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| **Relative Atomic Mass****The Mole** | Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |

Mass:

Atomic Mass:

* Atoms of different elements have \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**ATOMIC MASS**

* The atomic mass is found by comparing the mass of an atom of an element to the mass of an atom of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
* Carbon-12 is assigned an atomic mass of exactly 12.000000000000000000000 u (the “u” stands for “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_”)
* The mass of **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** is extremely small
* A **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** is required to provide enough mass to measure its mass
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** is a unit that measures the number of atoms that is equivalent to the atomic mass of a particular element.
* Or…. **the molecular mass** of a molecule (we will get there shortly!)

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| **THE MOLE**

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| **Avogadro’s Number****1 mole = 6.02214179 x 1023 items**\*\*items = atoms/molecules/particles etc |

 | Think about the term “dozen”.We can say …… a **dozen** eggs = 12 eggs… a **dozen** books = 12 booksSimilarly, …a **mole** of particles = 6.02 x 1023 particles… a mole of eggs = 6.02 x 1023 eggs |

The abbreviation for the unit mole is \_\_\_\_\_\_\_\_\_\_\_\_. (*do not confuse this with molecules*!)

**Reminder:** All unit conversions ***must be*** completed in the chain conversionformat!

**Example**: How many lithium atoms are in 3.2 mol of lithium?

Practice Problems:

1. Find the number of chromium ions in 3.5 mol of chromium ions.
2. How many atoms of sodium chloride are in 0.23 mol NaCl?
3. 7.3 x 1024 carbon monoxide molecules represent how many moles of carbon monoxide?
4. How many moles of argon do 1.81 x 1022 atoms of argon represent?
5. How many moles of hydrogen are there in a mole of water? How many moles of oxygen are there in a mole of water? **Hint:** What is the ration of hydrogen atoms to oxygen atoms?
6. 1.4 x 1018 Ag atoms represent how many moles of atoms?
7. If your body contains 0.0042 mols of Fe ions in a body, how many atoms of Fe are there in this body?