____

Signed _____

Mail to:

Mail Preference Service
Direct Mail Marketing Association
P.O. Box 643
Carmel, NY 15012-0643



There are over 10 billion catalogs stuffed into our mailboxes each year.

Ocean County Recycles

Activity

COMPUTER ACTIVITY

Background:

Students have grown up with computers! Chances are, they have had more than one computer in their short lifetimes. We all know that computers can become obsolete in a short time. As a matter of fact, a 1993 Carnegie-Mellon study reports that 150 million PCs will be heading for disposal by 2005.

What should be done with an old computer once it has outlived its usefulness? It should be recycled, of course! But why? There are various things inside computers that should not be thrown into the garbage because of potential environmental and health hazards. For example, computer monitors contain lead, which causes a variety of health problems. Circuit boards are contained in computer hard drives, floppy drives, CD ROM drives, memory, motherboard, modem and sound cards. These circuit boards may contain lead in the solder.

Relays and switches may contain mercury. Batteries may contain cadmium. Printed circuits contain heavy metals including mercury and zinc. These heavy metals harm the environment as well as human health. Also interesting is that there are some precious metals contained in computers. For example, copper is around the neck of a monitor (called the yoke) and also in the power supply. There may also be precious metals in the circuit boards like gold, although it is in very small amounts.

Ocean County has realized the importance of computer recycling and has set up drop off points at both its Northern and Southern Recycling Centers. In addition, nine municipal recycling centers accept computers for recycling.

Computers brought to the County's Recycling Centers are recycled through a company in Lakewood called Supreme Computer and Electronic Recycling, Inc.



At Supreme, computers are tested, and equipment that is deemed functional in its current form is remarketed through proprietary channels of not-for-profit agencies, schools, start-up businesses, domestic brokers, and retail locations within the U.S.

If the computer is obsolete or non-saleable, it is de-manufactured. This process includes the use of 50 employees who salvage all of the useful parts. These parts can

COMPUTER ACTIVITY (CONT.)

be shelved for future minor repairs or prepped for redistribution in parts form. If the parts cannot be reused, they are separated into components to be recycled.

1. Aluminum, steel, and iron are separated from the other components and recycled.
2. Copper is reused in wire and tubing, and precious metals are recycled at various smelters.
3. The plastic casings are shredded and recycled into plastic lumber, pallets or other applications.
4. Monitors, which contain leaded glass, may be recycled into other products or may be sent to smelters where the lead is extracted.
5. Hazardous materials like lithium batteries and mercury switches are sent to a licensed hazardous waste site where they are recycled.
6. Finally, any packaging that comes with the equipment, such as paper, cardboard, or pallets, is also recycled.

Potential Activities:

1. Get an old computer and dismantle it. Make a display board that lists the components and what can be recycled. Have students visit other classes to explain what they have learned or at least put the display board in a prominent place for other students to see. The local library may also be interested in displaying the board.
2. Call Supreme at 732-370-4100 and arrange a tour of their facility.
3. Have students write a letter to the editor of the local newspaper explaining why and how computers can be recycled in Ocean County.
4. Have the students do a survey of five family members or friends (not in their current class) to see how many have old computers in their homes that are not being used. In the survey include how many computers are in use in the house. Compile the information for the entire class and discuss the results.
5. Have the students design a brochure or newspaper ad to tell people what to do with old computers.

Activity

YOU CAN RECYCLE SO MANY THINGS IN OCEAN COUNTY –

THE IMPACT OF RECYCLING NON-TRADITIONAL MATERIALS

Background Discussion:

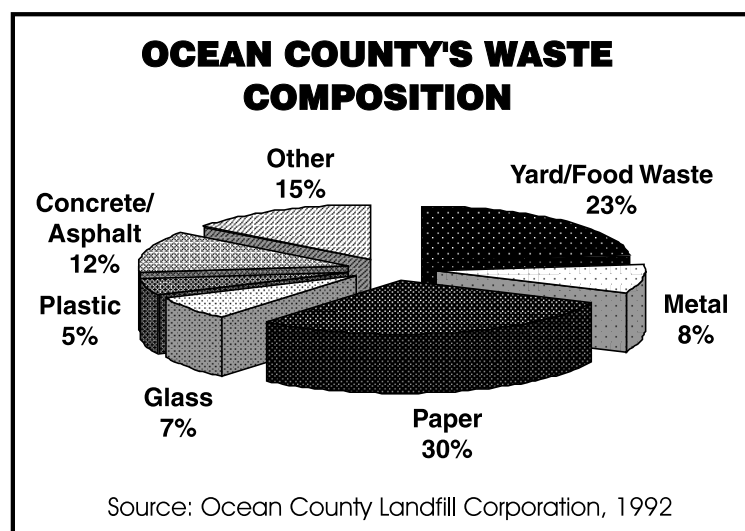
How many things would be “thrown away” at home and at school if there were no recycling. Use the blackboard to list the items which may include: product packaging, grass clippings, leaves, furniture, clothing, bottles, paper, binders, drink containers, food scraps, newspapers, appliances, paint, batteries, old toys, napkins, paper plates. Make the list as long as you can.

