



Composting Institutional Food Scraps with Worms (A Vermicomposting Pilot Program)

Final Report
May 2010



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Abstract

The City of Middletown has worked proactively to encourage residents to compost yard waste and food scraps through the distribution of home compost bins, composting demonstrations, workshops, home waste audits and informational brochures. In an effort to increase recycling and encourage composting beyond homeowners, the City initiated a small scale institutional food waste vermicomposting project. Funded in part with grant from the Connecticut Department of Environmental Protection, a greenhouse was constructed to house worms and other equipment was purchased to run the project. Over a five year period, 8,900 pounds of food waste were collected from the Eddy Center, area restaurants, and government offices. The project continues as more cafeterias are pursued for waste products.



Program History and Description

The grant for this project was initially approved in July 2001. The vermicomposting greenhouse was constructed in August 2002. Because many agencies were involved and state property was being sought to use for the pilot, inter-department negotiations took place from 2002 – 2004. The greenhouse was inadvertently constructed over a gas line, which made usage complicated, but not impossible. Agencies involved included the City of Middletown, State of CT DEP, Department of Mental Health and Public Works, Yankee Gas and The Connection, Inc. Alternative Incarceration Center.



Following advice from a consultant, Vinyl Tech students constructed a flo-through worm bin in March 2003. However, this bin was never used because more user friendly bins were acquired from a worm farmer leaving the business in Killingly, CT. These eight 4"x8" wooden bins on metal frames were set up in the greenhouse to house the worms.

The Eddy Center, a small transitional housing program, was recruited as our first institution to participate in the project. Prior to starting operations, extensive education was provided for Eddy Center Clients and staff (*Appendix A*). Food scrap collection commenced on July 14, 2004. By June 2006, six worm bins were operating. Over the course of the next five years, food scraps from the State of CT Juvenile Training Center, It's Only Natural Restaurant, Russell Library, Middletown City Hall, Wesleyan University and South Fire District were added to the project.



In 2005, we commenced teacher workshops and student field trips to the greenhouse. The programs have been very successful. We constructed the field trip around a two hour morning time slot. Four presenters; one each from Russell Library, Middletown Vo-Ag, Middletown Resource Recycling Advisory Council and the Recycling Office offered 25 minute workshops on various topics: soils experiments, gardening, worms & compost critters and snack & story. The larger group was broken up into four smaller groups and they all rotated through each station. We have also given 15 tours of the project. A “Let’s Get Composting” program and brochure was developed to coordinate activities with Spencer School (*Appendix B*). The worms have also traveled to 30 locations, such as a variety of schools, Middletown’s Open Air Market, Russell Library, CT Forest and Park Association, and Middletown’s Sidewalk Sale for presentations and display.



Fruit flies became a big problem. Various traps were devised (*Appendix C*) and shredded paper was used to cover the bins to keep the population down. The fruit fly problem seemed to be directly related to the amount of waste delivered and the temperature. It was suggested that pre-composting the food scraps half-way using another method before

feeding it to the worms may help prevent flies. Toward that end, in the spring of 2007 Camp Jewel donated two used Earth Tubs to the project. The City continues to work on hooking up the electricity for these Earth Tubs in hopes of solving the fly problem, expanding the waste collected and increasing the amount of compost created.

Collection at the Eddy Center ended in February 2009. The staff and clients change so frequently it was very time consuming to keep the collection program in place at this location. Connections have been made with Kuhn Employment, CT Hope Church, and ArtFarm to try to initiate interest.

Equipment

A greenhouse was chosen to give inexpensive shelter to the worms. The worms cannot stay outside all winter, yet no abandoned or vacant buildings were available. The greenhouse would provide some shelter in the winter and with fans, it was suggested that it would remain at an acceptable temperature in the summer. The fans in the greenhouse are absolutely necessary. Without high-powered fans, the greenhouse would be too hot in the spring, summer and fall. The flo-through worm



bin was constructed by Vinyl Tech students, but never used. Instead, several 4"x8" wooden worm bins and metal frames were purchased from Cedar Hill Redworms and used for the worms. The original starter-batch of red wiggler worms was purchased from Happy D Ranch. A Large Worm Harvester was recently purchased from Rising Mist, Inc. to screen the compost and the worms. Until recently, the worms were screened from the compost manually. This proved to be too labor intensive to continue.

