

Unit 6: Moles and Chemical Reactions

Summary

This unit will introduce you to mole unit conversions and types of chemical reactions

Textbook References

- Wilbraham, Staley, Matta, & Waterman. Chemistry. Boston, Massachusetts: Pearson Prentice Hall, 2007.
- Wilbraham, Antony C., Dennis D. Staley, Michael S. Matta. Addison-Wesley Chemistry. 5th ed. Menlo Park, CA: Addison-Wesley Publishing Company, 2002. – Chapters 7-8

Vocabulary

mole	gram atomic mass	empirical and molecular formulas
Avogadro's number	gram formula mass	balancing chemical reactions
representative particle	gram molecular mass	synthesis/combination reaction
atom	solute/solvent	decomposition reaction
molecule	molarity	single replacement reaction
ion	STP	double replacement reaction
formula unit	molar volume of a gas at STP	combustion reaction
molar mass	percent composition	

Calendar ***Note: Outline is Optional***

M 12/1	T 12/2	W 12/3	Th 12/4	F 12/5
Today: • Bonding Common Assessment as good but quick review • The MOLE Video • Mole POGIL Video • Show examples of 1 mole of Cu, Al, etc. • Mole Island • Mole Lecture Ppt NOTES HW: -Watch Intro to Moles Video -Watch Video 3.4a, 3.4b, 3.4c	Today: • Particles to Mole & Vice Versa Video (Part I) • Particles to Mole & Vice Versa Video (Part II) • Work on Mole WS#1 HW: -Work on Mole WS#1	Due Today: -Once you finish Mole WS#1 Upload it Here (and KEY) Today: • Unit 2 Retake Test ("2nd Olympics") If not taking the retake: • Work on Mole WS#1 HW: -Finish Mole WS#1	Due Today: -Once you finish Mole WS#2 Upload it Here (and KEY) Today: • Molar Mass Video • Grams to Mole Video • Work on Mole WS #2 HW: -Mole WS #2	Due Today: -Once you finish the Online Hwk#113 Upload it Here Today: • Watch Online Hwk #113 Video (Also Online Hwk#18 video help from Mr. Kiffe using Mole Island) • Online Hwk#113 or Jaffe Online Hwk#18 or Online Hwk #18 -Complete 10 Probs *If the Online Hwk link isn't working, use this backup video link for Online Hwk#113 <i>Demo:</i> -U-shaped Tube (lopsided density demo) HW: -Finish Online Hwk

M 12/8	T 12/9	W 12/10	Th 12/11	F 12/12
Today: - Mole Lab (Voss Version) ActivInspire - Which has more atoms of C - choose 2 of the following to complete? - Name on index card of you and neighbor in pencil (C) - Sugar ($C_6H_{12}O_6$) in small container (<i>Must break apart on Mole Island</i>) - Tealight Candle ($C_{20}H_{42}$) after burning 1 minute (<i>Must break apart on Mole Island</i>) HW: -Start studying for final	Today: Molarity WS (and KEY) OR Molarity Ppt (slides#1-2 for sure) Molarity PHET Concentration PHET - Annenberg animation Annenberg Chemistry Video - "When Chemicals Meet Water: The Properties of Solutions" (0-15:35min) - If time: Modified Molarity Activity (groups make exact sucrose solution of soda - 39g & 355mL) HW: -Molarity Practice Video Part I and Part II	Due Today: -Once you finish the Online Hwk#53 Upload it Here Today: - Watch Online Hwk#53 Video - Complete CSU Online Hwk #53 or Jaffe Online Hwk#14 (Do 10 Probs correctly by tonight<i>You may need to look up the formulas for each problem before doing it</i>) *If the Online Hwk link isn't working, use this backup video link for Online Hwk#53 HW: -Finish Online Hwk	Today: - Study for 1st Olympics of "Final Exam" Mole Study Guide Practice Problems (and KEY) HW: -Study	Today: 1st Olympics "Final Exam" (Unit 6 Half-way Point Test)
M 12/15	T 12/16	W 12/17	Th 12/18	F 12/19
Today: - Return Tests Annenberg Chemistry Video - "When Chemicals Meet Water: The Properties of Solutions" (15:35 - 27:30min) - Study for 2nd Olympics	Today: - Study for 2nd Olympics OR - Is It Toxic? Lab OR - Blood Sugar Lecture -Quick bio lesson using painted organs -Show 6g glucose in 6L (3- 2L bottles) -Compare to energy drink w/ 43g sugar - Glucose Lab Calculations & Discussion (Not performing lab...only calculations) <i>Demo: Show glucose levels with test kit</i> HW: - Self-Test	Finals (Per. 1 & 2) 2nd Olympics "Final Exam" (Unit 6 Half-way Point Test)	Finals (Per. 3 & 4) 2nd Olympics "Final Exam" (Unit 6 Half-way Point Test)	Finals (Per. 5 & 6) 2nd Olympics "Final Exam" (Unit 6 Half-way Point Test)
Winter Break If time remains: - Kool-Aid Chromatography Lecture & Demo (Polarity) - Mystic Sand - Garbage Can Smoke Rings (w/ extension cord) - Benzoic Acid Globe Lab - Little Christmas Tree AP Questions Worksheet & Do Activity w/ Microscopes (Cu & $AgNO_3$) - Holiday Ornament Lab (using sodium borate) Day 1 - perform Day 2 - view (no taking them home)				