Now, how many things are thrown away by businesses, large and small? Think about popular retail stores where students like to shop as well as warehouses, hospitals, manufacturing plants, and office buildings. Also, list some of the items which might include cardboard, pallets, office paper, magazines, scrap metal, clothing hangers, tissue paper, register tape, videotapes, coffee cups. Make the list as long as you can.

Use the Ocean County chart below to start a discussion about what are the biggest things that would be thrown away if there were no recycling.

Ocean County Recycling – The numbers!

There are 600,000 residents in Ocean County and they recycle an average of 600,000 tons each year! This is one ton (2,000 pounds) of what would have been waste that is now recycled for EVERY person in Ocean County EVERY year!



Activity

THE IMPACT OF RECYCLING NON-TRADITIONAL MATERIALS (CONT.)

OCEAN COUNTY 2004 TOTAL RECYCLING BY CATEGORY

MATERIAL	RESIDENT'L	COMM'L	INST	TOTAL	%
COMMINGLED CONTAINERS	34,151.8	977.5	0.0	35,129.3	5.0%
NEWSPAPER	18,980.8	1,816.2	0.0	20,797.0	3.0%
ALUMINUM CANS	420.1	521.5	0.0	941.5	0.1%
GLASS CONTAINERS	4,830.4	5,126.8	0.0	9,957.2	1.4%
TIN CANS	1,264.1	947.0	0.0	2,211.1	0.3%
PLASTIC (PET/HDPE)	1,232.2	352.0	0.0	1,584.2	0.2%
AEROSOL CANS	0.0	0.0	0.0	0.0	0.0%
CARDBOARD	22,124.2	16,730.0	0.0	38,854.2	5.5%
OFFICE PAPER	79.1	174.6	0.0	253.7	0.0%
MIXED PAPER	12,018.4	2,427.0	0.0	14,445.4	2.1%
WHITE GOODS	4,447.4	226.3	0.0	4,673.7	0.7%
STUMPS	2,574.8	27,900.2	0.0	30,474.9	4.4%
BRUSH	29,271.6	15,622.9	0.0	44,894.5	6.4%
LEAVES	35,525.5	2,909.3	0.0	38,434.8	5.5%
GRASS	348.3	576.1	0.0	924.4	0.1%
CHRISTMAS TREES	987.3	0.0	0.0	987.3	0.1%
OTHER VEGETATIVE WASTE	108.6	7.0	0.0	115.6	0.0%
WOOD WASTE (CONSTRUCTION)	602.4	6,975.6	0.0	7,578.0	1.1%
CONCRETE	24,747.3	206,467.3	0.0	231,214.6	33.0%
CEMENT BLOCKS	77.6	0.0	0.0	77.6	0.0%
BRICKS	0.0	0.0	0.0	0.0	0.0%
ASPHALT	6,677.0	5,394.8	0.0	12,071.8	1.7%
STREET SWEEPINGS	12,090.1	3,695.9	552.0	16,338.0	2.3%
MILLINGS	4,712.9	6,252.8	993.6	11,959.3	1.7%
FERROUS SCRAP	255.9	1,383.2	0.0	1,639.0	0.2%
NON-FERROUS SCRAP	1,266.1	500.0	0.0	1,766.1	0.3%
FOOD WASTE	0.0	1,979.6	0.0	1,979.6	0.3%
AUTO BATTERIES	186.4	367.1	0.0	553.5	0.1%
HOUSEHOLD BATTERIES	18.4	3.5	0.0	21.8	0.0%
ANTIFREEZE	9.7	42.7	0.0	52.4	0.0%
MOTOR OIL	311.7	3,137.6	0.0	3,449.3	0.5%
PHONE BOOKS	79.3	0.0	0.0	79.3	0.0%
EMPTY PAINT CANS	13.1	0.0	0.0	13.1	0.0%
TIRES	665.9	7,685.2	0.0	8,351.0	1.2%
AUTO SCRAP	232.0	2,920.9	0.0	3,152.9	0.5%
PROPANE TANKS	9.2	0.0	0.0	9.2	0.0%
OIL FILTERS	0.7	12.3	0.0	13.1	0.0%
SOIL CONTAMINATED BY OIL	1,525.5	16,746.7	0.0	18,272.2	2.6%
SHRINK WRAP	4.6	0.0	0.0	4.6	0.0%
COMPUTERS	359.8	0.0	0.0	359.8	0.1%
TEXTILES	659.0	91.4	16.0	766.3	0.1%
OTHER*	223.9	135,683.8	0.0	135,907.7	19.4%
TOTAL	223,092.8	475,654.6	1,561.6	700,309.0	100%

*OTHER INCLUDES ELECTRONICS, OTHER PLASTICS, MULTI-PAPER, ISRI/AMRA TOTALS

Activity

THE IMPACT OF RECYCLING NON-TRADITIONAL MATERIALS (CONT.)

How Can We Reach 60 Percent Recycling (Ocean County's Goal)?

Give each student a copy of the 2004 Total Recycling by Category for Ocean County. Ask the students to pick out 'typical' recyclable materials that are REQUIRED for recycling in Ocean County by RESIDENTS. Ask the students to cross out these items on their charts. At the same time list the materials along with the total recycled from the chart on the blackboard.

