

# **CMST Challenge Project**

## **The Energy Counter**

### **School of the Arts**

**CMST Teacher:** Paul Geary

Being part of the Green Schools program has allowed us to examine the amount of energy that is used in the school everyday. The problem we have is that the amount of things that require energy in the school is a lot and it is difficult to count the number of energy using things. These things include lights, computers, TV's and other things.

We believe by creating this program we can calculate the amount of energy our school uses and find ways to conserve that energy. The energy counter will be a way to quickly and easily add up the large amounts of energy that is used in the school on any day or even an average for the year.

We used Stella to make our program because. It easily showed the efficiency of the items and It is a math based program so it made the calculations easier to do. It also made it easier for the viewers to read and input information.

In developing this program we started by first determining what items used energy in the classroom. Next we found out the watts used by an item, how long it runs for (most of the time), and how many of them there are. We had equipment from the Green Schools program that helped us figure these things out. After doing this we were able to input the data that was needed in the counter we had created.

It was determined that by multiplying the watts, number of items, and the hours used would give us the amount of energy that was used. These pieces were each placed

in an arrow in the Stella program. The three arrows were directed in to another arrow which multiplied all three data points up. They were then divided by 1000 to get the energy usage in kilowatts from watts. These arrows could then be combined with the others to get the total energy usage for all the items in the classroom. They were put into a data table format so information could be put in. When it was put in it could then be calculated.

The program we created easily showed us how to calculate and compare the energy usage in our school. We found out that many of the class rooms in our school uses a tremendous amount of energy. We are now trying to cut down the usage of energy and use more energy efficient products such as T8 Fluorescent light bulbs instead of T12s. Also the use of LCD projectors would be an energy saver compared to an overhead projector.