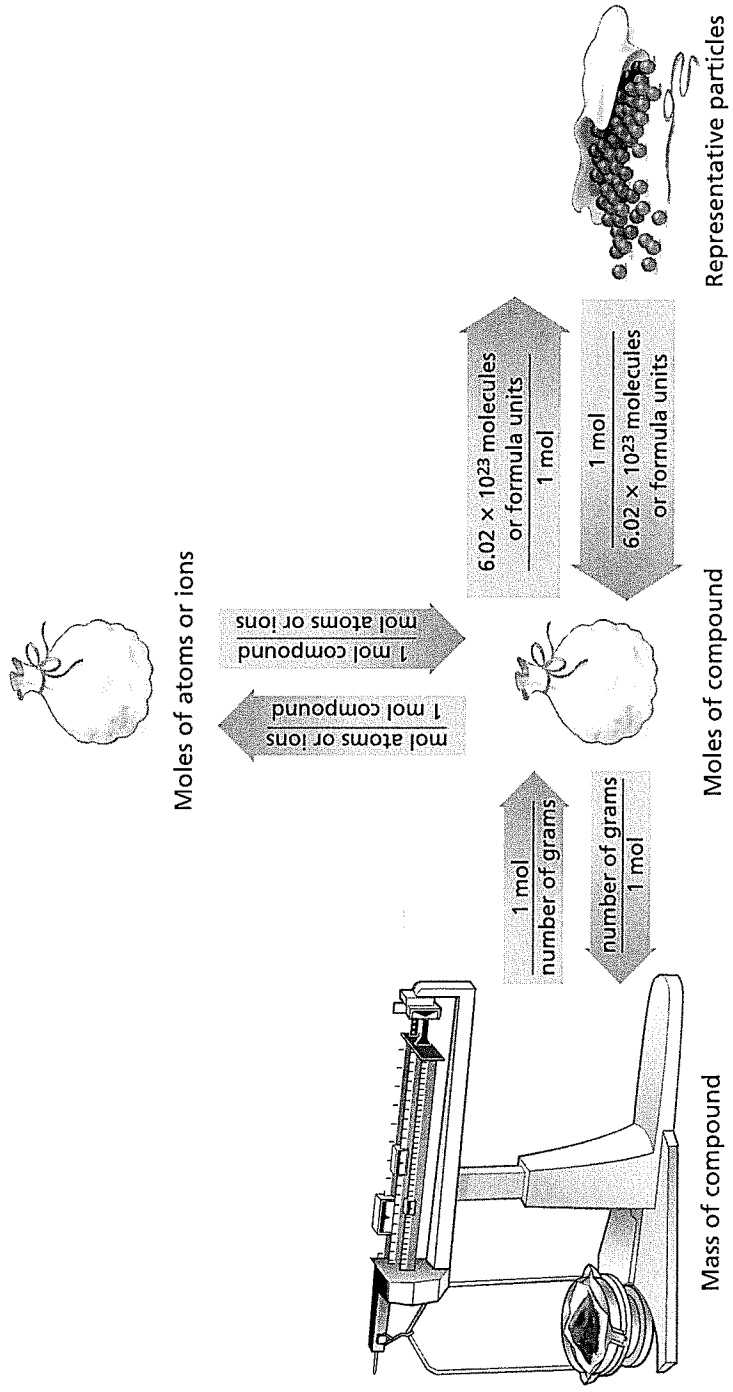
Name _____ Date _____ Class _____

TEACHING TRANSPARENCY MASTER **34**

Mass-to-Mole and Mole-to-Particles Conversions for Compounds

Use with Chapter 10, Section 10.3



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TEACHING TRANSPARENCY WORKSHEET 34

Mass-to-Mole and Mole-to-Particles Conversions for Compounds

Use with Chapter 10, Section 10.3

1. According to the diagram, what *three* quantities can you calculate if you know the number of moles of a compound?

_____

_____

2. According to the diagram, what *three* quantities can you calculate from a mass measurement of a compound?

_____

_____

3. If you were given the number of moles of a compound, what quantity would you need to know to calculate the mass of that number of moles of the compound?

_____

4. If you were given the number of moles of a compound, what information would you need to know to determine each of the conversion factors necessary to find the number of moles of each atom or ion in the compound?

_____

5. You are given a 2.0-mol sample of calcium carbonate ($CaCO_3$). The molar mass of $CaCO_3$ is 100.09 g/mol. Write the conversion factor you would use to determine correctly each of the following quantities.

   a. the mass in grams of the sample

   _____

   b. the number of formula units of $CaCO_3$ in the sample

   _____

   c. the number of moles of oxygen atoms in the sample

   _____

6. Write the conversion factors in the order you would use them to determine correctly each of the following quantities in a sample of 2.0×10^{24} molecules of ethane (C_2H_6). The molar mass of ethane is 30.08 g/mol.

   a. the mass in grams of the sample

   _____

   b. the number of carbon atoms in the sample

   _____