The mandated materials for residential recycling are:

- commingled bottles and cans
- newspaper
- mixed paper
- leaves
- white goods
- tires
- motor oil
- auto batteries

Ask the students to add up the total of all of the material that must be recycled by residents. (106,287.9 tons).

Discuss how this is only a small portion of what can and is actually recycled (15 percent).

Look at the items that are not crossed off on the chart and discuss the WIDE VARIETY of materials that are recycled in Ocean County. Talk about where these materials would come from (construction jobs, land clearing, retail businesses, office buildings, institutions). Ask the students to rank, by weight, the items. Give answer depending on chart.

Discuss how the 'heavier' materials like concrete have a HUGE impact on recycling and have gone far in helping to attain the 60 percent recycling goal.

THE IMPACT OF RECYCLING NON-TRADITIONAL MATERIALS (CONT.)

Questions for discussion:

Could we reach the 60 percent recycling goal by recycling only residential items? Commercial and industrial businesses as well as institutions, like schools and public buildings and hospitals, should play a very large role in recycling enough material to meet the goal of recycling 60 percent of the waste generated in Ocean County.

Which materials should be mandated for recycling in order to ensure compliance with the 60 percent recycling goal? After discussion, list the materials that are actually mandated for commercial, industrial and institutional sources.

These are:

- | | |
|-----------------------------|------------------------|
| ■ Commingled bottles & cans | ■ Brush |
| ■ Newspaper | ■ Automobile batteries |
| ■ Cardboard | ■ Tires |
| ■ Office paper | ■ Motor oil |
| ■ Concrete | ■ White goods |
| ■ Asphalt | ■ Ferrous scrap |
| ■ Brick | ■ Non-ferrous scrap |
| ■ Block | |
| ■ Stumps | |

Total the amount recycled by commercial and institutional sources for these mandated materials, (288,382.9 tons). Discuss how much more is recycled through commercial sources than residential sources. Talk about how important it is to make sure these things are recycled. Ask students what they can do to help ensure that these items are kept out of the landfill and recycled. For instance, they might ask a local business what materials they recycle, ask their municipal coordinator what types of materials businesses in their town recycle, ask a representative from one of the private recycling facilities to speak to the class about what they recycle, who their material comes from and what is done with it. Ask students to call one of the facilities and ask the same questions. Contact the Department of Solid Waste Management for a list of businesses who recycle the materials listed above.

HOUSEHOLD HAZARDOUS WASTE WORD SEARCH

DANGER LURKS IN YOUR HOME

Many products found in your kitchen, bathroom, garage or garden shed are hazardous substances and may harm the environment if they are carelessly thrown away. Anything thrown down a drain, inside or outside, may end up in your drinking water or in the bay or ocean. Any product labeled "Warning", "Caution", "Poisonous", "Toxic", "Flammable", "Corrosive", "Reactive" or "Explosive" is considered *hazardous*. To be sure that they do not harm Ocean County's clean air or water, do not throw them into the trash, do not bury them in the yard or throw them down a drain.

Homeowners can bring them to the County's Household Hazardous Waste Collection Program (call the Department of Solid Waste Management for collection dates). Some of the items accepted are silver polish, oven cleaners, photographic chemicals, rug and upholstery cleaners, polishes and bleaches, pool chemicals, laboratory chemicals, paints(including boat paint), thinners, pesticides, herbicides, toilet and drain cleaners.

Since 1997, Ocean County has been accepting full, partially full and empty paint cans at the County's Northern and Southern Recycling Centers. Also, some of the municipalities accept them at their recycling centers. Check with your municipal recycling coordinator to see if your town accepts them or click on the Department of Solid Waste Management's website at www.co.ocean.nj.us/recycle. The program is for latex, oil based and boat paints only. No stains or wood preservatives are accepted.

Schools can make arrangements with a registered hauler to properly dispose of any hazardous chemicals. Call the County for hauler information.

Try using less hazardous substitutes: cedar chips for mothballs - vinegar and water for ammonia cleaners - lemon oil and linseed oil for floor & furniture polish - latex paint for oil based paint.

Find the following words and circle them:

oven cleaner	bleach	battery
acid	solvent	pesticide
herbicide	toxic	poison
trash	drain	chemical
paint		

WORD SEARCH

(Answers are at the bottom of Page 40)

Z	O	Y	U	P	M	N	B	C	V	A	P	O	I	L	B	P	I
A	W	V	Q	X	V	B	N	M	J	K	L	U	D	R	L	W	M
A	X	Z	E	G	H	J	K	L	T	Y	U	E	W	R	E	M	Q
V	D	R	T	N	U	B	E	K	C	H	E	M	I	C	A	L	R
P	E	S	T	I	C	I	D	E	X	D	R	A	I	N	C	I	M
O	A	B	O	W	E	L	R	T	Y	U	B	C	E	M	H	K	N
I	A	C	X	R	T	H	E	R	B	I	C	I	D	E	Y	C	B
S	N	Y	I	E	D	C	P	A	I	N	T	D	T	Y	U	I	O
O	S	T	C	S	O	L	V	E	N	T	B	H	J	K	V	E	X
N	F	T	U	O	K	B	A	T	T	E	R	Y	V	C	S	K	P
A	D	T	Y	I	P	B	C	V	M	T	R	A	S	H	W	Q	Z



The average household generates more than 20 pounds of household hazardous waste each year.