An Eliminator Worm bin and Can 'O Worms was purchased to demonstrate how easy worm composting can be at home. The Eliminator Bin is a small home vermicomposting bin with a see-through panel. In theory, you can see the worms move up and down through the clear plastic panel. The bin worked fine; however, we didn't get much of a view of the worms. Because of the light from the clear panel, the worms never came right up next to that area!

A Can O'Worms was set up in City Hall to help make the connection between the vermicomposting greenhouse and the public. Many people know about the greenhouse, but can't get there to see it. This bin give them a glimpse of how it all works, and encourages them to do it themselves!

Program Progress

The program has had its ebbs and flows through the years. It reached its high point in 2005-06, when food waste was collected from the Eddy Center, It's Only Natural Restaurant and Wesleyan University. Since then, transportation issues have hindered efforts at Wesleyan and ION and the transitional nature of the Eddy Center's clients and staff, has proven too difficult to maintain a consistent program. We continue to solicit food waste from other areas to keep the worms alive while the program is in transition from working with just the static beds to including the Earth Tubs.



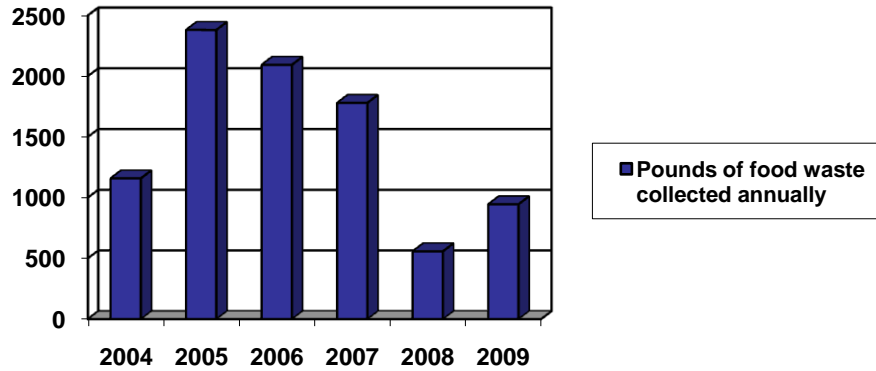
The program has not reached the diversion rates originally set. If the transportation portion of the program was stable, these could have easily been met. There were plenty of participants willing to separate and offer food waste. However, they were not willing to transport it to the greenhouse. The future will tell if the transportation can be solved on a voluntary basis or if operational assets will be needed to tie in this crucial component of the program.

The educational component of this program has been very successful. The greenhouse has been a wonderful site for field trips for schools, teachers and community organizers. The worms have traveled over thirty times for displays and presentations.



Diversion Tonnages

The food collection program started in July 2004. A total of 8914.90 lbs of food waste were collection from 2004-2009. Below is a chart breaking down the collection by year.



Participants

Below is a list of institutions and businesses that have participated in the program.

Name of Participant	Average Amount Provided	Years of Participation
Eddy Center	10-30 lbs/week	2004-2009
CT Juvenile Training Center	60 lbs/week	2005
It's Only Natural Restaurant	90 lbs/week	2006
Russell Library, City Hall	10 lbs/week	2007
South District Fire House	15 lbs/week	2008
Wesleyan University	30 lb/week	Spring 2008

Costs

The largest cost for this program was for the installation of the greenhouse (\$22,500), crushed stone (\$631.45) and hooking up the electricity and water (\$5963.84). The worm bins cost \$405 for the flo-through bin and \$480 for the wooden bins and frames. It cost \$675 to hook up the gas for heat, but it was so expensive to heat the greenhouse



(\$700/month) the gas had to be shut off in 2006. \$1020 was spent for the harvester, which is crucial to sifting out the worms and getting the end product. Other incidentals, such as tools, weed block and signage used the rest of the grant funds.

