FINDING THE KING!!!

$Cu + AgNO_3 \rightarrow$

- Copper is highest on the reaction series list so he is the KING
- I gave him a crown

Ask: Is the king in the compound?

  - Yes – no reaction, leave it alone
  - No – reaction will occur so we will criss-cross to predict the products

Ag gets bumped out so you have $Cu + AgNO_3 \rightarrow Ag +$ _____

Cu is Cu^{2+} and NO_3 is NO_3^{-1}

Criss cross: Cu_1 and $(NO_3)_2$

- Now you have $Cu + AgNO_3 \rightarrow Ag + Cu(NO_3)_2$

- you have to balance … $\_1\_Cu + \_2\_AgNO_3 \rightarrow \_2\_Ag + \_1\_Cu(NO_3)_2$

Example 1: Al + NaOH →

Who is the king??

- Na is the king
- He is in the compound so therefore no reaction!

NOTE: *Single replacement reactions are irreversible because the more reactive metal is already in the compound*

Example 2: $Li + CaCl_2$

Who is the king??

- Li is the king
- Li has +1 charge and Cl has -1 charge
- $Li + CaCl_2 \rightarrow Ca + LiCl$
  - Balance: $\_2\_Li + \_1\_CaCl_2 \rightarrow \_1\_Ca + \_2\_LiCl$