RECYCLING SONGS & POEMS



RECYCLING

Recycle glass, recycle cans
 Don't throw out your pots and pans
 Save our planet, save our trees
 Save our water, won't you please?
 When the news is read and you go to bed
 Bundle and tie the paper instead
 Magazines are really cool
 Recycle them too, don't be a fool
 When dad changes the oil in his car
 We bring it to the recycling center,
 It's not too far
 One day soon we all might find
 We can leave our trash behind
 But til that day for what it's worth
 We can all work together and save our earth

Victoria DeLena
 St. Peter School
 Point Pleasant Beach

Winner in the 2004 statewide recycling poetry
 contest sponsored by NJ Department of
 Environmental Protection

"THE RECYCLE RAP"

When I'm feeling hungry and a little bit lean,
 I like a TV dinner wrapped in Polystyrene.
 When I go to the kitchen for some fine cuisine,
 I always recycle so we keep our country clean.
 Keep it clean! You're clean, I'm clean,
 C-c-c-c-clean, we're all clean!

When I go to the market for some things I lack,
 A couple Tootsie Rolls and some Apple Jack.
 They pack all my goodies in a plastic sack.
 But I always make sure that I bring it back.

Gotta recycle. You gotta recycle again and
 again and again and again and again.

REFRAIN

Your daily newspapers seem to multiply.
 By garbage-day they get about a mile high.
 Don't toss it in the rubbish; don't throw it
 in a gulch.
 If you chop your paper up, you make some
 really nice mulch.
 We got some mulch. We like some mulch.
 You got some mulch? M-m-m-m-mulch.

All we're tryin' to tell you here is try to get a clue!
 Wanna make it a cleaner world is all we mean
 to do.
 If everybody does their part then when the day
 is through,
 We'll have a better world for me and a better
 world for you!

Gotta recycle. You gotta recycle again and
 again and again and again and again.

REFRAIN

**Write your own recycling song or poem and hold a
 school-wide contest.**

Earth Day Activity



History of Earth Day

The first Earth Day was celebrated on April 22, 1970. It was conceived by Gaylord Nelson, a Wisconsin Senator, whose goal was to have a "nationwide demonstration of concern for the environment, so large that it would shake the political establishment out of its lethargy and, finally, force this issue permanently onto the national political agenda." Twenty-million concerned citizens, including many college students, rallied for clean air and water. The message remains valid today - **every single person has a role to play in keeping the environment clean and healthful.**

Simple things EVERYONE can do to help EVERY DAY:

- Turn off the lights, TV and stereo when you leave a room.
- Walk, ride your bike or carpool.
- Turn the water off while you brush your teeth.
- Don't throw hazardous waste into the garbage.
- Don't throw oil or other things down the storm drain.
- Don't use the toilet as a wastebasket.
- Use a hose nozzle which can be shut off.
- Cut and leave your grass clippings - uses less water and fertilizer.
- Use both sides of the paper.
- Use reusable lunch bags and sandwich containers.
- Plant a tree.
- Don't litter and pick up litter you see.
- Reuse paper and plastic bags or use a cloth bag or don't even take a bag.
- Cut six-pack rings.
- Compost.
- Give old clothes and toys to a relative or neighbor.
- Have a garage sale or donate unwanted items.
- Write a letter or an email to a company if their product is not environmentally friendly.
- Use rechargeable batteries.
- RECYCLE AND BUY RECYCLED PRODUCTS !

Earth Day Activity

EARTH DAY ACTIVITIES (CONTINUED)

Below are activities you may want to do with your students on Earth Day or anytime during the year!

1. Laser cartridge recycling program.*
2. Build a butterfly garden.*
3. Cell phone and battery collection program. These items are accepted at the County's Recycling Centers. Ask your municipal coordinator for details.
4. Make sure your school recycling program is working well. If not, set up a committee to improve it. Look in wastebaskets, talk to the custodian and principal.
5. Have the students make an environmentally friendly package. An environmentally friendly package would use recyclable packaging and would use the minimum amount of packaging needed to protect the product.
6. Paper bag reuse program (through Shop Rite). Get paper bags from the store and have the students draw an Earth Day message on the bags. Return the bags to the store for use by customers during Earth Week.
7. Have a poster contest.
8. Have students go outside and provide them with colored chalk. Have them draw an Earth Day message on the blacktop/playground or sidewalk. As an alternative, have them work with play dough or clay and make an earth day sculpture. Display the results.
9. Write a letter to a company saying that you like their product, but you wish it came in a package that: is made from recycled materials, is recyclable or has less packaging. Companies usually list their addresses on the labels of their products.

