

August 2011 – May 2012  
1:00 P.M. – 3:00 P.M.

Kingdom Builders Homeschool Cooperative  
www.kingdombuilderscoop.com

## Exploring Creation through Chemistry

Students need to complete **all** the reading assignments, work **all** the problems, and answer **all** the questions AT HOME. **All** tests will be taken in class (**Except where noted on syllabus**). Class meeting time will be spent doing experiments, reviewing material covered in the readings for that week and taking tests. I will collect and grade tests. Students **must** memorize definitions, formulas, and any centered, bold-faced type in text. Please review the Lab Report Template and keep it for reference for use with every lab write-up.

The following items are to be done **outside** of the lab classes:

- On Your Own (OYO) questions (self-check answers at end of chapter)
- Review Questions (self or parent check answers in solutions manual)
- Practice Problems (self or parent check answers in solutions manual)
- Extra Practice Problems (Appendix B)
- Pre-lab write-ups (prior to experiment)
- Final lab write-ups (after completion of experiment in class)

You are strongly encouraged to adhere to the attached schedule so that you will be thoroughly prepared. Homework will be checked.

<b>Grading Scale</b>	Tests	50%
	Participation	10%
	Homework	20%
	Lab Notebook	20%

- Apologia Exploring Creation with Chemistry, 2<sup>nd</sup> edition, ISBN 1-932012-26-5
- Apologia Exp. Creation with Chemistry Solutions & Tests Manual ISBN 1-932012-27-3
- Apologia Exp. Creation with Chem., Companion CD (Lab demos, voc., calculations)
- Lab notebook (marbled composition notebook preferred)
- Student's answers to questions, problems and tests
- 2 sharpened Pencils
- Scientific Calculator

**BRING ALL OF THE ABOVE TO CLASS EACH FRIDAY** (excluding solutions manual and companion CD)

### Teacher Contact:

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Because we work with an open flame and potentially dangerous substances, instant obedience is required.  
**Stay on schedule.**

### Course Objectives

- To become familiar with the Periodic Table of Elements, the different states of matter, chemical bonding, and chemical formulas
- To safely perform experiments and correctly document data and calculations in a lab notebook
- To master a general understanding of the structure of the atom and its behavior under various conditions

### Course Prerequisites

- Algebra I

## Exploring Creation with Chemistry: 2<sup>nd</sup> Edition

The expectation is that the student will have read and completed assignments prior to coming to class. **This includes the first week of class.** All assignments are due the Friday of the week they are assigned.

### Week 1 (Class date August 26, 2011)

- Mon** Read p. i-iv. Review lab template. Place a copy in your binder.  
**Tue** Read p.1-11, Do OYO 1.1 -1.5  
**Wed** Read p. 11-22, Do OYO 1.6-1.12  
**Thu** Read p. 23-30, Do OYO 1.13-1.14  
**Fri** Go over book layout, p. i – iv, course structure, lab notebook, start extra practice problems  
**Exp. 1.1** Air Has Mass (**Do the pre-lab prior to coming to class, follow template**)  
(NOTE: CD demos are listed as CD on the syllabus)

### Week 2 (Class date September 2, 2011)

- Mon** **Exp. 1.2** Air Takes Up Space (**Full lab write-up**) **Exp. 1.3** Comparing Conversions to Measurements p.27 (**Do at home, NO lab write-up. However, do all calculations**)  
(Sample calculations in Solutions Manual p. 22)  
**Tue** **CD:** Mod 1: Gas density demo, Read p. 30-31, Do OYO 1.15-1.16, Do pre-lab exp 1.4  
**Wed** Review Questions p. 35, Review definitions & formulas, Complete write-up for exp. 1.1  
**Thu** Do all Practice Problems, Review all definitions/formulas, and finish Extra Problems p.569  
**Fri** **Exp. 1.4** The Density of Liquids p.29 (sample calculations in Solutions Man. p.23)  
**TEST Module 1 IN CLASS. Dismissal at 3 P.M.**

### Week 3 (Class date September 9, 2011)

- Mon** **Labor Day**  
**Tue** Read p.37-45  
**Wed** **Web:** Significant Figures Fable:  
<http://tourserver.rice.edu/documents/SignificantFigureRules1.pdf>  
Powers of 10 Demonstration:  
<http://micro.magnet.fsu.edu/primer/java/scienceopticsu/powersof10>  
**CD:** Mod 2: First Law of Thermodynamics Demonstration. Read p.45-47,  
Do OYO 2.1-2.3, Read p.48-50, Do OYO 2.4-2.5  
**Thu** Read p.50-53, Do OYO 2.6-2.7, Read p.53-60, re-read Exp. 2.1 on p.43. Prepare pre-labs.  
**Fri** **Exp. 2.1** Calibrating Your Thermometer p.43  
**Exp. 2.2** Measuring the Specific Heat of a Metal p.58  
(Sample calculations in Solutions Manual p. 29)  
Do OYO 2.8- 2.10 in class

