LESSON
94
DEMO

Fired Up!
Energy Changes

Name _____

Date _____ Period _____

Purpose

To experience firsthand a few reactions that transfer energy as heat and light.

Observations

Observe the demonstrations. Note whether you observe flames, sparks, a glow, or a sound.

Demo	Chemical equations	Observations
1 Safety match	(a) $P_4(s) + 5O_2(g) \longrightarrow 2P_2O_5(s)$ (matchbox) (b) $3S(s) + 2KClO_3(s) \longrightarrow 2KCl(s) + 3SO_2(g)$ (match tip) (c) $C_6H_{12}O_6(s) + 6O_2(g) \longrightarrow 6CO_2(g) + 6H_2O(g)$ (wood)	
2 Candle flame	$C_{25}H_{52}(s) + 38O_2(g) \longrightarrow 25CO_2(g) + 26H_2O(g)$	
3 Jet engine	$2CH_4O(l) + 3O_2(g) \longrightarrow 2CO_2(g) + 4H_2O(g)$	
4 Sugar sparks	$C_{12}H_{22}O_{11}(s) + 8KClO_3(s) \longrightarrow 8KCl(s) + 12CO_2(g) + 11H_2O(g)$	
5 Bubbles	$CH_4(g) + 2O_2(g) \longrightarrow CO_2(g) + 2H_2O(g)$	
6 Sparklers	$2Al(s) + KClO_3(s) \longrightarrow Al_2O_3(s) + KCl(s)$	

Analysis

1. Group the demonstrations into categories based on similarities. Create at least four groups. A demonstration can go into more than one group.

2. What types of substances react to produce flames?

3. **Making Sense** Explain why you can use a chemical reaction to cook your food. Provide an example of a reaction you might use, and justify your choice.

4. **If You Finish Early** How can you extinguish a fire? Explain your thinking.