** Details may be found on the Association of New Jersey Recyclers web site, www.anjr.com/resources/schools/uniqueprograms.*

EARTH DAY
EVERY DAY

 Ocean County Recycles

Earth Day Activity

EARTH DAY ACTIVITIES (CONTINUED)

10. Ask a Master Composter volunteer to talk to your class about composting. Call Ocean County for information on having a Master Composter provide a presentation to your class.
11. Ask your municipal recycling coordinator to come to your class to talk about why recycling is important, and what is recycled in your town. Make sure to ask how much garbage your community generates, and how much is recycled. Figure out the percent recycled.
12. Ask your Mayor to come to school and help with a schoolyard cleanup. Help with your municipal beach clean up. Make sure to coordinate with your Clean Communities Coordinator. They may already have a program in place that you can participate in. After the cleanup is over, talk about how items got there. Include unusual items that were picked up. Try to figure out how to stop litter from coming back. Ask the Mayor about things your town is doing to help the environment.
13. Ask the school's garbage hauler to send a truck to your school to explain how it works. Have a list of questions for the students to answer.
14. Do a web search and find out how long it takes for various items such as cigarette butts, paper cups, aluminum cans or plastic straws to decompose. Write how this affects litter and your environment.
15. Write a class letter to the editor of your local newspaper explaining how you think the environment is being protected in your community. Include ways to improve on what is being done.
16. Matching activity. List items that can be recycled in one column and list items that are made from recycled products in a second column. Ask the students to match the items and talk about it. Bring in samples of recycled products from office supply stores. See listing on page 6.
17. Ask a computer recycling company representative to come to your school to talk to students about why it is important to recycle computers rather than throwing them into the garbage. Ask them to take an old computer apart and talk about the hazardous components. Call your municipal recycling coordinator for lists of computer recycling companies.

EARTH DAY
EVERY DAY

 Ocean County Recycles

Earth Day Activity

EARTH DAY ACTIVITIES (CONTINUED)

18. As a homework assignment, have the students visit the County's Department of Solid Waste Management's web site and answer a list of questions about recycling in the County. As examples, what recyclables are mandated to be recycled in the County, and where can used paint be recycled?
19. As a homework assignment, have the students keep track of what gets thrown in the garbage can at home. Chart the results and talk about them as a class.
20. As an after school or extra credit assignment, have a group of students stencil storm drains as part of the new Storm Water Regulation requirements. Talk to the Municipal Public Works Representative about how to volunteer.
21. Make a sculpture from recycled items. Have each student bring in one or two items and let them use their imagination to create creatures, structures, etc. Display them in the school lobby or library.
22. Batteries. Have students do a web search to find out why batteries should not be put into the garbage. Have them find out what happens if mercury is released into the environment. See if they can find information on rechargeable batteries and why they are better to use.
23. Do a charades or blackboard pictionary activity. Supply a list of words for the students to act out or draw. Have the class guess the word. You may want to use the words listed in the Glossary.
24. As a class, visit the Ocean County MRF to see what happens to your recyclables. Call Mary Jerkowicz, Ocean County Department of Solid Waste Management at 732-506-5047 to arrange tour.
25. Read *The Wartville Wizard*, by Don Madden. Have the students act out the story.



WORD SEARCH ANSWERS (puzzle on page 35)

Z	O	Y	U	P	M	N	B	C	V	A	P	O	I	L	B	P	I
A	W	V	Q	X	V	B	N	M	J	K	L	U	D	R	L	W	M
A	X	Z	E	G	H	J	K	L	T	Y	U	E	W	R	E	M	Q
V	D	R	T	N	U	B	E	K	C	H	E	M	I	C	A	L	R
P	E	S	T	I	C	I	D	E	X	D	R	A	I	N	C	I	M
O	A	B	O	W	E	L	R	T	Y	U	B	C	E	M	H	K	N
I	A	C	X	R	T	H	E	R	B	I	C	I	D	E	Y	C	B
S	N	Y	I	E	D	C	P	A	I	N	T	D	T	Y	U	I	O
O	S	T	C	S	O	L	V	E	N	T	B	H	J	K	V	E	X
N	F	T	U	O	K	B	A	T	T	E	R	Y	V	C	S	K	P
A	D	T	Y	I	P	B	C	V	M	T	R	A	S	H	W	Q	Z

Resources

OCEAN COUNTY MUNICIPAL RECYCLING COORDINATORS

Barnegat	609-698-0080	www.ci.barnegat.nj.us
Barnegat Light	609-494-3522	www.barnlight.com
Bay Head	732-899-6782	www.bayhead.org
Beach Haven	609-492-2525	www.beachhaven.nj.gov
Beachwood	732-286-6010	www.beachwoodusa.com
Berkeley	732-341-1022	www.twp.berkeley.nj.us
Brick	732-451-4062	www.twp.brick.nj.us
Dover	732-255-1000	www.townshipofdover.com
Eagleswood	609-296-6291	
Harvey Cedars	609-494-6905	www.harveycedars.org
Island Heights	732-270-6415	
Jackson Township	732-928-1311	www.jacksonwpnj.net
Lacey	609-693-1100	www.laceytownship.org
Lakehurst	732-657-9797	www.lakehurstnj.org
Lakewood	732-905-3405	www.twp.lakewood.nj.us
Lavallette	732-793-7766	www.lavalletteboro.com
Little Egg Harbor	609-296-5760	www.leht.com
Long Beach	609-361-1000	www.longbeachtownship.com
Manchester	732-657-8121	www.manchestertownshipnj.org
Mantoloking	732-899-0809	www.mantoloking.org
Ocean Gate	732-269-3233	www.oceangateonline.com
Ocean	609-693-3302	www.oceantwp.com
Pine Beach	732-349-6425	
Plumsted	609-758-2241	www.plumsted.org
Point Pleasant Boro	732-892-1287	www.ptboro.com
Pt. Pleasant Bch.	732-899-1075	www.pointpleasantbeach.org
Seaside Heights	732-793-0313	www.seaside-heightsnj.org
Seaside Park	732-793-5100	www.seasideparknj.org
Ship Bottom	609-494-2171	www.shipbottom.org
South Toms River	732-349-0403	
Stafford	609-597-1000	www.twp.stafford.nj.us
Surf City	609-494-2400	
Tuckerton	609-296-5058	www.tuckerton.com

