

Unit 4: Electrochemistry

Unit Topics

Section	Issues <i>Ways the course connects to the world around me...</i>	Concepts <i>Things I need to be able to explain are...</i>	Skills <i>Things I need to practice are...</i>
4.1 Redox Reactions (9.1 – 9.2 in text)	A. What is the redox reaction in the Iron Ball demo?	A. What is a redox reaction and how can we identify if a reaction is a redox reaction? B. What is reduction and what is oxidation in terms of electrons and oxidation number?	A. Determine the oxidation number of an atom based on the 5 rules B. Identify reduction, oxidation half reactions as well as spectator ions C. Balance redox reactions using the half-reaction method
4.2 Spontaneity (9.3 in text)		A. How can we predict what redox reaction will happen in a solution?	A. Identify the strongest oxidizing agent (SOA) and strongest reducing agent (SRA) in a solution using a redox table B. Determine spontaneity of a redox reaction C. Predict the most likely redox reaction to take place in a solution
4.3 Galvanic Cells (9.4 – 9.5 in text)	A. How did the zinc/copper grapefruit cell produce a voltage?	A. What parts make up a galvanic cell and how do they work? B. What is a cell potential and what does the value tell us about a cell? C. What are batteries? Describe primary cells, secondary cells, fuel cells, dry cells and wet cells C. What is galvanization?	A. Determine the anode, cathode and electrolytes in a galvanic cell B. Identify the direction of flow of electrons and ions in a galvanic cell C. Identify the half reactions involved in a galvanic cell D. Calculate the cell potential of a galvanic cell based on the half reactions

Review problems:
Pg 726 #1-6, 8, 10, 13, 15a,b

Unit 5: Organic Chemistry

Unit Topics

Section	Concepts <i>Things I need to be able to explain are...</i>	Skills <i>Things I need to practice are...</i>
5.0 Hydrocarbons (1.1, 1.3, 1.9 in Text)	A. What are hydrocarbons? B. How are the different types of organic compounds related by the reactions they undergo? See flowchart on page 83	
5.1 Alkanes, Alkenes and Alkynes (1.2 in Text)	A. What are the properties of alkanes, alkenes, alkynes and aromatic hydrocarbons? (and how does boiling point change)	A. Name alkanes, alkenes and alkynes as well as aromatic hydrocarbons
5.2 Organic Halides (1.4 in Text)	A. What are the properties of organic halides	A. Name organic halides
5.3 Alcohols and Ethers (1.5 in Text)	A. What are the properties of alcohols and ethers?	A. Name alcohols and ethers
5.4 Aldehydes and Ketones (1.6 in Text)	A. What are the properties of aldehydes and ketones?	A. Name aldehydes and ketones
5.5 Carboxylic Acids and Esters (1.7 in text)	A. What are the properties of carboxylic acids and esters?	A. Name carboxylic acids and esters
5.6 Amines and Amides (1.8 in text)	A. What are the properties of amines and amides?	A. Name amines and amides