

TrashMasters!™
Team **Up** to Clean **Up**



Intermediate Division
Staten Island Borough
Winner

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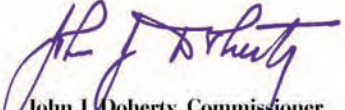
NEW YORK CITY DEPARTMENT OF SANITATION

2007 GOLDEN APPLE AWARDS

This certificate is awarded with the sincere appreciation and esteem of a grateful Department and City in recognition of your school's efforts to help make New York City shine.



City of New York, Michael J. Bloomberg, Mayor
Department of Sanitation, John J. Doherty, Commissioner


John J. Doherty, Commissioner
June, 2007

TrashMasters!

Team ^{Up} to

Clean ^{Up}

Students worked on a four season project.

Part I Fall:

Fall in Line. Brown Bag Your Leaves!

During the weeks leading up to and following November 11, 2007, students were encouraged to use the large paper leaf bags distributed by the New York Department of Sanitation (DSNY).

(See addition of student and parent letters written to document bagging at home)

During class time, we discussed reasons to bag leaves, including but not limited to:

- Paper bags decompose with the leaves
- Plastic bags holding leaves need to be discarded and is time/money consuming
- Paper bags create high quality compost that can be reused

Staff members donated any bags that they were not using in their home so that we could do a school leaf cleanup. Sixth grade classes participated to rake leaves and put them into bags. School custodial staff helped put the bags out for collection on Saturday, November 11, 2007. Students were extremely excited to participate in a school leaf clean up and this boosted the amount of participation at home. Students were told that some of the leaves they collected would be used for the school compost areas. We created compost areas along the fence line in the yard most students were raking. They were shown how materials break down over time. Other materials such as styrofoam, plastic, and glass were shown in comparison to the biodegradable materials to emphasize how the leaves would degrade into soil.

(See addition of pictures and materials from bulletin board)

Standards Addressed:

State Standards

5.1d The methods for obtaining nutrients vary among organisms. Producers, such as green plants, use light energy to make their food. Consumers, such as animals, take in energy-rich foods.

5.6.1a Energy flows through ecosystems in one direction, usually from the Sun, through producers to consumers and then to decomposers. This process may be visualized with food chains or energy pyramids.

6.1b Food webs identify feeding relationships among producers, consumers, and decomposers in ecosystems

6.1c Matter is transferred from one organism to another and between organisms and their physical environment. Water, nitrogen carbon dioxide and oxygen are examples of substances cycled between the living and nonliving environment.

7.1d Some microorganisms are essential to the survival of other living things

7.1e The environment may contain dangerous levels of substances (pollutants) that are harmful to organisms. Therefore, the good health of environments and individuals requires the monitoring of soil, air, and water, and taking steps to keep them safe.

City Standards

S1a Demonstrates understanding of properties and changes in properties of matter.

S1c Demonstrates understanding of transfer of energy and the nature of a chemical reaction.

S2a Demonstrates understanding of populations and ecosystems and the effects of resources and energy transfer on populations.

S5f Works individually and in teams to collect and share information and ideas.

S7e Communicates in a form suited to the purpose of the audience.

S8c Demonstrates scientific competence by completing fieldwork.

Dear Mrs. Laine,

Over the weekend, we all took part in cleaning up leaves and putting them in a big brown recycle bag given to us by the sanitation department. We did this for two and a half hours. We had fun. We all took part in this and enjoyed helping the community. We will do this as much as we can. We filled up four bags. We always love to participate in this.

Sincerely,
Jeanette Pistek

Jeanette Pistek

Nice job!

Emma Pistek

Samantha Pistek

and

Veronica Pistek

With love

The Pistek's

Students created and observed compost piles around the fence line of the school.

The nutritious soil students create in the compost piles will be used in the 9-11 garden in front of the building this spring.

PLASTIC BAGS do not decompose.

PAPER BAGS decompose naturally with the leaves inside.

Using paper instead of plastic bags means cleaner, high quality compost.

RECYCLING

means to treat or process used or waste materials to make suitable for reuse.

COMPOST

is a mixture of various decaying organic substances, such as dead leaves or manure, used for fertilizing soil.



Part II Winter:

A Cycling We Will Go!

During science class students began studying living things and their environment. This provided a science background for the clean up and beautification project.

