

# High School Chemistry

## Homeschool Syllabus

Made by Liesl

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## High School Chemistry Homeschool Syllabus

High School Chemistry Plans (1 <sup>st</sup> Semester)		
HOMEWORK History of Chemistry	<input type="checkbox"/> Boyle <input type="checkbox"/> Lavoisier <input type="checkbox"/> Dalton <input type="checkbox"/> Faraday <input type="checkbox"/> Newlands <input type="checkbox"/> Mendeleev <input type="checkbox"/> Crookes <input type="checkbox"/> Thomson <input type="checkbox"/> Roentgen <input type="checkbox"/> Becquerel <input type="checkbox"/> Curie <input type="checkbox"/> Rutherford <input type="checkbox"/> Moseley <input type="checkbox"/> Scientific Notation Practice Worksheets • <a href="#">Worksheet Set 1</a> (Lakeside College) • <a href="#">Worksheet Set 2</a> (Mayfield Schools) • <a href="#">Worksheet Set 3</a> (Dora)	Chemistry 101 DVD
	Online Practice Worksheets with answers	
	<input type="checkbox"/> Chemistry Review Pages (basic vocab element, compound, molecule, density, etc.) <input type="checkbox"/> Element Symbol Names <input type="checkbox"/> Chemistry Quick Quiz (vocab review) <input type="checkbox"/> Element or Compound <input type="checkbox"/> Unusual Elements Worksheets (Make sure the known most chemical symbols!)	Notebook Pages & Worksheets from: Properties of Matter Packet Chemistry Packet Ions/Isotopes Packet
	<input type="checkbox"/> Go over the Periodic Table Material (if they need review (make sure they are confident both with the group names and, <i>also</i> , with creating Bohr Diagrams and Lewis Structures))	Chemistry Packet
	<input type="checkbox"/> Ionic and Covalent Bonds <input type="checkbox"/> Which Group? (review alkali metals, alkaline earth metals, halogens, noble gases, transition metals, metalloids) <input type="checkbox"/> Covalent Bonds Nink Page <input type="checkbox"/> Ionic Bonds Nink Page <input type="checkbox"/> Period Table Review (atomic number, atomic mass, chemical symbol, element name)	Notebook Pages & Worksheets from: There are all in the Ions/Isotopes Packet
	<input type="checkbox"/> Lewis Structures and Ions <input type="checkbox"/> Isotope Notation <input type="checkbox"/> Chemistry Ions - Make flashcards, Ion Matching Pages, Work through all 8-10 pages and memorize the names! <input type="checkbox"/> How to learn the polyatomic ions - YouTube with worksheets <input type="checkbox"/> Lewis Structures and Ions Add or subtract ions... <input type="checkbox"/> Ions and Isotopes - Bohr Diagram <input type="checkbox"/> Isotope Fill in the missing information page	Ions/Isotopes Packet  Watch Miss Marnick video called <i>Tricks for Remembering Polyatomic Ions</i> <a href="https://www.youtube.com/watch?v=Jm8m8m8m8m">https://www.youtube.com/watch?v=Jm8m8m8m8m</a> NICK the Baby Camel...  As we work through the Chemistry Ions pages start to go over Glencoe textbook Chapter 8 and Chapter 9 about the naming of compounds and molecules

High School Chemistry Plans (1 <sup>st</sup> Semester)	
<input type="checkbox"/> Electron Configuration (down/up arrows worksheets from the Chemistry Packet)	Chemistry Packet
Glencoe textbook Chapter 8 Ionic Compounds - Naming Compounds Chapter 9 Covalent Bonding - Naming Molecules  <input type="checkbox"/> BINGO: Anion, Cation, Polyatomic Ions Bingo Cards <input type="checkbox"/> Chemical Formulas Worksheets (learning to figure out the names for something like sulfur trioxide or calcium hypochlorite, etc.)	Go over the notebook pages above as we read through this material.  Use notebook pages: Chemistry Naming Compounds (This might be in the Acid-Base Packet)
Glencoe textbook Chapter 10 Chemical Reactions AND Balancing Chemical Equations Worksheets by Chris Macaulay  <input type="checkbox"/> Balancing Equations Practice	<a href="#">BALANCING CHEMICAL EQUATIONS</a>  Do ALL practice problems in the Glencoe Textbook. Answers are all provided in the back on the student textbook!
Glencoe textbook Chapter 11 The Mole <input type="checkbox"/> The Mole Notebook Pages Problem Sets in Glencoe: <input type="checkbox"/> 11-1 <input type="checkbox"/> 11-2 <input type="checkbox"/> 11-3 <input type="checkbox"/> 11-4 <input type="checkbox"/> 11-5 <input type="checkbox"/> 11-6 <input type="checkbox"/> 11-7 <input type="checkbox"/> 11-8 <input type="checkbox"/> 11-9 <input type="checkbox"/> 11-10 <input type="checkbox"/> 11-11 <input type="checkbox"/> 11-12 <input type="checkbox"/> 11-13 <input type="checkbox"/> 11-14	
Glencoe textbook Chapter 12 Stoichiometry <input type="checkbox"/> Stoichiometry Problem Sets in Glencoe: <input type="checkbox"/> 12-1 <input type="checkbox"/> 12-2 <input type="checkbox"/> 12-3 <input type="checkbox"/> 12-4 <input type="checkbox"/> 12-5 <input type="checkbox"/> 12-6	Additional problems are in the high school chem packet that I made for us, and 0 (which is not shared online at this point)

