

Teaching Program for 5th and 4th graders about Composting and Vermicomposting .

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Introduction

- We the Organic Composting internship team from UMET, decided to not only focus on composting but on vermicomposting as well. The school that was chosen to be a part of this process was the El Conquistador Elementary School in Trujillo Alto, Puerto Rico. After visiting the school, and meeting with the personnel and the people in charge of the lunchroom we agreed on what approach would be best not only for the school but also for the students.
- Taking into consideration the time frame that was given; we decided to take the fourth and fifth grade, giving us a total of 92 students. The fourth grade (composed of 42 students) focused on vermicomposting, while the fifth grade(a total of 50 Students) focused on regular composting. That way, they had a chance to learn more than one composting system and have a better understanding of what they were doing.

Vermicompost on 4th Grade

4th Grade

- What is vermicomposting? Why choose to set up a vermicomposting for the school? Why not another form of composting?
- After choosing the school, my partner and I decided it would be best to set up the systems with the fourth and fifth grade because they wouldn't be graduating any time soon, they would be able to help the students from years to come with the process and we figured they are just at that age where they want to learn and be involved with something different yet educational. I decided to take on the fourth grade and since there were two classrooms, I saw it best to create two vermicomposting systems (one for each classroom).

- Why choose vermicomposting? Well the correct question would be, why not?



Workshops

- The vermicomposting workshops took place every Wednesday and Friday for about nine weeks. In the workshops the students were taught how to classify the things that can and cannot be put in the compost. To make the learning process fun and dynamic, I created several games and a presentation about vermicomposting and its components. As the workshops passed, the children were regularly quizzed at the beginning of every workshop to see if they had been able to retain some information from the previous workshop. Ensuring that the students understood the material that were given and knew how to maintain the vermicomposting system up and running.

Personnel and students involved in the process

- In this process there were a total of 42 students involved in the vermicomposting system. Since there were two fourth grade groups participating in the system, there were two teachers present.
- Ms. Ignieris Casado was the teacher for the rotating fourth grade; Ms. Montes was the teacher for the stable fourth grade, or as the school calls it: “Cuarto Isla”. Some of the students had certain special needs (learning disabilities), which was the reason for them not rotating between classes; that way they were able to receive better attention in their daily classes.

- In the workshops there were a total of four parents present to observe the teaching process.



Amount of “trash” that was redirected because of the established vermicomposting system

- Seeing as there was a short time frame in which the system had to be set up and that the vermicomposting system doesn't require a large amount of food, the quantity of “trash” that was redirected wasn't large.
- A total of two vermicomposting systems were set up and working; each containing approximately 1,000

- In the 7 weeks the system was up and running, there was a total of 56 ounces, which is approximately 4 pounds that were deviated. It's not a large quantity that was being redirected in that time frame but taking into consideration that the system will be working in the school all year long, at the end of a school year there will have been a total of 36 ounces which is about 15.5 pounds a year.
- A total of 42 students, three parents and two teacher were involved in the process.

What works?

- I believe that by teaching according to grade level, and taking into consideration that not everybody learns at the same pace, one can reach a successful outcome. Establishing first a plan for the classroom (with the respective teachers) and then proceeding to teach the material in different ways. Making it fun, dynamic, open minded and being prepared for anything in the classroom. Making sure that the students play an active role in the process.



What doesn't work?

- What I believe doesn't work (in the amount of material being deviated) is that, there's not a large quantity of food being deviated from the lunchroom. Most of the meals served in the school contain certain ingredients that do not belong in the compost. When classifying the "waste material" there is a large part that ends up in the trash.



Materials created for the vermicomposting workshops

- Farewell bag
- Order of the Compost
- Card Game
- Vermicomposting Presentation
- Earth worm video
 - http://www.youtube.com/watch?v=gR4MYjrflkWs&feature=results_main&playnext=1&list=PL84o4FDF44oAC53C7

