

Molar Mass: A Chemical Dictionary

Student Worksheet | g09_u05_w20

I can: translate formulas into molar mass, use subscripts/parentheses correctly, and report calculated values with units and appropriate precision.

Frozen values: classroom values from audits/atomic_masses_v2024.1.json: H 1.008, C 12.011, N 14.007, O 15.999, Na 22.990, Mg 24.305, S 32.06, Cl 35.45, Ca 40.078.

1. Define molar mass.

2. State unit for molar mass.

3. Find molar mass of H_2O .

4. Find molar mass of CO_2 .

5. Find molar mass of NaCl .

6. Find molar mass of MgO .

7. Find molar mass of CaCl_2 .

8. Why does a subscript multiply atomic mass?

9. Find molar mass of NH_3 .

10. Find molar mass of H_2SO_4 .

11. Find molar mass of $\text{Ca}(\text{NO}_3)_2$.

12. Count O atoms in $\text{Al}_2(\text{SO}_4)_3$.

13. Find molar mass of CH_3COOH .

14. Find molar mass of $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$ using $\text{Cu}=63.546$.

15. Why must water of hydration be included?

16. Explain difference between formula mass and mass of one sample.

17. A student reports CO_2 as 44.0095 g/mol. Round appropriately using frozen values.

18. Compare molar masses of N_2 and CO ; explain why equal atom count does not mean equal mass.

19. Diagnose missing parentheses in mass calculation for $\text{Ca}(\text{NO}_3)_2$.

20. Critique: "Molar mass tells the hazard or exact density of a substance."