High School Chemistry Plans (2 <sup>nd</sup> Semester)	
Balancing Chemical Equations Worksheets by Chris Macaulay	Practice Problems
Glencoe textbook Chapter 14 Gases <input type="checkbox"/> Boyle's Law <input type="checkbox"/> Charles's Law <input type="checkbox"/> Gay-Lussac's Law <input type="checkbox"/> Combined Gas Law <input type="checkbox"/> Avogadro's Principle <input type="checkbox"/> Ideal Gas Law Problem Sets in Glencoe: <input type="checkbox"/> 14-1 <input type="checkbox"/> 14-2 <input type="checkbox"/> 14-3 <input type="checkbox"/> 14-4 <input type="checkbox"/> 14-5 <input type="checkbox"/> 14-6 <input type="checkbox"/> 14-7 <input type="checkbox"/> 14-8 <input type="checkbox"/> 14-9 <input type="checkbox"/> 14-10	<a href="#">Gas Laws</a> Boyle's Law $P_1V_1 = P_2V_2$ Charles's Law $V_1/T_1 = V_2/T_2$ Gay-Lussac's Law $P_1/T_1 = P_2/T_2$ Combined Gas Law $P_1V_1/T_1 = P_2V_2/T_2$ Ideal Gas Law $PV = nRT$  Use the Worksheets in the High School Chem Packet (which is still just on my computer, no shared online)
Glencoe textbook Chapter 15 Solutions <input type="checkbox"/> Solutions <input type="checkbox"/> Henry's Law <input type="checkbox"/> Molarity Problem Sets in Glencoe: <input type="checkbox"/> 15-1 <input type="checkbox"/> 15-2 <input type="checkbox"/> 15-3 <input type="checkbox"/> 15-4 <input type="checkbox"/> 15-5 <input type="checkbox"/> 15-6	Use the Worksheets in the High School Chem Packet (which is still just on my computer, no shared online)
Glencoe textbook Chapter 16 Energy and Chemical Change <input type="checkbox"/> Energy <input type="checkbox"/> Specific Heat <input type="checkbox"/> Measuring Heat	Use the Worksheets in the High School Chem Packet (which is still just on my computer, no shared online)
Glencoe textbook Chapter 19 Nuclear Chemistry <input type="checkbox"/> Nuclear Radiation <input type="checkbox"/> Radioactive Decay <input type="checkbox"/> Transmutation Problem Sets in Glencoe: <input type="checkbox"/> 16-1 <input type="checkbox"/> 16-2 <input type="checkbox"/> 16-3 <input type="checkbox"/> 16-4 <input type="checkbox"/> 16-5 <input type="checkbox"/> 16-6 <input type="checkbox"/> 16-7	
Organic Chemistry	Use the Organic Chemistry Packet to go over the 4 major macromolecules This is covered in Glencoe textbook Chapter 24, but we won't use that

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My youngest daughter will be doing high school chemistry this year. This syllabus should give you an idea of what we will be covering and the notebook pages and worksheets I printed out for her. (Hopefully I didn't forget much... there's a lot I carry in my head rather than writing down!!)

We have done various chemistry units off and on since late elementary, so some topics we will just need to review. Others she might need to dive into more depth. Depending on how much chemistry your kids/students have had, you may need to go into more depth on things like valence electrons/Bohr diagrams, Lewis Diagrams, electron configuration, etc. if they haven't done much chemistry prior to this.

My goal for ED is to get through the review (which for us is through the bottom of the first page as well as electron configuration) as quickly as possible.

I pulled out notebook pages and worksheets from these packets:

- **Properties of Matter Packet**
- **Chemistry Packet**
- **Ions/Isotopes Packet**

We will skim through Chapters 8 and 9 in *Glencoe Chemistry*. Many chemistry teachers/university instructors demand that their students have the basic polyatomic ions memorized for their classes. My goal is to have my daughter as familiar with them as possible (without making it a drag for her). We'll play a lot of ion bingo along the way this semester!! 🎮

We will spend lots of time on Chapters 11 and 12 (the Mole and Stoichiometry). Glencoe has the answers in the back and we would/will read each section together. (This is my third time through high school chemistry as ED is my youngest!) Then I generally work out the problems at the same time as my kids. That way I can help them with any trouble they are having or can spot any silly math mistakes.

We bought a used version of **Glencoe Chemistry Matter and Change** - <https://amzn.to/47EpYzZ> (this my affiliate link if you are interested in checking it out) - The great thing is with the answers printed in the back, you don't need an instructor's manual.

We will also be using a workbook called **Balancing Chemical Equations** - <https://amzn.to/3E5rTA4> - It has lots of problems and my older kids found it helpful. I had them do problems from that book off and on all year (when they went through chemistry) and will do the same for ED this year.

What I really hope to cover well and in-depth for her this year is the chapters 11 through 16. This is the material students really need to know fairly well if they plan to go into the sciences in college.

By the way, most high school chemistry classes also go over Organic Chemistry. I spent 6 or 7 weeks last year going over Organic Chemistry with her last year when we did biology. I shared that packet on the website last year.

- **Organic Chemistry Packet**

A few chemistry notebook pages are still just on my computer and not actually shared on my website (yet). I tried to make a note of that - and feel free to reach out if you'd like those along the way! In particular, the material on the Mole, stoichiometry, heat, etc.

Oh and the history of chemistry lecture series is a DVD. They are really fascinating/well done! I will have my daughter watch these on her own for homework and do the "quiz" (which is pretty easy, but just is a quick check for comprehension) on her own.

Again, please let me know if you have any questions. I just thought it might be helpful to have a glance at what another homeschooling family is doing! :)

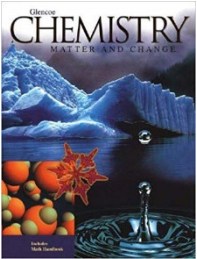
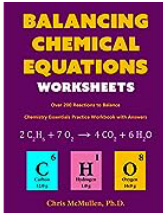
Have a wonderful school year!

