

Formules et modèles moléculaires

Jeu de Dominos

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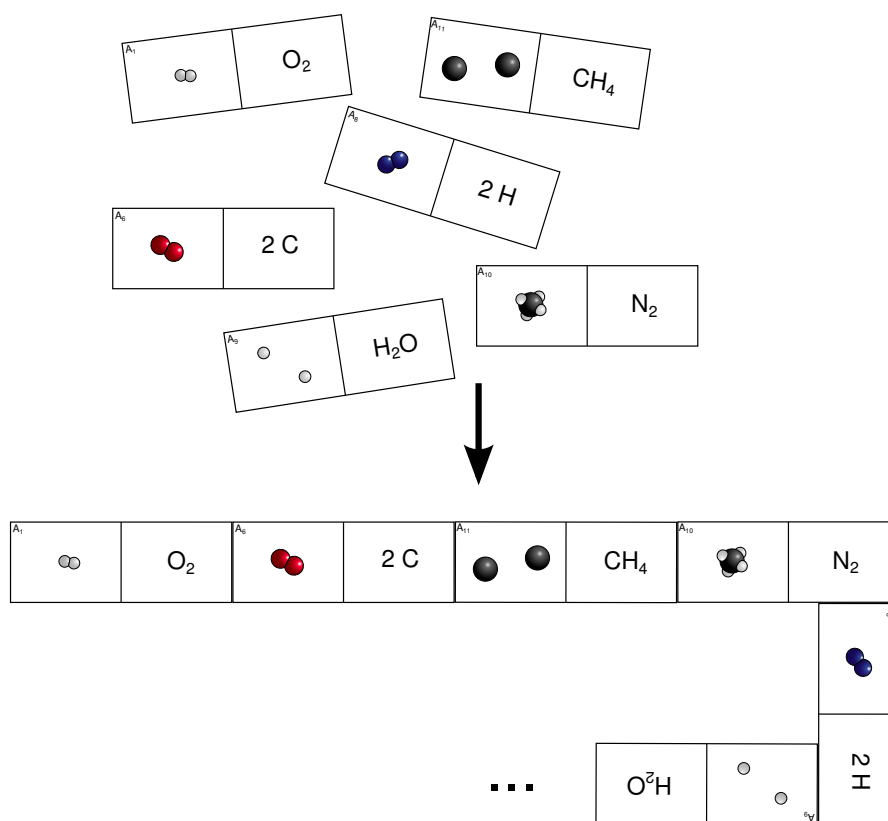
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Voici quatre jeux de "Dominos" de difficulté croissante pour faire travailler les élèves sur le passage de la formule au modèle et du modèle à la formule. La notation qui servira dans les équations de réaction est abordée aussi dans des exemples de plus en plus complexes.

Autant que possible, les diamètres des atomes et les angles des liaisons ont été respectés.

Il est recommandé d'imprimer les dominos sur du papier cartonné, ou mieux encore, d'imprimer sur papier normal mais de plastifier les tirages avant de massicotter entre les cartes.

Les jeux "bouclent", c'est à dire que la première est associée à la dernière et l'ensemble forme un rectangle qui tient sur une table.



