**Name**_____ **Date:**_____

# THE ROTTEN TRUTH ABOUT GARBAGE PRE-TEST

**Directions**: These are questions you may not know. Try your best! You will review your answers to the pre-test at the end of this lesson to see if your answers were correct. You will need a calculator for the math questions.

1. What is garbage?

2. Which country makes the most garbage per person, per day?
   a. Germany b. China
   c. United States d. Mexico

3. Early humans didn't have the garbage problem we face today because:
   a. there were few people b. they were nomadic hunters and gatherers
   c. all their garbage was biodegradable d. all of the above

4. What was introduced during the Industrial Revolution - the era of factories - that increased our garbage load?
   a. cheap, factory-made goods, meaning more stuff to buy and throw away
   b. nomadic lifestyle
   c. biodegradable garbage
   d. modern landfills

5. What features have been added to make modern landfills safer for the environment? You may select more than one answer.
   a. the runoff water is tested for toxins
   b. they are left uncovered so the wind can blow trash around
   c. they are built with a thick lining to keep toxins away from our soils
   d. they are covered or fenced to prevent wildlife from scavenging garbage

6. In the United States, where does most of our garbage end up?
   a. landfills b. rivers
   c. burned d. recycled

7. Which kind of garbage do we make more of than any other?
   a. plastic b. glass
   c. metal d. paper

8. How many plastic bottles do Americans throw away each hour?
   a. 150 b. 3,000
   c. 250,000 d. 2.5 million

9. _____ humans are added to the planet every minute.

10. Each person in the United States generates 4.4 pounds of waste per day. If the population of the US is 329 million (as of September, 2019), how much waste is produced per day? (Show your work)

**Name**_____ **Date:**_____

# HISTORY OF GARBAGE WORKSHEET

1. Write your own definition of garbage: _____

_____.

2. Early humans never had the garbage problem we face today, because _____

_____.

3. Garbage was not a problem until people began to live in _____ and _____.

4. For a long time, garbage was thrown into the _____ and _____.

5. During the Industrial Revolution, Americans were introduced to _____ and could afford to buy more stuff.

6. Rainwater can wash the _____ found in our dumps out into our drinking water.

7. Modern landfills include a thick _____ to prevent the leakage of toxins into our soils.

8. With the invention of _____, America became a "throwaway society."

9. We make _____ as much garbage as most other industrialized countries.

10. Garbage has become a _____ because we don't know how we will safely dispose of it all.

11. Try as we might, we can never really make garbage _____.

12. Name one solution to our garbage crisis: _____

13, Using games, experiments, and activities, we will be finding out more about the garbage crisis, but first let's talk about _____ history in regards to its garbage.

14. The city of Fairbanks was founded in _____.

15. Early Fairbanksans waited for _____ so the river would take away the garbage.

16. In 1904, the city council created a garbage dumping site _____ yards beyond the city limit and _____ yards away from the river.

17. Name two things we still dumped into the Chena River from the 1940s to the 1960s:
_____ and _____.

**Name**_____ **Date:**_____

# Math Path to 7 Billion
# Student Worksheet - Version A

## DIRECTIONS

Read through the questions and solve each problem using division.

Question 1.
If the population was growing by 1 million (1,000,000) people per year, as it was in 1492 when Columbus arrived in the Americas, how many people would be added to the planet each minute?

Process (round to the nearest whole number):

a. First, change the number of people/year into the number of people/day by dividing by 365.

$$\frac{\text{1,000,000 people}}{\text{365 days}} = \_\_\_\_\_ \text{ people/day (answer a)}$$

b. Change the number of people added/day into the number of people/hour by dividing by 24 hours.

$$\frac{\text{Answer to (a)}}{\text{24 hours}} = \_\_\_\_\_ \text{ people/hour (answer b)}$$

c. Change the number of people/hour into the number of people/minute by dividing by 60 minutes.

$$\frac{\text{Answer to (b)}}{\text{60 minutes}} = \_\_\_\_\_ \text{ people/minute}$$

**ANSWER: _____ people would have been added to the planet each minute.**

Question 2.
Using the same process as you used in question 1, answer the following question. If the population is growing by 82 million (82,000,000) people per year, as it is currently, how many people are being added to the planet each minute?

a. First, change the number of people/year into the number of people/day by dividing by 365.

$$\frac{82{,}000{,}000 \text{ people}}{365 \text{ days}} = \_\_\_\_\_ \text{ people/day (answer a)}$$

b. Change the number of people added/day into the number of people/hour by dividing by 24 hours.

