



## HOMEWOOD-FLOSSMOOR HIGH SCHOOL COURSE SCOPE & SEQUENCE

Semester 1 of 2      Department: Science      Course: Honors Chemistry      Instructor(s): Anderson, Pavinato, Peto, Sheriff, Sippel, Stolzenbach  
 This course is aligned to:      **College Readiness Standards and/or College Board Standards**      Other:

*The Homewood-Flossmoor High School Course Scope & Sequence provides parents and students with a semester-long overview of each class that we offer. **An instructor may alter a course's scope & sequence as needed.** Students are responsible for keeping track of due dates and other pertinent course information in their H-F Student Planners. Parents, please contact your child's teacher by telephone or e-mail to clarify any questions you may have about the scope & sequence of a particular course.*

WEEK	COLLEGE READINESS AND/OR COLLEGE BOARD CONTENT STANDARDS	INSTRUCTIONAL CONTENT	ACTIVITIES, READINGS, LABS, AND/OR ASSIGNMENTS	MAJOR ASSESSMENTS	OTHER
Week 1:	S.II.b.1 S.II.f.1 13.A.3a 13.A.4a	Unit 1: Policies, Procedures, Syllabus, Safety	Acid/Egg Safety Demo Safety videos (may vary) Predicting Strategies	Signed safety contract Review lab equipment and safety rules for quiz	
Week 2:	S.I.a.2 S.I.b.4 11.A.4a 11.A.4b	Factor-label method Scientific method Metric System Density	Observational Lab Density Lab Dimensional Analysis Hands-on Activity Predicting Strategies	Dimensional Analysis Quiz <a href="http://www.chemthink.com">www.chemthink.com</a> activity	
Week 3:	S.II.d.3 S.II.c.4 11.A.4c	Finish density Significant figures Scientific notation	Measurement Video Measurement Lab #1 Significant Figures online tutorial Predicting Strategies	Significant Figures and density Quiz	
WEEK #4 9/6 to 9/10 No school:	S.I.a.2 S.I.d.5 S.I.d.4	Accuracy and Precision Graphing	Measurement Lab #2 Graphing Lab on Excel Summarizing Strategies	Lab Comprehension & Graph Analysis Questions	



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9/6 Pep assembly: 9/10	S.II.c.1 S.I.d.5				
WEEK #5 9/13 ó 9/17		Review master concepts	Review Game (CRISS Strategies such as Round Robin Review game) Summarizing Strategies	Unit 1 Test	Review for test this week.
WEEK #6 9/20 ó 9/24 PLC day: 9/24	S.III.c.2 S.I.A.2 S.I.d.5 12.C.3b	Unit 2: Classification Matter Properties of Matter Thermochemistry	Separation of Mixtures Lab Matter of State video Nuts -N Bolts Activity to classify matter Summarizing Strategies	Article Analysis Assign element for presentations next week	
WEEK #7 9/27 ó 10/1		$Q = mc\Delta T$	-Cheetos (specific heat) lab -practice $Q = mc\Delta T$ calculations with variety of substances Combining Reading Strategies	Element name and symbols quiz Element presentations	Review for test this week.
WEEK #8 10/4 ó 10/8 PLC day: 10/8	S.I.b.1 S.I.e.2 S.I.d.4 S.II.d.4	Element name and symbols Chromatography	Physical & Chemical Changes Lab Chromatography Lab Element bingo for memory retention Predicting and Summarizing Strategies	Unit 2 Binder check Unit 2 Test	
WEEK #9 10/11 ó 10/15 No school:	S.III.c.1 S.III.d.4 12.C.4b	Unit 3: History of the Atom/Periodic Table	Read Chapter 10 -World of Chemistry video óThe Atomö with viewing guide	<a href="http://www.chemthink.com">www.chemthink.com</a> tutorial and question sets online	



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10/11 All School Testing: 10/13			-Unit vocabulary sheet Predicting and Summarizing Strategies		
WEEK #10 10/18 ó 10/22 End of 1 <sup>st</sup> Quarter: 10/22	S.III.d.5 S.III.c.2 S.III.d.1 12.C.4b	Calculate $p^+$ , $n^0$ , $e^-$ , mass number, etc. Atomic mass Isotopes	-Bring books to class for Jigsaw Reading activity -Atom in a Bag Activity Predicting and Summarizing Strategies		