Vermicomposting Pilot Program Expenses

Items	Expenditure	Comments
Greenhouse: structure, gravel bass, exhaust fans, heater, utility hook up, weedcloth, woodchips	\$27,666.45	
Supplies: worm bins, red wigglers, hoses, hand tools, totes, scale, thermometer	\$4,791.08	
Composter harvester	\$1,020.00	Rising Mist Large Worm Harvester
Miscellaneous: signs, printing, camera	\$693.94	
Total Expenditures	\$34,171.47	
Total Grant Amount	\$36,500.00	

After the initial costs, the program is fairly inexpensive to maintain. It does require someone to transport food waste and feed the worms on nearly a daily basis. When the program was created, it was anticipated that the alternative incarceration crews (AIC) would be able to collect the food waste and transport it to the worms. After budget cuts within their organization, this could not be done. The program has struggled with this ever since. The Recycling Coordinator has been able to maintain some consistency by herself and with volunteers but it is unsustainable for a long term basis.



The educational materials have cost the City approximately \$400 for supplies for the field trips and various handouts, brochures and fact sheets. Most of the educational costs have been the Recycling Coordinator's time.



Overall, the Recycling Coordinator has spent an average of ten hours a week coordinating this project.

Benefits

The benefits of the project include:

- Participation and education of AIC clients and staff and CT Juvenile Training Center staff in an environmental project that provides service to the community;
- Reduction of wet, high-nitrogen waste being sent for disposal and therefore reduction of air emissions and ash disposal from resource recovery plants;
- Increase in state and local recycling rates;
- Promotes positive relations with public/private partnership;
- Offers the potential to expand vermicomposting services to other areas;
- Use of facility for numerous educational opportunities;
- Use of worms and compost in off-site demonstration and educational programs;
- Support goals of the State Solid Waste Management Plan.



Program Summary

Sector	Institutional, Small Business
State Date	July 14, 2004
Dedicated Time	8-10 hours/week for Recycling Coordinator
Responsibilities	Collect food waste, compost it with worms, maintain bins, start new bins, arrange for repairs in greenhouse or bins, screen compost, and organize educational opportunities.
Method	Bin vermicomposting
Food Waste Composted	8914.90 lbs (2004-2009)
Capital Expenditures	Approx. \$34,000 (most of the cost being the greenhouse, hook up of electricity, bins & screener)

Participants	Eddy Center, CT Juvenile Training Center, It's Only Natural Restaurant, South Fire District, City Hall, Russell Library, Wesleyan University, CT River Coastal Conservation District
Operating Expenditures	Under \$500 per year.
Educational Expenditures	Depends on how many programs are held, but require one educator (recycling coordinator) and a budget of \$200-400.
Benefits	Promoting environmental ethics to a community that otherwise doesn't learn about it; Endless educational opportunities for community, schools, businesses and individuals; Increased recycling rate; Possible decrease in tip fees; Promote positive relations with public/private partnership.
Undetermined Potential	We never really reached the point of generating enough compost to market and sell. However, the potential exists to sell the compost and provide special work for a group or individuals interested in running this operation.

Considerations for Replication

1. The most important part of this project is to work with a reliable partner who can do the daily maintenance of transporting the waste and feeding the worms.
2. A greenhouse is a great way to house the worms; however, it is not the cheapest. An empty shed, barn or room would work as well. Also, we have found the heating of the greenhouse to be costly. With further research, we hope to find an alternative solution. However, they have been surviving okay without the heat. However, should the program expand, it could be detrimental to lose worms through the winter. Currently we do lose some of the worms in the winter, but they come back each spring. If a greenhouse is used, the powerful fans are absolutely necessary.
3. It is important that the location of the project be close to the food waste source. We have worked with cafes close and far, and it is much easier with the ones who are close.
4. Bureaucracies can be difficult. If you are working with any kind of bureaucracy, expect delays.



5. Try to work with a consistent clientele; long term staffing, long term clients. Working with a transient population (both clients and staff) proved much too difficult, unless someone is committed to spending a lot of time on site and re-educating.
6. When large amounts of food waste were delivered and the weather was warm, the fruit fly population increased. We hope pre-composting food waste in the Earth Tubs will eliminate this problem, but the shredded paper on top of the bins helped as well.
7. Take care of weeds before they come up. Weed cloth and trap rock had to be laid down after the project was in place. Do it first as you are siting the project!
8. Manual screening is very labor intensive. If you don't have the labor, invest in a commercial screener.
9. We constantly had to adjust for the fluctuating waste coming in. At times we were getting 100 lbs/week and others only 15lbs. Try to get a consistent amount of waste at a time to keep the worms happy and maintenance low.

