The diagram shows a Lithium/Gold battery. The metals are placed in lithium nitrate and gold (I) nitrate solutions.

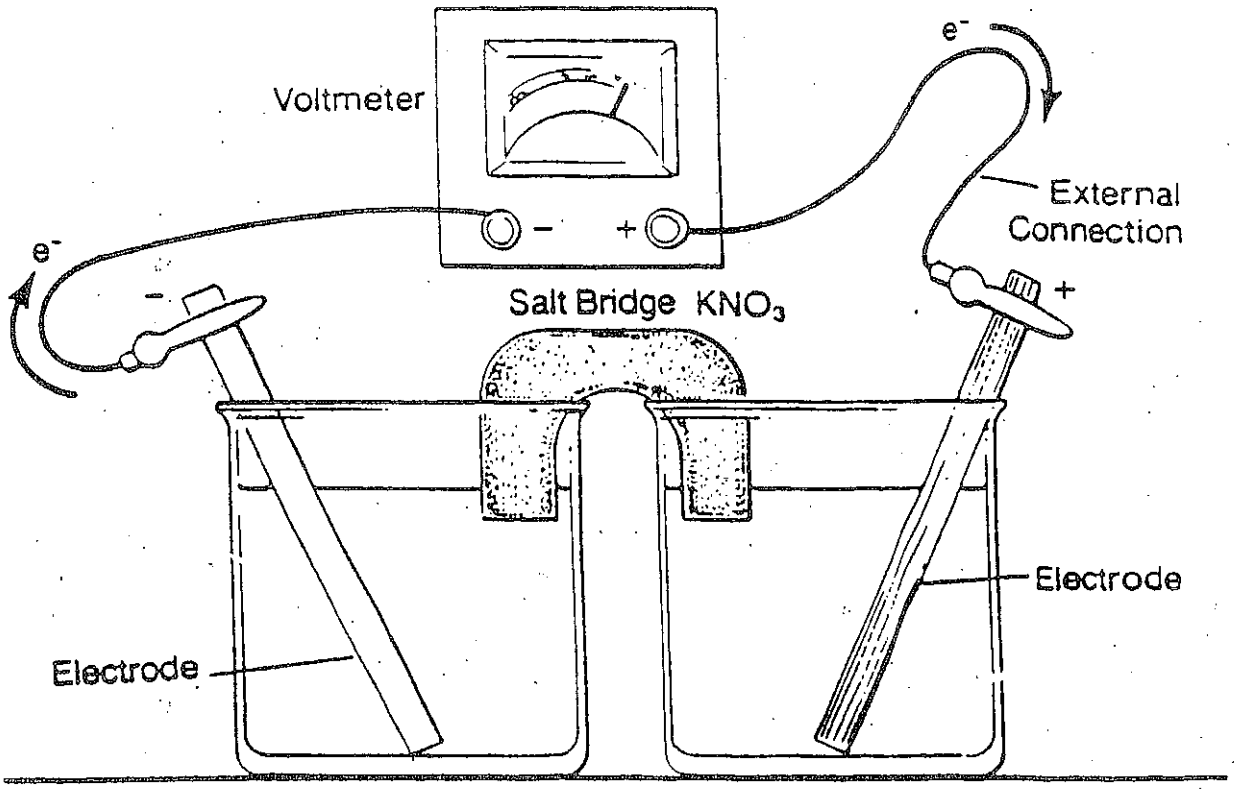
1. Label the metal electrodes and solutions.

2. Label the anode and cathode.

3. Write the half-reactions for each electrode:

4. What is the purpose of the salt bridge?

5. What is the expected voltage of the cell?



15-2 Skillsheet

Table 15-1 Half-Reaction Potentials

Half-Reaction	E^0 (V)
$Ag^+ + e^- \longrightarrow Ag$	0.799
$Au^+ + e^- \longrightarrow Au$	1.691
$Co^{2+} + 2e^- \longrightarrow Co$	−0.277
$Cr^{2+} + 2e^- \longrightarrow Cr$	−0.900
$Cu^{2+} + 2e^- \longrightarrow Cu$	0.337
$Fe^{2+} + 2e^- \longrightarrow Fe$	−0.440
$Ga^{3+} + 3e^- \longrightarrow Ga$	−0.529
$Hg^{2+} + 2e^- \longrightarrow Hg$	0.854
$In^{3+} + 3e^- \longrightarrow In$	−0.343
$Li^+ + e^- \longrightarrow Li$	−3.045
$Mg^{2+} + 2e^- \longrightarrow Mg$	−2.363
$Mn^{2+} + 2e^- \longrightarrow Mn$	−1.185
$Pd^{4+} + 2e^- \longrightarrow Pd^{2+}$	1.263
$Pt^{2+} + 2e^- \longrightarrow Pt$	1.188
$Sc^{3+} + 3e^- \longrightarrow Sc$	−2.077