~Liesl

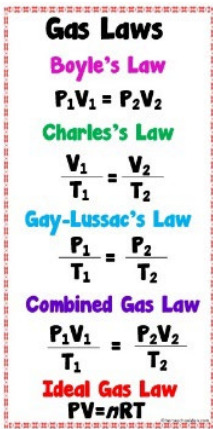

P.S. You can email me if you have any questions: [Liesl@homeschoolden.com](mailto:Liesl@homeschoolden.com)

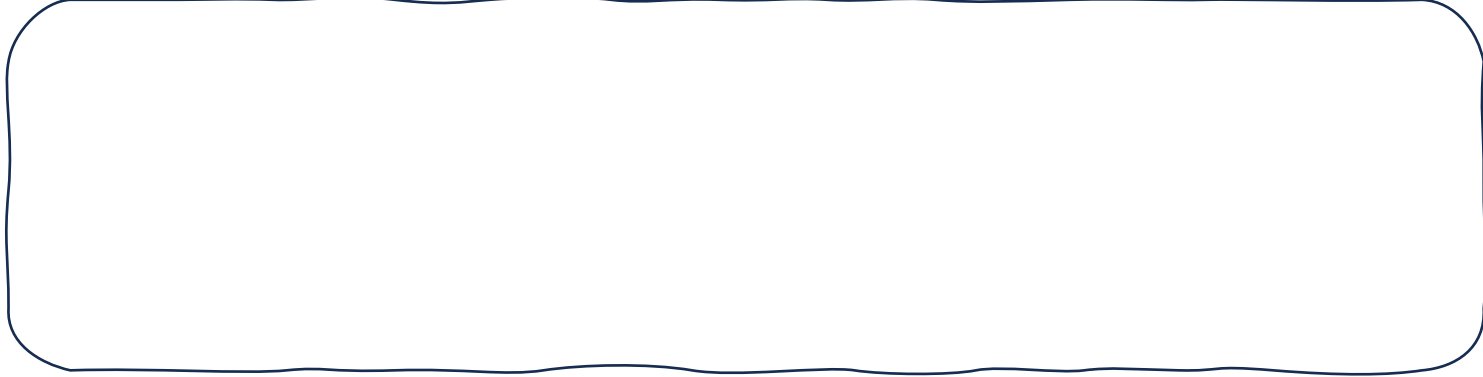
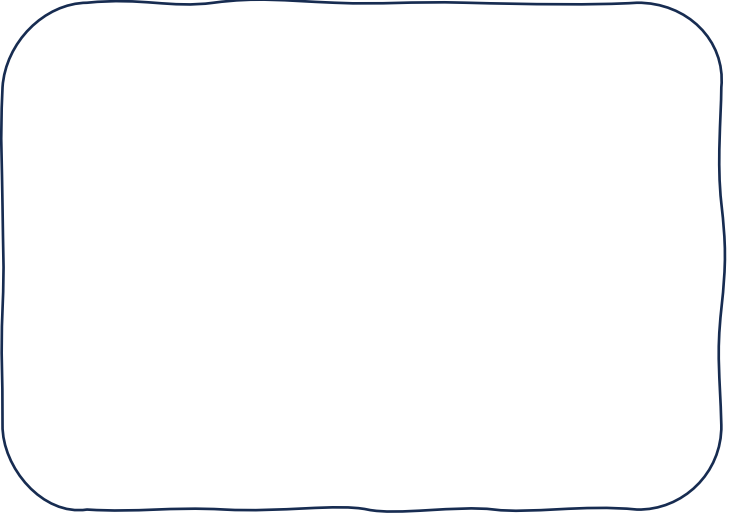
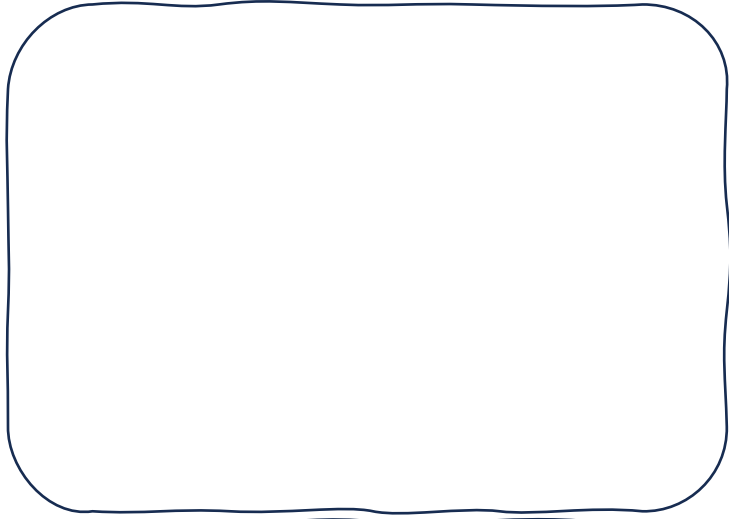
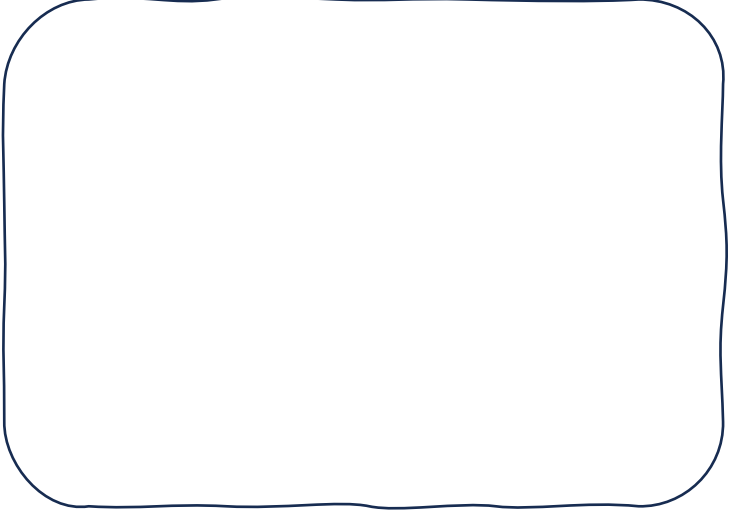
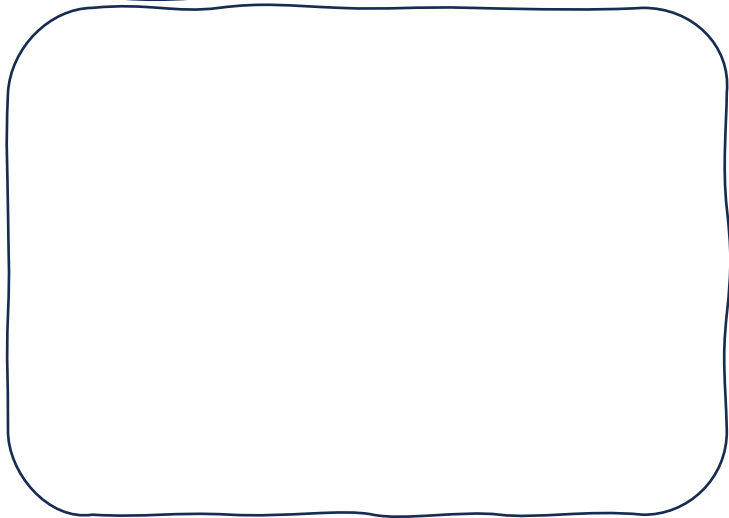
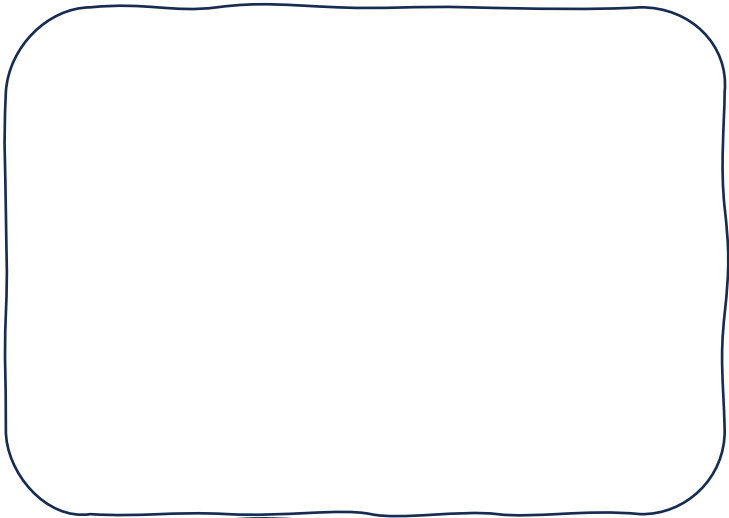
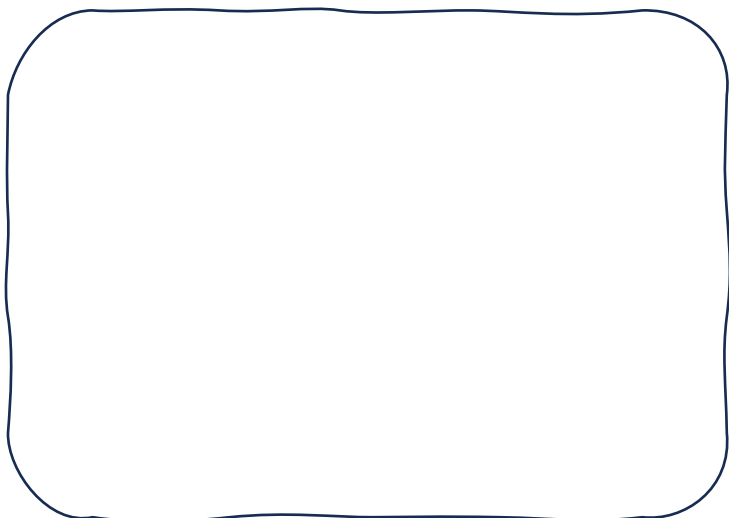
# High School Chemistry Plans (1<sup>st</sup> Semester)