Resources

OCEAN COUNTY MUNICIPAL CLEAN COMMUNITIES COORDINATORS



Township	Phone
Barnegat	(609) 698-0080 x120
Barnegat Light	(609) 494-3522
Bay Head	(732) 892-0636
Beach Haven	(609) 492-0111
Beachwood	(732) 286-6010 x11
Berkeley Twp.	(732) 349-4616
Brick	(732) 451-4062
Dover Twp.	(732) 341-1000
Eagleswood	(609) 296-3040
Harvey Cedars	(609) 494-6905
Island Heights	(732) 270-6415
Jackson	(732) 928-1200 x250
Lacey Twp.	(609) 693-1100 x301
Lakehurst	(732) 657-9797
Lakewood	(732) 905-3405
Lavallette	(732) 793-7766
Little Egg Harbor	(609) 294-0746
Long Beach	(609) 361-0715 x 259
Manchester Twp.	(732) 657-8121 x1163
Mantoloking	(732) 899-6600
Ocean Gate	(732) 269-3166 x12
Ocean Twp.	(609) 639-3302 x233
Pine Beach	(732) 349-6425
Plumsted Twp.	(609) 758-2241
Point Pleasant	(732) 892-1287
Point Pleasant Beach	(732) 892-8770
Seaside Heights	(732) 793-0313
Seaside Park	(732) 793-3700
Ship Bottom	(609) 494-2171 x 116
So. Toms River	(732) 349-0403
Stafford Twp.	(609) 597-1000 x8604
Surf City	(609) 494-3064
Tuckerton	(609) 296-5058
Ocean County Clean Communities	
Coordinator:	
(732) 929-2043, x4832	

Note: This program is administered by the
Ocean County Dept. of Corrections.



Resources

OCEAN COUNTY CLEAN COMMUNITIES COMMUNITY OUTREACH PROGRAMS

This educational program is part of the Ocean County Department of Corrections New Jersey Clean Communities Program. The grants from the state have provided equipment and salaries for the Clean Communities Task Force, which have cleaned-up miles of Ocean County roadways as well as in the Pinelands area, the ocean beaches and other public lands.

As part of the educational program they have developed a number of free environmental educational presentations.



Sam Tuna vs Pollution is a puppet show teaching children about non-point source pollution, geared to second grade students.

Sparkles the Trash Can Robot teaches the importance of recycling, and is appropriate for third grade students.

D.E.E.P. Divers Environmental Education Program. A three times a year program featuring divers who bring up animals and pollution from the bottom of the channel in Point Pleasant, and naturalists who explain how the pollution affects the sea life.

To schedule these shows, call 732-929-2117.

Resources

HAVE YOUR STUDENTS CHECK OUT SOME OF THESE RECYCLING WEBSITES:

www.grrn.org

GrassRoots Recycling Network

www.eoshi.rutgers.edu/re

The Environmental and Occupational Health Sciences Institute is one of the nation's leading environmental research and educational facilities. The resource center continues to develop award winning curricular materials for K-12 grades that are multi-disciplinary and classroom tested.

www.wasteage.com

Articles from Waste Age magazine, some of which discuss recycling topics.

www.njhazwaste.com

Website of the Association of New Jersey Household Hazardous Waste Coordinators.

www.resourcerevival.com

Listings of unique products made from recycled materials.

www.rbrc.org/ng

Lists of locations to recycle rechargeable batteries.

www.CIWMB.ca.gov/

The California Waste Management Board site has information on waste prevention ideas, classroom activities, which can be downloaded, and a waste exchange.

www.prc.org

The Pennsylvania Resource Council's site has Earth Day ideas, environmental shopping tips, litter activities and listings of recycled products.

<http://use-less-stuff.com>

This site contains ideas on waste prevention. It also has a middle school curriculum developed in conjunction with the National Science Teachers Association, called "An Ounce of Prevention". It also has a publication called "42 Ways to Trim Your Holiday Wasteline".

<http://aggie-horticulture.tamu.edu>

If you click on "Just for Kids" there is an excellent slide show explaining composting. Also click on "Kindergarden" for many gardening activities and games for children.

www.consrv.ca.gov/dor/edu/

This site features Recycle Rex, spokesdinosaur for the California Department of Conservation. It contains a number of children's activities, games and newsletters.

www.epatrol.org

The E Patrol is a program for children and students which contains eco information, news and press releases, an e-patrol quiz and a screen saver.

Resources

SUPPLEMENTAL RESOURCES

The following agencies and organizations have environmental programs, publications, school presentations, tours and curriculum guides. Visit their web sites and explore their programs.