The Future

The worms will continue to be fed with food from the CT River Coastal Conservation District and deKoven House patrons in 2010. The City is still awaiting electrical connection for the Earth Tubs. When this is complete, more food waste will be pursued. We hope to collect enough food waste to run one Earth Tub at a time and pre-compost the waste in the Earth Tub before feeding it to the worms. We are hoping this will reduce the fruit fly population when the food waste generation is higher.



Ideally, we would like to connect with a community group interested in assisting on continuing this project. We have discussed the possibility with Kuhn Employment as well as local churches. The program will not work unless we can figure out the transportation aspect. Regardless, the project will continue to be used as an education tool. The second grade field trips to the greenhouse have been very successful and the outreach possibilities are endless. We've had the recent benefit of having various community service volunteers come and help with heavy maintenance and clean up and hope that this will continue.

Contact Information

Kim O'Rourke
Middletown Recycling Coordinator
245 deKoven Drive
Middletown, CT 06457
860-344-3526
kim.orourke@cityofmiddletown.com



Appendix A: Education Program for Eddy Center

Meetings were held in May & June 2004 with Eddy Center staff and clients to prepare for the separation of food waste in the cafeteria. An instruction manual (below) was prepared and a small group of staff and clients were trained on how to feed the worms. Also, a flyer (below) was designed for the kitchen.

Starting June 14, the Recycling Coordinator spent every weekday lunch period at the Eddy Center for a month. After the initial trial of getting clients to separate from their plates, it was decided to only accept food from behind the counter. Unless someone monitored separation by clients, it was impossible to ensure proper sorting.

After the first month, the Recycling Coordinator visited once a week to answer questions and monitor the sorting. The Recycling Coordinator and outside volunteers also became responsible for delivering the food to the worms.

Vermicomposting Instruction Manual

Collection of Food Waste – Food waste will be collected daily from the kitchen for composting. We will be using five gallon buckets with lids. Lids are required. The food wastes cannot be stored in these containers and must be applied to the worm beds daily. On the one day a week that crews are not immediately available, food wastes can be stored, preferably in the refrigerator, for 48 hours. Allowing food wastes to sit for an extended time will generate odors and attract vermin.

Food waste collection units must look different than the standard trash receptacles in the kitchen. This should avoid the inclusion of inorganic materials such as plastic, cans and bottles. These materials must be pulled out if they are included.

Mixing – Food wastes average roughly 75% moisture and tend to be relatively high in nitrogen. Blending them with compost or shredded leaf material balances the nitrogen with a source of carbon, thereby creating an ideal nutrient level. The compost or leaf material will also absorb the excess moisture released by the food as its processed ensuring an ideal environment for rapid processing, and acts as a bio-filter that prevents potential odors.

Ideally, the food waste and carbon material are mixed together in a one to one ratio by volume. We will be mixing them together manually in wheelbarrows. The mixture is then spread into the worm bin in a 2 inch layer and then covered with a 2 inch layer of carbon material (compost, leaves, woodchips or paper – we will be experimenting with each and will give oral instructions as to which one to use). We suggest not covering the new material until after the containers are rinsed clean. (See below).

Watering – The consistency of the material in the bin should be that of a rung out sponge. We must water with frequent light applications instead of with infrequent, heavy applications. The object is to keep the water high in the system where the worm activity is the heaviest. During the hot summer months evaporation of moisture from the system will make the worms feel far cooler than ambient temperatures suggest. Sufficient moisture and air movements through the building will be necessary to keep worm activity high during the hot spells.

Temperature – The ideal temperature range for worms are in the 78 degree range. Their limits are between 38 and 95 degrees.

Clean out area – The bins must be rinsed clean after use. The clean out area must have a screen to catch all the food waste which can then be placed in the worm bin (and covered). A garbage can should also be on sight to put all inorganic contaminants.

Recording – Attached is a recording log which must be filled out each time food waste is applied.

Kitchen Staff Instruction Manual

Separation – Post consumer food waste must be placed in separate, designated containers for composting. Acceptable materials include all food waste except:

- Meat & Bones
- Liquids
- Fats & Oils

We cannot have ANY inorganic materials such as plastics, cans, or bottles. There should only have a small amount of paper material, if any.