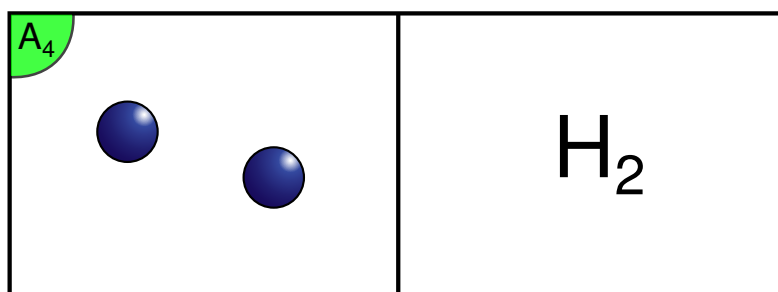
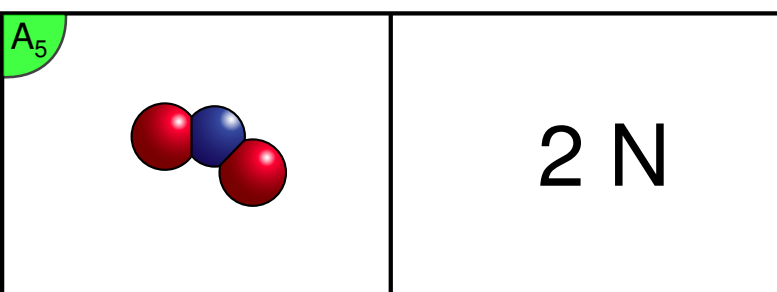
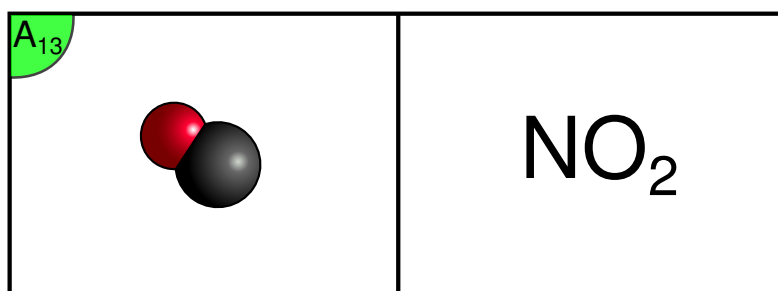
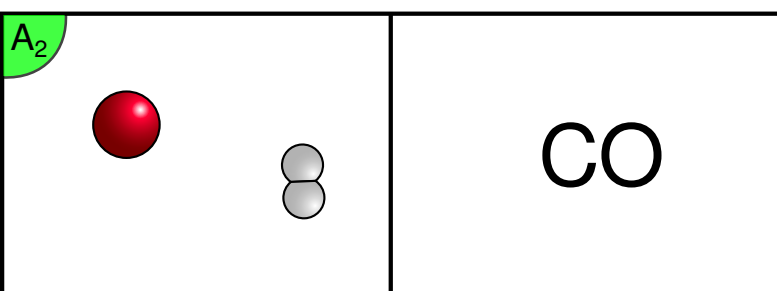
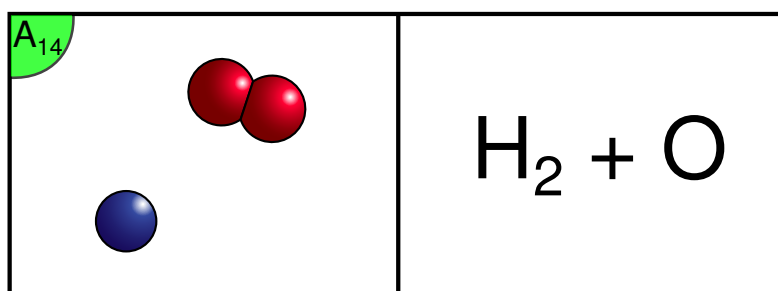
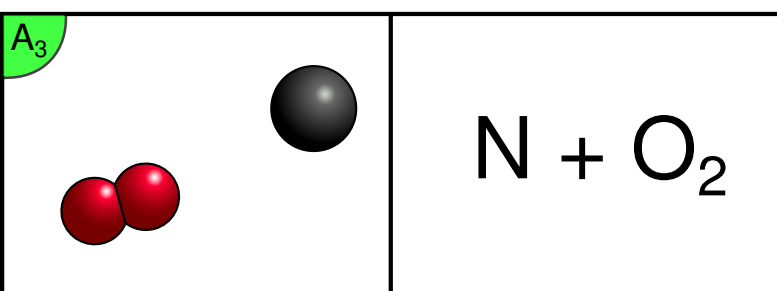
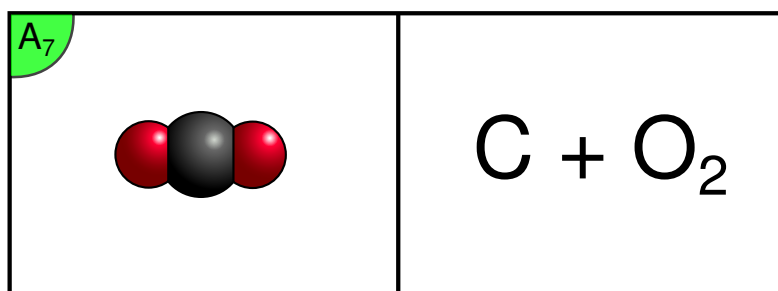
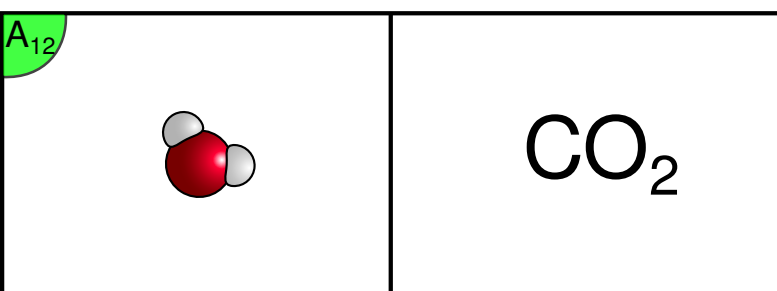
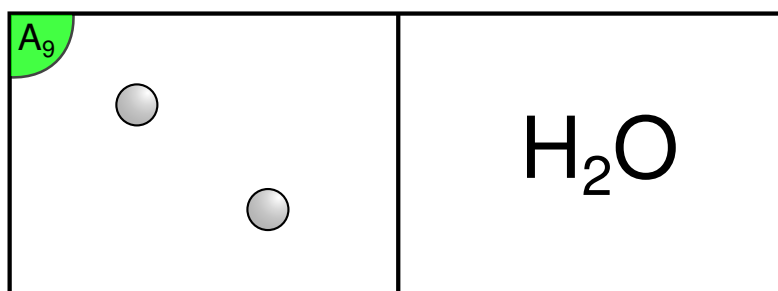
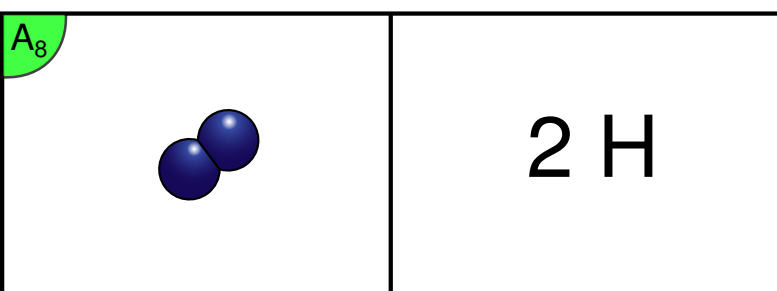
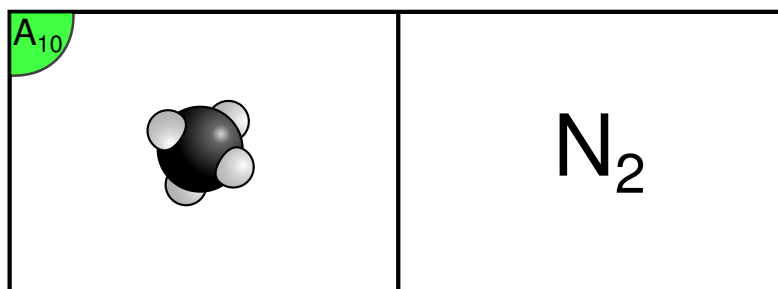
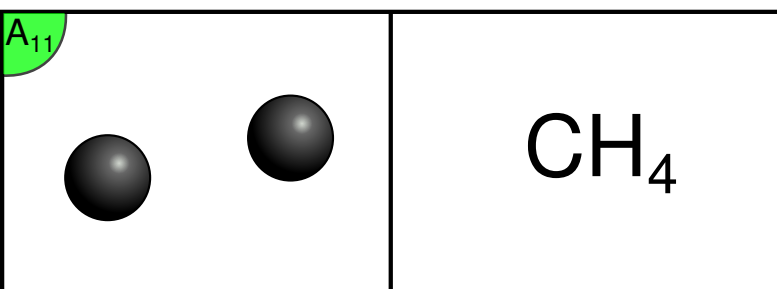
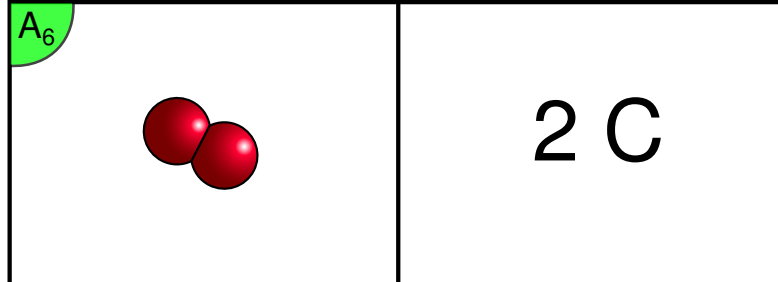
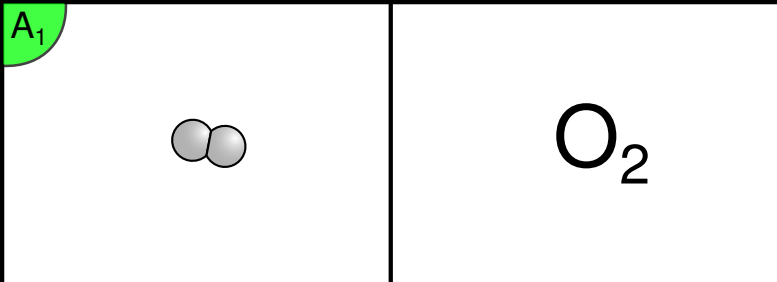
Correction des trois jeux

Facile : A1 A6 A11 A10 A8 A9 A12 A7 A3 A14 A2 A13 A5 A4
B1 B6 B2 B14 B11 B10 B13 B8 B3 B4 B9 B12 B7 B5

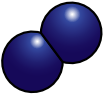
Moyen : A1 A4 A12 A2 A9 A8 A3 A7 A13 A5 A11 A14 A6 A10
B1 B4 B12 B2 B9 B8 B3 B7 B13 B5 B11 B14 B6 B10

Difficile : A1 A7 A11 A10 A3 A8 A5 A2 A4 A6 A12 A9 A14 A13
B1 B7 B11 B10 B3 B8 B5 B2 B4 B6 B12 B9 B14 B13

Très difficile : A1 A3 A9 A7 A12 A8 A6 A11 A2 A5 A13 A14 A10 A4
B1 B3 B9 B7 B12 B8 B6 B11 B2 B5 B13 B14 B10 B4



