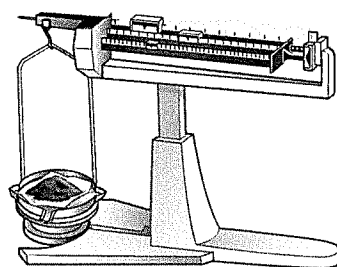


TEACHING TRANSPARENCY MASTER

35

Mass-to-Mass Conversions

Use with Chapter 11,
Section 11.2



Mass of given substance

Step 2
Convert
from grams
to moles

1 mol
number of grams



Mole of given substance

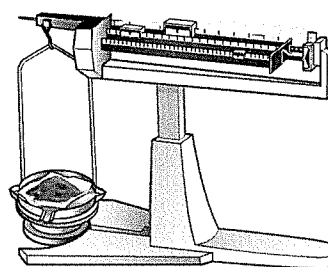
Step 1
Start with a
balanced equation

no direct conversion



moles of unknown
moles of given

Step 3
Convert from moles
of given to moles of
unknown



Mass of unknown substance

number of grams
1 mol



Moles of unknown substance

Step 4
Convert
from moles
to grams

TEACHING TRANSPARENCY WORKSHEET**35****Mass-to-Mass Conversions****Use with Chapter 11,
Section 11.2**

1. What conversion factor would you use to convert correctly from the mass of a given substance to the number of moles of the given substance?

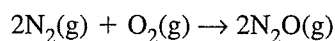
2. What conversion factor would you use to convert correctly from the number of moles of a given substance to the number of moles of an unknown substance?

3. What conversion factor would you use to convert correctly from the number of moles of the unknown substance to the mass of the unknown substance?

4. What is the name of the conversion factor in question 2?

5. What do you need to know to find the conversion factor in question 2?

Use the following balanced chemical equation and table to answer questions 6.



Compound	Molar Mass (g/mol)
N_2	28.02
O_2	32.00
N_2O	44.02

6. Write the conversion factors in the order you would use them to determine correctly each of the following.
 - a. the number of moles of N_2O produced when 26.5 g N_2 reacts with excess oxygen

 - b. the mass of N_2 needed to produce 11.5 g N_2O

 - c. the mass of N_2 needed to react completely with 1.56 g O_2

 - d. the mass of N_2O produced when 7.05 g O_2 reacts with excess nitrogen
