WORKSHEET 9

EXPERIMENT: BURNING WOOD

Syllabus reference 8.5.4

INTRODUCTION

The main sources of the energy we use today are fossil fuels. Fossil fuels are mixtures of mainly hydrocarbons, and the energy is obtained by burning them. The combustion (burning) of these fuels produces heat energy, carbon dioxide and water. Often there is incomplete combustion of these fuels and soot is also formed.

Another important natural fuel is wood. For centuries humans have been collecting and burning wood to obtain energy to heat homes and cook food. When wood is burnt, ash is produced.

AIM

To observe mass changes during the combustion of wood.

SAFETY: Safety glasses must be worn during this experiment.

EQUIPMENT

- crucible
- Bunsen burner
- tripod
- gauze mat
- balance
- tongs
- small pieces of wood (wooden skewers or paddle pop sticks are good sources)

PROCEDURE

1. Weigh the empty crucible and then reweigh with wood in the crucible. (Note: You may need to break up the wood to fit it all in the crucible.)
2. Record the masses in your data table.

3 Place the crucible on the wire gauze on the tripod.

4 Turn the Bunsen burner to a blue flame and burn the wood. You will need to hold the Bunsen burner over the wood rather than try to burn from below. Record your observations.

5 Allow the crucible to cool.

6 Weigh the cool crucible and ash remains. Record this in your data table.

7 Calculate the mass of wood and mass of ash.

RESULTS

	MASS	MASS DIFFERENCE
Empty crucible		NA
Crucible and wood		
Crucible and ash		

OBSERVATIONS

QUESTIONS

1 What evidence was there that a chemical reaction had taken place?

2 Calculate the loss of mass which occurred during the reaction.

3 Calculate the percentage of mass lost.

4 Since this is a chemical reaction, explain why mass was apparently not conserved.

5 Suggest a reason for there being a solid residue at the end of this experiment.