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	<input type="checkbox"/> Scientific Notation Practice Worksheets <ul style="list-style-type: none"> <li>• <a href="#">Worksheet Set 1</a> (Lehman College)</li> <li>• <a href="#">Worksheet Set 2</a> (Mayfield Schools)</li> <li>• <a href="#">Worksheet Set 3</a> (Kuta)</li> </ul>	Online Practice Worksheets with answers
	<input type="checkbox"/> Chemistry Review Pages (basic vocab element, compound, molecule, density, etc.) <input type="checkbox"/> Element/Symbol Names <input type="checkbox"/> Chemistry Quick Quiz (vocab review) <input type="checkbox"/> Element or Compound <input type="checkbox"/> Unusual Elements Worksheets (Make sure she knows most chemical symbols!)	<b>Notebook Pages &amp; Worksheets from:</b> <b>Properties of Matter Packet</b> <b>Chemistry Packet</b> <b>Ions/Isotopes Packet</b>
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	<b>Glencoe Textbook Chapter 10 Chemical Reactions AND Balancing Chemical Equations Worksheets by Chris McMullen</b>  <input type="checkbox"/> Balancing Equations Practice	
	<b>Glencoe Textbook Chapter 11 The Mole</b>  <input type="checkbox"/> The Mole Notebook Pages <b>Problem Sets in Glencoe:</b> <input type="checkbox"/> 11-1 <input type="checkbox"/> 11-2 <input type="checkbox"/> 11-3 <input type="checkbox"/> 11-4 <input type="checkbox"/> 11-5 <input type="checkbox"/> 11-6 <input type="checkbox"/> 11-7 <input type="checkbox"/> 11-8 <input type="checkbox"/> 11-9 <input type="checkbox"/> 11-10 <input type="checkbox"/> 11-11 <input type="checkbox"/> 11-12 <input type="checkbox"/> 11-13 <input type="checkbox"/> 11-14	<b>Do ALL practice problems in the Glencoe Textbook. Answers are all provided in the back on the student textbook!</b>
	<b>Glencoe Textbook Chapter 12 Stoichiometry</b> <input type="checkbox"/> Stoichiometry <b>Problem Sets in Glencoe:</b> <input type="checkbox"/> 12-1 <input type="checkbox"/> 12-2 <input type="checkbox"/> 12-3 <input type="checkbox"/> 12-4 <input type="checkbox"/> 12-5 <input type="checkbox"/> 12-6	Additional problems are in the high school chem packet that I made for L and D (which is not shared online at this point)

