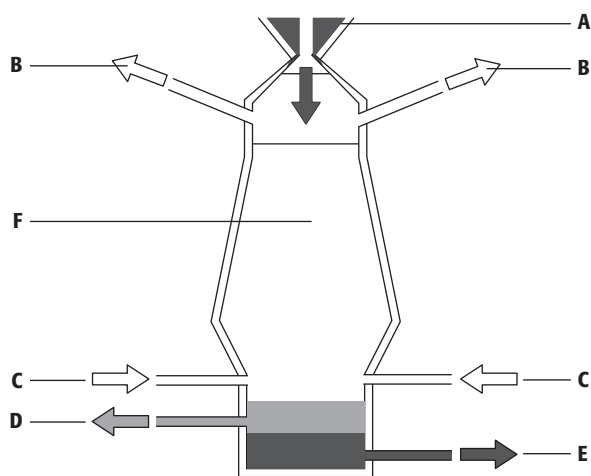


# Worksheet 9.1

## The blast furnace

- 1 Complete the following labels for the diagram of the blast furnace for extracting iron. The labels fit in places A–F on the diagram.

molten iron out      1500 °C      hot gases out      blast of hot air in  
 mixture of iron ore, coke and limestone in      molten slag out



A = .....      B = .....  
 C = .....      D = .....  
 E = .....      F = .....

- 2 Write balanced chemical equations for these reactions which occur in the blast furnace.

a Carbon and oxygen react to form carbon dioxide.

.....

b Carbon dioxide reacts with carbon to form carbon monoxide.

.....

c Hematite (iron(III) oxide) reacts with carbon monoxide to form iron and carbon dioxide.

.....

**d** Limestone (calcium carbonate) decomposes to form calcium oxide and carbon dioxide.

.....

**e** Calcium oxide reacts with impurities such as silica to form slag (calcium silicate).

.....