



MASSACHUSETTS CLEAN TECHNOLOGY AWARDS

A Program from The Foresight Project Inc; www.theforesightproject.org



Middle School Clean Tech Awards: *State Award Winner*

Region II: Central

Malik Salah, Al-hamra Academy, Shrewsbury

“Clean Up Your Act!: Reduce, Recycle, Reuse; Respect Planet Earth”

I live with my parents, two brothers, a sister, and Rattles (the family pet) in central Massachusetts. This year I served as president of the student council and worked hard to raise money for the victims in China and Myanmar. I was a member of the robotics club. I work hard to achieve success in all my endeavors and equally appreciate the importance of all subject matter whether it is history, math, science, reading or language art. Currently, I spend most of my time with studies of a religious nature and organize interfaith discussion.

MY PROJECT:

This project came from several sources: In December I was reading an article about health care that discussed methods in which a doctor's office might use to get their patients in for an appointment – should they call days in advance or the night before? Or perhaps they need to send a postcard, or charge a late cancellation fee? So that had me thinking about what does it take to persuade an individual to do something – Does it have to be beneficial for them, or does it need to cost them money?

At the same time my dad was trying to persuade the family to recycle or, even better, reduce. In addition, the Town of Shrewsbury is adopting a “Pay as you Throw” Program: since Proposition 2½ did not pass, the town budget cannot pay for waste disposal. The town did try to encourage its citizens to recycle by informing them how much could be saved in the cost of disposing municipal waste but the town did not respond.

So, my project asked the question: How could I measure the amount of recycled waste my neighbors produce and what could I do to increase that amount? Every year, the United States generates approximately 230 million tons of "trash" - about 4.6 pounds per person per day. Less than one-quarter of it is recycled; the rest is incinerated or buried in landfills.



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Northborough adopted a "Pay as You Throw" Program about 5 year ago, so I spoke with Fred Litchfield, the town engineer who oversees municipal waste. He was able to show me data that suggests that recycling did increase when a cost was add to waste disposal.

I decided to attempt to reduce lunch box waste at my school. It has been estimated that, on average, a school-age child using a disposable lunch generates 67 pounds of waste per school year. That adds up to 18,760 pounds of lunch waste for just one average-size elementary school.

What method of persuasion will decrease lunch box waste by the greatest amount? The methods of persuasion that I decided to compare were awareness of how trash affects the production of greenhouse gases; health awareness; reward-based awareness (a monetary benefit or reward); moral awareness; and educational awareness (the students studied about the environment).

Five different flyers were produced; one side contained identical information on how to reduce lunch box waste, for example a cloth napkin instead of paper, reusable silverware and beverage container. Aluminum foil could be avoided and replaced with either reusable Ziploc bags or plastic reusable containers. The other side of each flyer contained information on the specific awareness. Fonts and appearance were consistent in all the flyers.

During three days a week students are required to provide their own lunch, so on those days I collected lunch box waste excluding organic waste but not excluding tissues or napkins, controlling all other variables as much as possible. Flyers were distributed over a three week period: week one the flyer contained only facts; week two the flyer asked parents to help in the effort; and finally in week three parents were asked specifically to buy materials they need to reduce lunch box waste.

After flyers were distributed to the students, garbage was collected using the same procedure on three different days. The data suggested that environmental awareness had a greater effect in reducing lunch box waste. Moral awareness came in a close second, while reward-based awareness and health awareness measured in at third and fourth place. Educational awareness had almost no effect on the amount of trash produced in lunch box waste. Although I expected health to have the greatest effect, the results of educational awareness surprised me. I am assuming since the educational awareness was directed at the sixth grade and not their parents that this was the reason for little to no change in behavior.

Encouraging a population to reduce or even recycle is not an easy endeavor. Reduction or even an increase in recycling requires awareness of the various issues. The public needs to be educated on all fronts in order to be aware of the seriousness of the issue. An increase in knowledge about the effects of waste on the environment, one's health and the moral issue needs to be addressed. For now, simple solutions such as "Pay As You Throw" programs offer an adjustment in behavior. But, people need to believe a real problem exists in order to want to solve it willingly.