Halogen Displacement Results **Answers**

A colour change will only occur if the halogen present in the halogen solution is **more reactive** than the halogen present in the potassium salt.

The combinations of solutions highlighted in the table below will not react. Since each of the solutions contain the same halogen, displacement will not occur. You can use these reactions as colour controls:

- After mixing, if the colour of the solutions remains the same as the highlighted mixture in that row, then no reaction has occurred. Write **no reaction** in the box.
- After mixing, if the colour of the solutions changes from the highlighted mixture in that row, then describe the colour change in the box.

	potassium chloride	**potassium bromide**	**potassium iodide**
chlorine water	no reaction	**turns yellow-orange**	**turns brown**
bromine water	**no reaction**	no reaction	**turns brown**
iodine solution	**no reaction**	**no reaction**	no reaction

Which is the most reactive of the three halogens? **chlorine**

Explain how you know. **Chlorine was able to displace both bromine and iodine from their potassium salts. Chlorine could not be displaced from its salt by either bromine or iodine. Therefore, chlorine must be more reactive than bromine and iodine.**

Which is the least reactive of the three halogens? **iodine**

Explain how you know. **Iodine was displaced from its salt by both chlorine and bromine. It was not able to displace either chlorine or bromine from their salts. So iodine must be less reactive than chlorine and bromine.**