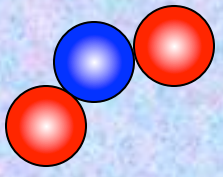
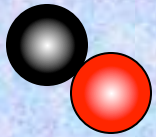
$$NO_2 + CO \rightarrow NO + CO_2$$

$NO_2 + CO \rightarrow NO + CO_2$

$NO_2 + CO \rightarrow NO + CO_2$





$$NO_2 + CO \rightarrow NO + CO_2$$

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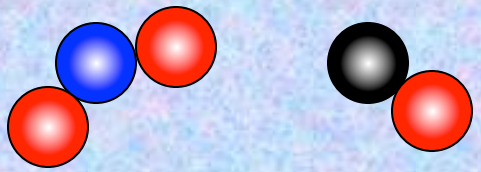
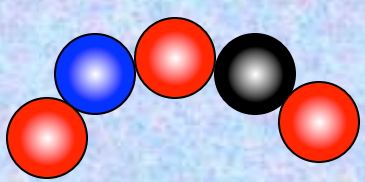
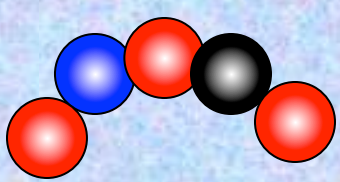


