

Name: _____ Block: _____ Date: _____

Isotopes of “Beanium”

Purpose: To use different types of beans to represent different isotopes of an element for the purpose of calculating its average atomic mass.

Procedure:

1. Obtain about 100 mL of the Beanium sample.
2. Sort the beans into different types (isotopes), and count the total number of beans of each isotope. Record in your data table.
3. Find the total mass of each isotope and record this mass on the data table.
4. Divide the total mass of each isotope by the number of atoms of that isotope to find the average mass of one atom of that isotope and record this in the data table.
5. Determine the percent abundance of each isotope:
 - a. Find the total number of atoms of each isotope in the data table.
 - b. Divide the total number of atoms of each isotope by the total number of all atoms combined.
 - c. Change this decimal to a percent and record it in the data table.
6. Determine the average atomic mass for Beanium:
 - a. Multiply the average mass of one atom of each isotope by its percent abundance.
 - b. Add the resulting products together to find the average atomic mass and record it in the space provided below.
7. Return your beans to the container.

Data Table:

	Isotope 1	Isotope 2	Isotope 3	Isotope 4	Isotope 5
Bean Description					
# of Atoms					
Total Mass					
Avg. Mass of 1 Atom					
Percent Abundance					

Total number of atoms in the sample = _____ atoms

Percent Abundance Calculations:

Average Atomic Mass Calculations:

The average atomic mass of Beanium is _____ grams.