M 1/5	T 1/6	W 1/7	Th 1/8	F 1/9
Today: - Lecture: -Volume of Gas at STP -Diatomic Molecules (Halogen HON) -Using Mole Island with Density (ActivInspire) Updated Mole Island (Updated version with Density) - Work on Mole WS #3 HW: -Mole WS #3	Today: - Work on Mole WS #3 and/or Mole WS #4 <i>Optional:</i> Jaffe#17 or PHHS Online Hwk#17 HW: -Work on Mole WS #3 and/or Mole WS #4	Due Today: -Once you finish Mole WS#3 Upload it Here (and KEY)	Due Today: -Once you finish Online Hwk#114 Upload it Here	Due Today: -Once you finish Online Hwk#115 Upload it Here
	Today: - Work on Mole WS #3 and/or Mole WS #4 <i>Optional:</i> Jaffe#17 or PHHS Online Hwk#17 HW: -Watch Video 3.4d (% comp)	Today: - Work on Mole WS #3 and/or Mole WS #4 <i>Optional:</i> Jaffe#17 or PHHS Online Hwk#17 HW: -Watch Video 3.4d (% comp)	Today: - Molecular Formula POGIL (ActivInspire) % Composition Online Hwk#114 Complete 10 problems (Refer to Video 3.4d for help) *If the Online Hwk link isn't working, use this backup video link for Online Hwk#114 HW: -Watch Video 3.5a, 3.5b (Emp Formula) -Watch Video 3.5c, 3.5d (Molec Formula) -Work on Mole WS #4	Today: - Discuss Lab Empirical Formulas Online Hwk#115 Complete 10 problems (Refer to Videos 3.5a and 3.5b for help) *If the Online Hwk link isn't working, use this backup video link for Online Hwk#115 <i>Demo:</i> -Ditto Rockets (teaching about hot substances on balances)
M 1/12	T 1/13	W 1/14	Th 1/15	F 1/16
Due Today: -Once you finish Mole WS#4 Upload it Here (KEY)	Today: PhET Balancing Equations Guided Inquiry and Balancing Equations PhET - Hints for Balancing -choose difficult cmpd 1st -sulfate, phosphate, etc. -hints to save time (HOH) Notes: Balancing Overview Ppt <i>Demo:</i> -Big Blocks Demo	Due Today: -Once you finish PhET Balancing Equations Guided Inquiry Upload it Here (Here is the KEY to the 15 balancing probs)	Today: - Complete Practice Quiz #2 & KEY - If you want more practice balancing, then try this Jaffe Online Hwk#18 OR PHHS Online Hwk #19 OR CSU Online Hwk#130 *If the Online Hwk link isn't working, use this backup video link for Online Hwk#130 - Work on Self-Test <i>Optional:</i> Balancing Practice WS -ONLY Complete problems #7-10 (KEY) HW: -Self-Test	Due Today: -Once you finish the Self-Test Upload it Here (KEY)
Today: - Lab: Empirical Formula of Mg_xO_y (ActivInspire) Handout: - Lab Handout or use ActivInspire HW: -Self-Test -Watch Video 3.1a, 3.1b, 3.2 (Balancing)	Today: PhET Balancing Equations Guided Inquiry and Balancing Equations PhET - Hints for Balancing -choose difficult cmpd 1st -sulfate, phosphate, etc. -hints to save time (HOH) Notes: Balancing Overview Ppt <i>Demo:</i> -Big Blocks Demo	Today: - Finish PhET Balancing Equations Guided Inquiry and Balancing Equations PhET - Work on Self-Test <i>Demo:</i> -Ping Pong Popper (goes w/ ActivInspire)	Today: - Complete Practice Quiz #2 & KEY - If you want more practice balancing, then try this Jaffe Online Hwk#18 OR PHHS Online Hwk #19 OR CSU Online Hwk#130 *If the Online Hwk link isn't working, use this backup video link for Online Hwk#130 - Work on Self-Test <i>Optional:</i> Balancing Practice WS -ONLY Complete problems #7-10 (KEY) HW: -Self-Test	Today: Mole Test Format (ActivInspire) - Work on Self-Test <i>Demo: Whoosh Bottle & Partner Review Problems on ActivInspire</i>
M 1/19	T 1/20			
NO SCHOOL	Today: -Unit 6 Test			

May add to calendar:
[-Balancing WS](#) (using 100 problem WS)