### Week 4 (Class date September 16, 2011)

- Mon** Do Module 2 Review Questions.  
**Tue** Review all definitions/formulas, Do Practice Problems.  
**Wed** Extra practice problems Module 2  
**Thu** Finish Lab write-ups for experiments 2.1 and 2.2, review for Module 2 test  
**Fri** Review in class. **MODULE 2 TEST IN CLASS. Dismissal at 3 P.M.**

### Fall Break 9/19/11-9/23/11

**Week 5 (Class date September 30, 2011)**

- Mon** Read p.69-77, Do OYO 3.1-3.4  
**Tue** Memorize abbreviations for elements 1-38 p.568, pre-lab exp. 3.1  
**Wed** **CD:** Periodic Table Song; also  
<http://www.privatehand.com/flash/elements.html>  
Lyrics: [http://www.privatehand.com/flash/elements\\_lyrics.pdf](http://www.privatehand.com/flash/elements_lyrics.pdf)  
Read p.78-82, Do OYO 3.5-3.6 Review abbreviations for elements p.568  
Read p.82-87, Do OYO 3.7-3.8, Review abbreviations for elements p.568  
**Thu**  
**Fri** **Exp. 3.1** The Conservation of Mass p.71  
**Quiz: Abbreviations for elements.**

**Week 6 (Class date October 7, 2011)**

- Mon** Read p.87-90, Do OYO 3.9, Read p.90-93, and Do OYO 3.10-3.11,  
Memorize prefixes p.91, Review all definitions / formulas  
**Tue** Complete Review questions Module 3. Review prefixes on p.91  
**Wed** Review definitions/formulas, Do Practice Problems for Module 3  
**Thu** Review entire module. Complete write-up for experiment 3.1  
**Fri** **Module 3 Test in class, Dismissal at 3 P.M.**

**Week 7 (Class date October 14, 2011)**

- Mon** Read p. 103-117, Do OYO 4.1-4.5  
**Tue** **Exp. 4.2** Distinguishing Between Chemical & Physical Change p.107, Do pre-lab and begin  
experiment at home.  
**Wed** Read p. 117-125, Do OYO 4.6-4.10  
**Thu** Pre-labs 4.3 and 4.4. Do final write-up for experiment 4.2  
**Fri** Review for Module 4 test and review for Quarterly test 1  
**Exp. 4.3** Condensing Steam in an Enclosed Vessel p.110  
**Exp. 4.4** The Kinetic Theory of Matter p.113

**Week 8 (Class date October 21, 2011)**

- Mon** Do Review Questions Module 4. Review definitions and formulas  
**Tue** Do Practice Problems Module 4, work on final write-ups for exp. 4.3 and 4.4  
**Wed** **Module 4 Test AT HOME (Due 10/21/11, parent signature required)** Finish labs.  
**Thu** Review Modules 1-4, Extra practice problems on pages 569-572 are great review problems  
**Fri** **Quarterly Test 1 in class, Dismissal at 3 P.M.**

**Week 9 (Class date October 28, 2011)**

- Mon** Read p. 133-137, go over example 5.1 **VERY CAREFULLY**, Do OYO 5.1-5.2  
**CD:** Decomposition demonstration (3 min), Read p.137-140, Do OYO 5.3-5.4  
**Tue** Read p.140-148, Do OYO 5.5-5.6  
**Wed** Read p.149-152, Do OYO 5.7-5.9, Exp 5.1 pre-lab  
**Thu** Do **Exp. 5.1 at home.** Do complete write-up  
**Fri** Review Module 5, Review Exp 5.1 calculations. Do OYO 5.10 in class

**Week 10 (Class date November 4, 2011)**

- Mon** **CD:** Further explanation of Experiment 5.1 & Combustion of Magnesium  
Demonstration. Read p.152-156. Do Review Questions Module 5  
**Tue** Do Practice Problems Module 5, Review definitions / formulas  
**Wed** **Module 5 Test AT HOME (Due 11/4/11, parent signature required)**  
**Thu** Read p.163-171, Do OYO 6.1-6.3. Pre-lab experiment 6.1  
**Fri** **Exp. 6.1** Limiting Reactants p.166, Review topics in module 6

