

How Much Garbage?

(From *Worms Eat Our Garbage*)

Background Information:

On average, red worms consume one-half their weight in organic material each day. Therefore, one pound of worms can consume one-half pound of banana peels, apple cores, carrot tops, etc. each day.

Procedure:

Each day for a week (the five school days), have the students place all appropriate waste into the plastic pail (remember, no meat or cheese or other dairy products, and no greasy foods such as French fries; they would get too smelly in a worm bin!). Make sure you weigh the empty pail first so you can subtract its weight from the total weight. Create a table with the dates (Monday, Tuesday, Wednesday, etc.) in a column, and space to write in the weights next to each day (in ounces). At the end of the week, add all of the weights together and divide by seven to get the average amount of food waste the worms would need to consume each day. See if any student questions you as to why you divide by seven and not five? *Because while we would be putting food scraps in for five days, the worms are going to be eating the scraps every day of the week. That is what we want to know; how much will they eat each day?* If it's confusing for them, write in Saturday and Sunday below the other days of the week, and place zeros for those two days in the weight column. Then they will see there are seven numbers added together, so you divide by seven. If worms consume half their weight each day, multiplying this average daily amount of food scraps by two will give you the weight of the worms needed. And if you divide this number by sixteen ounces, this will give you the weight, in pounds, of the amount of worms needed to consume all of the appropriate organic material your class generates. Brainstorm with your class at the end of the week the kinds of things they were putting in the pail for a worm bin. Since your classroom doesn't have a worm bin, yet, what kinds of things could be done so the food isn't wasted? *Telling mom or dad they are putting too much in their lunches, try to eat some of the foods they don't like, saving the crusts of bread, if they don't like them, and feed them to some birds.*

Learning Objective: Students will observe how much food is wasted each day by the class as a whole, and can take steps to reduce the waste or begin a worm compost bin at school or home.

Summary: Simple math calculations to see how much organic waste the class generates on a daily basis, and how many worms would be needed to process that waste.

Teaching Time: 15-20 minutes each day for a week, plus another 15 minutes on the last day.

Vocabulary: Garbage, waste, organic materials, micro-organisms, decompose, and compost.

Materials:

Two-quart plastic pail or similar container

A scale or weighing balance able to weigh in ounces and pounds.