The food waste must be kept in the covered five gallon buckets and placed in the designated location for daily pickup. On the one day a week when collection is not available, the buckets can be placed in the refrigerator until the next scheduled pick up.

Vermicomposting Daily Log

Day	Date	Time	Temp.	Weight	Bin #	Cover Material	Food Type	Comments	Int.
Mon									
Tues									
Wed									
Thurs									
Fri									
Sat									
Sun									

Vermicomposting Action Plan

JUNE

1. Set up a meeting with the Eddy Center monitors in the lunch room - Jeremy
 - a. Separation – what and how to educate
 - b. How to communicate with diners
 - c. Buckets at each station
 - d. Who will cover buckets
 - e. Who will supply buckets
 - f. Who will place the buckets @ end of the meal?
 - g. Which meal to do – lunch or dinner?
2. Trial period for collection
 - a. Get buckets - Richard
 - b. Get scale – Richard
 - c. Choose what week to start
 - d. Meet with Tammy
3. Design a separation sheet with pictures - Kim
4. How will transportation of buckets work – AIC
5. Make list of tools – Which need to be bought – AIC/Kim
 - a. Get scoop
 - b. Trowel
 - c. Wheelbarrow
 - d. Pitch fork
 - e. Shovel
6. Get bedding material - Richard
 - a. Compost
 - b. Leaves
 - c. Woodchips
 - d. Sawdust
7. Washing area
 - a. Prepare – Richard?
8. Who will return the buckets for the next meal?

**EDDY CENTER
KITCHEN STAFF**

FEED THE WORMS!

Sort the following foods to feed to the worms on a daily basis during the lunch rotation. Any questions, ask Tammy.

FOOD TO SEPARATE:



**Breads
Pastas
Cakes & Cookies
Coffee Grounds & Tea Bags
Fruit Scraps
Vegetables**

UNACCEPTABLE FOOD

**Dairy
Meats & Bones
Oils & Butter
Any Plastics**

Thank you!!!

Appendix B: Let's Get Composting Brochures and Program

In 2004 a program was initiated with the assistance of The Rockfall Foundation at Spencer School to compliment the vermicomposting project at the Eddy Center. We initiated food waste composting in the kitchen at Spencer School and conducted two public workshops for children and adults at the school. The program included a second grade field trip to the greenhouse and a spring and fall home compost bin sale and development of a teacher's worm composting kit.



Teacher's Composting Kit

Vermicomposting uses redworms to process food waste and turn it into nutrient-rich plant food. It can be done in backyards, garages, at school or at work!

This kit will help teachers, scout leaders, youth group advisors and others interested in teaching children or adults about composting and vermicomposting.

Contents of Kit

- Wormania - Video to teach the basics of worm composting. Lots of fun to watch. Suitable for age 8 and up.
- Worm Drive The Musical - CD and Puzzle book that offers a folksy experience with a message.
- Worm Bin Creatures - Video explaining the different microorganisms that make compost happen. Suitable for all ages.
- Worms Eat Our Garbage: Classroom Activities for a Better Environment - Fully adaptable classroom curriculum to develop an in-class vermicomposting system. Over 150 activities to nurture hands on learning.

Plus more!



This kit was made possible with a grant from the Rockfall Foundation and is available upon request from the City of Middletown Recycling Office at (860) 344-3526 or kim.ourouke@cityofmiddletown.com

Let's Get Composting

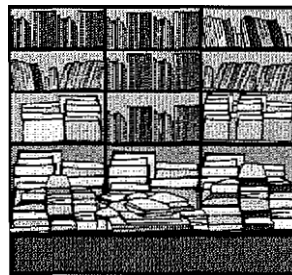
The Let's Get Composting program is a comprehensive program designed to teach families throughout Middlesex County about composting and activate at least fifty families to start composting.

Components:

- **Schools** - Organizers are working with staff at Spencer School in Middletown to teach composting principles to students and parents. We have met with the PTO, been available at school functions and hosted a Vermicompost field trip in the spring 2005. The school initiated a cafeteria waste composting system in 2004, but since the compost bin was stolen over the summer, it is awaiting replacement, and then the program will continue through the 2005-06 school year. The bin will

The Middletown Recycling Coordinator and a children's librarian from Russell Library will be visiting classrooms in the fall 2005 to talk about composting and recycling.