We first focused on biotic and abiotic factors, helping students realize what was living and non-living around them. Students created pictures of biotic and abiotic factors labeling each item under its respective category. These pictures were used to create a bulletin board outside of the classroom to foster knowledge to other students in the building. (See included pictures) Students also completed questions to review what we discussed. (See included question sample)

Then, students learned about energy flow in ecosystems. They were able to identify producers, consumers, and decomposers and how energy changes through each level of consumer. This was important to help them understand why compost is able to break down and how the nutrients were recycled back into the ground. Again, students completed review questions on this topic. (See included question sample)

After that, we moved on to discuss the cycles of matter. We focused on the water cycle, carbon-oxygen cycle, and nitrogen cycle. Students were able to see how bacteria in the soil allows plants to use the nitrogen the is then passed up the food chain until decomposers return the material to the soil. Students created Venn diagrams to contrast the three types of cycles. Questions were completed to review their understanding of these concepts (see attached question sample).

Finally, the students studied the six major biomes to foster the idea that there are many types of climates and organisms other than what we find here on Staten Island. Students completed a graphical organizer comparing the different biomes as groups. (See sample graphical organizer). Then the students completed written questions to review the subject. (See included question sample).

Part III Spring:

April Showers Bring May Flowers!

Students are about to embark on the third step of their project. The leaves and compost material that we have saved from the fall are finally defrosting and ready to be used as rich planting soil. With the help of the school custodians who have been tending to the compost piles in the colder months (in addition to our red wigglers of course!) we have luscious soil to use for planting.

Our front gardens are lacking flowers and have not been tended to in many years. The school wanted to create a garden in memory of 9-11 and was eager to have students use science standards to do the job. Several eighth grade classes are going to be planting flowering seed and collecting height data to document how the plants grow in their classroom. The plants will have the aid of a Grow Lab unit that provides additional sunlight and a humidity tent which will prevent cold night air from stunting plant growth. We will be using a mixture of compost dirt and potting soil to fill each container. The 8th graders will tend to the plants daily, watering, recording data, and providing tender loving care for their plants. Before the end of the month, the classes will travel outside to let their plants start their roots in our front garden.

This activity will give the graduating class something to look back on in their high school years and something to look for as they come back to the school. Spring after spring they will find their plant and know that it is growing into a mature plant, just as they will grow in high school. In addition, the blooms of these plants, year after year will provide beautification to our school grounds.

Part IV Summer:

You Can Do It! We Can Help.

Students will learn all the facts and steps necessary to complete their own compost gardens over the summer. They have seen what kind of materials do and do not go into a compost bin. They have seen the luscious soil that is created through using a compost bin. They have even see the wonderful blossoms that result through the use of compost. Now students will have the chance to create their own compost bins at home and bring back stories and pictures in September.

We have been in contact with Ms. Erica Johnson from the Compost Project at the Staten Island Botanical Garden. We are working to plan afternoons in the month of May and June for Ms. Johnson to visit and educate the students of how to create their own compost bins. She brings hands on activities into the classroom to excite the students about the project and also distributes materials for parents to become more educated on the matter while helping their children.

Educating our students on how to create their own compost and use it around the neighborhood increases the beautification of our surrounding area while also reducing the amount of garbage being put out. Students will gain a sense of accomplishment when their compost bin becomes successful and will be able to quantify results with blooming flowers over the summer.

Future Work:

Students expressed a desire to do a future project to beautify the empty lot next to the school. Currently, community members are using this lot to dump old appliances and garbage while nature is taking over with weeds. In the past, school clean up teams have been met with poison ivy and great distress when trying to complete this task. It would require many supplies to clean this area, much out of the budget of the school. Students projected that if we could win this grant we would be able to use the funds to start a beautification project of the neighboring lot.

Projects discussed to use in this lot included a larger compost pile, not limited to the perimeter fence using a compost bin, flower bins surrounding the lot, and a vegetable garden that would be able to produce food for the local homeless shelter.

Project Summary

Part I Fall: Students clean up their neighborhood and school perimeter bagging leaves for composting through the DSNY and around our perimeter fence.

Part II Winter: Students learn scientific concepts necessary to understand what composting is, how it helps our environment, and how it is part of the cycles of Earth.

Part III Spring: Students will be able to use composted material from the fall to plant seeds. They will document height data and then use the blossoms that have grown to plant a 9-11 garden in the front of the building.

Part IV Summer: Students will be able to learn the details of creating their own compost gardens. This information can be used to start their own gardens at home, reusing organic waste in our surrounding neighborhood and encouraging plant growth overall in the community.

Future Aspects: The students would like to extend this project in the following years to clean up and beautify the neighboring lot to the school. This could be an ideal area for creation of a compost pile and garden.