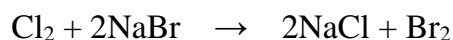


Chlorine is more reactive than bromine (you know this because chlorine is above bromine in group 7). Sodium bromide is a salt of bromine that will dissolve in water. So chlorine will displace bromine from sodium bromide solution.

This means that if chlorine (as a gas or dissolved in water) is added to sodium bromide solution, bromine forms and the mixture turns brown. We say that bromine has been displaced from sodium bromide. Displaced is just a chemist's word for pushed out. Here are the equations for the reaction:

chlorine + sodium bromide \rightarrow sodium chloride + bromine



You can see that the Cl and Br have swapped places. If you test different combinations of the halogens and their salts you can work out a reactivity series for the halogens. The most reactive halogen displaces all the other halogens from solutions of their salts, while the least reactive halogen is always displaced. It works just the same whether you use a sodium salt or a potassium salt.