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| How Dalton Estimated the mass of Hydrogen AtomsCλeMis+ry: http://genest.weebly.com Stop in for help every day at lunch and Tues &Thurs after school! |  | Name\_\_\_\_\_\_\_\_\_\_\_\_\_Period\_\_\_\_\_\_\_\_\_\_\_\_\_ |

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| --- | --- | --- | --- | --- | --- |
| 1. Can you see a molecule? \_\_\_\_\_\_\_\_\_\_
2. Explain why \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
3. Is there any easy way for an average person to accurately count how many molecules of air are in a balloon?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_1. What does Avogadro’s Principle tell us about the number of particles in the four balloons shown below?

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (each balloon contains one substance, an element. There are no compounds.)

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| 2.999 liters of SubstanceA184 grams | 2.999 liters of SubstanceB23 grams | 2.999 liters of SubstanceC276 grams | 2.999 liters of SubstanceD943 grams |

 | 1. Look at the balloons shown here.

We won’t use their volumes in any calculation: the volumes only serve to show that each balloon has the same number of particles. If we arbitrarily choose **the lightest substance** and divide the others by it, we can get relative ratios of the mass of single pieces. Do this for each substance.* 1. Relative Mass of Substance A
	2. Relative Mass of Substance B
	3. Relative Mass of Substance C
	4. Relative Mass of Substance D
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| --- | --- | --- | --- | --- | --- |
|  1. What does Avogadro’s Principle tell us about the number of particles in the four balloons shown below?

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| 4 liters of SubstanceE85 grams | 4 liters of SubstanceF221 grams | 4 liters of SubstanceG17 grams | 4 liters of SubstanceH102 grams |

 | 1. IF we arbitrarily choose **the lightest substance** and divide the others by it, we can get relative ratios of the mass of single pieces. Do this for each substance.
	1. Relative Mass of Substance E
	2. Relative Mass of Substance F
	3. Relative Mass of Substance G
	4. Relative Mass of Substance H
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