**Week 11 (Class date November 11, 2011)**

- Mon** Read p.171-176, Do OYO 6.4-6.5
- Tue** Read p.176-182, Lab write-up
- Wed** Read p.182-186, Do OYO 6.6-6.9
- Thu** Read p.186-190, Do OYO 6.10-6.11  
Do half Review Questions. Review all definitions and formulas.
- Fri** Review all of Module 6

**Week 12 (Class date November 18, 2011)**

- Mon** Review questions Module 6, #6-10, Review definitions and formulas
- Tue** Do Practice Problems Module 6
- Wed** Prep for next module, Read p. 201-213, OYO 7.1-7.3
- Thu** Review all of Module 6, Extra Practice problems on p. 574 (optional) **Great Review!**
- Fri** **Module 6 Test in class, Dismissal at 3 P.M.**

**Extra Week A (No Class! Happy Thanksgiving)**

- Mon** Read p. 213-219, Do OYO 7.4-7.5
- Tue** Read p. 219-224, and Do OYO 7.6-7.7

**Week 13 (Class Date December 2, 2011)**

- Mon** Read p. 224-237, Do OYO 7.8-7.10
- Tue** Read p.237-240, Do OYO 7.11-7.12, Do Module 7 Review Questions
- Wed** Do Module 7 Practice Problems, Review all definitions/formulas
- Thu** Review entire module, Extra practice problems (optional) **Great Review!**
- Fri** **Module 7 Test in class, Dismissal at 3 P.M., Lab notebooks due**

**Week 14 (Class Date December 9, 2011)**

- Mon** Read p.247-257, OYO 8.1-8.2
- Tue** Read p.257-260, Do OYO 8.3-8.5
- Wed** Read p.261-267, Do OYO 8.6-8.9
- Thu** Read p.267-276, Do OYO 8.10-8.12
- Fri** Review Module 8 in class

**Extra Week B (No class, 12/12/11 through 12/16/11)**

- Mon** Do all Review Questions, Review definitions/formulas
- Tue** Do all Practice Problems, Review all definitions/formulas, Extra Problems p.576 (optional)
- Wed** **Module 8 Test AT HOME (Due 1/13/12, parent signature required)**
- Thu** Review for Quarterly Test #2, Modules 5-8
- Fri** **Take Quarterly Test #2 at home** (Solutions Manual p.207) **parent signature required**

**Extra Week C (No class, 1/2/12 through 1/6/12)**

- Mon** Read p.285-289, Do OYO 9.1-9.3
- Tue** Read p.289-300, Do OYO 9.4-9.8
- Wed** Read p.300-307, Do OYO 9.9-9.10
- Thu** Read p.307-308, Do OYO 9.11
- Fri** **Exp. 9.1** Polar Covalent versus Purely Covalent p. 300 **Do at home, full write-up**

**Week 15 (Class Date January 13, 2012)**

- Mon** Do all Review Questions, Review all definitions and formulas
- Tue** Do all Practice Problems Review all definitions & formulas
- Wed** Review entire module, must know p. 295
- Thu** Do Extra Practice Problems p. 577 (**Turn in for grade**)
- Fri** **Module 9 Test in class, Dismissal at 3 P.M.**

**Week 16 (Class Date January 20, 2012)**

- Mon** **CD:** Acid/base indicator demonstration. Read p.319-327, Do OYO 10.1-10.3
- Tue** Read p.327-333, Do OYO 10.4-10.6
- Wed** Read p.333-338, Do OYO 10.7-10.8, Pre-lab 10.2
- Thu** Read p.338-345, Do OYO 10.9-10.10
- Fri** SEM 1 GRADES ISSUED  
**Exp. 10.2** Acid/Base Titration p. 342 (sample calculations in Solutions Manual p.60)  
**Dismissal at 3 P.M.**

**Week 17 (Class Date January 27, 2012)**

- Mon** **CD:** Further explanation of Experiment 10.2 (5 min)  
Do all Review Questions  
Review all definitions & formulas
- Tue** Do all Practice Problems, Review all definitions & formulas
- Wed** Do lab write-up for exp. 10.2 (sample calculations in Solutions Manual p. 60)
- Thu** Review entire module
- Fri** **Module 10 Test in class, Dismissal at 3 P.M.**

**Week 18 (Class Date February 3, 2012)**

- Mon** Read p.353-364, Do OYO 11.1-11.3
- Tue** Read p.365-368, Do OYO 11.4-11.5
- Wed** Read p.368-371, Do OYO 11.6, pre-labs 11.1 and 11.2
- Thu** Read p.371-375, Do OYO 11.7-11.10
- Fri** **Exp. 11.1** The Effect of Temperature on the Solubility of Solid Solutes p. 359  
**Exp. 11.2** The Effect of Temperature on the Solubility of a Gas p. 361