# High School Chemistry Plans (2<sup>nd</sup> Semester)

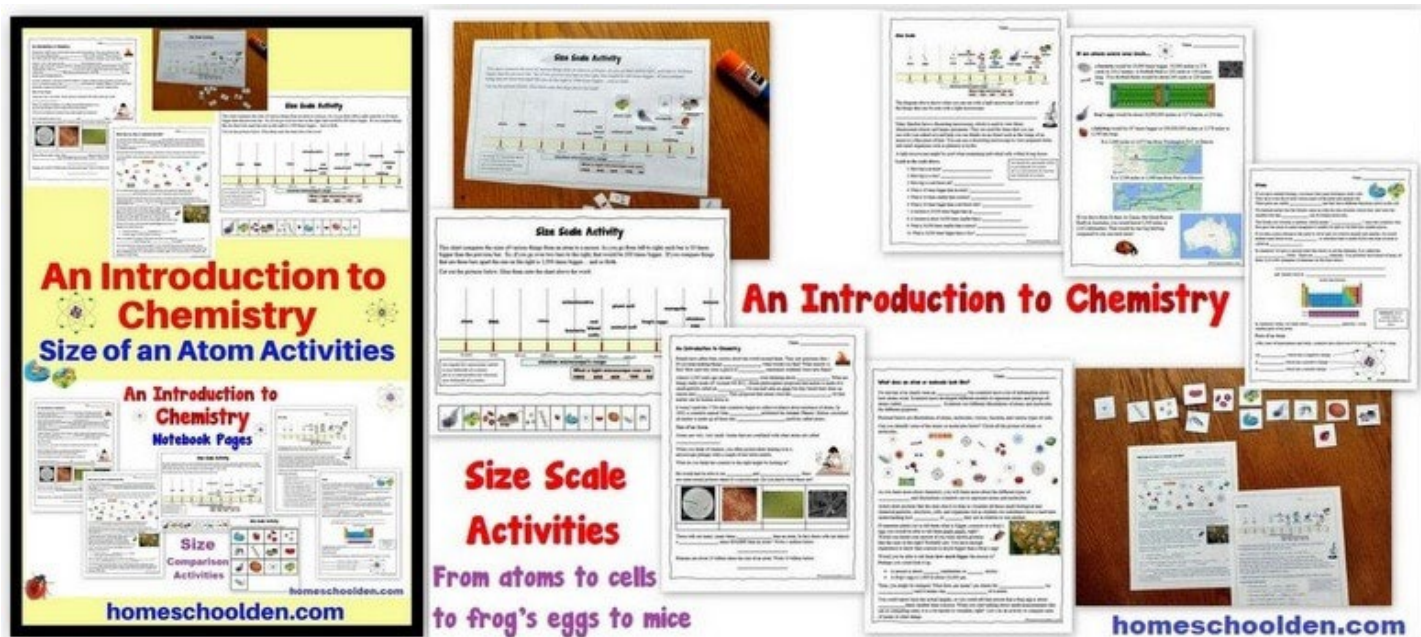
	<b>Balancing Chemical Equations Worksheets by Chris McMullen</b>	<b>Practice Problems</b>
	<b>Glencoe Textbook Chapter 14 Gases</b> <input type="checkbox"/> Boyle's Law <input type="checkbox"/> Charles's Law <input type="checkbox"/> Gay-Lussac's Law <input type="checkbox"/> Combined Gas Law <input type="checkbox"/> Avogadro's Principle <input type="checkbox"/> Ideal Gas Law <b>Problem Sets in Glencoe:</b> <input type="checkbox"/> 14-1 <input type="checkbox"/> 14-2 <input type="checkbox"/> 14-3 <input type="checkbox"/> 14-4 <input type="checkbox"/> 14-5 <input type="checkbox"/> 14-6 <input type="checkbox"/> 14-7 <input type="checkbox"/> 14-8 <input type="checkbox"/> 14-9 <input type="checkbox"/> 14-10	 <p>Use the Worksheets in the High School Chem Packet (which is still just on my computer, not shared online)</p>
	<b>Glencoe Textbook Chapter 15 Solutions</b> <input type="checkbox"/> Solutions <input type="checkbox"/> Henry's Law <input type="checkbox"/> Molarity <b>Problem Sets in Glencoe:</b> <input type="checkbox"/> 15-1 <input type="checkbox"/> 15-2 <input type="checkbox"/> 15-3 <input type="checkbox"/> 15-4 <input type="checkbox"/> 15-5 <input type="checkbox"/> 15-6	<p>Use the Worksheets in the High School Chem Packet (which is still just on my computer, not shared online)</p>
	<b>Glencoe Textbook Chapter 16 Energy and Chemical Change</b> <input type="checkbox"/> Energy <input type="checkbox"/> Specific Heat <input type="checkbox"/> Measuring Heat	 <p>Use the Worksheets in the High School Chem Packet (which is still just on my computer, not shared online)</p>
	<b>Glencoe Textbook Chapter 25 Nuclear Chemistry</b> <input type="checkbox"/> Nuclear Radiation <input type="checkbox"/> Radioactive Decay <input type="checkbox"/> Transmutation <b>Problem Sets in Glencoe:</b> <input type="checkbox"/> 16-1 <input type="checkbox"/> 16-2 <input type="checkbox"/> 16-3 <input type="checkbox"/> 16-4 <input type="checkbox"/> 16-5 <input type="checkbox"/> 16-6 <input type="checkbox"/> 16-7	
	<b>Organic Chemistry</b>	<p>Use the <b>Organic Chemistry Packet</b> to go over the 4 major macromolecules</p> <p>This is covered in <b>Glencoe Textbook Chapter 24</b>, but we won't use that</p>