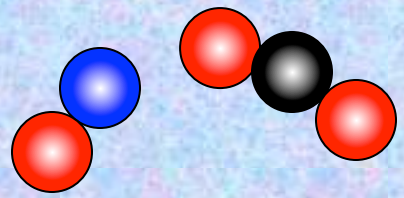
$$NO_2 + CO \rightarrow NO + CO_2$$



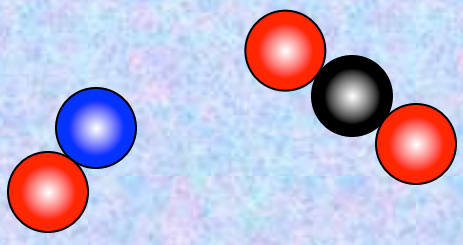
$$NO_2 + CO \rightarrow NO + CO_2$$



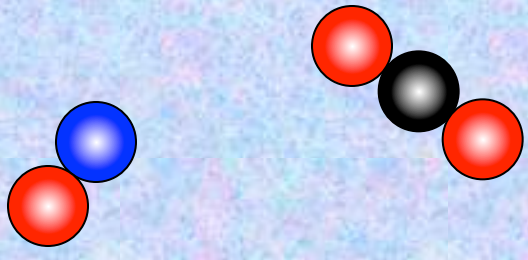
$$NO_2 + CO \rightarrow NO + CO_2$$



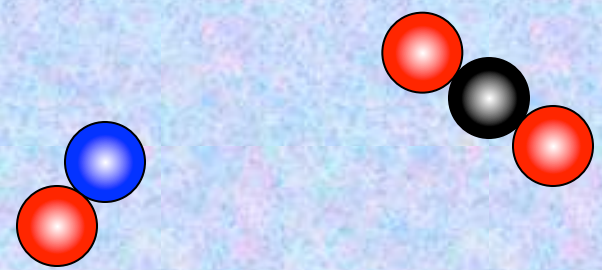
