

# Science

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(Chapter – 3) (Atoms and Molecules)

(Class – IX)

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## Question 1:

In a reaction 5.3 g of sodium carbonate reacted with 6 g of ethanoic acid. The products were 2.2 g of carbon dioxide, 0.9g water and 8.2 g of sodium ethanoate. Show that these observations are in agreement with the law of conservation of mass.

*Sodium carbonate + ethanoic acid → sodium ethanoate + carbon dioxide + water*

## Answer 1:

In a reaction, sodium carbonate reacts with ethanoic acid to produce sodium ethanoate, carbondioxide, and water.

Sodium	+	Ethanoic	→	Sodium	+	Carbon	+	Water
Carbonate		acid		ethanoate		dioxide		

Mass of sodium carbonate = 5.3g (Given)

Mass of ethanoic acid = 6g (Given)

Mass of sodium ethanoate = 8.2g (Given)

Mass of carbon dioxide = 2.2 (Given)

Mass of water = 0.9g (Given)

Now, total mass before the reaction = (5.3 + 6)g

= 11.3g

and total mass after the reaction = (8.2 + 2.2 + 0.9)g

= 11.3g

Therefore, Total mass before the reaction = Total mass after the reaction

Hence, the given observations are in agreement with the law of conservation of mass.