

# Example work &

Name \_\_\_\_\_

Block \_\_\_\_\_

Date \_\_\_\_\_

## calculations

M&M Isotope Lab



DATA TABLE:	Number of M&M's	Mass of M&M's
Isotope #1 - Plain M&M's	14	16.20g
Isotope #2 - Crispy M&M's	22	31.10g
Total Number of all your M&M's	36	

Calculate the average mass of each isotope using the formula to the right.

$$\text{Average Mass} = \frac{\text{Total Mass}}{\# \text{ of M\&M's}}$$

Isotope #1 - Plain M&M	Isotope #2 - Crispy M&M
$\frac{16.20g}{14} = 1.16g$	$\frac{31.10g}{22} = 1.41g$
10. Average mass of Isotope #1 = 1.16g	11. Average mass of Isotope #2 = 1.41g

Calculate the percent abundance of each isotope. Of all the M&M's you have, what % of them are plain and what % are crispy?

$$\% \text{ abundance} = \frac{\# \text{ of each type of M\&M}}{\text{TOTAL \# of all M\&M's}} \times 100$$

Isotope #1 - Plain M&M	Isotope #2 - Crispy M&M
$\frac{14}{36} \times 100 = 38.89\%$	$\frac{22}{36} \times 100 = 61.11\%$
12. % abundance of Isotope #1 = 38.89%	13. % abundance of Isotope #2 = 61.11%

14. Calculate the average "atomic mass" of your M&M's.

convert to a decimal!

$$\text{Average Atomic Mass} = (\text{mass of isotope 1})(\% \text{ abundance}) + (\text{mass of isotope 2})(\% \text{ abundance}) \dots$$

$$(1.16g)(0.3889) + 1.41g(0.6111) = 1.31g$$

Average Atomic Mass = 1.31g