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WEEK #11 10/25 610/29 PLC day: 10/29	S.1.a.3 S.I.c.2	Organization of Periodic Table Reactivity trends (basic)	The Periodic Table video Periodic Table Trend/Reactivity Lab Predicting and Summarizing Strategies	Small group discussion on trends assessment	
WEEK #12 11/1 6 11/5 Parent/teacher Conferences: 11/4 No school: 11/5	S.III.d.4 S.III.c.1 S.III.c.2	Unit 4: Ions Naming ionic compounds Cations and anions	Metal video Element crossword activity in computer lab Ion Card Game activity Connecting strategies	Positive (cation) quiz	
WEEK #13 11/8 611/12 No school: 11/11	S.III.d.4 S.III.c.1 S.III.c.2	Polyatomic ions Naming with transition metals Acid & base Nomenclature (basic) Start chemical bonding	Iron +2 and Iron +3 Lab Household Products Lab Read Chapter 11 -World of Chemistry video and viewing guide on Chemical Bonding Connecting strategies	Negative (anion) quiz	Relay Race for naming and writing formulas
WEEK #14 11/15 611/19 PLC day: 11/19	S.I.b.2 S.III.c.1	Unit 5: Counting atoms Word equations Signs of a chemical reaction Law of conservation of mass	Evidence of Interaction Lab Sequence of reaction lab with copper $E=mc^2$ Einstein's Big Idea video Connecting and Questioning Strategies	Writing word equations and counting atoms quiz	
WEEK #15 11/22 6 11/26 No school:	S.III.d.1	Balancing chemical equations	Reaction type demonstrations	Balancing quiz	Distribute semester



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11/25 & 11/26		Types of reactions	Practice balancing equations via Relay Race activity  Connecting and Questioning Strategies		exam review packets.
WEEK #16 11/29 ó 12/3	S.I.b.2 S.III.c.1 S.III.d.1	Solubility table and activity series Predicting products Net ionic equations	Metal reactivity lab Connecting and Questioning Strategies	Review for test this week. Unit 5 Binder Check Unit 5 Test	
WEEK #17 12/6 ó 12/10 PLC day: 12/10	S.I.b.2 S.I.a.3 S.III.c.2	Unit 6: The Mole concept Percent composition Molar mass	The Mole video Counting by weighing lab Oreo Percent composition lab Inferring Strategies	Sew a Mole Project (extra credit)	
WEEK #18 12/13 ó 12/17	S.I.a.3 S.I.d.1 S.III.d.1	Mole conversions Empirical and molecular formulas (basic)	Review dimensional analysis MgO empirical formula lab/demonstration Inferring Strategies		
WEEK #19 1/3 ó 1/7	S.III.c.2	Continue mole relationships with calculations	Inquiry based Mole lab (provide more given information than Honors) Inferring Strategies	Unit 6 Test	Review for test this week.



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Semester 2 ø 1 ø ø 2                      Department: Science                      Course: Honors Chemistry    Instructor(s): Anderson, Pavinato, Peto, Sheriff, Sippel, Stolzenbach

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WEEK #1 1/17 ø 1/21 No school: 1/17	S.I.a.3 S.I.d.1 S.III.d.1	Unit 7: Stoichiometry	Stoichiometry Balloon Races Demonstration Analogies to stoich. Imaging Strategies	Stoichiometry Unit 7 quiz	
WEEK #2 1/24 ø 1/28 PLC day: 1/28	S.I.b.2 S.III.c.1	Limiting reactant	S’mores lab Imaging Strategies	Unit 7 Binder check Unit 7 Test	Review for test this week.
WEEK #3 1/31 ø 2/4	S.III.c.1 S.III.d.4 12.C.4b	Unit 8: Modern Atomic Theory	-World of Chemistry video øThe Atomø with viewing guide -Unit 8 vocabulary sheet -Electromagnetic Spectrum -Spectroscope Lab -Flame Test Lab	<a href="http://www.chemthink.com">www.chemthink.com</a> tutorial and question sets online	Demos: -Flinn demonstration with colored balls to illustrate the emission of light when