B₁



H₂

B₆

Une molécule de dihydrogène


CO₂

B₂

Une molécule de dioxyde de carbone

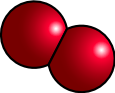
CH₄

B₁₄



O₂

B₁₁



2 N

B₁₀

Deux atomes d'azote


H₂O

B₁₃

Une molécule d'eau

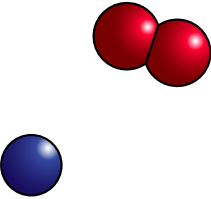
CO

B₈



N + O₂

B₃



C + O₂

B₄

Un atome de carbone et une molécule de dioxygène

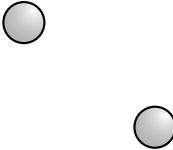
2 C

B₉

Deux atomes de carbone


2 H

B₁₂



H₂ + O

B₇

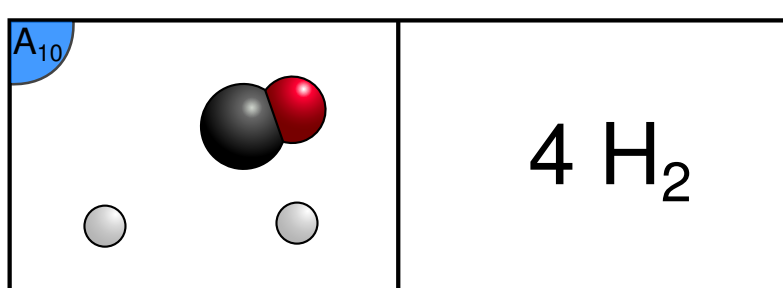
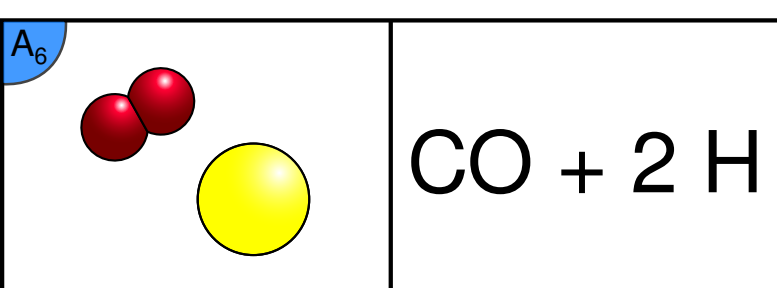
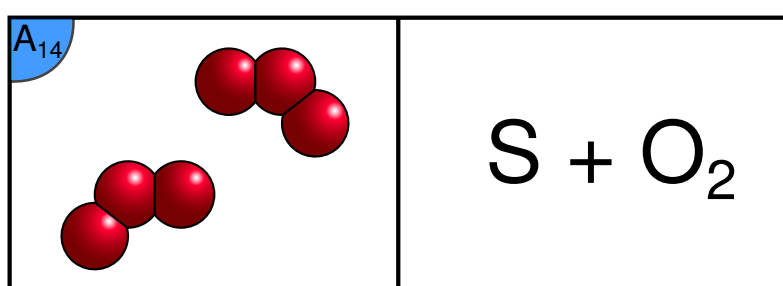
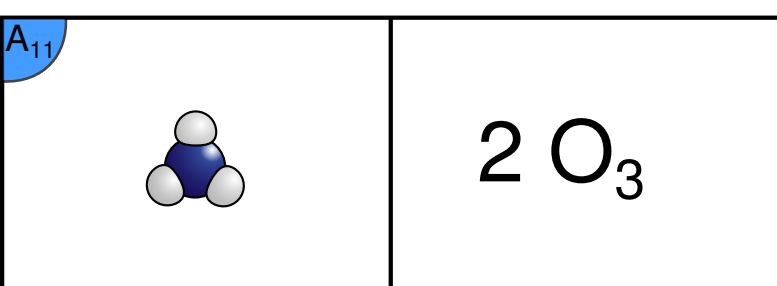
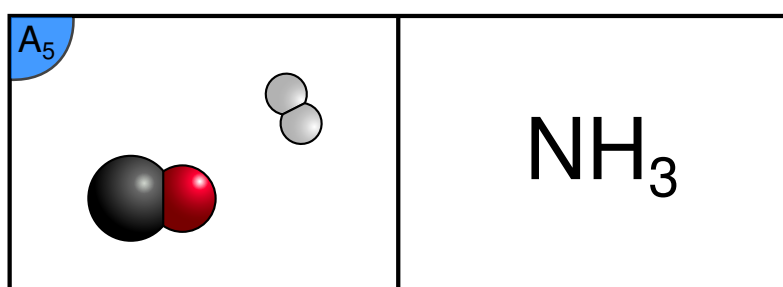
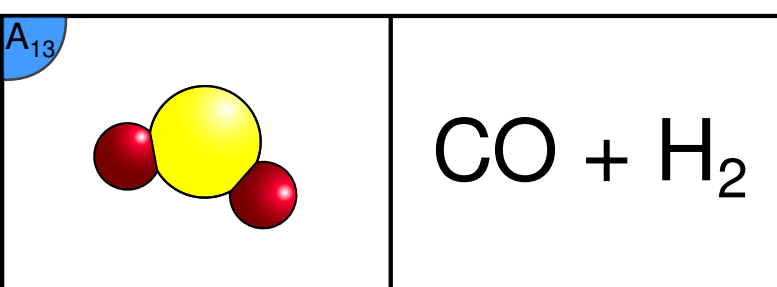
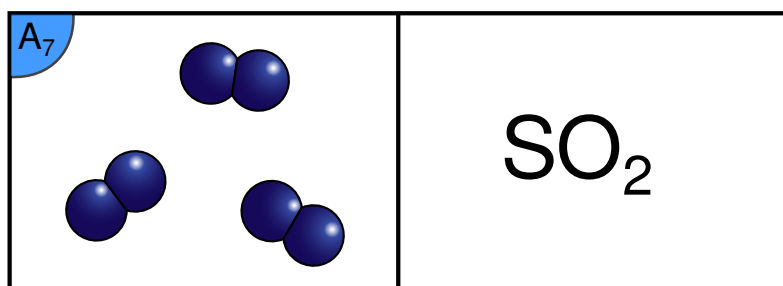
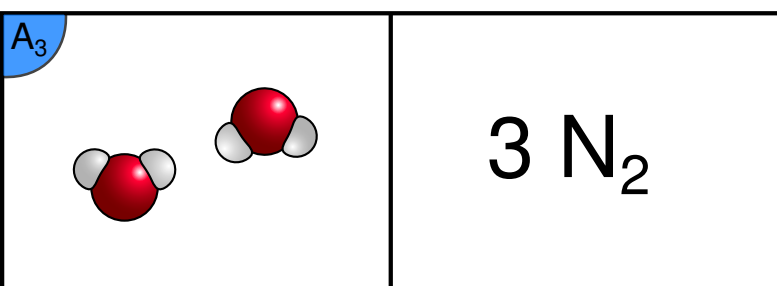
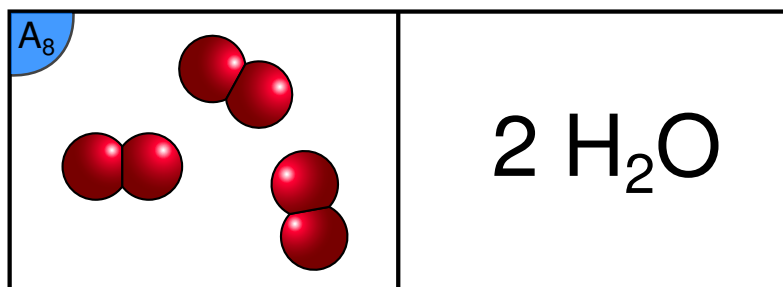
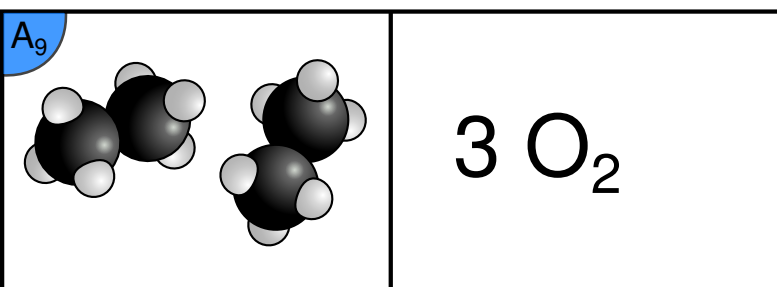
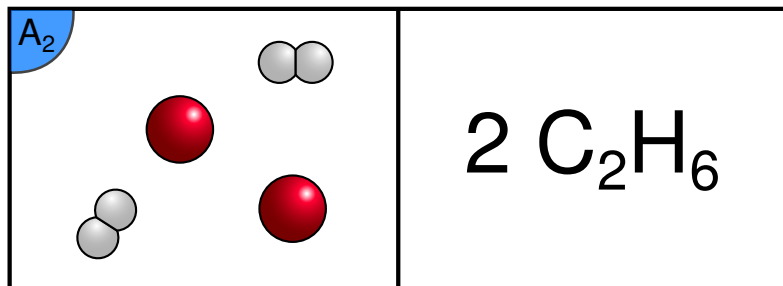
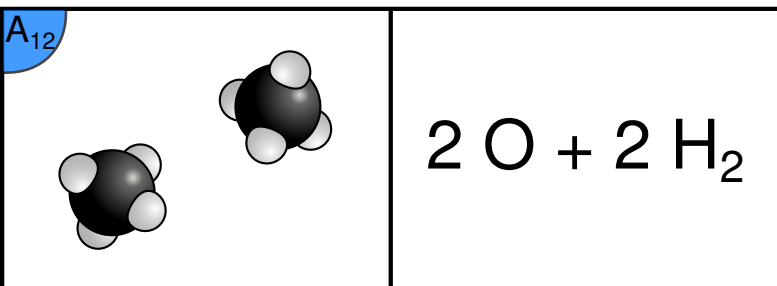
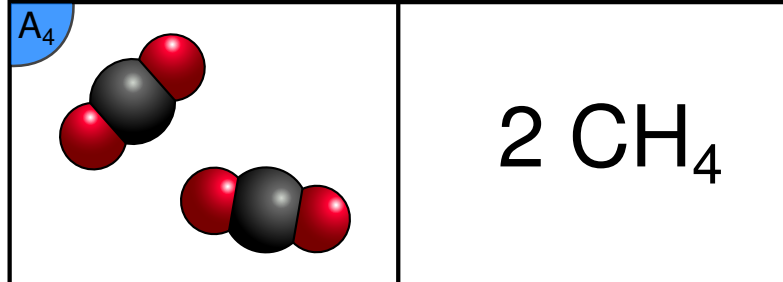
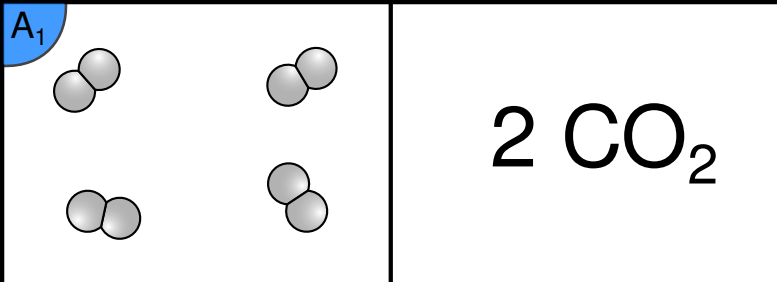


