WORKSHEET 11

PHYSICAL AND CHEMICAL CHANGES

Syllabus reference 8.2.4

1 **Complete the blank spaces in the table below to identify the differences between physical and chemical changes.**

PHYSICAL CHANGES	CHEMICAL CHANGES
No new substances formed	
	Difficult to reverse
Relatively small energy changes	
	Mass conserved

2 **Classify each of the following as a physical or chemical change by placing the letter P (physical) or C (chemical) beside each one.**

a **Evaporation of perfume** _____

b **Tarnishing of silver** _____

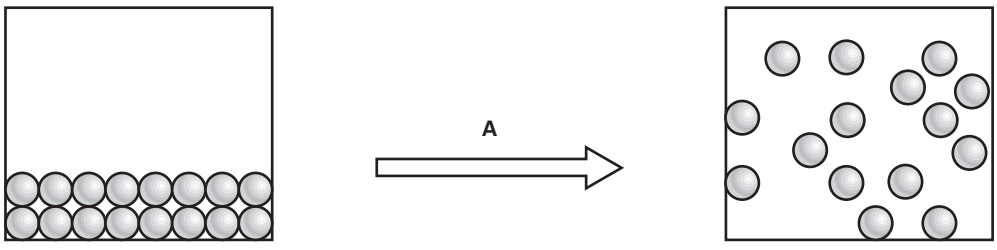
e **Photosynthesis** _____

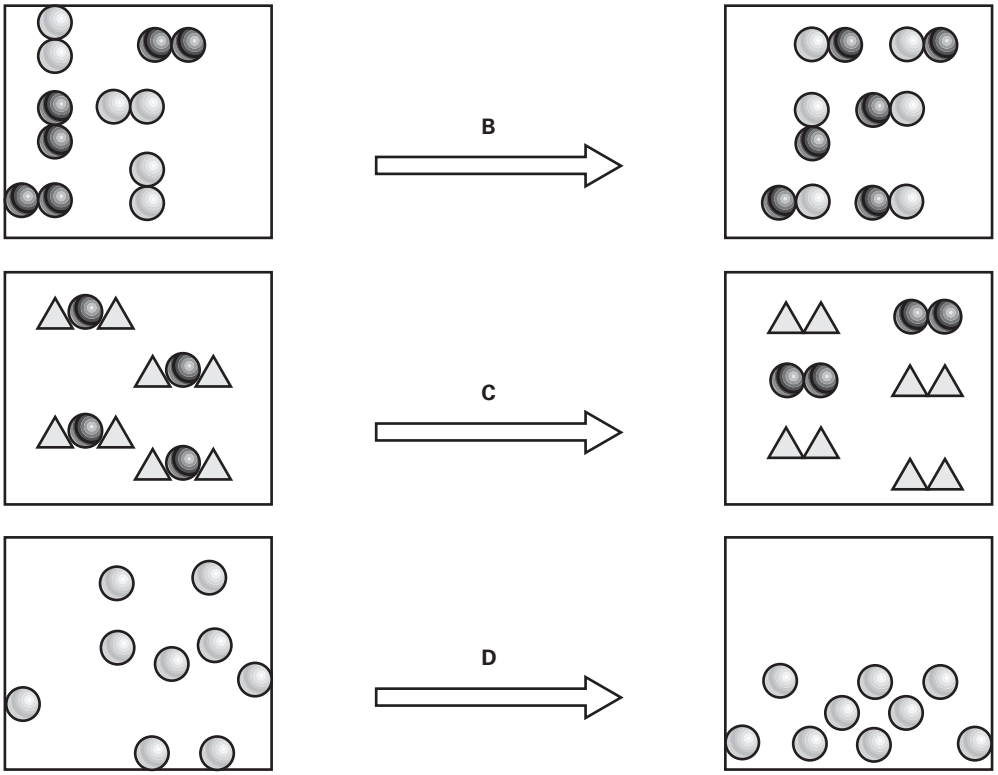
d **Dissolving salt in water** _____

e **Bleaching fabric** _____

f **Melting lead** _____

3 **The diagrams below represent particles of four substances which are undergoing change.**