US Environmental Protection Agency (EPA)

Region 2 office
290 Broadway
New York, NY 10007-1866
Phone: 212-637-5000
Office for Environmental Education
Phone: 212-637-3671
Fax: 212-637-4445
Web: www.epa.gov/region02

New Jersey Department of Environmental Protection (DEP)

Division of Solid & Hazardous Waste
401 East State Street
P.O. Box 414
Trenton, NJ 08625-0414
Phone: 609-984-3438
Fax: 609-777-0769
Web: www.state.nj.us/dep/dshw/recycle/

Association of New Jersey Environmental Commissions (ANJEC)

P.O. Box 157
Mendham, NJ 07945
Phone: (973) 539-7547
Fax: (973) 539-7713
Email: info@anjec.org
Web: www.anjec.org

Association of Environmental Authorities of New Jersey

2333 Whitehorse-Mercerville Road, Suite 3
Mercerville, NJ 08619
Phone: 609-584-1877
Fax: 609-584-8271
email: aea.info@aeanj.org
web: www.aeanj.org

Association of New Jersey Recyclers

120 Finderne Avenue
Bridgewater, NJ 08807
Phone: (908) 722-7575
Fax: (908) 722-8344
email: info@anjr.com
web: www.anjr.com/

Alliance for a Living Ocean

2007 Long Beach Blvd.
North Beach Haven, NJ 08008
Phone: 609-492-6216
Fax: 609-492-6216
email: livingoceanalo@comcast.net
Web: www.livingocean.org

Clean Ocean Action (Sandy Hook office)

PO Box 505
Highlands, NJ 07732
Phone: 732-872-0111
Fax: 732-872-8041
email: SandyHook@CleanOceanAction
Web: www.cleanoceanaction.com

Barnegat Bay National Estuary Program

Ocean County College
College Drive, PO Box 2001
Toms River, NJ 08754
Phone: 732-255-0472
Web: www.bbep.org

Forest Resource Education Center

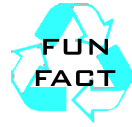
370 East Veterans Highway
Jackson, NJ 08527
Phone: 732-928-2360
Fax: 732-928-8472
Email: njfsfrec@bellatlantic.net
Web: www.state.nj.us/dep/parksandforests/forest/njfs

Marcal Paper Mills, Inc.

1 Market Street
Elmwood Park, NJ 07407
Phone: 201-703-6406
Fax: 732-703-6234
Web: www.marcalpaper.com



Resources



MORE FUN FACTS

- In a lifetime, the average American will throw away 600 times his or her adult weight in garbage. So each of us leaves a legacy of 90,000 pounds of trash for our children.
- If lined up bumper to bumper, garbage trucks hauling the nation's daily waste could reach halfway to the moon.
- Recycling one ton of newspaper saves the equivalent of 100 gallons of gasoline.
- Americans throw away enough office and writing paper annually to build a wall 12 feet high stretching from Los Angeles to New York City.
- Each ton of recycled paper can save 17 trees, 380 gallons of oil, three cubic yards of landfill space, 4,000 kilowatts of energy and 7,000 gallons of water!
- The average American uses 650 pounds of paper per year.
- Five 2-liter recycled PET bottles produce enough fiberfill to make a ski jacket.
- Toothbrushes represent more than 100 million pounds of plastic waste each year.
- Each year, Americans throw away 25 trillion styrofoam cups.
- Americans use 2.5 million plastic bottles every hour.
- Recycling one ton of glass saves the equivalent of ten gallons of oil.
- Nearly 500 million computers will become obsolete between 1997 and 2006.
- When you recycle one aluminum can, you save enough energy to run a 100 watt light bulb for about three and a half hours. We use about 392 cans per person per year.
- Americans throw away enough aluminum every three months to rebuild our entire commercial air fleet.
- One gallon of motor oil improperly disposed has the potential of contaminating 1 million gallons of drinking water.
- Americans throw out about 20,000 old television sets every day.
- Packaging: \$1 out of every \$10 we spend on food pays for packaging.
- Americans throw away enough cars every twenty minutes to form a stack as high as the Empire State Building.
- Each year, Americans throw away 100 million tires.



Resources

FOR FURTHER INFORMATION, PLEASE CONTACT:

Ocean County Department of Solid Waste Management

Kathleen Avery, 732-506-5047, School Recycling & Master Composter Program

Mary Jerkowicz, 732-506-5047, Tours of Ocean County Recyclable Materials

Processing Facility

129 Hooper Avenue, P.O. Box 2191

Toms River, NJ 08754-2191

email address: ocreycles@co.ocean.nj.us

website: www.co.ocean.nj.us/recycle

Rutgers Cooperative Extension of Ocean County

1623 Whitesville Road

Toms River, NJ 08755-1199

732-505-3671

www.rce.rutgers.edu

Ocean County Solid Waste Management Hotline

1-800-55-RECYCLE

To report illegal dumping, contact the

Ocean County Environmental Crimes Unit

1-800-535-DUMP



GLOSSARY

Commingled:

When several types of recyclable materials – such as glass bottles, aluminum cans, tin cans and plastic bottles – are deposited in one container for collection.

Compost:

To break down organic materials (leaves, grass clippings, fruit and vegetable scraps) into humus-like earth.

Decompose:

To break down grass, leaves, grass clippings into soil.