$$NO_2 + CO \rightarrow NO + CO_2$$



$$NO_2 + CO \rightarrow NO + CO_2$$

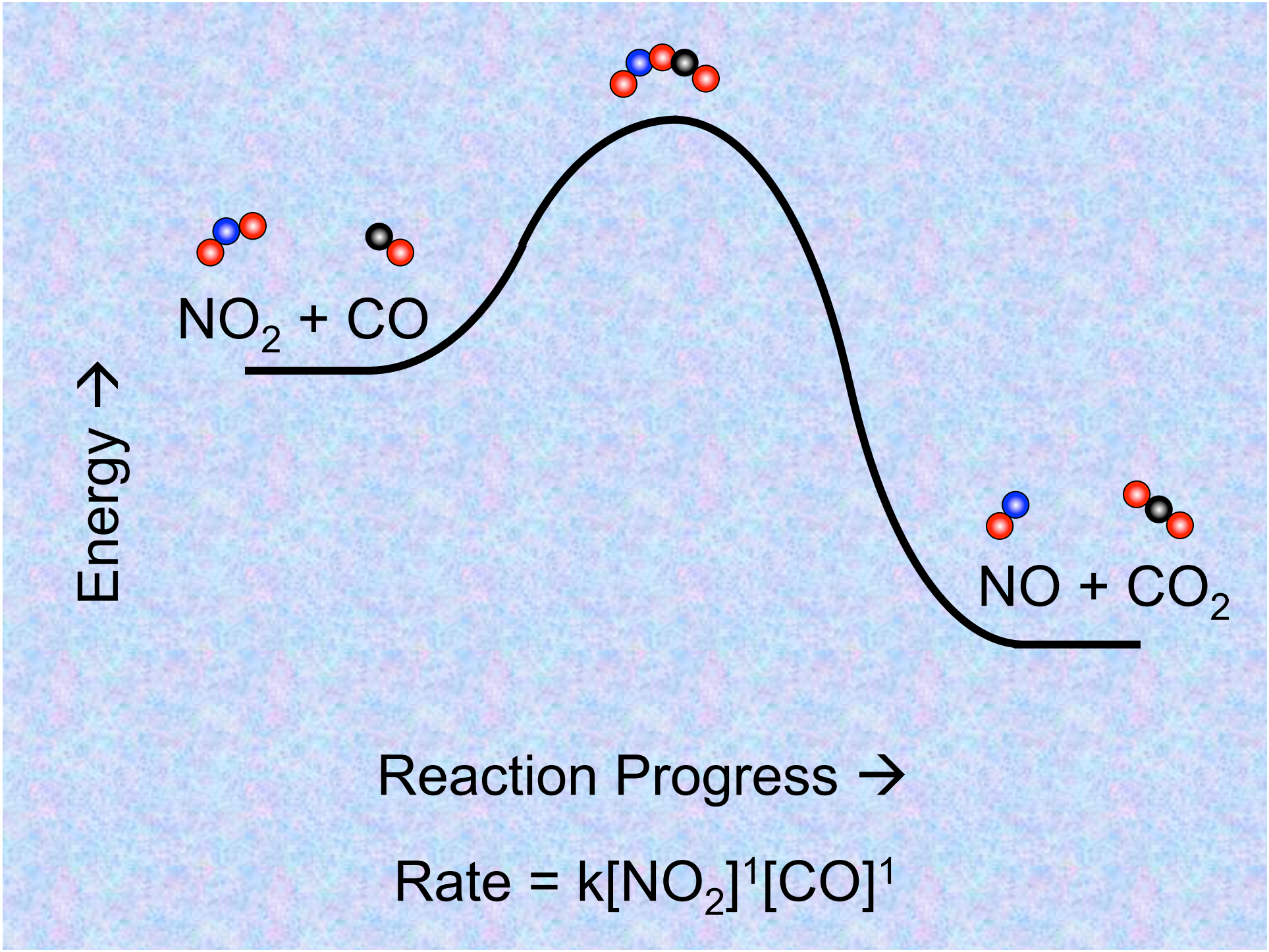


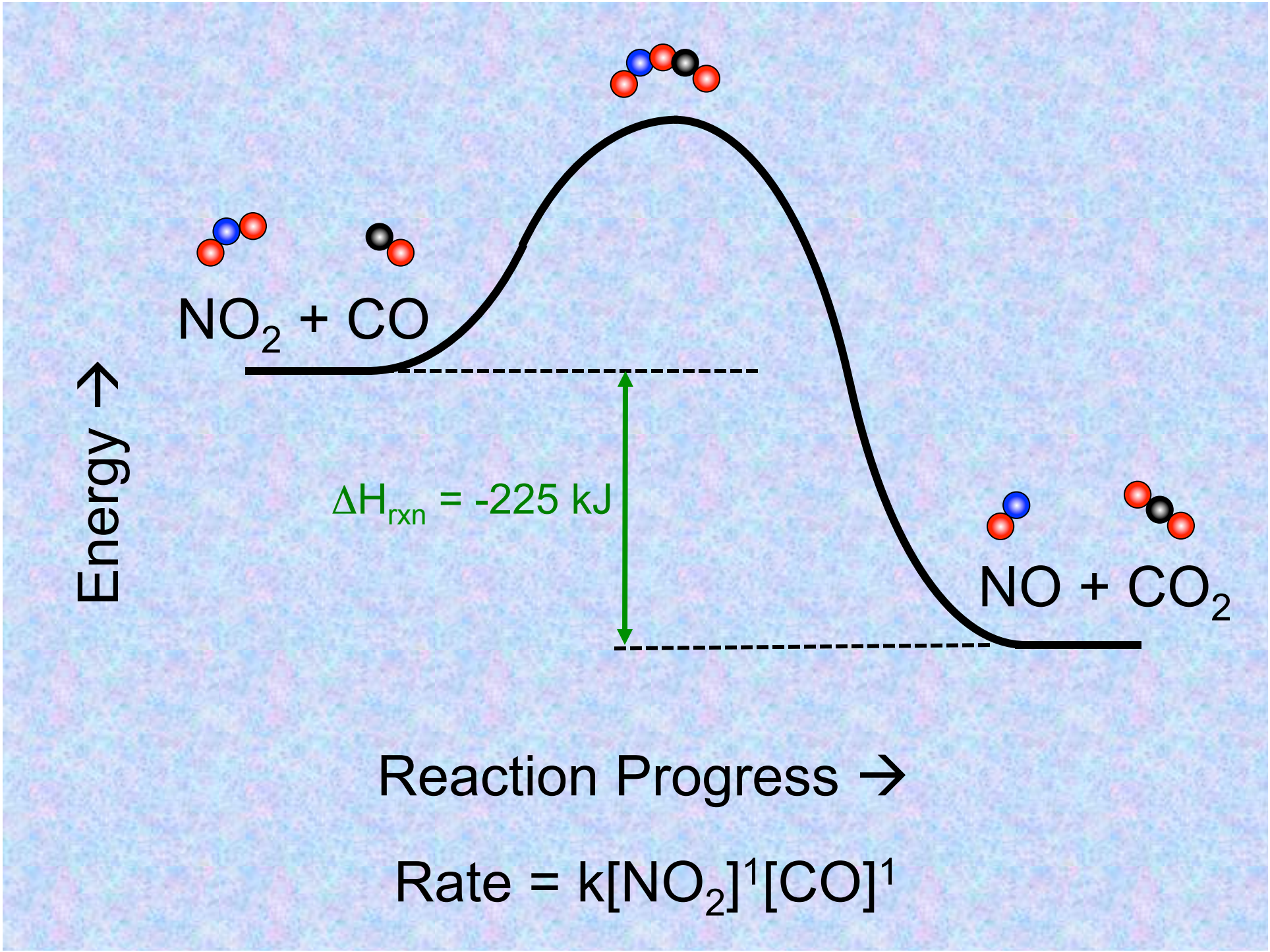
$$NO_2 + CO \rightarrow NO + CO_2$$

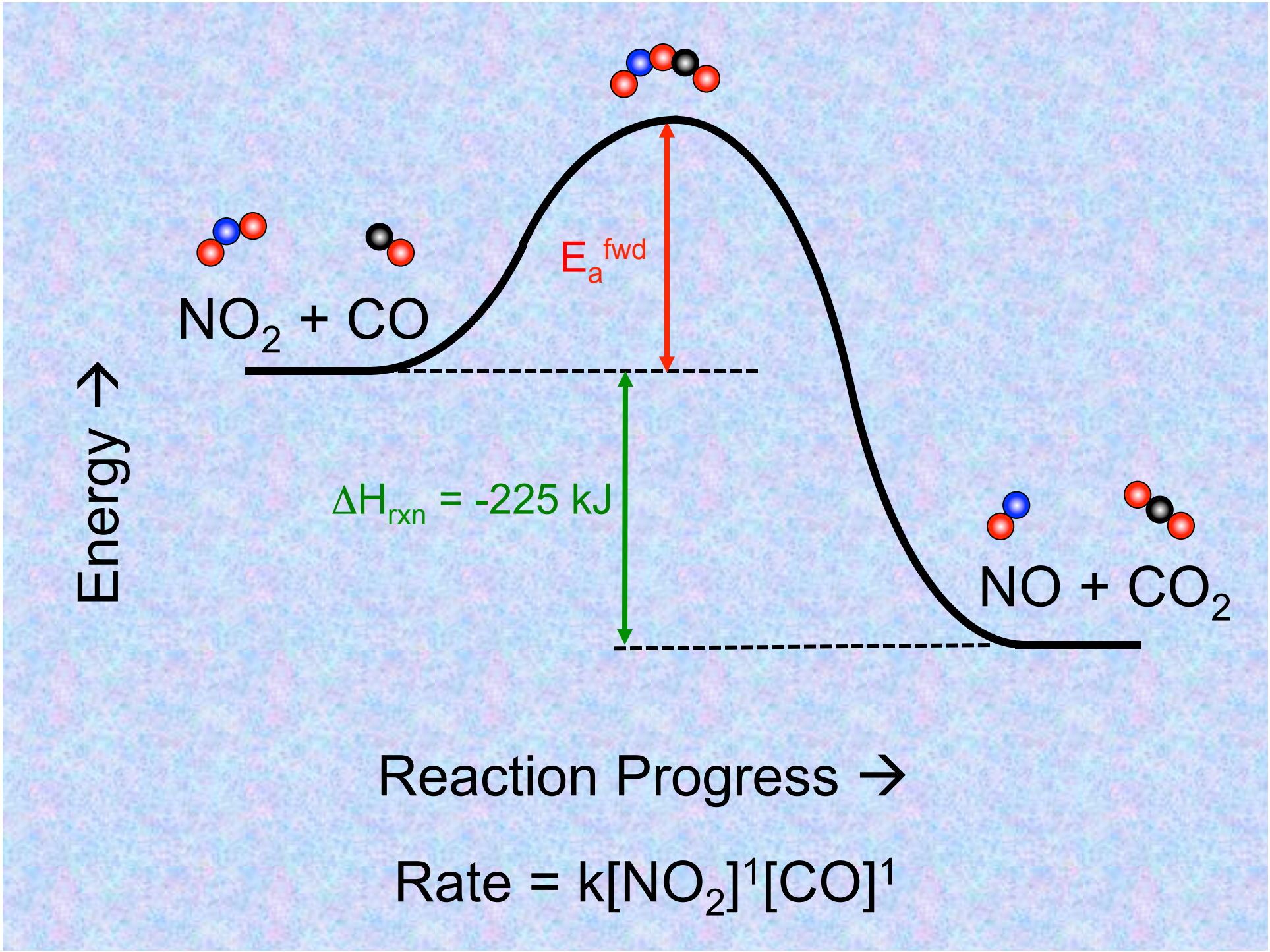


$$NO_2 + CO \rightarrow NO + CO_2$$