Which of the processes A, B, C or D represent:

a a physical change _____

b a chemical change _____

c condensation _____

d decomposition _____

4 **Use the diagrams to complete the questions.**

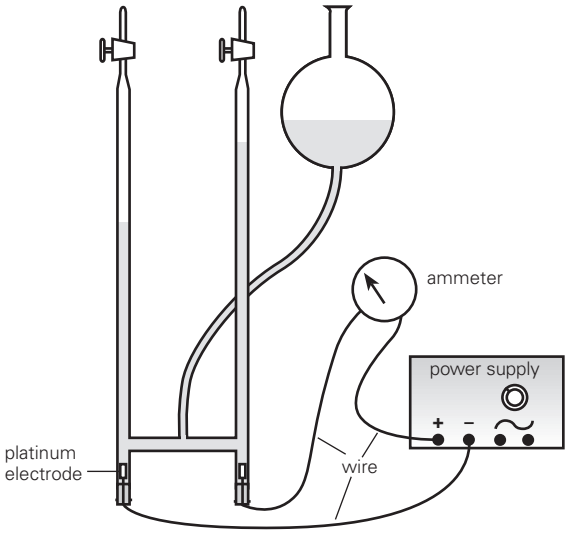


Diagram A shows the decomposition of water

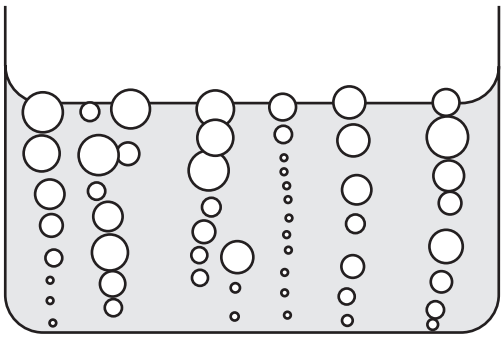


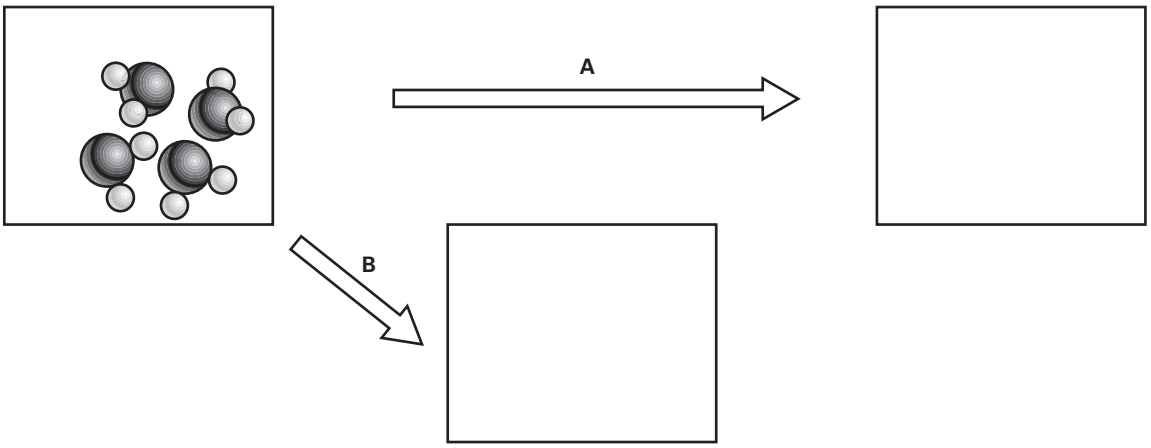
Diagram B shows water boiling

a **Complete the following:**

Diagram A shows a _____ change while diagram B shows a _____ change.

b Which of the above two changes involves the greater energy change? _____

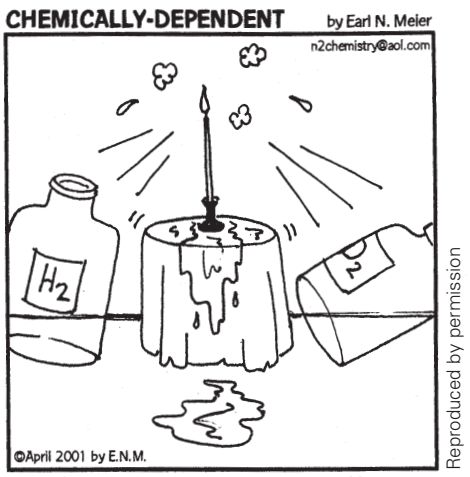
c Complete the following diagrams showing the changes in the particle arrangement for changes A and B.



d Process A needs 286 kJ energy while process B needs only 44 kJ of energy for the same amount of water. Explain the difference in these values in terms of the changes involved.

e Explain the relationship between the amount of energy needed to separate the atoms in a compound and the strength of the bond between atoms in that compound.

5 Explain why a candlelit dinner was not such a good idea.



A candlelit dinner seemed such a good idea to bring a little romance into their marriage.

6 Match the statement on the left with the most appropriate answer on the right. Write your answer in the space provided.

a Form of energy needed for electrolysis _____

b Needed to change liquid water into a gas _____

c Type of change represented by decomposition _____

d Type of change represented by freezing _____

e Form of energy used to decompose silver chloride _____

f Name of the type of reaction when aluminium is extracted from aluminium oxide _____

g Burning coal represents this type of reaction _____

Chemical
Decomposition
Light
Heat
Direct combination
Electricity
Physical