- **Russell Library** - Russell Library hosted a regional workshop on composting in June 2005. The program focused on teaching families about composting and urging them to make a commitment to compost. A second workshop is scheduled for Oct. 22 in the Hubbard Room at Russell Library. The Library is also compiling a list of resources to have available for patrons.



- **Compost Bin Sale** - A compost bin sale was held in the spring of 2005. The City sold 40 bins at approximately \$40 each. Participants received a kitchen scrap bucket and Backyard Composting booklet. A follow up survey is currently being done with the families who purchased these bins. A second sale will be held in October 2005.
- **Teacher's Compost Kit** - A wonderful kit full of resources for teachers, scout leaders, youth group organizers and others was put together to encourage others to learn and teach about composting. The kit includes books, music, puzzles and other vermicomposting tools to use.



GOAL:

We want to get at least 50 families in Middlesex county to start composting because of this program.

RESULTS:

As of Oct. 2005, we have:

- 40 new bin purchases
- 5 written commitments from additional families

Surveys are being done now to follow up with these families. We hope to sell an additional 100 bins this fall and get commitments from another 20 families by the end of the year.

Let's Get Composting Program

Brought to you by:

City of Middletown
Recycling
Division

Russell Library

Spencer School
Middletown

Rockfall Foundation

Special thanks to the Rockfall Foundation for its generous support of recycling and composting programs in Middlesex County. The Rockfall Foundation grant program sponsored the Let's Get Composting program in Middletown.

Why Compost?

Composting is nature's way of recycling. Decomposition happens all the time in nature. But composting will make it happen faster. You can end up with a rich organic material within a matter of months that can be used with house plants, in flower beds and in vegetable gardens.

- Composting is a great way to save money and natural resources. By generating less garbage, we lower our garbage bills and reduce pollution. By composting, we generate a natural fertilizer for free!
- Compost returns nutrients such as phosphorus, potassium, nitrogen and many trace minerals to the soil. It also improves soil aeration, tilth & drainage.
- Using compost as mulch can promote weed and erosion control, protect plants from sun and wind damage and reduce soil diseases.

What to Compost

There are several organic materials that can be composted. You can develop a program to compost as many as you like but some you definitely need. To start your pile, you need some "brown" materials and "green" materials. The "brown" materials contain carbon and the "greens" contain nitrogen. Both of these are needed, usually in a chemical balance of 30 (browns) to 1(green).

Browns:

- Leaves
- Woodchips
- Straw/Hay

Greens:

- Grass clippings
- Food scraps such as
 - Fruit
 - Vegetables
 - Coffee filters
 - Egg shells
 - Pasta & breads



Do not compost:
Meat, grease, bones, dairy products, animal wastes, plastic, metal, glass, contaminated matter, diseased plants or weeds.

Planning your Compost

Before setting up your compost, you should consider the following factors:

- **Access:** Whether you choose to use a compost pile, commercial bin or a homemade system, make sure it is located in a convenient location. The location should be easily accessible in all weather conditions and fairly close to where you'll be using the compost.
- **Holding areas:** Have a holding area for leaves, grass clippings, food scraps or whatever other materials you're collecting. This can include a pile or bin outside for yard debris or a covered container to use in the kitchen to collect food scraps.

Let's Get Composting

Municipal Building
Department of Public Works
245 deKoven Drive
Middletown, CT 06457
Phone: 860-344-3526
Fax: 860-344-3590
[Email: kim.orourke@cityofmiddletown.com](mailto:kim.orourke@cityofmiddletown.com)

Composting Projects in Middletown

The City is proud to sponsor several unique composting programs. We hope these programs will be used as models for others to follow.

1. **Vermicomposting Pilot Program** - This City sponsors a worm composting project at the Eddy Center on the CVH campus. Food waste from area cafeterias are fed to red wiggler worms. The worms eat the food waste and turn it into compost.
2. **Spencer School Kitchen Composting Program** - The kitchen at Spencer School has been composting food waste from its food preparation area. The families at Spencer have also been part of the "Let's Get Composting Program" sponsored by the Rockfall Foundation.
3. **Backyard Compost Bins** - The City has made available backyard composting bins to residents for reduced rates and sponsors public education events to teach people about composting.



