

# Balancing Equations

10SCIE - Fire & Fuels

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## Learning Outcomes

8. Write the word equation for complete combustion
  9. Write the balanced symbol equation for complete combustion
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## Starter

1. What are some key observations that would indicate incomplete combustion?
  2. What are some key observations that would indicate complete combustion?
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## Keywords

- **Reactants:** Butane, oxygen, hydrogen, vinegar etc.
  - **Products:** Carbon dioxide, water, carbon etc.
  - **Chemical Compound:**  $H_2O$ ,  $CO_2$ ,  $NH_3$ ,  $NaCl$  etc.
  - **Atom/Molecule:** H, C, O, Au, Ca
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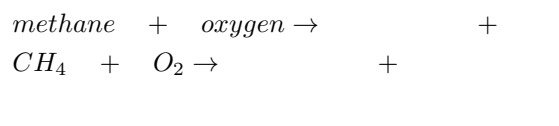
## Question

What happens to the atoms/molecules during a chemical reaction?

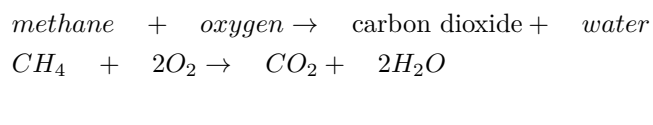
- No new atoms are created or destroyed
  - Mass of the reactants = mass of the products
  - The reactants change molecular structure
  - Two or more new products are made
  - The atoms are *rearranged*
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### Complete Combustion of Methane

Complete the word and balanced symbol equation for this reaction.

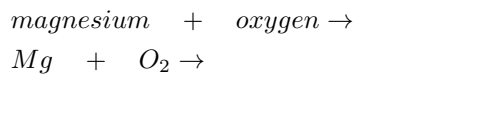


**Answer** Complete combustion of methane:

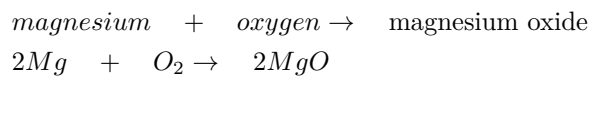


### Burning of Magnesium

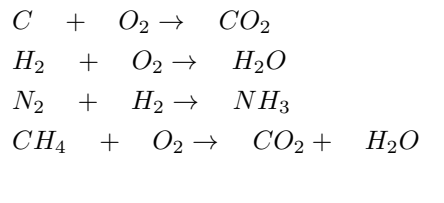
Complete the word and balanced symbol equation for this reaction.

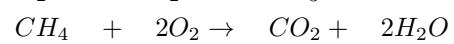
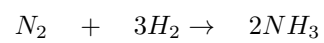
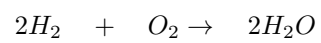
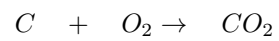


**Answer** Burning of Magnesium



**Balance these reactions:**



**Answer****Extra Work**

1. Page 9: Fuels & Combustion
2. Balancing Equations Worksheet