O₃

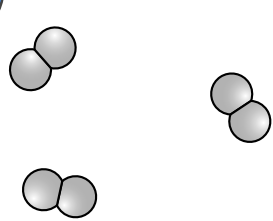
B₅

Une molécule d'ozone (trioxygène)

N₂



B₁



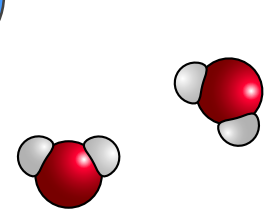
2 CO₂

B₄

Deux molécules de dioxyde de carbone

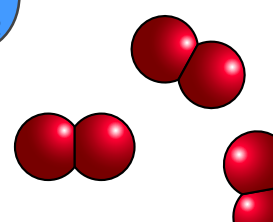
2 H₂O

B₁₂



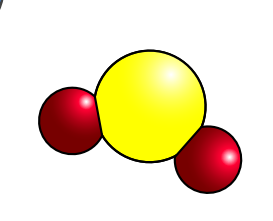
Trois molécules de dioxygène

B₂



Une molécule de dioxyde de soufre

B₉



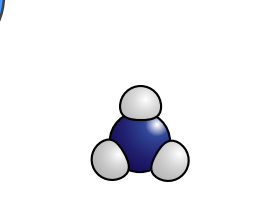
2 O + 2 H₂

B₈

Deux atomes d'oxygène et deux molécules de dihydrogène

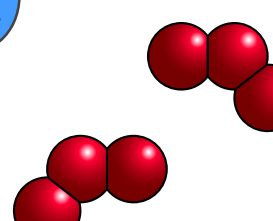
NH₃

B₃



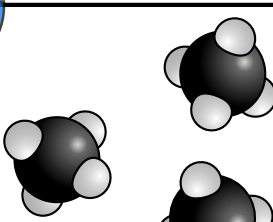
Deux molécules d'ozone (trioxygène)

B₇



Trois molécules de méthane

B₁₃



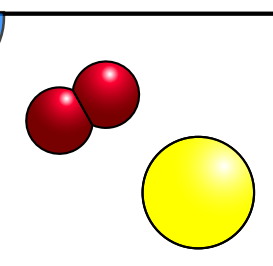
3 N₂

B₅

Trois molécules de diazote

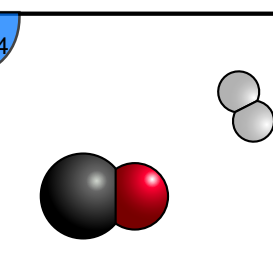
S + O₂

B₁₁



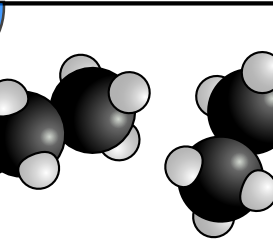
Une molécule de dihydrogène et une molécule de monoxyde de carbone