apple

potato

ORDER of the COMPOST

List from 1 al

____ Newspaper

____ Water

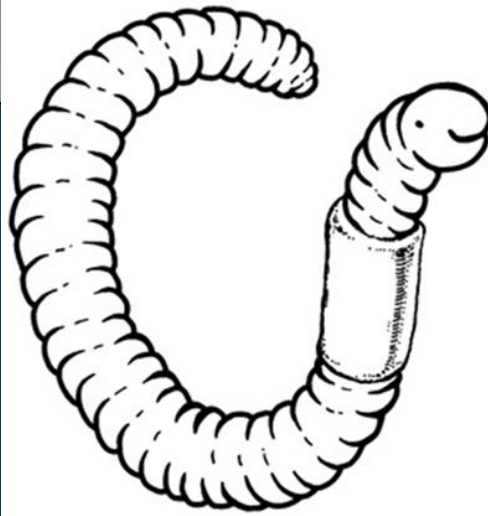
____ Meat

____ Food

____ Earth (dry leaves and dirt)

____ Milk

____ Acids



Green
leaves

Order of the COMPOST

Newspaper

Water

Dirt

Worms

Food: vegetables

Fruit

Acids (1-2 times a month)



Compost on 5th Grade

5th Grade

- Composting for children's, it's something they like and they don't even know it. When the children's starts knowing about compost they realize that the mother earth does that every day and they are part of it. They play in areas that are natural composting areas and they don't know it. So why teaching them to compost? Teaching about compost it's something very helpful for our society because it helps our children's to understand the earth process and to love it and be part of it without causing any damage in the process to our landfills. Although it's something that can be use as therapy for relaxing the child's and entertain them for a while.
- In my experience with the 5th graders, I observe all this things that have been mentioned. I can say that composting it's something that they like, that catch their interest and makes them want to learn more about the planet earth and how to conserve it.

General Information

- We've been working at El Conquistador Elementary School in Trujillo Alto, P.R. I've been working with the 5th Graders and their respective teachers Mrs. Martinez and Mrs. Viera. All in all, a very compromised and enthusiastic group of students and teachers.



Our goals

- We wanted to make compost (the simple one) in a short amount of time. Create in the students a motivation to follow it in their houses and teach them how the life in the compost is. Our goals have been achieved, most of the compost was finished by the time that we had proposed (2 months) originally and they could see what organisms live there, how they live and all the compost chain we've taught them. As another accomplished goal, the student's started to make their own compost in their own houses with the help of their parents.



- As another goal, we've made our compost in little binders because there were enough time to do a bigger one, and the students were so excited to have one for their own and the one we made was like a little garden basket.
- We created another and more bigger compost in another kind of binder and we expect that for the end of summer in August, there would be great compost.



Composting Process



1st Week



2nd Week



3rd Week



Final

Statistics

- As a total of participants there have been 50 students, 3 parents and 2 teachers in all the process.
- Each week there have been able to redirect 6 gallons of food (6.54 pounds per week). We use this method because the 5th graders have a Recycling Club so we use the plastic containers to storage the food we recollect among each week.
- We expect that as the weeks pass, each family can redirect approximately 20 pounds (1.09 gallons) of food.

What Works? What doesn't work?

- I think that everything works out properly even if there were different groups of compost and in different accommodation order. Even when the time to do the project wasn't much we do a great job and the students could see everything in the compost process and in the trash discard progress.
- The student's take a very much wider consciousness of the compost and how it works, and they implement them in their own houses, they were so excited about working with trash and to see the little world that's been creating in their compost binders.
- I considered that our goal of the deviation of organic material wasn't enough for what I've been expecting. This could be because each students brings a little portion of this from their own houses.



How can this is used in other schools

- This program could be implemented in other schools because it takes a small amount of time and the students could not only see but be part of the process, and the teacher could use it as an assessment project in the classroom.



General Results

Regular Compost System

- Deviated 51.14 pounds of kitchen garbage in five weeks. Using as containers to collect food six (6) plastic gallons of juice.
- *Note: All this food has been brought by the students from their own houses.*
- The material that has been deviated can be recognized like:
 - Coffee Scratch
 - Fruits
 - Vegetable
 - Leafs
 - Others
- 50 students 3 parents and 2 teachers have been teach about composting, and they started it in their own home, a micro system.
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Vermicomposting System

- A total of two vermicomposting systems were set up and working; each containing approximately 1,000.
- In the 7 weeks the system was up and running, there was a total of 56 ounces, which is approximately 4 pounds that were deviated. It's not a large quantity that was being redirected in that time frame but taking into consideration that the system will be working in the school all year long, at the end of a school year there will have been a total of 36 ounces which is about 15.5 pounds a year.
- A total of 42 students, three parents and two teachers were involved in the process

Suggestions

- Keeping in mind the end results, it would be best if this program could continue. Not only in this school but, in others also. To make this vermicomposting system a part of the science class, as some sort of science project. That way the students will be able to learn in real time; to not only read about a material given in class but to experience it firsthand.
- By the end results, it could be considered to implement this into an established curriculum; to teach the students about compost in a little amount of time, so they could see it while they are in the class room and be part of all the process.

