The Reactivity Series

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This is for those who were away on the art trip to the Tate gallery at Liverpool to catch up on the work missed. You should copy these notes up into your book, filling in any gaps and answering questions, which should take less than one hour. Please email me if you have any questions, and note that this work may be included in the test on 13 December.

In this lesson, we found out what the reactivity series for metals is, learned about displacement reactions, and placed all the metals we have met so far into a series of reactivity.

We added the (more reactive) metal iron to a solution of copper sulphate.

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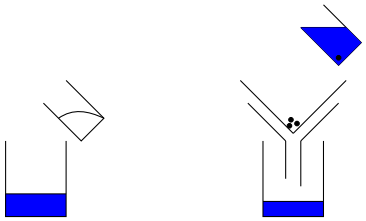
We found that when the iron filings were shaken in the copper sulphate solution, the iron filings turned an orange-brown copper colour, and the solution became warm. If enough iron was added, the copper was all removed from the solution, and it lost its blue colour of copper sulphate.

Iron + Copper $\square \longrightarrow \square$ + Iron sulphate

$\square + CuSO_4 \longrightarrow \square + FeSO_4$

1. How do we know there is a reaction when we add iron filings to copper sulphate?
2. Fill in the gaps in the word and symbol equations, and if necessary, balance.
3. Label the diagrams and fill in the blanks below.



In this $\square$ reaction, the iron displaced the $\square$ from the solution, leaving copper metal which we recovered by $\square$ and washing.

In general, more $\square$ metals can 'kick out' $\square$ reactive metals from a solution. This kind of reaction is called a displacement reaction.

[less, displacement, filtering, reactive, copper]

Reactivity series

The reactivity series is a list of the metals in the order of their reactivity. It is useful to predict what will happen in chemical reactions involving metals and their compounds. From the experiments we have done in class so far, our reactivity series now looks like this:

4. Add ‘Copper’, ‘Zinc’ and ‘Potassium’ to the reactivity series in the correct spaces.

Most reactive **Least reactive**

	Sodium	Lithium	Magnesium		Iron		Silver