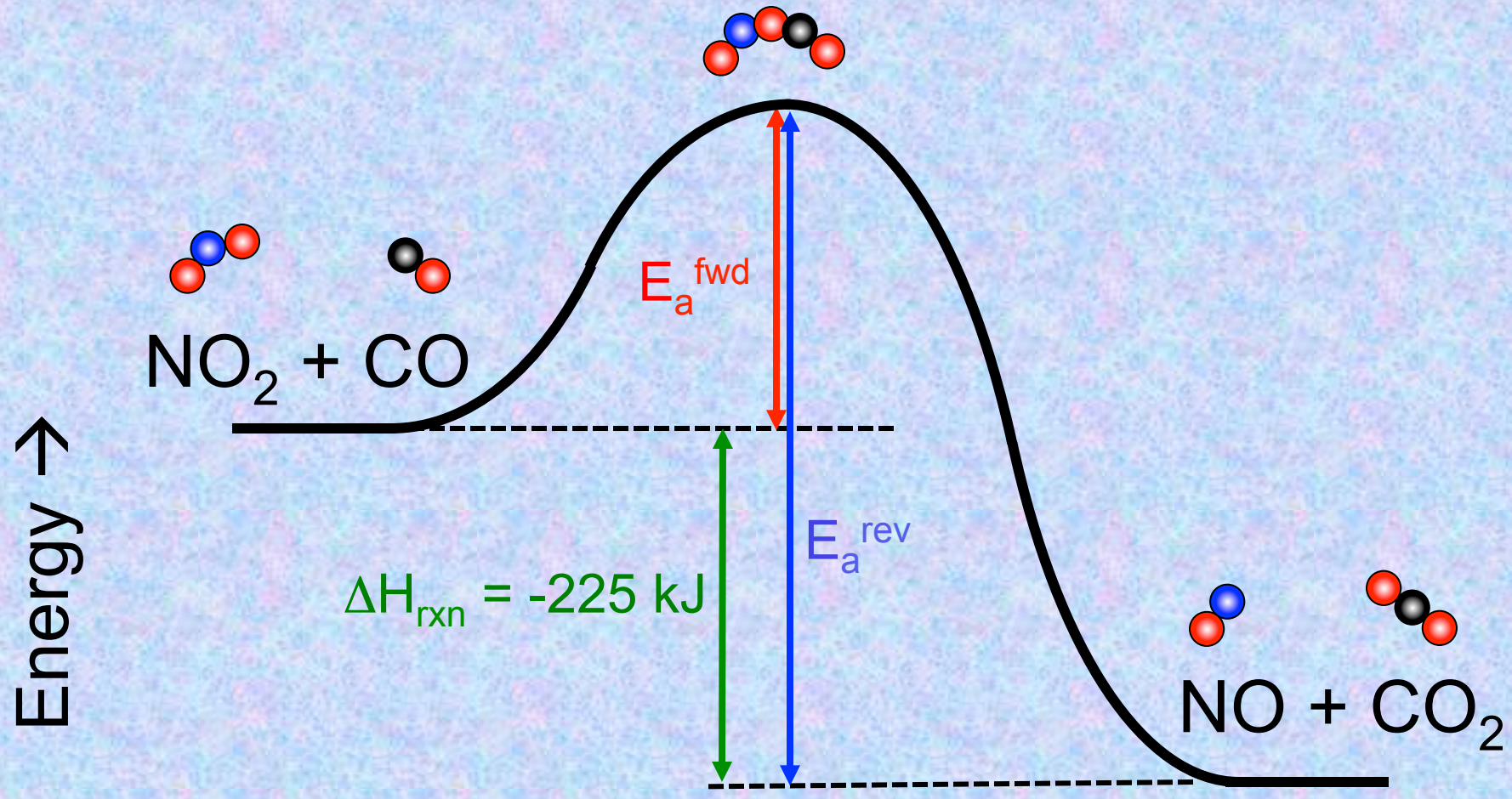
$$\text{Rate} = k[NO_2]^1[CO]^1$$


NO_2 + CO
Energy →
NO + CO_2
Reaction Progress →
Rate = $k[NO_2]^1[CO]^1$


$NO_2 + CO$
Energy →
ΔH_{rxn} = -225 kJ
$NO + CO_2$
Reaction Progress →
Rate = $k[NO_2]^1[CO]^1$



