



Cycle 7 Chemistry 2 Lesson 5

AGENDA – Using the Activity Series to predict redox reactions

Warmup: Consider the single displacement reaction



What is oxidized in this reaction? What is reduced?

Vocab: Activity Series

Homework: Activity Series WS



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Single Displacement Reactions

- The **activity series** ranks the reactivity of elements. Metals higher in the series can displace metals lower in the series from their compounds. This is redox: more 'active' metals are stronger reducing agents, they reduce ions of the less active metals to the elements.

Element	Reactivity
K Ca Na	react with cold water and acids to replace hydrogen; react with oxygen to form oxides
Mg Al Zn Fe	react with steam (but not with cold water) and acids to replace hydrogen; react with oxygen to form oxides
Ni Pb	do not react with water; react with acids to replace hydrogen; react with oxygen to form oxides
H ₂ Cu	react with oxygen to form oxides
Ag Au	fairly unreactive; form oxides only indirectly





Activity Series

Activity of Metals		
	Li Rb K Ba Sr Ca Na	<p>React with cold H₂O and acids, replacing hydrogen. React with oxygen, forming oxides.</p>
	Mg Al Mn Zn Cr Fe Cd	<p>React with steam (but not cold water) and acids, replacing hydrogen. React with oxygen, forming oxides.</p>
	Co Ni Sn Pb	<p>Do not react with water. React with acids, replacing hydrogen. React with oxygen forming oxides.</p>
	H ₂ Sb Bi Cu Hg	<p>React with oxygen, forming oxides.</p>
	Ag Pt Au	<p>Fairly unreactive, forming oxides only indirectly.</p>

Stop



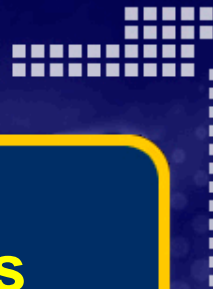
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Chapter 8

Section 3 Classifying Chemical Reactions



Determining Products by Using the Activity Series
Magnesium is added to a solution of lead(II) nitrate.
Will a reaction happen? If so, write the equation
and balance it.



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1. Identify the reactants.

Magnesium will attempt to displace lead from lead(II) nitrate.

2. Check the activity series.

Magnesium is more active than lead and displaces it.

3. Write the balanced equation.

(How do you know NO_3 has a charge of -1?
How do you know Mg becomes a +2?)



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