Plastic Pollution Problem
Standard(s): 5.NBT.B; 6.NS.B

Directions: Show all work and circle your final answer

1.   The average United States family of 4 people goes through 60 plastic shopping bags in a month. The U.S population is approximately 325 million people. Assuming all the population is broken into families of 4 people, how many plastic bags are used by the U.S population each year? Fact: It takes a plastic bag 10-20 years to decompose.

2.   The average American uses 167 plastic water bottle a year and only recycles 38. What percentage of plastic bottles gets recycled? How many plastic bottles are used in the United States each year. (using 325 million people in the U.S) Fact: It takes 450 years for a water bottle to decompose.

3.   The average cost of tap water in the United States is $.004/gallon. The average cost of bottled water is $1.22/gallon. If a person is supposed to drink 8 cups of water each day, what is the price of tap water per year? What is the price of bottled water per year?
Hint: 1 gallon=16 cups

4.   The average American uses 1.6 plastic drinking straws per day. How many straws does a person use between the age of 5 and 80? Fact: It takes up to 200 years for a plastic straw to decompose.

REDUCE, REUSE, RECYCLE, REFUSE

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2.   The average United States family of 4 people goes through 60 plastic shopping bags in a month. The U.S population is approximately 325 million people. Assuming all the population is broken into families of 4 people, how many plastic bags are used by the U.S population each year? Fact: It takes a plastic bag 10-20 years to decompose.

60/4=15 bags per person per month

15 bags x 325,000,000 people =4.875×10^9 or 4,875,000,000 plastic bags

3.   The average American uses 167 plastic water bottle a year and only recycles 38. What percentage of plastic bottles gets recycled? How many plastic bottles are used in the United States each year. (using 325 million people in the U.S) Fact: It takes 450 years for a water bottle to decompose.

38/167=22.75% of bottles get recycled
167 x 325,000,000= 5.4725×10^{10} or 54,725,000,000 plastic bottles

4.   The average cost of tap water in the United States is $.004/gallon. The average cost of bottled water is $1.22/gallon. If a person is supposed to drink 8 cups of water each day, what is the price of tap water per year? What is the price of bottled water per year?
Hint: 1 gallon=16 cups

$.004 x .5 gal/day x 365 days/year= $.73/year for tap water
$1.22 x .5 gal/day x 365 days/year= $222.65/year for bottled water

5.   The average American uses 1.6 plastic drinking straws per day. How many straws does a person use between the age of 5 and 80? Fact: It takes up to 200 years for a plastic straw to decompose.

80-5 years=75 years

1.6 straws/day x 365 days/year x 75 years= 43,800 straws

REDUCE, REUSE, RECYCLE, REFUSE