Additional Resources

For additional information on composting bins, strategies or troubleshooting, contact Middletown's Recycling office for a copy of *Home Composting Made Easy*. This 32 page booklet offers more details for the serious, or not-so-serious composter.

Also, while supplies last, the City is offering small covered kitchen scrap buckets to collect food scraps in for composting.

Once or twice a year, depending on demand, the City also offers compost bins to residents. Call for the schedule.

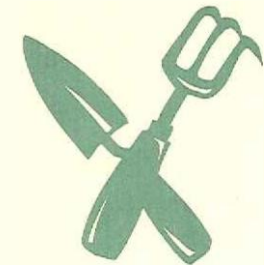
Contact the Recycling Office at 860-344-3526 or kim.orourke@cityofmiddletown.com.

This brochure and the Let's Get Composting program have been funded with a generous grant from the Rockfall Foundation and support from the City of Middletown, Spencer School and Russell Library.

Municipal Building
Department of Public Works
245 deKoven Drive
Middletown, CT 06457

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[Email: kim.orourke@cityofmiddletown.com](mailto:kim.orourke@cityofmiddletown.com)

Let's Get Composting



A Practical Guide to Composting

City of Middletown
Public Works Department
Recycling Division
860-344-3526



Let's Get Composting Workshop Press Release

For Immediate Release

10/19/05

For more information, Contact Kim O'Rourke at 860-344-3526

"Let's Get Composting" Workshop at Russell Library

Learn how to make your own "black gold" at the "Let's Get Composting" Family workshop on Saturday, October 22nd from 10:30 - 11:30am at Russell Library in Middletown.

The City's Recycling Coordinator, Kim O'Rourke, and Russell Library's Green Children's librarian, Ken Kruse, will offer practical advice on composting and how to get started. Hands-on activities will be on hand for the children. They will be able to take an up-close look at the worms from the City's vermicomposting project, make dirt cake and do recycling word finds and puzzles.

Free raffle prizes and giveaways will be available for participants. The City is also offering compost bins for \$43.10. Forms will be available at the workshop.

For more information, contact the City Recycling Coordinator, Kim O'Rourke, at 860-344-3526.

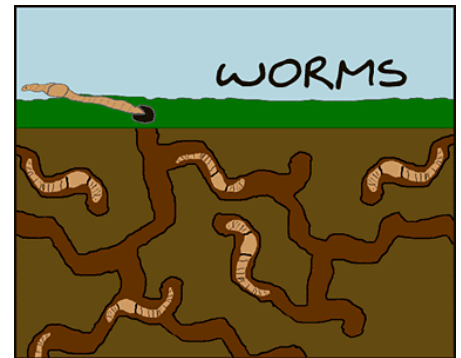
"Let's Get Composting"



The City of Middletown Public Works Department, on behalf of the Rockfall Foundation, is pleased to offer a "Let's Get Composting" teacher's kit to area schools.

This educational and enlightening kit will help teachers, scout leaders, youth group advisors and others interested in teaching children or adults about worm composting.

The kit includes two movies, a CD, puzzle book, classroom curriculum to develop an in-class composting system and over 150 other activities to nurture hands-on learning.



The "Let's Get Composting" kit can be loaned from the Department of Public Works for one month at a time.

If you are interested in obtaining the kit, or if you have any questions, please contact the City Recycling Coordinator at 860-344-3526 or kim.orourke@cityofmiddletown.com.

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The kit includes two movies, a CD, puzzle book, classroom curriculum to develop an in-class composting system and over 150 other activities to nurture hands-on learning.

The "Let's Get Composting" kit can be loaned from the Department of Public Works for one month at a time.

If you are interested in obtaining the kit, or if you have any questions, please contact the City Recycling Coordinator at 860-344-3526 or kim.orourke@cityofmiddletown.com.

Appendix C: Fruit Fly Traps

Fly traps were constructed to deal with the many fruit flies that infested the greenhouse. Covering the beds with shredded paper seemed to work the best. Sticky fly paper was also used. Below is a picture of the fly traps that were constructed. This design was taken from Mary Appelhof's Worms Eat My Garbage. These did collect many of the flies, although there always seemed to be more.

