Particle Models of Chemical Change Worksheet

Scoring guide · one credit per question · review written work against each rubric

Particle Models of Chemical Change

Question 1

Choice (4)

Each O_2 molecule has two oxygen atoms, so three molecules contain six atoms.

Question 2

$2H_2$ means two separate molecules with two H atoms each. H_4 would represent a single particle containing four H atoms.

Question 3

Choice (2)

A chemical reaction rearranges atoms. It conserves the number of atoms of each element.

Question 4

The oxygen counts differ. A chemical reaction rearranges atoms and conserves the count of each element, so complete panels must show the same number of O atoms.

Before and After a Model Reaction

Question 5

Choice (2)

The after panel shows two molecules with one O atom and two H atoms.

Question 6

Before: two H_2 give four H atoms and two O_2 give four O atoms. After: two H_2O give four H and two O, and the O_2 gives two more O. Both panels have four H and four O.

Question 7

Choice (2)

One pair of joined O atoms remains after the reaction.

Question 8

The equation is $2H_2 + O_2 \rightarrow 2H_2O$. Only one O_2 molecule reacts. The other is excess oxygen present in both the initial and final atom count.