B₁₄



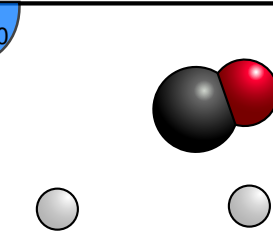
2 C₂H₆

B₆

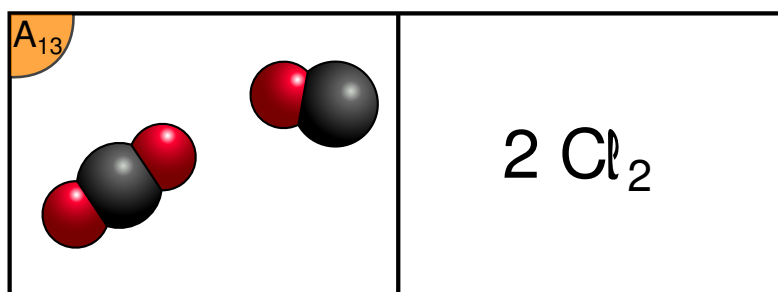
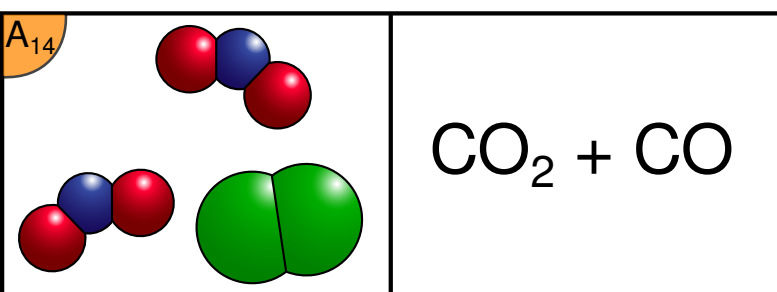
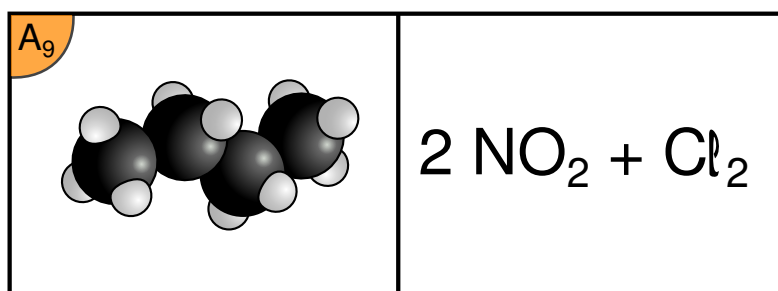
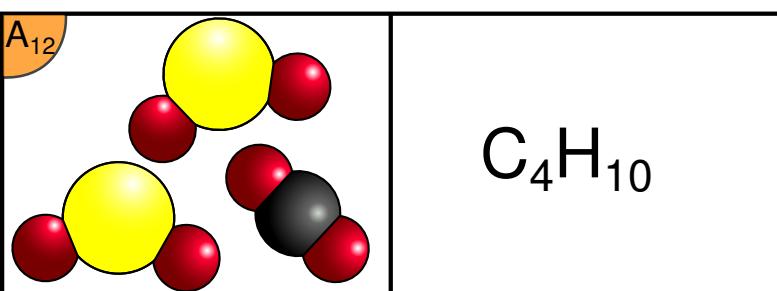
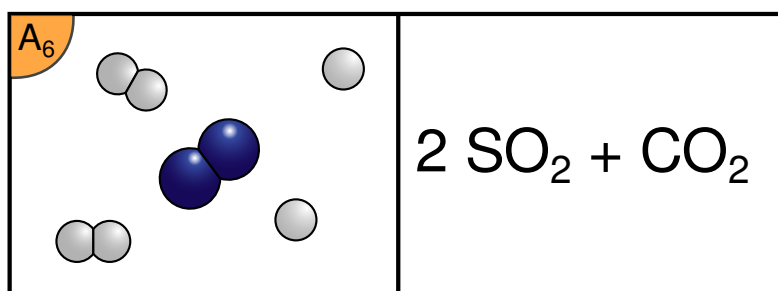
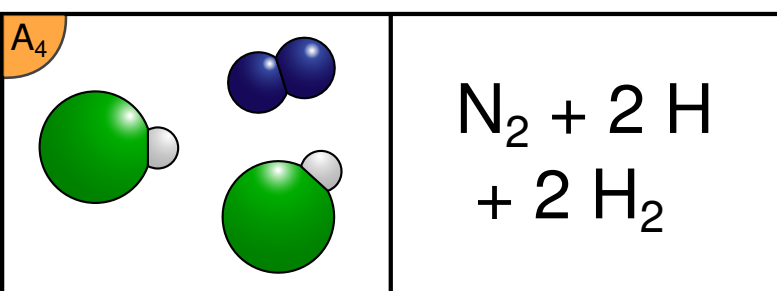
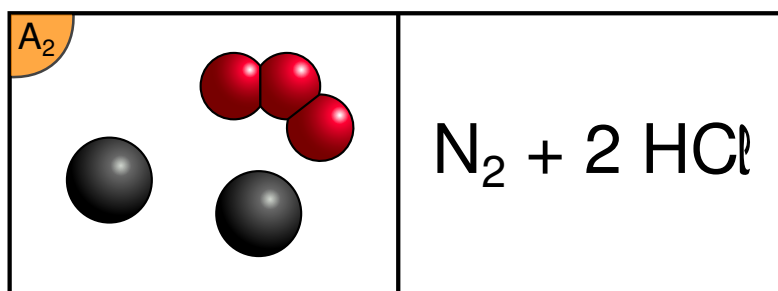
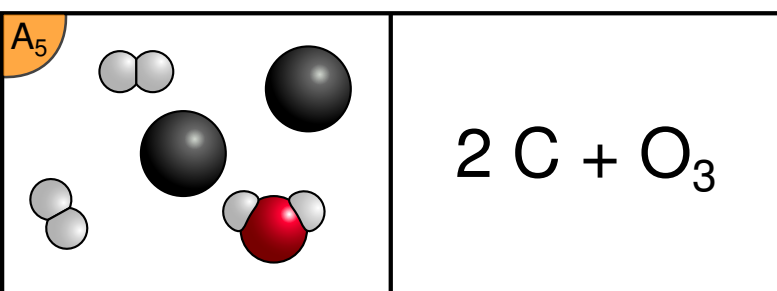
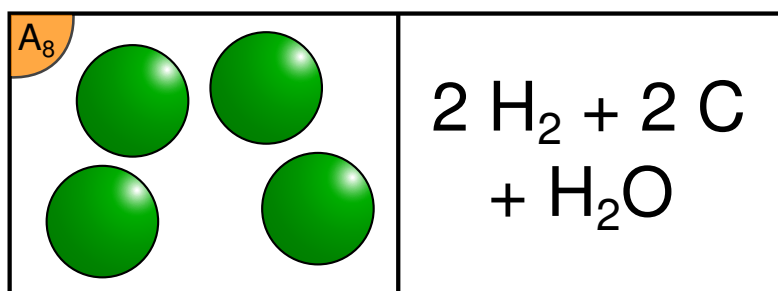
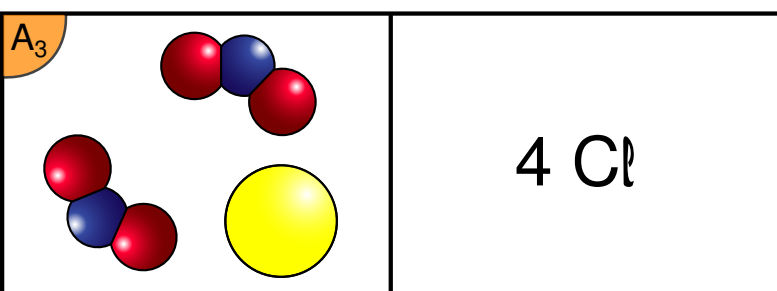
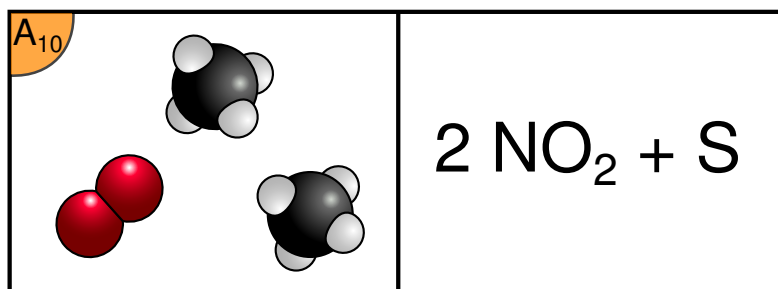
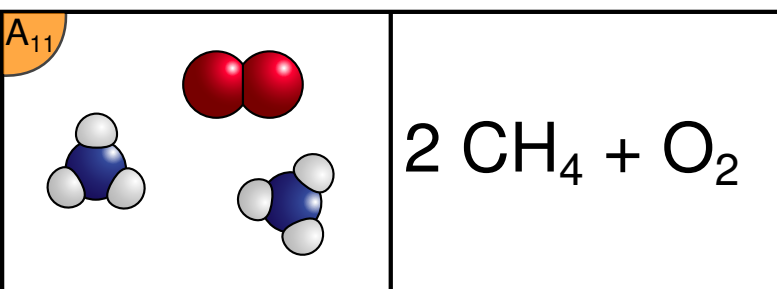
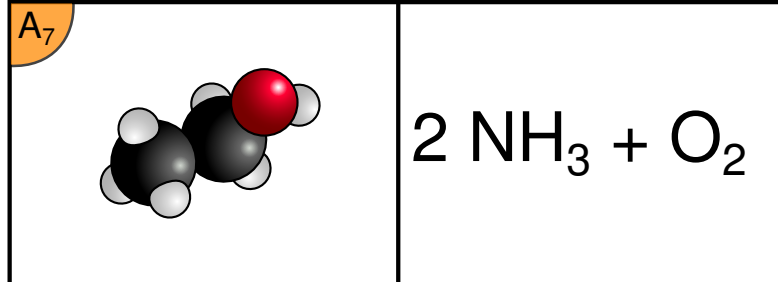
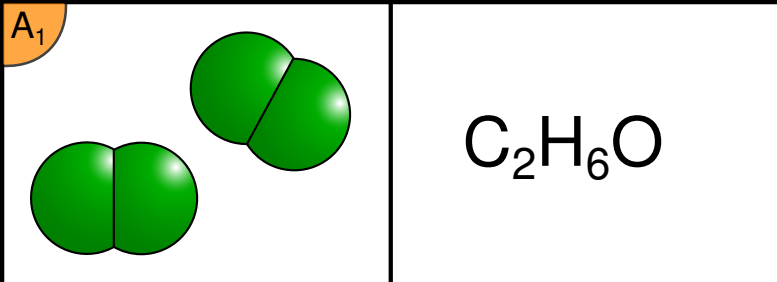


