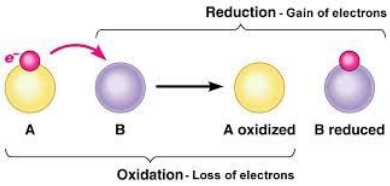
Unit 5: Electrochemistry

Name _____ Pd _____

- Electricity and RedOx

Topic(s):	Details:
Electricity	❏ Electricity is defined as the _____ of _____ through the movement of _____.
	❏ In Chemistry, movement of _____ between atoms happens when forming _____ and _____ ions.
	❏ This process of moving electrons is also called _____ and _____.
Oxidation and Reduction - RedOx 	❏ Oxidation is the process of _____ electrons. ❏ When an atom _____ electrons it forms a _____ ion (cation). ❏ **Ex**: ❏ The electron is shown on the _____ side because it comes _____ of Sodium in the process.
	❏ Reduction is the process of _____ electrons. ❏ When an atom _____ electrons it forms a _____ ion (anion). ❏ **Ex**: ❏ The electrons are shown on the _____ side because they are _____ to the Oxygen in the process.
	❏ **Note**: # of _____ in the _____ must equal # of _____ required to change the _____.
	←Now, write the pneumonic device we use to remember oxidation and reduction to the left!

Redox Practice	$Mg \rightarrow Mg^{2+}$
	$F \rightarrow F^{1-}$
	$Al \rightarrow Al^{3+}$
	$S \rightarrow S^{2-}$
SUMMARY: Take a moment to summarize what you learned in this section of notes!	

RedOx Practice Problems:

1. **Define** the process of **oxidation** in terms of :

   a) transfer (gain or loss) of electrons _____

   b) decrease or increase in charge/oxidation number _____

2. **Define** the process of **reduction** in terms of :

   a) transfer (gain or loss) of electrons _____

   b) decrease or increase in charge/oxidation number _____

3. Identify the following (some are half reactions) as involving either **oxidation** or **reduction** or **neither**:

   a) $Mg\ (s) \rightarrow Mg^{2+}(aq) + 2e^-$ _____

   b) $Cu^{2+}(aq) + 2e^- \rightarrow Cu(s)$ _____

   c) $Fe(s) \rightarrow Fe^{2+}(aq) + 2e^-$ _____

4. Complete the half reactions by writing the proper amounts of electrons on the proper side and identify each half reaction as either an **oxidation** or **reduction** reaction by circling the correct term.

(i) $Na\ (s) \rightarrow Na^{+}\ (aq)$ Oxidation or Reduction

(ii) $Mg^{2+}(aq) \rightarrow Mg\ (s)$ Oxidation or Reduction

(iii) $Fe\ (s) \rightarrow Fe^{3+}(aq)$ Oxidation or Reduction

(iv) $2Cl^{-}\ (aq) \rightarrow Cl_2\ (g)$ Oxidation or Reduction

vii) $2F^{-}\ (aq) \rightarrow F_2\ (g)$ Oxidation or Reduction

viii) $Cu^{2+}\ (aq) \rightarrow Cu(s)$ Oxidation or Reduction