Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Candy Atoms**

For each of the following atoms, determine the atomic number, symbol, and atomic mass. Also figure the number of protons (P), neutrons (N), and electrons (E). Then make a model of Oxygen and Carbon (electrons only) with the candy. Get Mrs. Stant to check off one of the models. After the model is checked off you can eat the candy! **Remember:**

Atomic Number = # of Protons in the nucleus

Atomic Mass = Protons + Neutrons

Hydrogen Carbon Oxygen

\_\_\_\_(atomic #)

H (symbol)

\_\_\_\_\_\_(mass)

P= \_\_\_\_\_N=\_\_\_\_\_E=\_\_\_\_\_

\_\_\_\_(atomic #)

\_\_ (symbol)

\_\_\_\_\_\_(mass)

P= \_\_\_\_\_N=\_\_\_\_\_E=\_\_\_\_\_

\_\_\_\_(atomic #)

\_\_ (symbol)

\_\_\_\_\_\_(mass)

P= \_\_\_\_\_N=\_\_\_\_\_E=\_\_\_\_\_

Nitrogen Sodium Phosphorus

\_\_\_\_(atomic #)

\_\_ (symbol)

\_\_\_\_\_\_(mass)

P= \_\_\_\_\_N=\_\_\_\_\_E=\_\_\_\_\_

\_\_\_\_(atomic #)

\_\_ (symbol)

\_\_\_\_\_\_(mass)

P= \_\_\_\_\_N=\_\_\_\_\_E=\_\_\_\_\_

\_\_\_\_(atomic #)

\_\_ (symbol)

\_\_\_\_\_\_(mass)

P= \_\_\_\_\_N=\_\_\_\_\_E=\_\_\_\_\_

Neon Magnesium Helium

\_\_\_\_(atomic #)

\_\_ (symbol)

\_\_\_\_\_\_(mass)

P= \_\_\_\_\_N=\_\_\_\_\_E=\_\_\_\_\_

\_\_\_\_(atomic #)

\_\_ (symbol)

\_\_\_\_\_\_(mass)

P= \_\_\_\_\_N=\_\_\_\_\_E=\_\_\_\_\_

\_\_\_\_(atomic #)

\_\_ (symbol)

\_\_\_\_\_\_(mass)

P= \_\_\_\_\_N=\_\_\_\_\_E=\_\_\_\_\_

**When you are finished with your models and have cleaned up the candy,**

**do the activity on the back side of this paper.**

How Much Are Your Elements Worth?

Obviously, you’re priceless…but if you could break your body down into the elements that compose it, and then sell those elements, how much would you make? Write your prediction here: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Now using the following data, calculate your worth.

1. Find the mass of your body in grams. (Note: 1 lb = 0.454 kg and 1000 g = 1 kg). If you don’t want to use your own weight, use 140 lbs.

(Weight in lbs \_\_\_\_\_\_\_\_\_ X 0.454) X 1000 = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (total mass in grams)

1. Using the following table, calculate how many grams of each element are in your body. Then calculate the cost of each element in your body. Show your work

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Element** | **Percent in Body by Mass** | **Amount of element in you**  **(in grams)**  **(% in body/100) X (your total mass)** | **Cost per gram** | **Total Cost of**  **Element in You**  **($ per gram X amt. in you)** |
| Oxygen | 61% |  | $1.62 |  |
| Carbon | 23% |  | $0.09 |  |
| Hydrogen | 10% |  | $26.25 |  |
| Nitrogen | 2.6% |  | $1.87 |  |
| Calcium | 1.4% |  | $0.18 |  |
| Sulfur | 0.20% |  | $0.015 |  |
| Phosphorus | 1.1% |  | $0.19 |  |
| Potassium | 0.20% |  | $2.56 |  |
| Sodium | 0.14% |  | $0.42 |  |
| Chlorine | 0.12% |  | $0.02 |  |
| Silicon | 0.026% |  | $0.067 |  |
| Magnesium | 0.027% |  | $0.13 |  |
| Zinc | 0.0033% |  | $0.08 |  |
| Fluorine | 0.0037% |  | $1.90 |  |
| Iron | 0.006% |  | $0.14 |  |
| Chromium | 0.006% |  | $0.20 |  |

1. Well, what are your elements worth? What is the total cost of all of the elements in you? Write your final answer here:

*Contributed by: Alexis Book; Chemistry, Physics, and Science Teacher; The Neighborhood Academy, Pittsburgh, PA. www.theneighborhoood academy.org.*