

Fill in the blanks:

Mechanism for the  $S_N2$  Reaction

	$\text{HO}^- + \text{CH}_3\text{Cl} \longrightarrow \text{CH}_3\text{OH} + \text{Cl}^-$
Step	Mechanism
	<p>Transition state</p>
	<p>The negative hydroxide ion brings a pair of electrons to the partially positive <i>carbon/hydrogen</i> from the back side with respect to the leaving group. The chlorine begins to move away with the pair of electrons that bonded it to the <i>carbon/hydrogen</i>.</p> <p>In the transition state, a bond between oxygen and carbon is partially <i>broken/formed</i> and the bond between carbon and chlorine is partially <i>broken/formed</i>. The configuration of the carbon atom begins to invert.</p> <p>Now the bond between the oxygen and carbon has <i>departed/formed</i> and the chloride ion has <i>departed/formed</i>. The configuration of the carbon has inverted.</p>