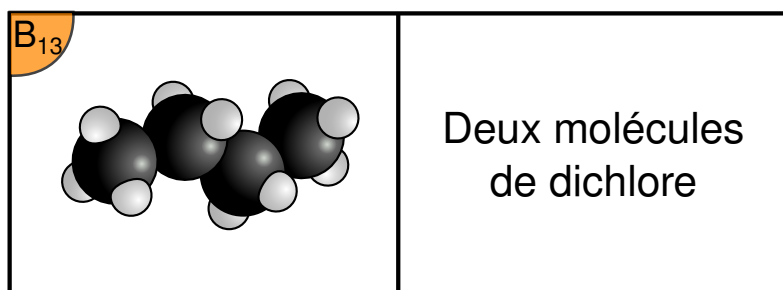
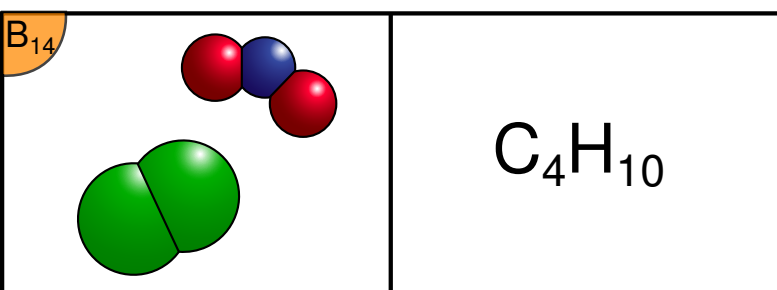
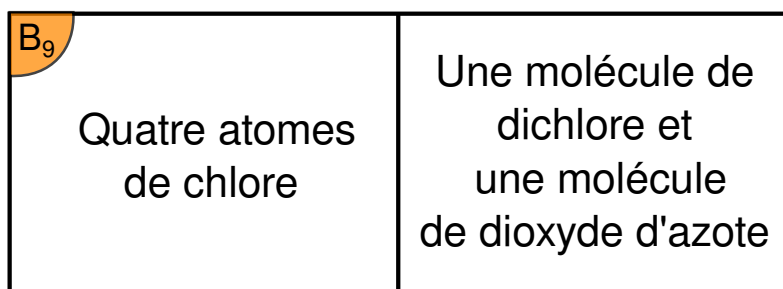
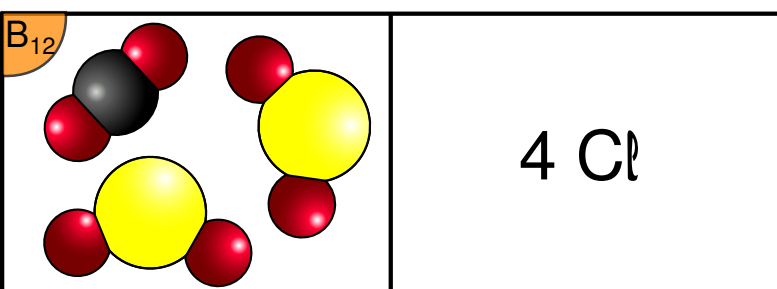
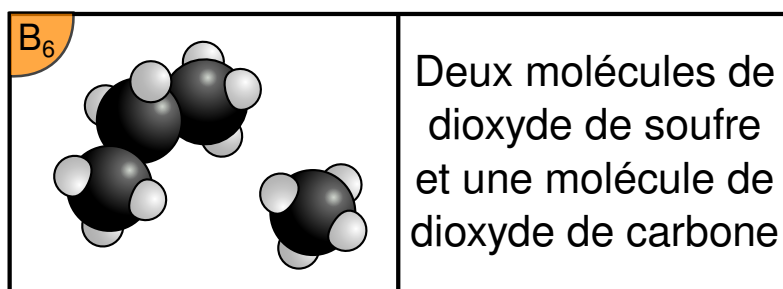
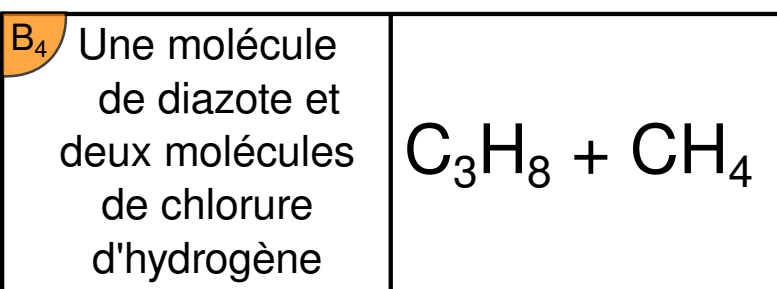
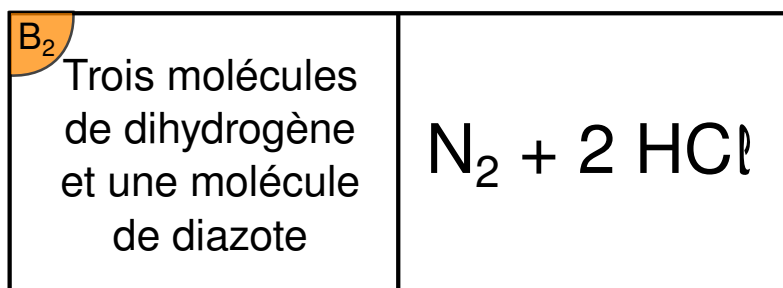
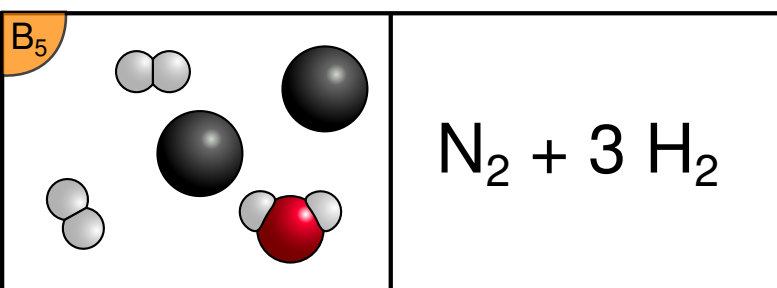
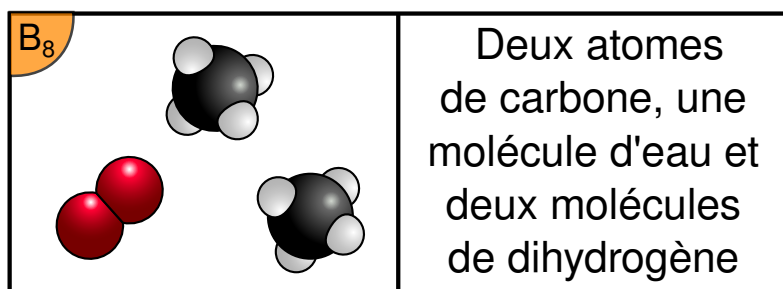
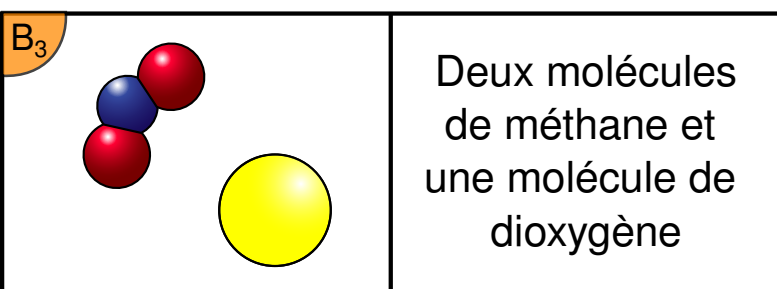
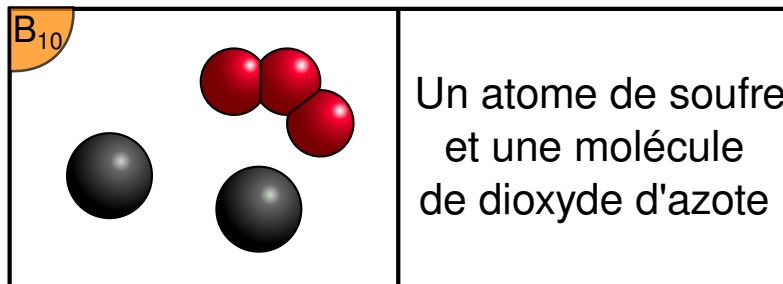
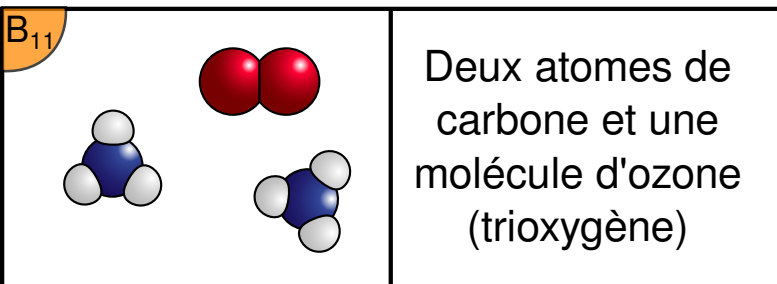
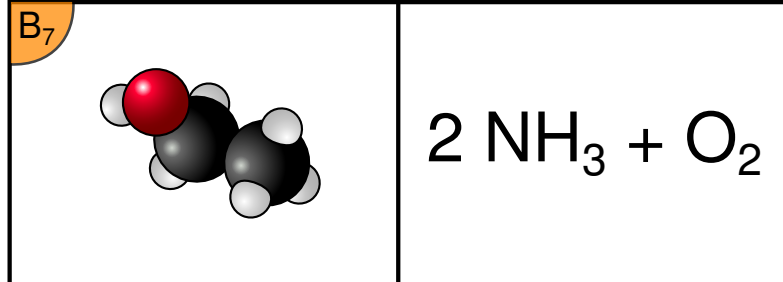
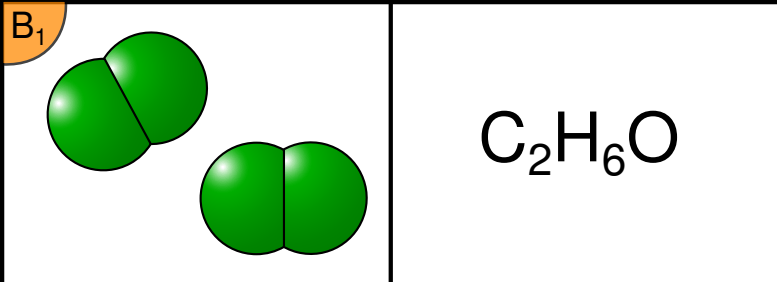
Une molécule de monoxyde de carbone et deux atomes d'hydrogène