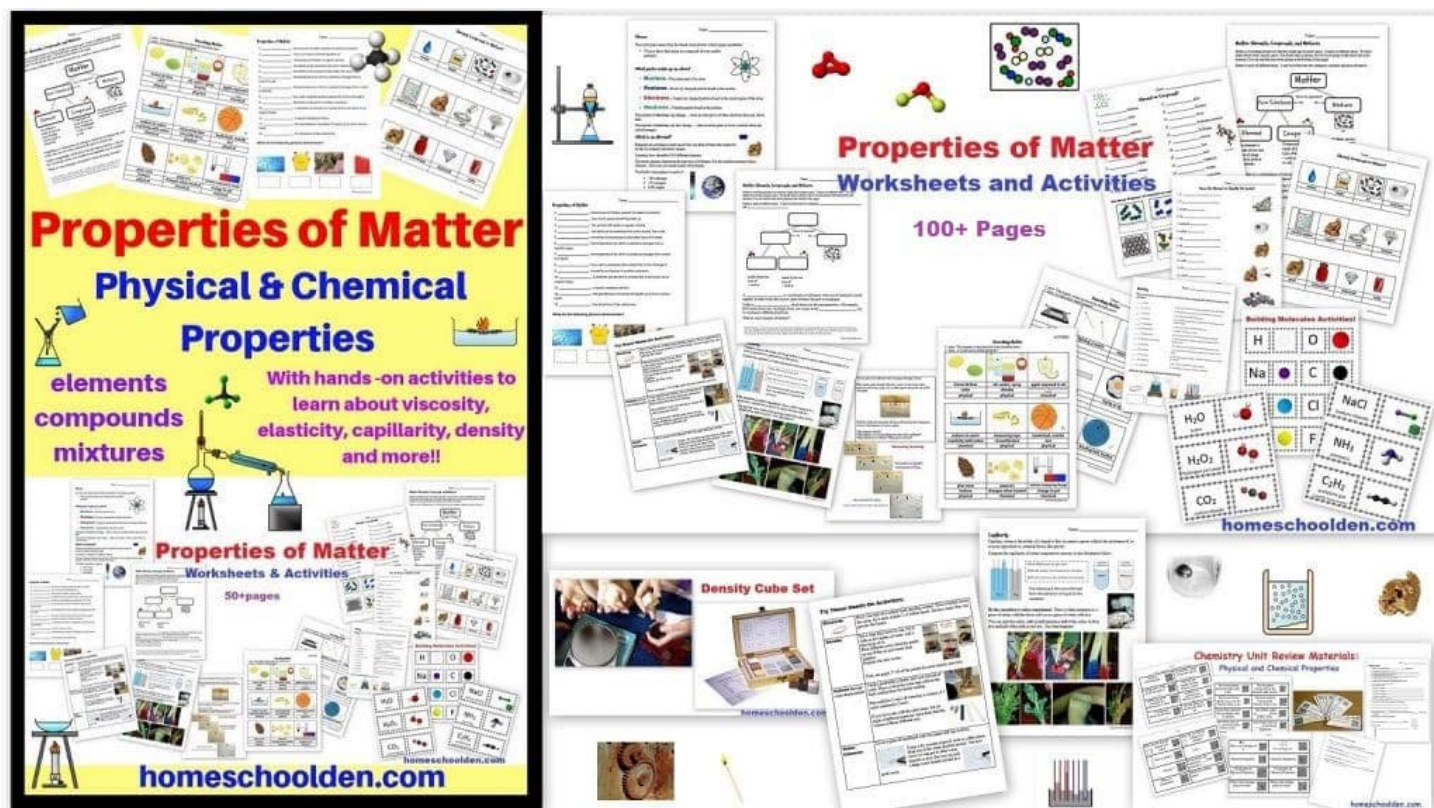


Visit our [Chemistry BUNDLE Page](#) to find out more about these units.  
They are sold as a bundle or sold separately.

[Introduction to Chemistry – Size of Atoms Mini-Unit](#)