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			Predicting and Summarizing Strategies		energy is released) -Burning Rainbows Demo (to illustrate the emission of light)
WEEK #4 2/7 ó 2/11 PLC day: 2/11	S.III.c.1 S.III.d.4	Chapter 10 (cont'd) -Skittles Lab (electron configuration lab) -Periodic Table of People Inquiry Lab (Periodic Table Trends) -Whiteboard review game for electron configuration practice Connecting strategies	Electron Configuration Quiz  - Binder check for Unit 3 -Unit 3 Test (short answer and multiple choice) (See textbook for practice and review questions to prepare for the exam.)	Flinn electron configuration (visual aid) board for Aufbau Principle  Review for test this week.	Modern Atomic Theory and History of the Atom
WEEK #5 2/14 ó 2/18	S.III.d.4 S.III.c.1 S.III.c.2	Unit 9: Chemical Bonding	Chapter 11 (cont'd) -Power point on Chemical Bonding (see webpage for power point) -Lewis Structures Bingo activity  Polyacrylate Lab Questioning Strategies	Unit Test  Start Unit 5: Covalent Bonding & Nomenclature half way through week 14.	Review for test this week.
WEEK #6 2/21 ó 2/25	S.III.c.1	Covalent Bonding & Nomenclature of	-Driving Force video -Create a Venn diagram	-Venn diagram group presentation of final	-Flinn demonstration



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No school: 2/21 PLC day: 2/25		Molecular Compounds	to examine the 3 different types of bonds Questioning Strategies	product -Binder check for Unit -quiz on lewis structures, polar covalent, non-polar covalent, and ionic bonding	bonding rubberband and styrofoam spheres to illustrate polar covalent and non-polar covalent bonding
WEEK #7 2/28 & 3/4	S.III.c.1	Continue Covalent Bonding & Nomenclature	Chapter 11 (cont'd) -Molecular Model Kits Lab for Molecular Geometry and VSEPR Theory Questioning Strategies	Unit Test	Review for test this week.
WEEK #8 3/7 & 3/11 No School: 3/7 & 3/8	S.I.b.2 S.I.a.3 S.I.b.4	Unit 10: Solutions/States of Matter	Read Chapter 13 & 14 -Solubility lecture -Excel solubility lab Imaging Strategies	Excel Solubility lab analysis questions	Demonstrations: -saturated and unsaturated solutions of salt water mixture. -supersaturated solutions of sodium acetate -hand warmers -Freezing to the board  -How to make a solution in lab
WEEK #9	S.II.b1	Continue Solutions &	Continue Ch 13 & 14	- Binder check for Unit	Review for test



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3/14 ó 3/18 PLC day: 3/18	S.II.c.1 S.III.c.2 S.I.d.1 12.C.5b	States of Matter	-States of matter activity -Ice Cream Lab -Root Beer Lab Inferring and Imaging Strategies	-Unit 10 Test	this week.
WEEK #10 3/21 ó 3/25 End of 3rd Quarter: 3/25	S.III.c.1 S.III.d.4	Unit 11: Equilibrium	Read Chapter 16 -LeChatlierø Lab -Rate of Reaction Lab	-Equilibrium Quiz	Demonstration: LeChatlierø Principle
WEEK #11 4/4 ó 4/8	S.I.b.2 S.I.a.3 S.I.b.4 S.II.b.1 S.II.c.1	Unit 12: Acid/Base	Read Chapter 15 -Intro to the Properties of Acids & Bases Lab -pH of Peppers Lab Inferring and Imaging Strategies	-Analysis questions for each lab this week. -Student-made Power Point presentations on a particular section in Ch 15.	Demonstration: -Rainbow in a Tube



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WEEK #12 4/11 & 4/15 PLC day: 4/15	S.I.b.2 S.I.a.3 S.I.b.4 S.II.b.1 S.II.c.1	Continue Acid/Base	Chapter 15 (cont'd) -Titrations (lecture and lab) -review naming acids/bases -Modern Marvels <i>Acids</i> video with viewing guide Inferring and Imaging Strategies	-Titration Lab Practical (will have had several practice trials prior to lab assessment) -Mini quiz on acid/base properties and balancing acid/base equations.	Demonstration: -Change in pH and colors of the rainbow (in graduated cylinder) -Kermit the Frog Rainbow Connection Demo
WEEK #13 4/18- 4/22 No school: 4/22	S.I.b.2 S.I.a.3 S.I.b.4 S.II.b.1 S.II.c.1	Continue Acid/Base	-Lecture on acid/base calculations (basic) -Practice calculations. Inferring and Imaging Strategies	- www.chemthink.com simulation/activity questions - Binder check for Unit 12 -Unit 12 Test	-Review for test this week.
WEEK #14 4/25 & 4/29 PSAE: 4/27 & 4/28	S.III.c.2 S.I.b.4 S.I.b.1 S.I.b.2 S.I.d.5 S.III.c.2	Unit 13: Gases	Read Chapter 12 -Watch Mt. Everest movie or Modern Marvels <i>Gases</i> with viewing guide -Variables of a Gas & Kinetic Molecular Theory (notes) Combining Reading Strategies		- Demonstrations of gas basics such as: 1-small beaker with Kleenex in it, submerged in a larger beaker of water to illustrate that gases take up



