

LAB: BEANIUM

Students: Please read the following information given below, and then come to class on your lab day with the following already prepared in your notebooks:

1) Date, 2) Partner, 3) Title, 4) Purpose, 5) Materials, 6) Safety, 7) Procedures, and 8) Data/Calculations Table.

Questions on the last page need to be printed out and will be done after completion of the experiment. These questions will be due 3 days after performing the lab in class.

In this lab, you will be given a bottle of beans. The beans will represent atoms. In each bottle there are three different types of beans. Each type will represent an isotope.

Beanium is the name of the element. Beanium has three isotopes that are easily identified. The isotopes are called “black-eyed” (white with a black dot), “kidney” (maroon), and “pinto” (brown with dark specks).

Separate the sample into these three isotopes and record the total mass of each type of isotope. Then record the number of atoms in each type of isotope.

Place the table below in your notebook:

ISOTOPE	MASS OF ISOTOPE-TYPE	NUMBER OF ATOMS
black-eyed		
kidney		
pinto		

Find the total number of atoms in the sample and determine the total mass of the sample.

Calculate the average mass of each isotope and the percent abundance for each type of isotope.

Place the table below in your notebook:

ISOTOPE	AVERAGE MASS (one bean)	PERCENT ABUNDANCE
black-eyed		
kidney		
pinto		

Finally, calculate the average atomic mass of beanium.

Lab Station _____
 PD _____

 Name _____
 Lab Partner _____
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1. What is an isotope?

2. Complete the table below, make sure to include proper units.

ISOTOPE	MASS OF ISOTOPE-TYPE	NUMBER OF ATOMS
black-eyed		
kidney		
pinto		

3. What is the total number of atoms in your sample? _____

4. Complete the table below, make sure to SHOW ALL WORK and include proper units.

NO WORK NO CREDIT

ISOTOPE	AVERAGE MASS (one bean)	PERCENT ABUNDANCE
black-eyed		
kidney		
pinto		

5. Calculate the average atomic mass of beanium. Make sure to SHOW ALL WORK & include proper units.