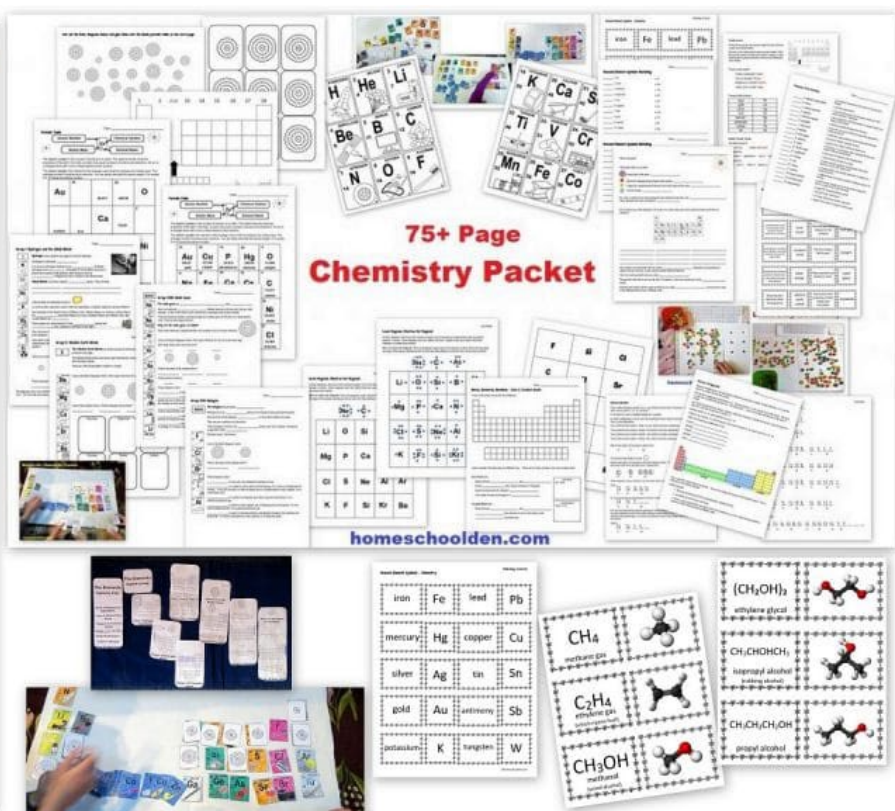
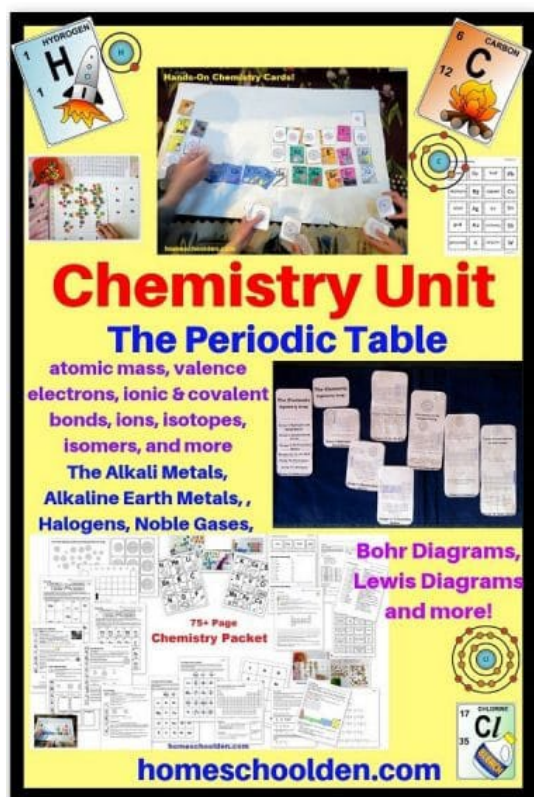


[Properties of Matter Unit \(Click here to see the full post!\)](#)

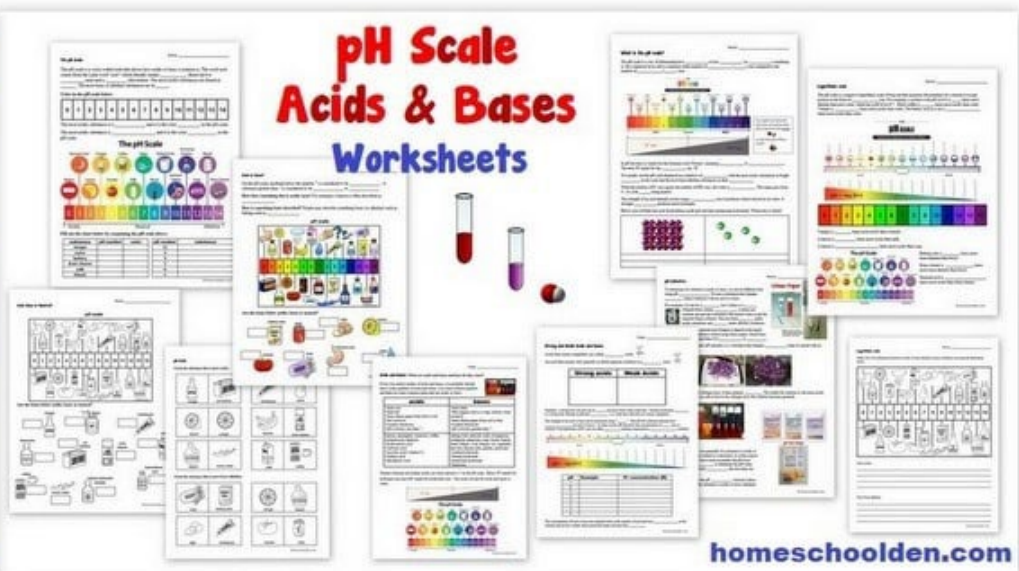
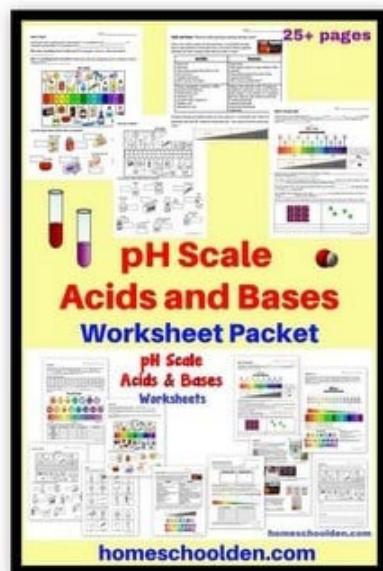




[Chemistry Packet: The Periodic Table \(Click here to see the full post!\)](#)



[pH Scale – Acids and Bases Worksheet Packet](#)

