

## Unit 5, Video 2: Chemical Reactions and Balancing

1. True or False: Bonds must be broken and new bonds formed in a chemical reaction.
2. How should water vapor appear in a chemical equation?
3. Use the examples in the video to balance the following equations:
  - $\text{N}_2 + \text{H}_2 \rightarrow \text{NH}_3$
  - $\text{C}_3\text{H}_8 + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$
4. True or False: When an element shows up in multiple places on the same side of a chemical equation, you should balance that element first.
5. Fill in the blank: When \_\_\_\_\_ stay the same on both sides of a reaction, it is simpler to consider them as one particle rather than as individual elements.
6. Use the examples in the video to balance the following equations.
  - $\text{Ca}(\text{NO}_3)_2 + \text{NaCl} \rightarrow \text{NaNO}_3 + \text{CaCl}_2$
  - $\text{C}_2\text{H}_6 + \text{O}_2 \rightarrow \text{CO}_2 + \text{H}_2\text{O}$
7. True or False: Coefficients should be whole numbers.