Eco-Literacy and Local Connections
Craig Slocum Developmental Mathematics MTH 090

MATH 090 ECO-LITERACY PLASTIC WATER BOTTLE ASSIGNMENT

The use of plastic bottles and especially plastic water bottles have become a big environmental problem. A water filter company recently aired an ad where they stated that Americans use enough plastic water bottles in a year to circle the world 190 times. In this assignment, you will investigate the computations behind this claim as well as consider our local plastic water bottle usage. Remember to use units consistently.

1) In words, describe what information you would need in order to justify the claim above.

2) Use the Internet to find the information you would need to make this claim. Either reference the websites you use or explain in detail the assumptions you made to get your own estimate.

3) What does “around the world” really mean? (Hint: We have worked with this concept in class.)

4) How many miles is "around the world 190 times"? Show your computations.

5) Determine the U.S. per capita yearly consumption of plastic water bottles. Show your computations.

6) Using your computation from number five above, determine the number of bottles a class of 25 would use in a semester.

7) If these bottles were placed end to end how far would they stretch? Show your computations.

8) What do you think of this number? Should Moraine Valley consider a plastic bottle water ban? Why or why not.

9) What other considerations should be taken into account when discussing plastic water bottle consumption?

Write your responses on a separate sheet. This assignment is worth 20 points and is due

Course Learning Outcomes:

1.) The student will perform addition, subtraction, multiplication, and division on rational numbers.
2.) The student will apply the concepts of arithmetic correctly in problem solving.

Learning Outcomes:

1.) Students will make assumptions and use estimation.
2.) Students will work with rates and conversions in a real world setting.
3.) Students will analyze their impact on the environment.
4.) Students will explore the concept of sustainability and eco-literacy.
5.) Students will write about mathematical concepts.

Scoring Rubric (20 Points total):

Question 1: 0-3 pts. Student mentions the height of a bottle, the distance around the world and the population of the United States.

Question 2: 0-3 pts. Student gives link or estimate for each.

Question 3: 0-1 pts. Student mentions circumference.

Question 4: 0-2 pts. Proper computations

Question 5: 0-3 pts.
0-2 pts. Shows understanding of per capita and uses division
0-1 pts. Proper units

Question 6: 0-1 pt. Proper computation

Question 7: 0-3 pts. Student uses height of bottle, multiplication and proper units

Question 8: 0-2 pts. Comment and explanation of why/why not.

Question 9: 0-2 pts. Student gives at least two examples