- As well, we could make compost in a much bigger size that would take a little more of time (the average one) so they could see it in bigger proportion.

Conclusion

- Teaching about composting can be something gratifying. Helping children's understanding about the compost process and how to do it and implement it in their own houses its very useful, because we are a porting to the future generations.
- Like we can see in our results this program really works at all and can be implemented in every school in Puerto Rico. This would help teacher to improve their science or other classe's curriculum to help and understand the environment from another point of view. As well it would help students to appreciate and protect their planet earth and their environment.
- This program it's something that it's demonstrated that students like it and the school community can be impact just because its creating new soil for planting, for gardening or agriculture. This programs also helps to united families, create enthusiasm on students for saving the planet and improve in the school works, and helps teachers to support from the classroom the big idea of teaching about composting in the school facilities as well in their own houses.

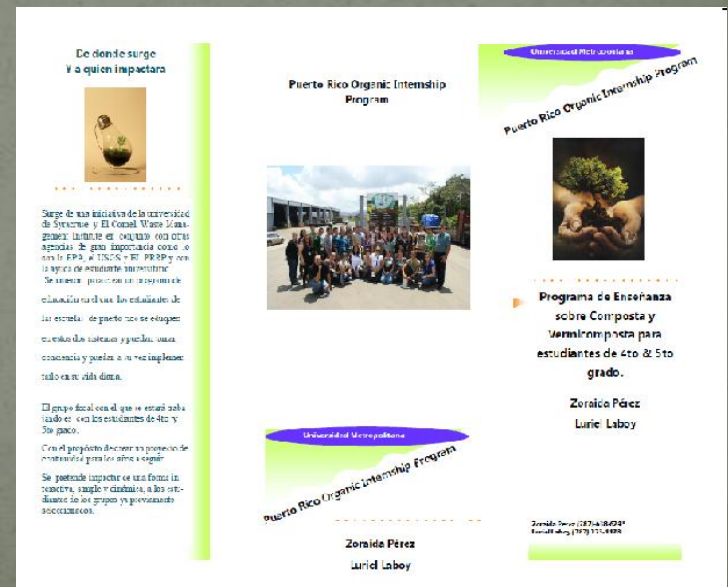


Material and Photos

Materials created for the workshops

- Farewell bag
- Order of the Compost
- Card Game
- Vermicomposting Presentation
- Earth worm video
- Compost Presentation
- Biology Chain
- Video
- Brochure

Examples of the materials used



lettuce

potato

Order of the COMPOST

Newspaper

Water

Dirt

Worms

Food: vegetables

Fruit

Acids (1-2 times a month)

ORDER of the COMPOST

List from 1 al

____ Newspaper

____ Water

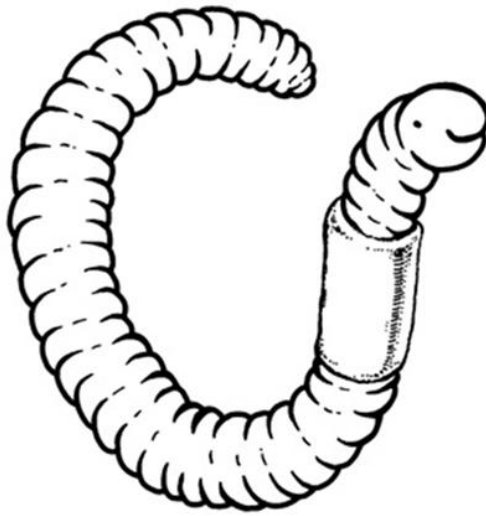
____ Meat

____ Food

____ Earth (dry leaves and dirt)

____ Milk

____ Acids



apple

carrots

Green
leaves

Thanks Fot Your Attention