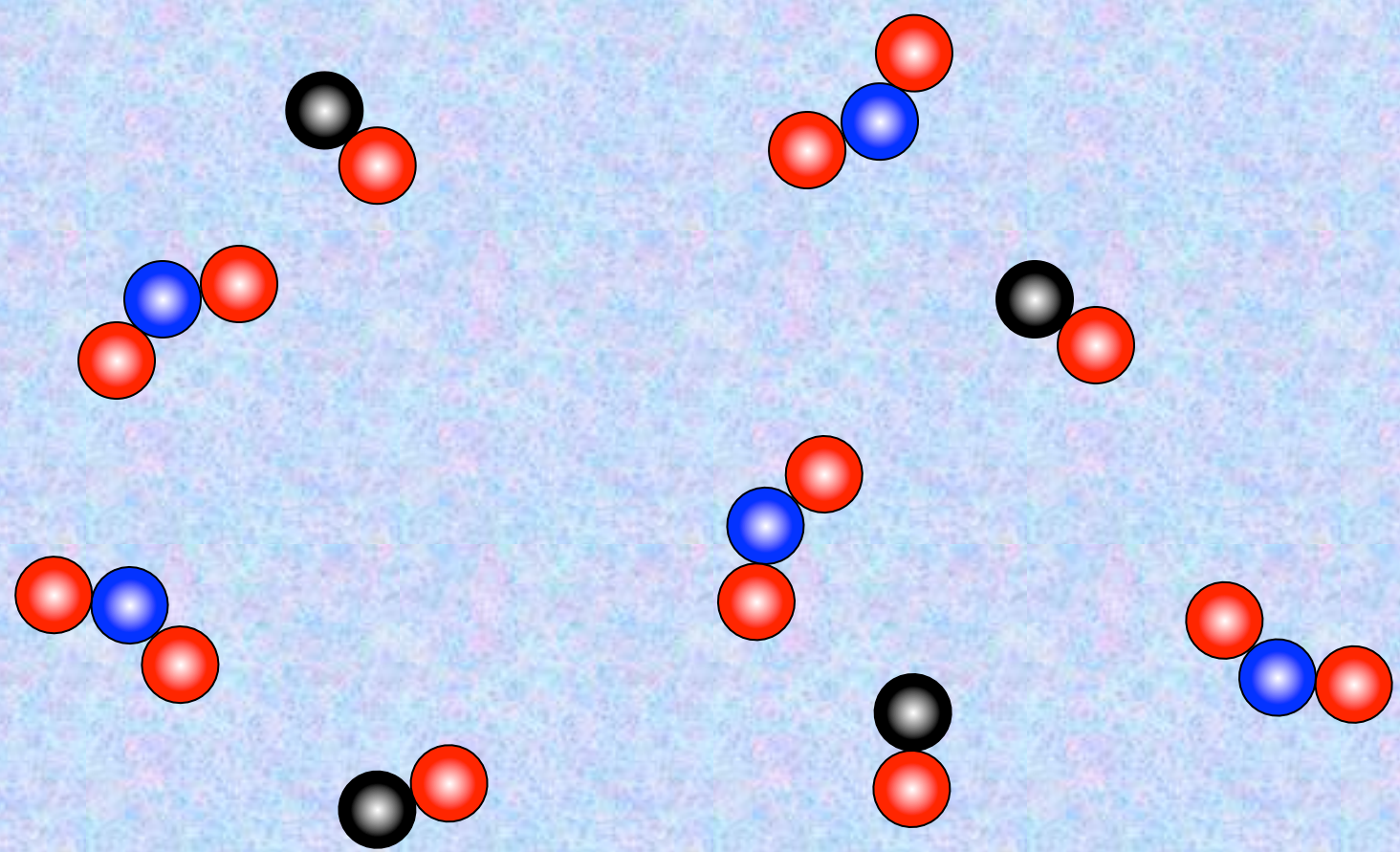
Rate = $k[NO_2]^1[CO]^1$



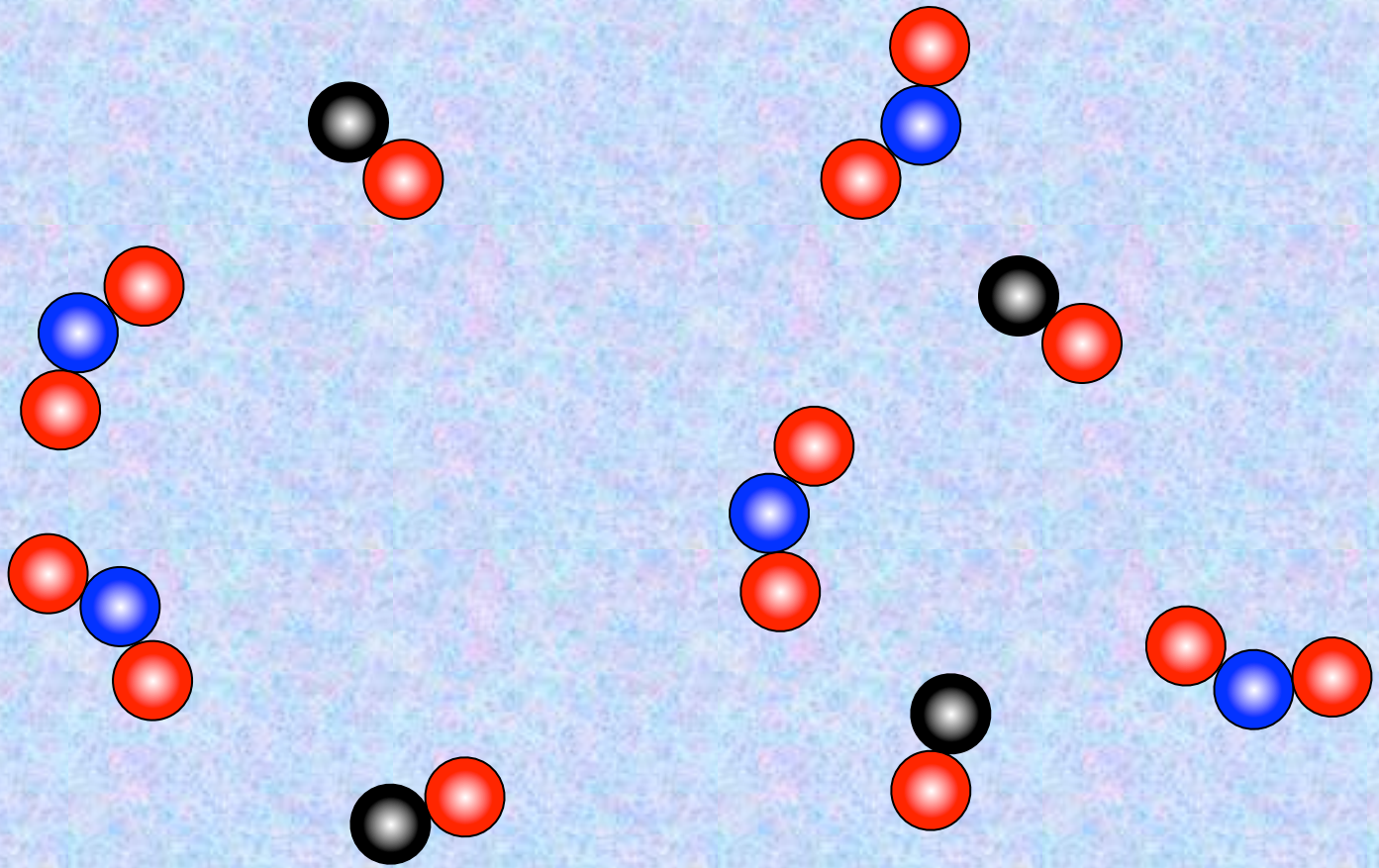
$NO_2 + CO \rightarrow NO + CO_2$ $\Delta H_{rxn} = E_a^{fwd} - E_a^{rev}$