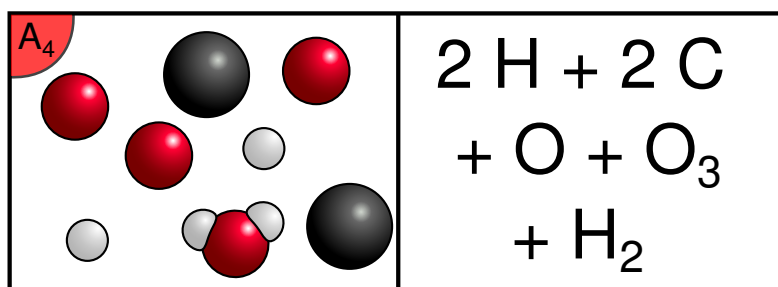
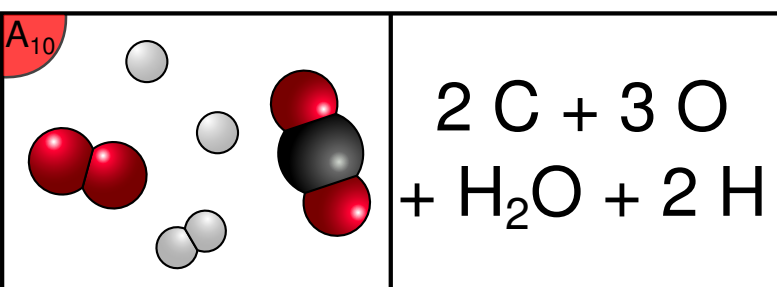
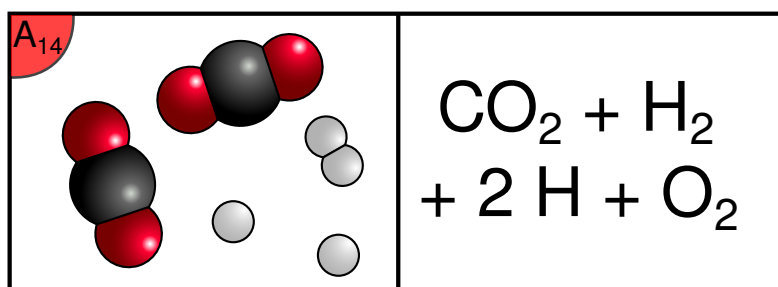
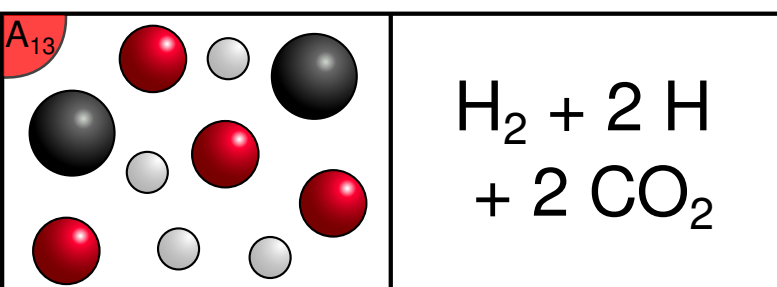
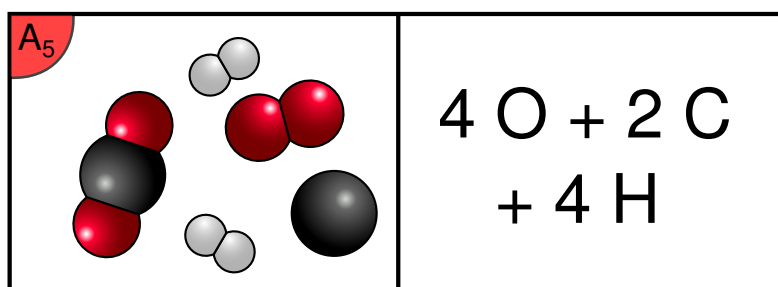
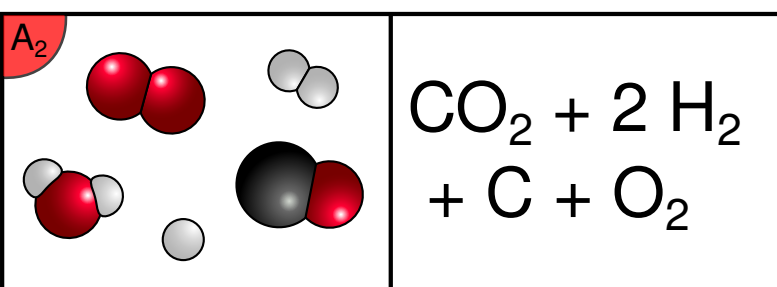
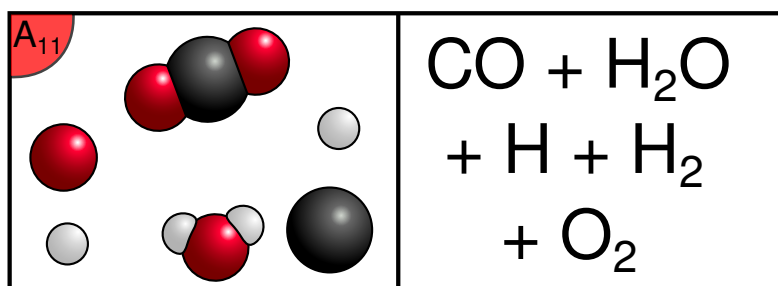
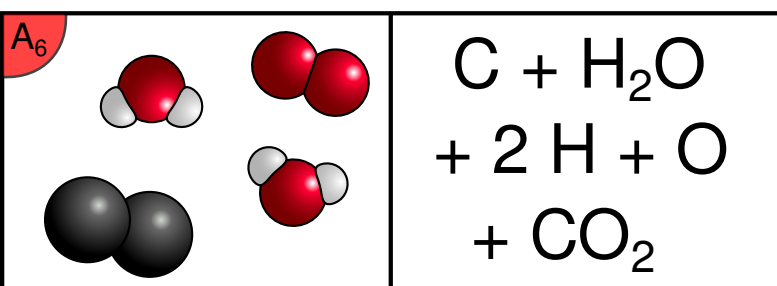
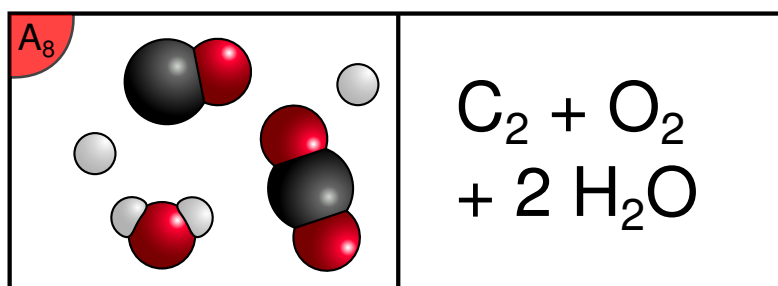
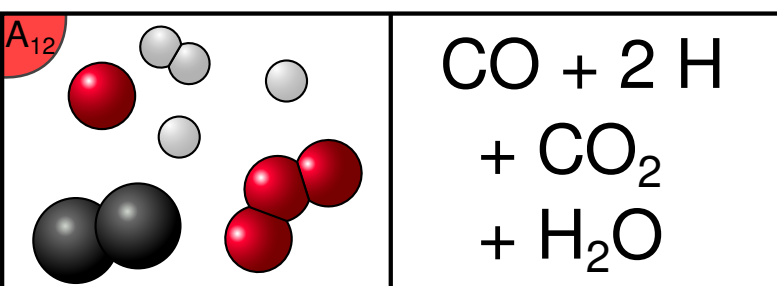
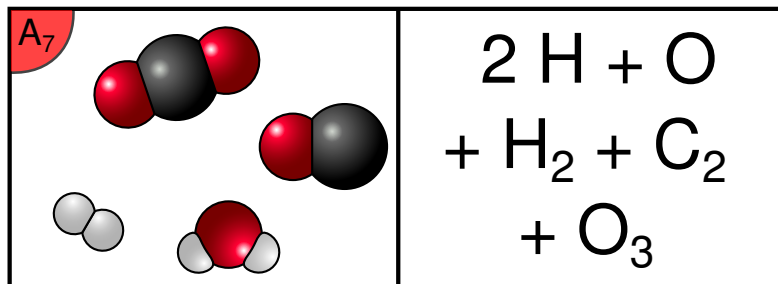
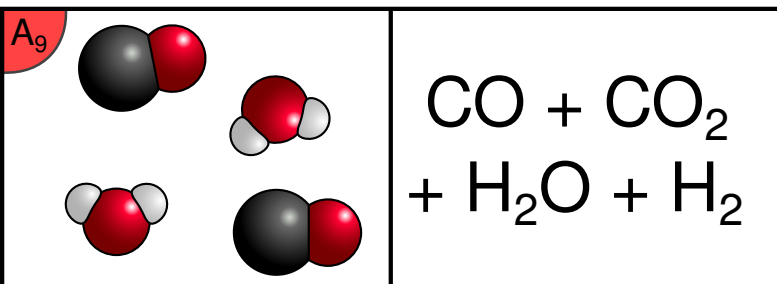
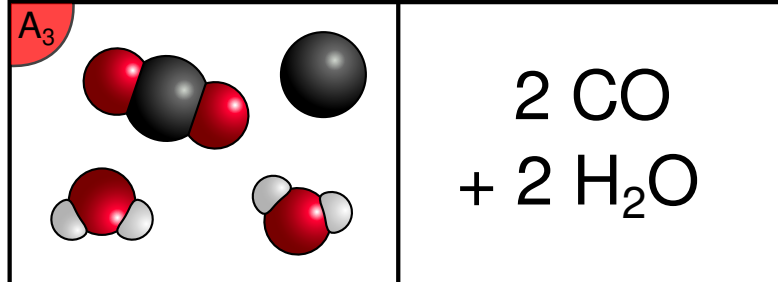
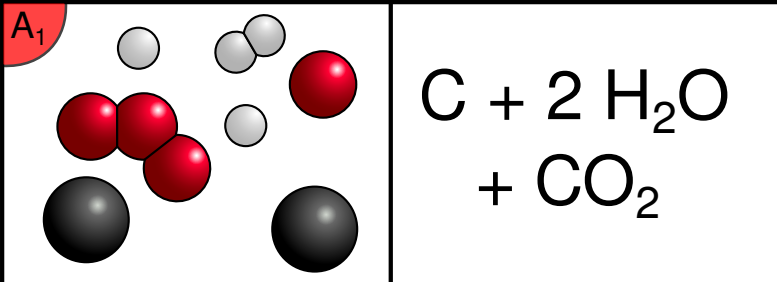
B₁₀