Disposable:

A product that is meant to be thrown away after a single use rather than reused. Examples of disposable products are paper cups or plastic plates.

Grasscycling:

The natural recycling of grass clippings by leaving clippings on the lawn after mowing.

Hazardous waste:

Any product which is labeled corrosive, caution, poisonous, toxic, flammable or toxic.

Landfill:

A specially engineered site for disposing of solid waste on land.

Litter:

Waste in the wrong place.

Mixed paper:

Paper which includes magazines, catalogs, office paper, school paper, envelopes, junk mail.

MRF (Recyclable Materials Processing Facility):

A facility which separates, bales or crushes recyclables. These materials are then sold to markets where they are made into new products.

Natural resource:

A valuable, naturally occurring material such as wood, minerals, soil and air.

Organic waste:

Waste which comes from a living thing such as grass, vegetables, fruit, trees, etc.

Raw materials:

Substances still in their natural, unprocessed state.

Recycle:

To remove from the waste stream materials to be reused in the same form, or as a different product.

Reduce:

To decrease the amount of waste we produce.

Reuse:

To extend the life of an item by using it again, repairing it or creating new uses for it.

Recycling Revenue Sharing Program:

A unique program in which Ocean County shares the revenue earned from the sale of recyclables with its municipalities.

Solid waste:

Material that is considered worthless or unnecessary and is usually thrown away.

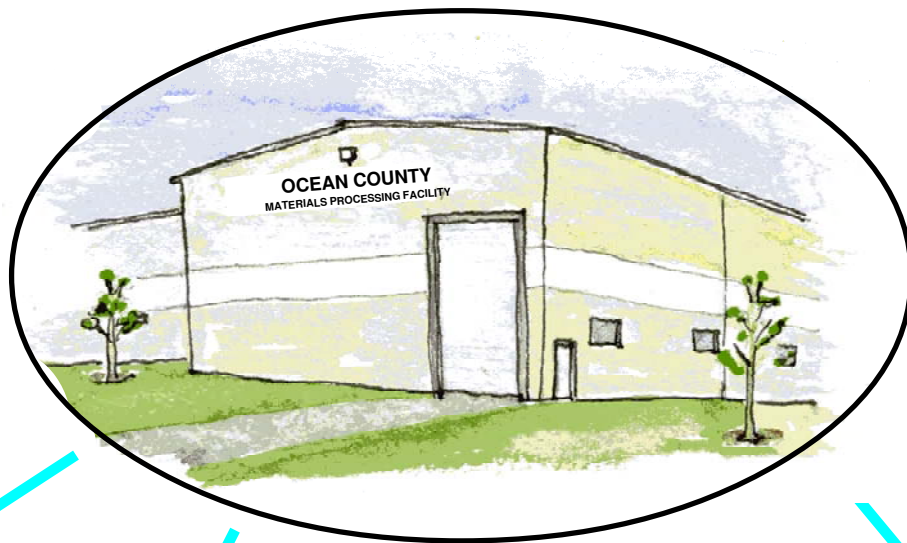
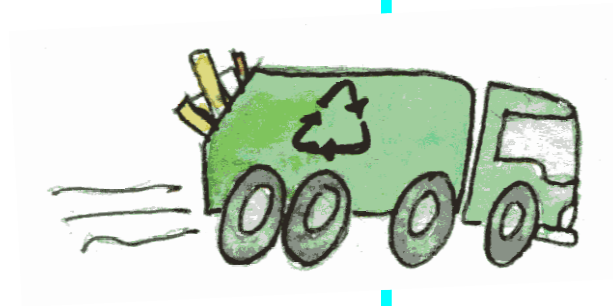
Vermicomposting:

A type of indoor composting using redworms to break down fruit and vegetable scraps into humus.

RECYCLING IS EASY!



Your House



Magnet



Tin Cans

Crusher



Glass

Air

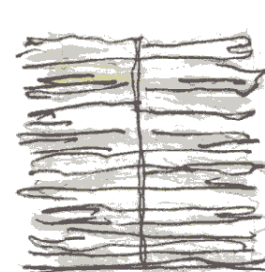
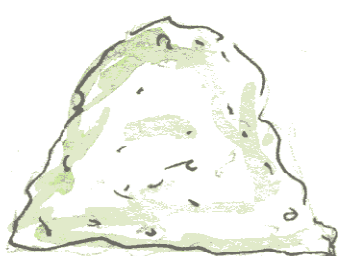


Aluminum & Plastic

Hands



Paper



Materials Ready for Re-use

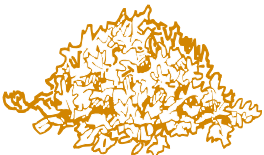
OCEAN COUNTY SORTS IT FOR YOU!

Collect.



Browns

Sawdust
Hair
Dry Leaves
Wood Chips
Wood Ash
Coffee Grounds
Coffee Filters
Tea Bags



Greens

Grass Clippings
Flowers
Weeds
Fruit Peels
Vegetable Trimmings



No-No's

Meat & Fish
Grease
Dairy Products

Compost.

Keep Moist



Turn Occasionally

Use the Compost.



For Mulching, Planting and Soil Improvement

90% OF CLASSROOM TRASH IS PAPER...

Don't Throw it Away



RECYCLE IT!