$Rate = k[NO_2]^1[CO]^1$

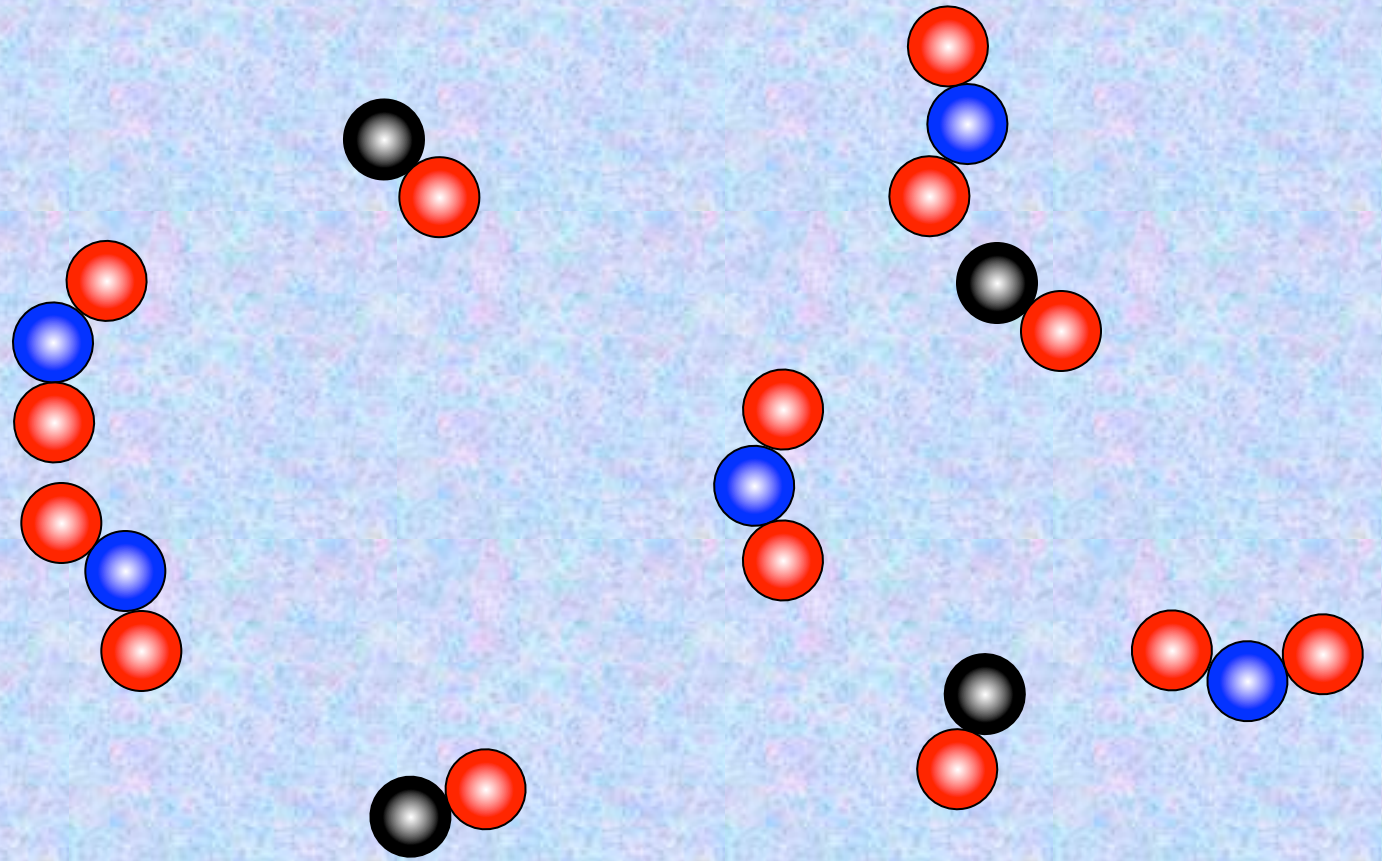
$NO_2 + CO \rightarrow NO + CO_2$



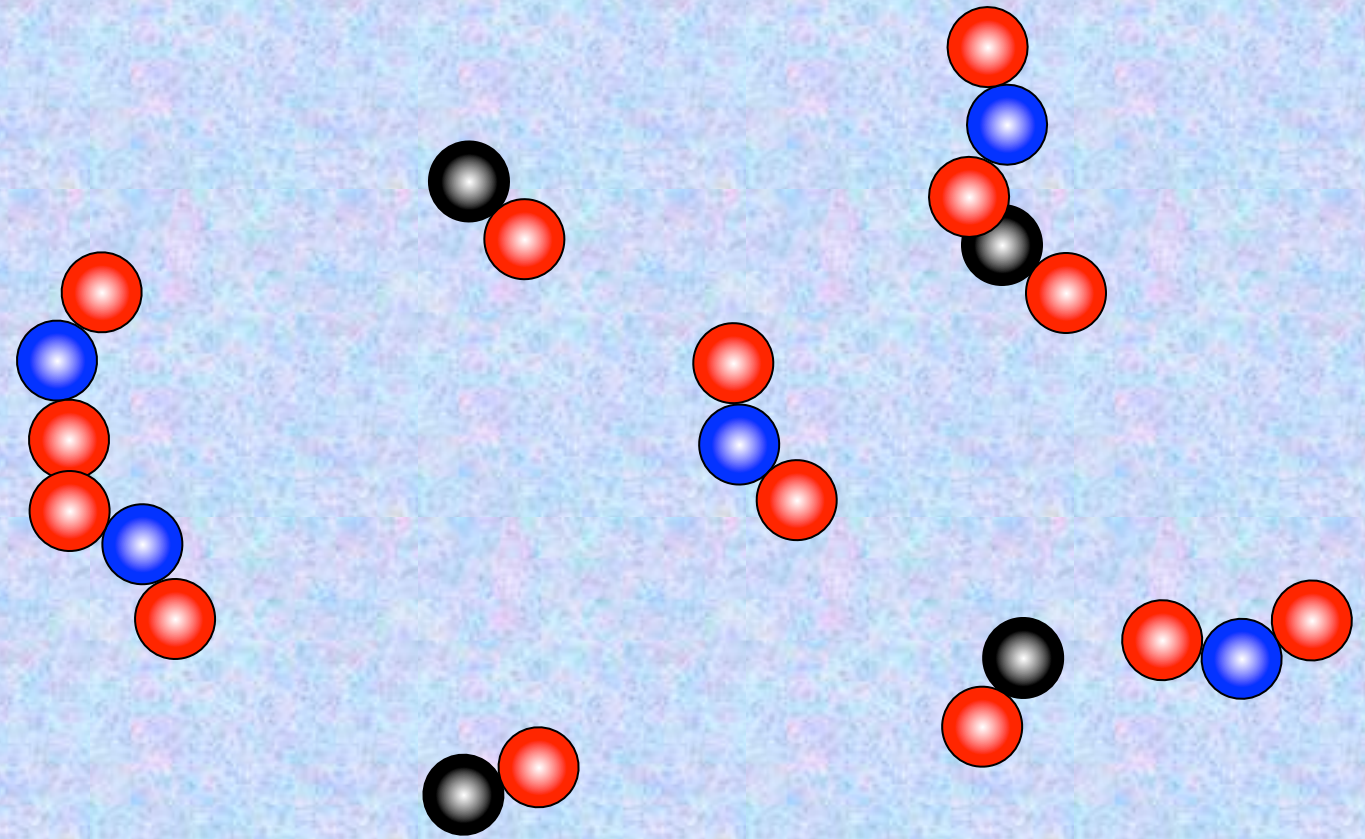
$NO_2 + CO \rightarrow NO + CO_2$



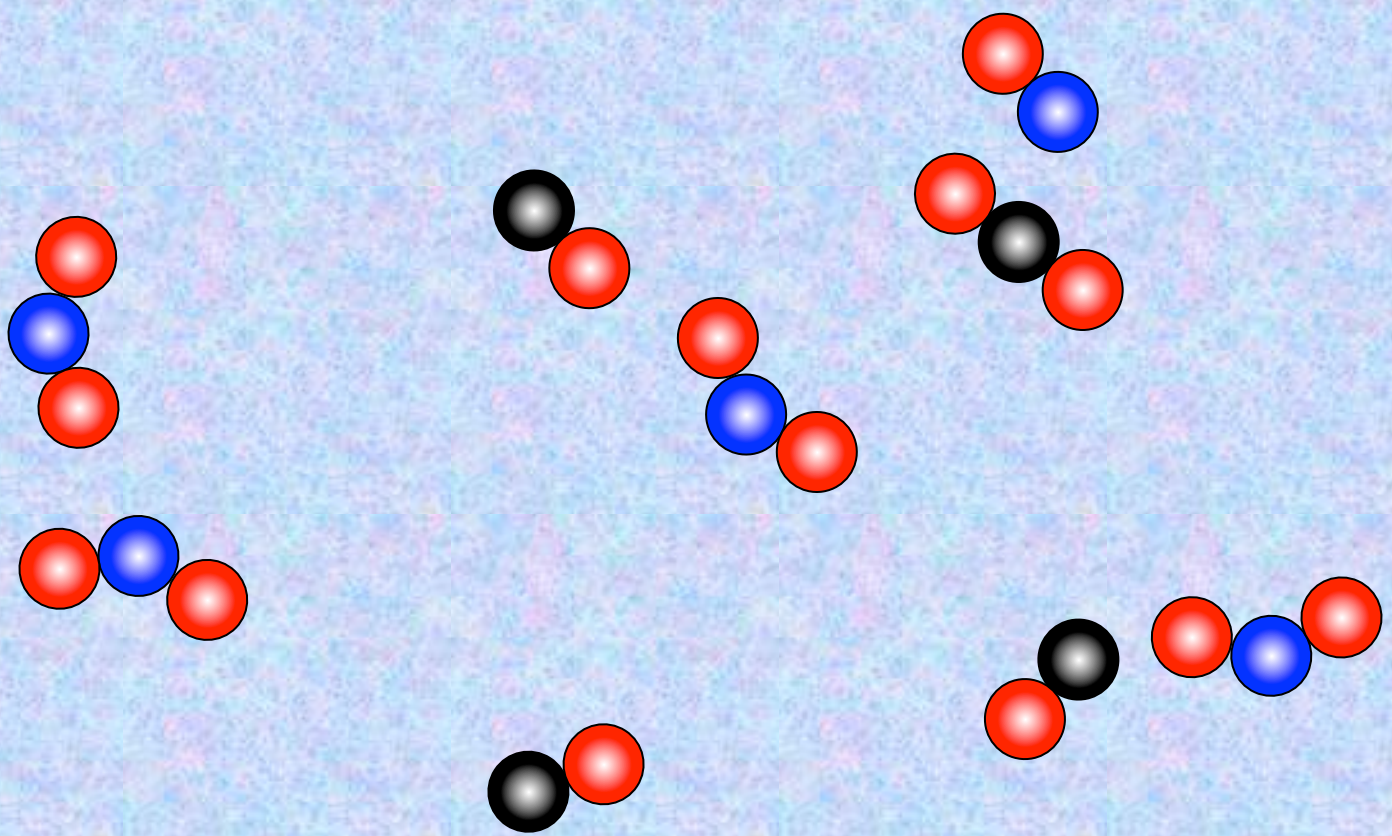
$NO_2 + CO \rightarrow NO + CO_2$



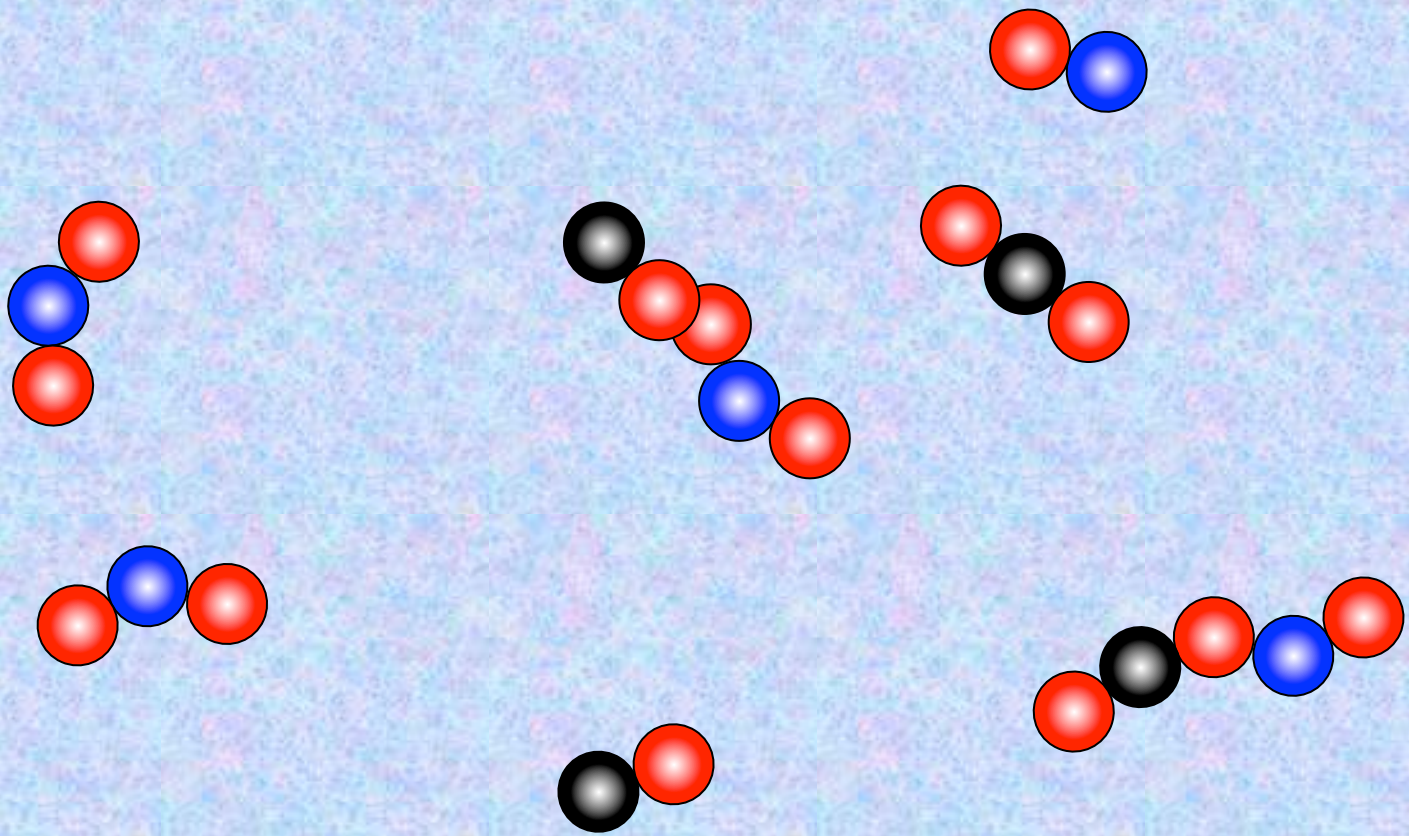
