

Nucleophilic Substitution

Pre-lesson assignment – Textbook page 231

Define the following terms

- Nucleophile
- Substitution reaction

Now watch the tutorial on Nucleophilic Substitution

Make notes on Nucleophilic substitution

Use the following questions as guidance.

1. Draw, **using displayed formula**, the molecule chloroethane.
2. Showing relevant dipoles and lone pairs, and using curly arrows to show the movement of lone pairs of electrons, show how an OH^- ion will react with chloroethene in a nucleophilic substitution reaction. Explain each step of the reaction as you go.
3. Show the mechanism for the reaction below:
 $\text{CH}_3\text{CH}_2\text{CH}_2\text{Cl} + \text{HCN} \rightarrow \text{CH}_3\text{CH}_2\text{CH}_2\text{CN} + \text{HCl}$
Bear in mind that in water $\text{HCN} \rightleftharpoons \text{H}^+ + \text{CN}^-$