College Prep Chemistry
Mr. Urig
Worksheet #3 Average Atomic Mass

Samples of an unknown element X were collected and their masses were recorded. Use the information presented in the data table to answer the following questions.

Isotope	Mass (amu)	Percent Abundance	Mass Number
1	37.765	9.67	
2	39.056	78.68	
3	40.003	11.34	
4	41.060	0.31	

1. Fill in the mass number for each sample of element X in the data table.
2. What is the most common isotope of element X?

3. Calculate the average atomic mass of element X.

4. Use your periodic table to identify element X based on its average atomic mass.

5. What is the atomic number of this element?

6. Dram one atom of this element. Make sure to correctly represent the number of protons and electrons in the atom.

7. This atom forms an ion with a charge of 1+. Draw a picture representing an ion of this element.

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Worksheet #4 – Average Atomic Mass

1. What is the average atomic mass of an unknown element if 92.21% of its atoms have a mass of 27.977 amu, 4.70% have a mass of 28.976 amu, and 3.09% have a mass of 29.974 amu?

2. A sample of a given element consists of 78.99% of an isotope having a mass of 23.98 amu, 10.00% of an isotope having a mass of 24.99, and 11.01% of an isotope having a mass of 25.98 amu. What is the average atomic mass of the element?

3. The element copper is found to contain the naturally occurring isotopes Cu-63 and Cu-65. The relative abundances are 69.1% and 30.9%, respectively. Calculate the average atomic mass of copper.

4. The percent abundance information for the element lead is as follows: 1.37% for Pb-204, 26.26% for Pb-206, 20.82% for Pb-207, and 51.55% for Pb-208. Calculate the average atomic mass for lead.

5. A sample of silver as it occurs in nature is 52% of isotope Ag-107 and 48% of isotope-108. What is the average atomic mass of silver?

6. There are three isotopes of uranium. They are as follows: U-234 (0.0058%), U-235 (0.71%), and U-238 (99.23%). Calculate the average atomic mass of uranium.

7. A sample of chlorine gas consists of both Cl-35 and Cl-37 atoms present in their natural abundances, 75.8% and 24.2%, respectively. Since the masses of the two isotopes are 34.97 amu and 36.97 amu respectively, what is the average atomic mass of this element?