$$NO_2 + CO \rightarrow NO + CO_2$$



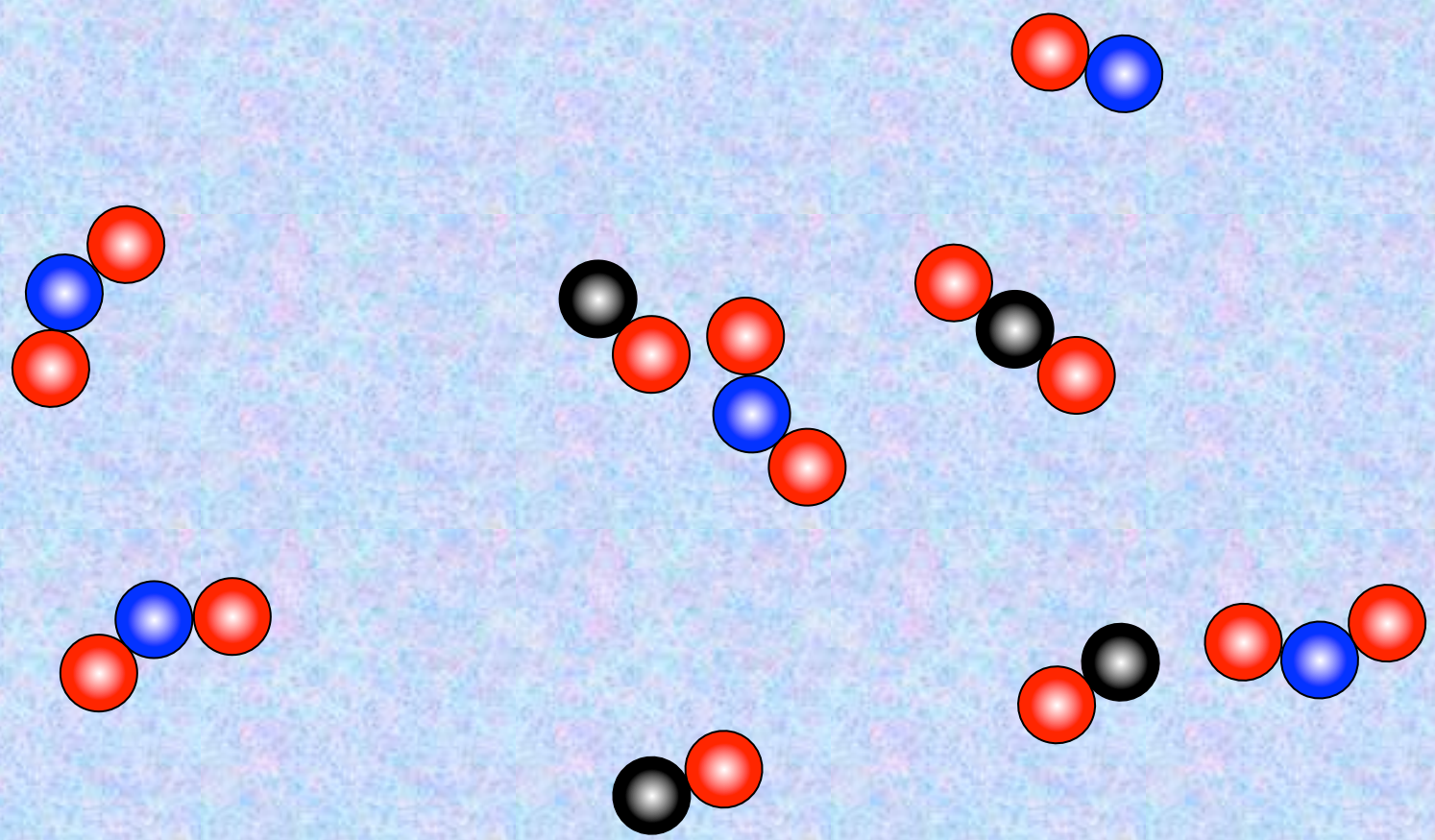
$$NO_2 + CO \rightarrow NO + CO_2$$



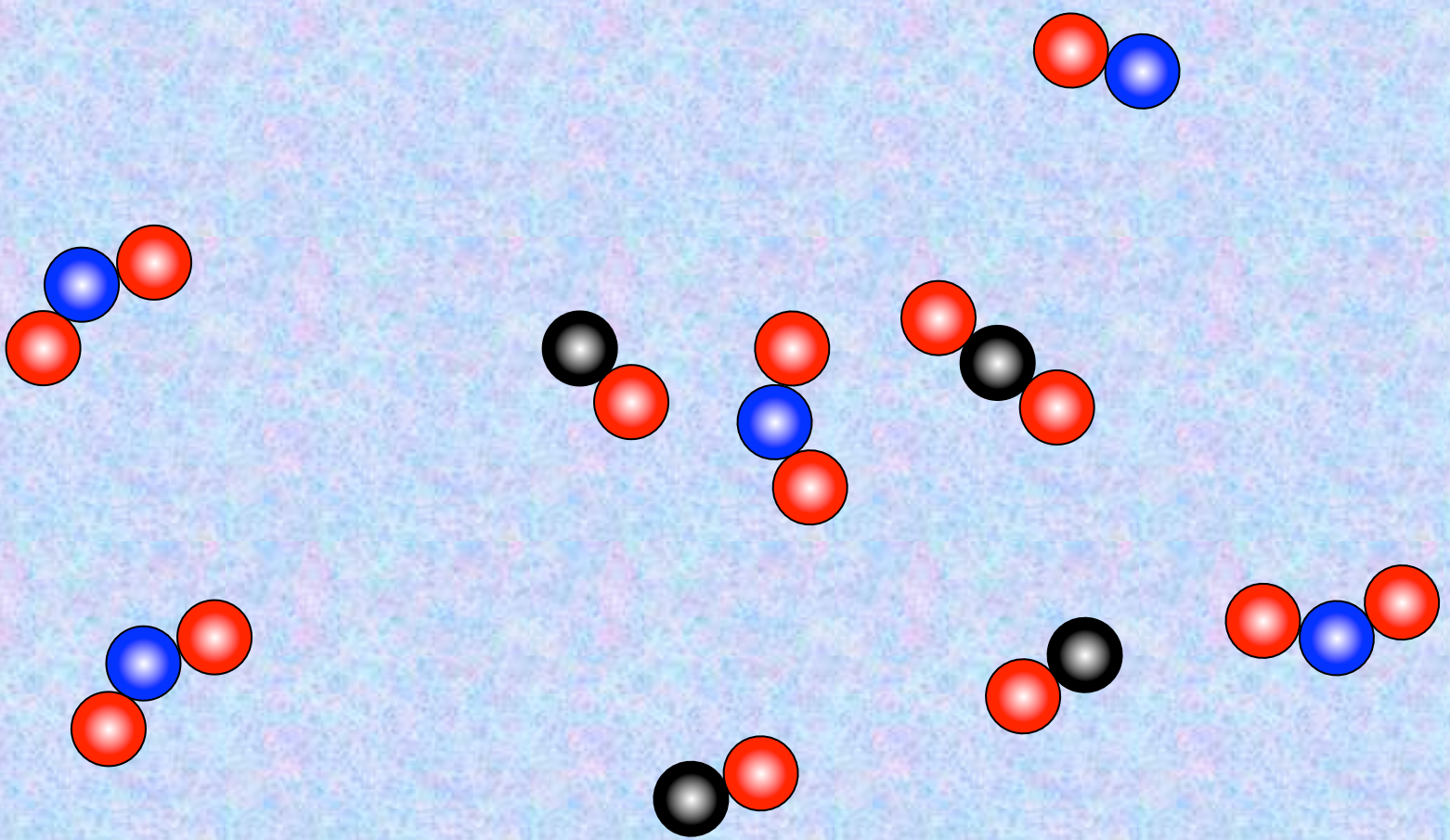
$$NO_2 + CO \rightarrow NO + CO_2$$



$NO_2 + CO \rightarrow NO + CO_2$



$NO_2 + CO \rightarrow NO + CO_2$



$$NO_2 + CO \rightarrow NO + CO_2$$

① How many effective collisions were observed?

② How many collisions were ineffective due to orientation?

③ How many collisions were ineffective due to inefficient energy?

④ How many collisions were non-productive due to collisions between like molecules?