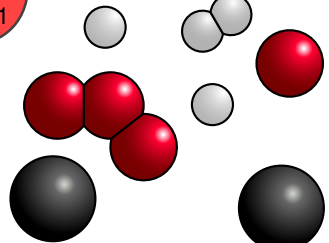
3 H₂





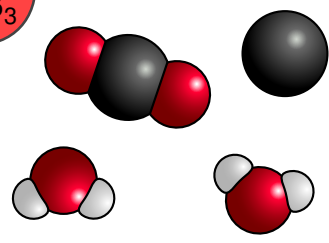


B₁



Un atome de carbone,
deux molécules d'eau,
une molécule de
dioxyde de carbone

B₃



2 CO
 $+ 2 \text{ H}_2\text{O}$

B₉

Deux molécules d'eau
et deux molécules de
monoxyde de carbone

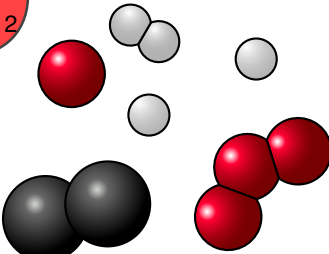
$\text{CO} + \text{CO}_2$
 $+ \text{H}_2\text{O} + \text{H}_2$

B₇

Une molécule de
dihydrogène, une molécule
d'eau, une molécule de
dioxyde de carbone
et une molécule de
monoxyde de carbone

$2 \text{ H} + \text{O}$
 $+ \text{H}_2 + \text{C}_2$
 $+ \text{O}_3$

B₁₂



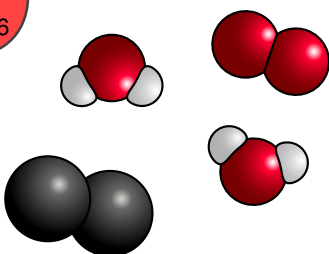
$\text{CO} + 2 \text{ H}$
 $+ \text{CO}_2$
 $+ \text{H}_2\text{O}$

B₈

Deux atomes
d'hydrogène, une molécule
d'eau, une molécule de
dioxyde de carbone
et une molécule de
monoxyde de carbone

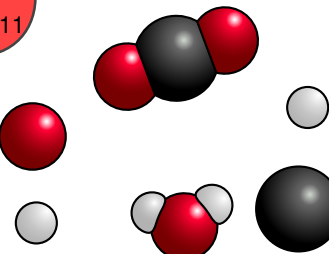
$\text{C}_2 + \text{O}_2$
 $+ 2 \text{ H}_2\text{O}$

B₆



Deux atomes d'hydrogène,
une molécule d'eau,
un atome d'oxygène,
une molécule de
dioxyde de carbone
et un atome de carbone

B₁₁



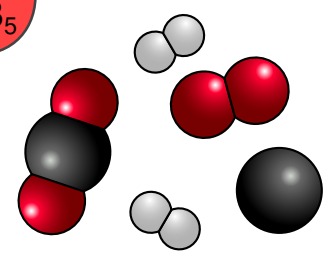
$\text{CO} + \text{H}_2\text{O}$
 $+ \text{H} + \text{H}_2$
 $+ \text{O}_2$

B₂

Une molécule de
dihydrogène, une molécule
d'eau, une molécule de
dioxygène, un atome
d'hydrogène
et une molécule de
monoxyde de carbone

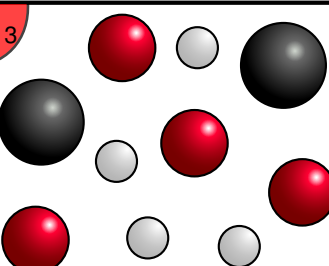
$\text{CO}_2 + 2 \text{ H}_2$
 $+ \text{C} + \text{O}_2$

B₅



Quatre atomes
d'hydrogène,
deux atomes de carbone
et quatre atomes
d'oxygène

B₁₃



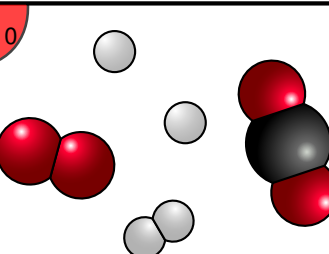
$\text{H}_2 + 2 \text{ H}$
 $+ 2 \text{ CO}_2$

B₁₄

Une molécule de
dihydrogène, deux atomes
d'hydrogène et
deux molécules de
dioxyde de carbone

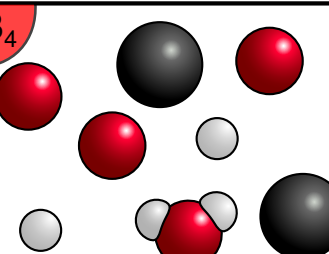
$\text{CO}_2 + \text{H}_2$
 $+ 2 \text{ H} + \text{O}_2$

B₁₀



Trois atomes d'oxygène,
une molécule d'eau,
deux atomes de carbone,
et deux atomes
d'hydrogène

B₄



Deux atomes de carbone,
deux atomes d'hydrogène,
une molécule d'ozone,
un atome d'oxygène
et une molécule
de dihydrogène