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## A Balancing Act

This activity will help you become skillful at balancing chemical equations.

1) Cut out the squares on the attached sheet. These represent the coefficients needed to balance the following equations.
2) Count the number of atoms present in the equation.
3) Determine the coefficients necessary to balance the equation.
4) Secure (glue or tape) the coefficients in the correct location.

Example:

$$
\begin{array}{cc}
2 \mathrm{Na}+\square \mathrm{HCl} \rightarrow \square & \mathrm{H}_{2}+8 \mathrm{NaCl} \\
\mathrm{Na}= \pm 2 \\
\mathrm{H}= \pm 2 & \mathrm{Na}= \pm 2 \\
\mathrm{Cl}= \pm 2 & \mathrm{H}=2 \\
\mathrm{Cl}= \pm 2
\end{array}
$$

1. $\square$
2. $\square$ $\mathrm{HI} \rightarrow$ $\square$
$\square$
3. $\square$ B + $\square$ $\mathrm{F}_{2} \rightarrow$ $\square$ $\mathrm{BF}_{3}$
4. $\square$ $\mathrm{N}_{2}+\square \mathrm{H}_{2} \rightarrow \square \mathrm{NH}_{3}$
5. $\square$

6. $\square$ $\mathrm{O}_{2} \rightarrow$ $\square$ $\mathrm{H}_{2} \mathrm{O}$
7. $\square$
8. 

$\square \mathrm{Al}_{2} \mathrm{O}_{3} \rightarrow \square \mathrm{Al}+\square \mathrm{O}_{2}$
10. $\square$ $\mathrm{P}_{4}+\square \mathrm{O}_{2} \rightarrow$ $\square$ $\mathrm{P}_{4} \mathrm{O}_{6}$
11. $\square \mathrm{SiCl}_{4} \rightarrow \square \mathrm{Si}+\square \mathrm{Cl}_{2}$
12. $\square$ $\mathrm{H}_{2} \rightarrow \square$ $\mathrm{CH}_{4}$

| 0 | 8 | 8 | 9 |
| :---: | :---: | :---: | :---: |
| 0 | 8 | 8 | q |
| 0 | 8 | 8 | q |
| 0 | 8 | 8 | q |
| 0 | 8 | 8 |  |
| 0 | 8 |  |  |
| 0 | 8 |  |  |
| 0 | 8 |  |  |
| 0 | 8 |  |  |
| 0 | 8 |  |  |
| 0 | 8 |  |  |
| 0 | 8 |  |  |
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