



Chem to Go

- For the highest electrical potential, should an electrochemical cell's two metals be close together or far apart on the activity series? Explain.
- Predict whether the electrical potential of cells composed of these metal pairings will be higher or lower than that of the pairs you tested:
 - Zn and Cr
 - Zn and Ag
 - Sn and Cu
- Notice that silver, platinum, and gold have good reduction potential. Why are these elements not generally found in batteries?
- Predict the direction of electron flow in an electrochemical cell made from each pair of metals in solutions of their ions.
 - Mg and Cu
 - Zn and Cu
 - Ag and Mg
- Identify the anode and the cathode for the metal pairs in *Question 4*.
 - Write the half-reactions for each metal pair in *Question 4*.
- List some of the pros and cons of batteries. Consider cost, size, and disposal issues, among others.
- Which half-reaction correctly represents reduction?
 - $\text{Ag} \rightarrow \text{Ag}^+ + \text{e}^-$
 - $\text{Au}^{3+} + 3\text{e}^- \rightarrow \text{Au}$
 - $\text{F}_2 \rightarrow 2\text{F}^- + 2\text{e}^-$
 - $\text{Fe}^{2+} \rightarrow \text{Fe}^{3+} + \text{e}^-$
- Which reaction is an example of an oxidation-reduction reaction?
 - $\text{AgNO}_3 + \text{KI} \rightarrow \text{AgI} + \text{KNO}_3$
 - $\text{Cu} + 2\text{AgNO}_3 \rightarrow \text{Cu}(\text{NO}_3)_2 + 2\text{Ag}$
 - $2\text{KOH} + \text{H}_2\text{SO}_4 \rightarrow \text{K}_2\text{SO}_4 + 2\text{H}_2\text{O}$
 - $\text{Ba}(\text{OH})_2 + 2\text{HCl} \rightarrow \text{BaCl}_2 + 2\text{H}_2\text{O}$
- Where does oxidation occur in an electrochemical cell?
 - at the cathode
 - at the cathode and the anode in the electrolytic cell
 - at the anode
 - neither the cathode nor the anode

Inquiring Further

Storing batteries

Design and conduct a test for determining the best way to store batteries in order to extend their life.