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					<p>space</p> <p>2-empty balloon, take mass, blow it up, mass it again to illustrate gases</p> <p>have a mass</p> <p>3-Can Crush to illustrate how a vacuum works and the effect of atmospheric pressure</p> <p>4- Teacher in a garbage bag, using a shop vac to remove the air from the bag and watch your teacher get shrink wrapped. This demo illustrates the effect of atmospheric pressure.</p>
<p>WEEK #15</p> <p>5/2 ó 5/6</p> <p>PLC day: 5/6</p>	<p>S.III.c.2</p> <p>S.I.b.4</p> <p>S.I.b.1</p> <p>S.I.b.2</p> <p>S.I.d.5</p> <p>S.III.c.2</p>	<p>Gases contød</p>	<p>Chapter 12 (contød)</p> <p>-Making Gases Lab</p> <p>-Watch Modern Marvels <i>Methane</i> video and complete viewing guide</p> <p>-Boyles, Charles, and Gay-Lussac Laws (notes and demonstrations)</p> <p>Combining Reading Strategies</p>	<p><a href="http://www.chemthink.com">www.chemthink.com</a> tutorial and question sets online for Gas Laws</p>	<p>Demonstrations of Gas Laws:</p> <p><b>BOYLES LAW:</b></p> <p>1-marshmallow peep, twinkie, and/or an inflated small balloon in a vacuum pump to illustrate the inverse relationship of pressure and volume of gases.</p> <p><b>CHARLES</b></p>



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					<p><b>LAW:</b>            1-birthday balloons in cold weather deflate (could do in beaker with ice then with boiling water) and birthday balloons inflate in warm weather.            2-Marshmallow or peep in microwave.</p> <p><b>GAY-LUSSAC LAW:</b>            1-Bike or car tires lose pressure when the temperature drops.            2-Aerosol cans explode when exposed to high temperatures.</p>
<p><b>WEEK #16</b>            5/9 to 5/13</p>	<p>S.III.c.2            S.I.b.4            S.I.b.1            S.I.b.2            S.I.d.5            S.III.c.2</p>	<p>Gases cont'd</p>	<p>Chapter 12 (cont'd)            -Combined Gas Law (notes &amp; practice calculations)            -Ideal Gas Law (notes &amp; practice calculations)            -Stations Gas Laws Lab (ie: balloon race and popcorn lab)            -Relay Race (all the gas laws together)            Combining Reading Strategies</p>	<p>-Quiz on Gas Basics &amp; Gas Laws (Charles &amp; Boyle, Gay-Lussac)            -Review for test this week.            -Unit 13 Binder check            -Unit 13 Test</p>	<p>Demonstrations:            -Egg in a bottle            -Mentos and Diet Coke Explosion!</p>



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WEEK #17 5/16 ó 5/20 PLC day: 5/20	S.I.b.2 S.III.c.2 S.II.d.4	Unit 14: Organic Nomenclature and molecular lewis structures	-Identifying an organic compound activity -Naming alkanes lecture -Slime lab -Silly Putty Lab Combining Reading Strategies		
WEEK #18 5/23 ó 5/27 Seniorsø last day: 5/26	S.I.b.2 S.III.c.2 S.II.d.4	Continue organic nomenclature	-Naming alkenes and alkynes Power Point -Functional groups (time permitting) activity/esters lab Molecular Model Kit Lab for Organic molecules -Tie Dye Lab and assessment packet for extra credit\ Combining Reading Strategies	-Unit 14 Binder check -Unit 14 Test	
WEEK #19 5/30 ó 6/3 No school: 5/30 Final Exams: 5/31 ó 6/2 Marking Day: 6/3	Review for semester exam.	-Review. -Collect semester final exam review packet for extra credit (graded for accuracy and completion)	Semester 2 Final Exam.	Review for semester exam.	