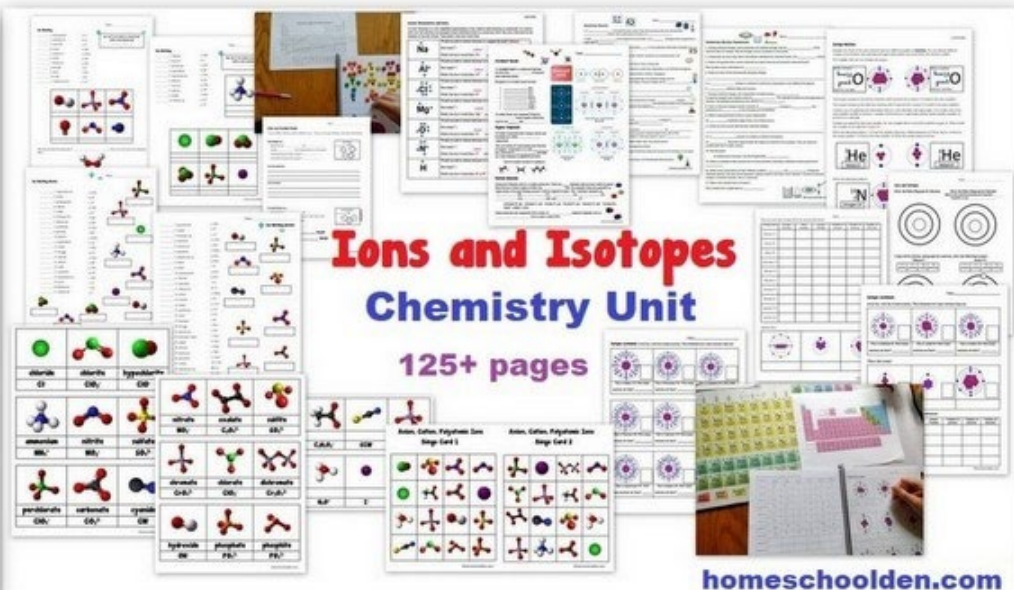
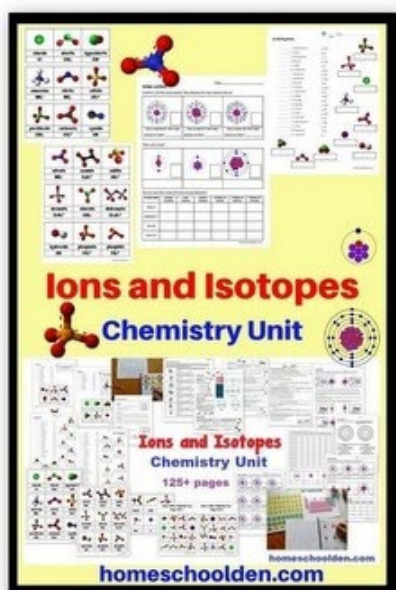


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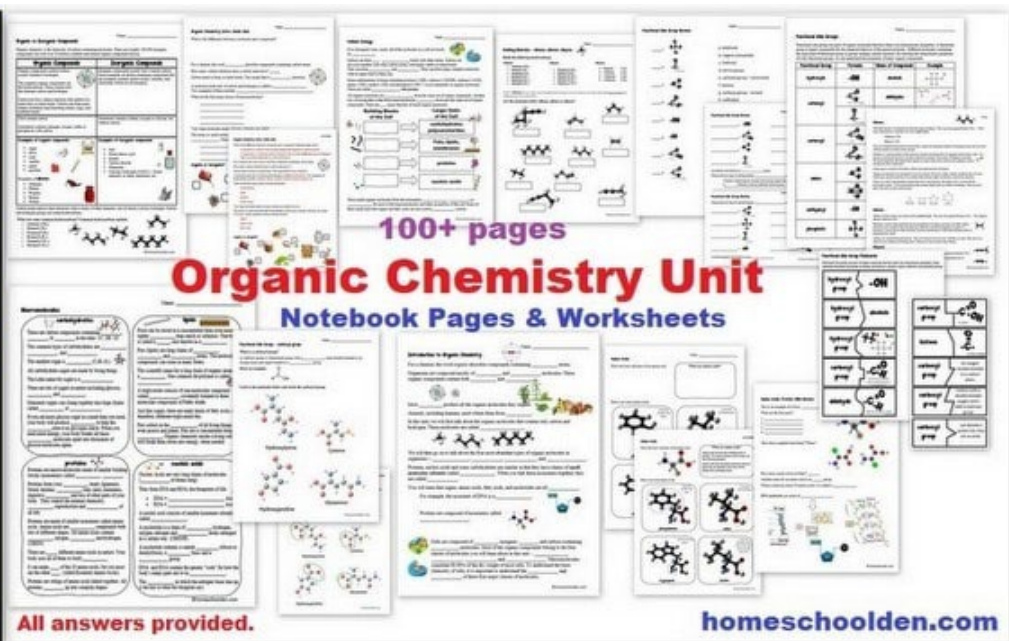
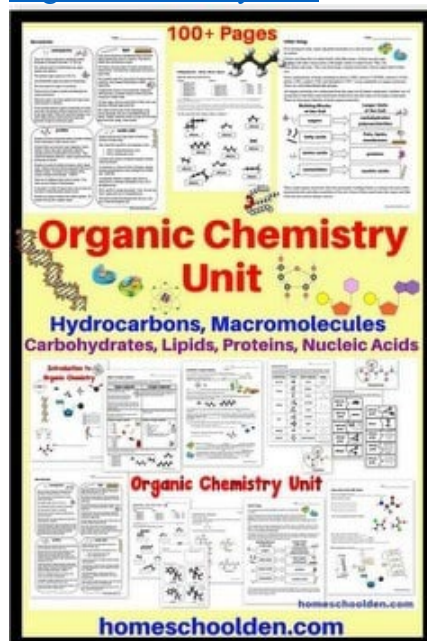
<https://homeschoolden.com/chemistry-bundle/>



[Ions and Isotopes Chemistry Unit \(Click here to see the full post!\)](#)



[Organic Chemistry Unit](#)



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<https://homeschoolden.com/chemistry-bundle/>