$$\frac{\text{Answer to (a)}}{24 \text{ hours}} = \_\_\_\_\_ \text{ people/hour (answer b)}$$

c. Change the number of people/hour into the number of people/minute by dividing by 60 minutes.

$$\frac{\text{Answer to (b)}}{60 \text{ minutes}} = \_\_\_\_\_ \text{ people/minute}$$

**ANSWER: _____ people are being added to the planet each minute.**

**Name**_____ **Date:**_____

# Math Path to 7 Billion
# Student Worksheet - Version B

## DIRECTIONS

Read through the questions and solve each problem using division.

Question 1.
If the population was growing by 1 million (1,000,000) people per year, as it was in 1492 when Columbus arrived in the Americas, how many people would be added to the planet each minute?

Procedure: Do the calculations. Show your work.

**ANSWER: _____ people would have been added to the planet each minute.**

Question 2.
Using the same process as you used in question 1, answer the following question. If the population is growing by 82 million 82,000,000) people per year, as it is currently, how many people are being added to the planet each minute?

Procedure: Do the calculations, rounding to the nearest whole number. Show your work.

**ANSWER: _____ people are being added to the planet each minute.**

**Name**_____ **Date:**_____

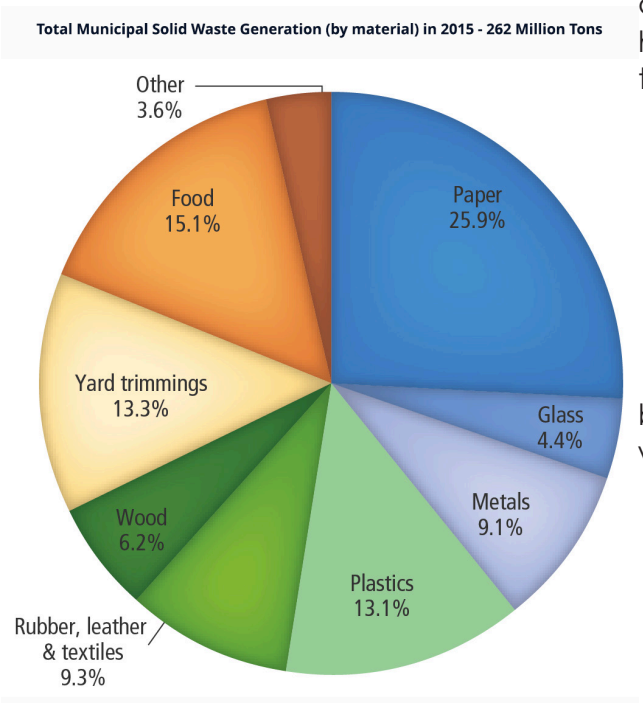
# HOMEWORK: All About Garbage!

What do you put in the garbage can every day? Once you toss it, chances are you never want to think about it (or smell it) again. But take a closer look. It's not all gross.

1. The average American generates 4.5 pounds of waste per day. Calculate how many pounds of waste your family would generate in a week.
Formula:
**(4.5 pounds x number of people in your family) x 7 = pounds of waste your family would generate in a week**
Show your work below:

2. Use your answer to figure out how much waste your family would generate in a year (365 days).
Show your work below:

3. The the following chart is a general overview of what's in America's trash, according to the Environmental Protection Agency (EPA).[18]




a. Does it surprise you to know that most of your school and household waste is likely paper (one of the easiest materials to recycle)?

b. What can your class and/or family do to produce less waste?

**Name**_____ **Date:**_____

# HOMEWORK: Story of Stuff Reflection

Many facts in the film The Story of Stuff may have surprised you. Select one (or more) of the facts below. Reflect on the fact(s) you selected and write a half page on the subject. Be sure to include why you selected the fact(s) and what you found interesting about them. Be sure to use correct punctuation and grammar.

Assignment due: _____

- We see more advertisements in **one year** than a person 50 years ago saw in a **lifetime**.
- Each person in the United States creates an average of **4 1/2 pounds of garbage a day**. That is twice what we made thirty years ago.
- Even if we could recycle 100% of the waste coming out of our homes, it doesn't get to the core of the problem.
- **70 garbage cans' worth of junk** were created to make just one can of garbage you throw out.
- Human happiness **peaked in the 1950s** at the same time consumption mania exploded and **has been dropping ever since**.