

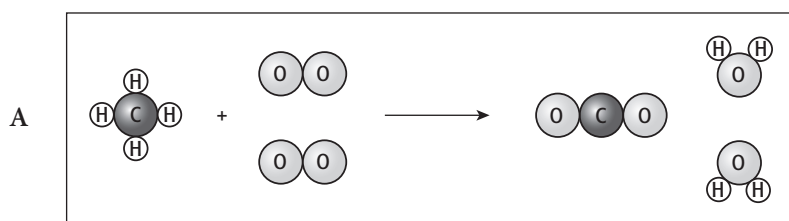
# Worksheet 4.1

## Recognising chemical reactions

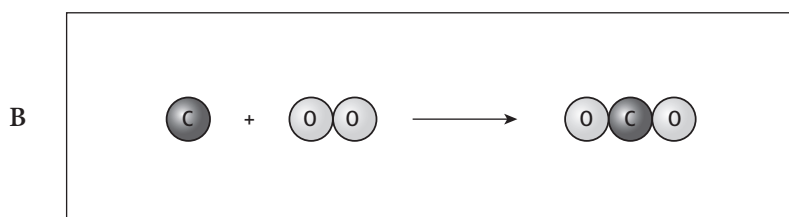
**1** In any chemical reaction, the properties of the reactants and products are different. New substances are made as the atoms combine in a different way to make the product(s). Burning (or combustion) is a reaction we are familiar with.

You need to be able to recognise diagrams showing the rearrangement of atoms during some chemical reactions.

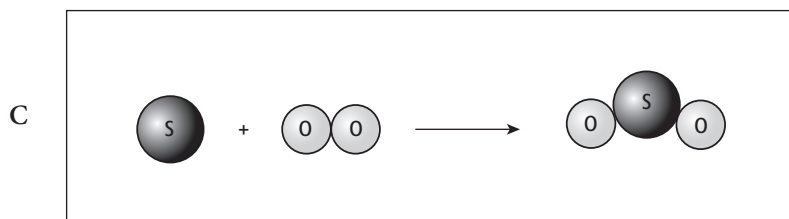
**a** Draw a line link each diagram to the description of the reaction it represents.



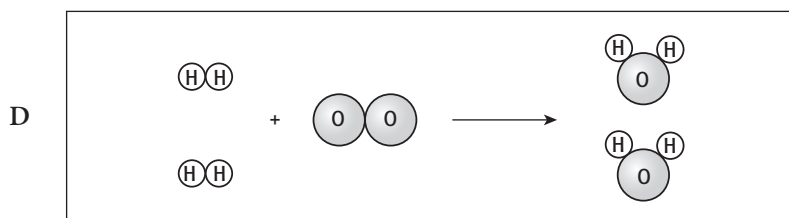
hydrogen burning with oxygen



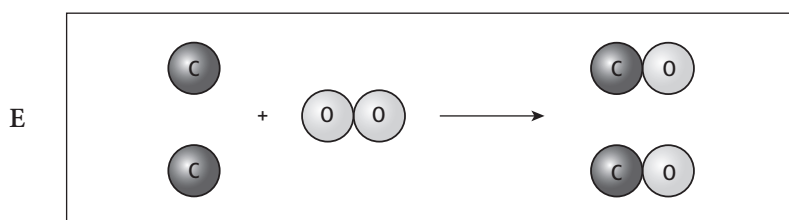
methane burning with oxygen



carbon burning with limited oxygen



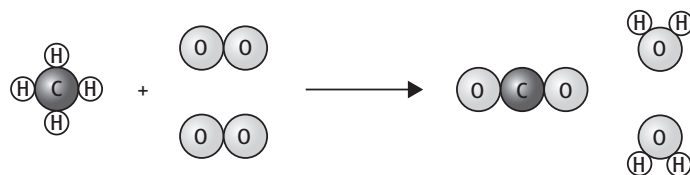
sulfur burning with oxygen



carbon burning with oxygen

- b Below are some statements about the reactions presented in part a. Identify which reaction (A–E) is being referred to in each case.
- i The reactants are gases and the product is liquid. ....
  - ii One reactant is a black solid and the product is a very poisonous gas. ....
  - iii The reactants are a yellow solid and a colourless gas, and the product dissolves in water to form an acid. ....
  - iv The reactants are a black solid and a colourless gas, and the product is a colourless gas that turns limewater milky. ....
  - v Two gases react together to form a liquid that turns anhydrous copper sulfate blue and a gas that turns limewater milky. ....

**2** In a chemical reaction, the numbers of atoms of each element must be the same in the products as in the reactants. Methane burns in oxygen to form carbon dioxide and water. The chemical reaction can be represented by:



Complete the boxes below by filling in the number of each type of atom in the reactants and in the products.

Number of atoms in reactants
C =
O =
H =

Number of atoms in products
C =
O =
H =