**Week 19 (Class Date February 10, 2012)**

- Mon** Do all Review Questions, Review all definitions and formulas
- Tue** Do all Practice Problems, Review all definitions & formulas
- Wed** Lab write-ups 11.1 and 11.2
- Thu** Review entire module, Extra practice problems **ODD ONLY (Turn in for grade)**
- Fri** **Module 11 Test in class, Dismissal at 3 P.M.**

**Break February 13, 2012 through February 17, 2012**

**Week 20 (Class Date February 24, 2012)**

- Mon** **CD:** Demonstration of Boyle's Law (1 min)  
Read p.383-394, Do OYO 12.1-12.3
- Tue** Read p.394-400, Do OYO 12.4-12.5
- Wed** Read p.400-404, Do OYO 12.6-12.8, pre-lab 12.1
- Thu** Read p.404-408, Do OYO 12.9-12.10
- Fri** **Exp. 12.1** Using the Ideal Gas Equation p. 404, Review Module 12

**Week 21 (Class Date March 2, 2012)**

- Mon** **CD:** Demonstration of the definition of boiling point (2 min),  
Do all Review Questions, Review all definitions & formulas, Do half Practice Problems
- Tue** Finish Practice Problems, Review all definitions & formulas, Extra Problems p.580 (opt.)
- Wed** **Module 12 Test at home (Parent signature required, Due 3/2/12)**
- Thu** Review for Quarterly Test #3, review old tests Modules 9, 10, & 11, Exp 12.1 write-up
- Fri** **Quarterly Test 3 in class, Dismissal at 3 P.M.**

**Week 22 (Class Date March 9, 2012)**

- Mon** Read p.417-428, Do OYO 13.1-13.3
- Tue** Read p.428-434, Do OYO 13.4-13.5, pre-lab 13.1
- Wed** Read p.434-439, Do OYO 13.6-13.8
- Thu** Read p.439-444, Do OYO 13.9-13.10
- Fri** **Exp. 13.1** Determining the  $\Delta H$  of a Chemical Reaction p. 421 (sample calculations in Solutions Manual p. 74)

**Week 23 (Class Date March 16, 2012)**

- Mon** Read p.444-449, Do OYO 13.11-13.12
- Tue** Do all Review Questions, Review all definitions & formulas,  
Do half of Practice Problems.
- Wed** Do half of Practice Problems. Do lab write-up for 13.1
- Thu** Review entire module, Do extra practice problems on p.581 (**ODD ONLY due for grade**)
- Fri** **Module Test 13 in class, Dismissal at 3P.M.**

**Week 24 (Class Date March 23, 2012)**

- Mon** **CD:** Surface area demonstration Read p.459-468, OYO 14.1-14.2
- Tue** Read p.468-473, Do OYO 14.3-14.6, **Carefully review example 14.2 on p.466**
- Wed** Read p.473-480, Do OYO 14.7-14.8
- Thu** **CD:** Reaction rate demonstration  
Read p.481-484 Do OYO 14.9-14.11, Pre-labs for 14.1 and 14.2
- Fri** **Exp. 14.1** Factors That Affect Chemical Reaction Rates p. 460  
**Exp. 14.2** The Effect of a Catalyst on the Decomposition of Hydrogen Peroxide p. 480  
**Dismissal at 3 P.M. if necessary**

**Week 25 (Class Date March 30, 2012)**

- Mon** Do all Review Questions Review all definitions and formulas
- Tue** Do all Practice Problems Review all definitions and formulas
- Wed** Lab write-ups for exp 14.1 and 14.2
- Thu** Extra Problems p.582 (**ODD ONLY due for grade**)
- Fri** **Module Test 14 in class, Dismissal at 3P.M.**

**Easter Break (April 2, 2012- April 6, 2012)**

**Week 26 (Class Date April 13, 2012)**

- Mon** **CD:** Equilibrium demonstration  
Read p.491-499, Do OYO 15.1-15.4
- Tue** Read p.499-503, Do OYO 15.5-15.7
- Wed** Read p.504-509, Do OYO 15.8-15.9
- Thu** Read p.510-515, Do OYO 15.10, **CD:** Le Chatelier's Principle demonstration  
Pre-lab write-up for exp. 15.2
- Fri** **Exp. 15.2** Temperature and Le Chatelier's Principle p. 510

**Week 27 (Class Date April 20, 2012)**

- Mon** Read p.515-518, Do OYO 15.11-15.13
- Tue** Do all Review Questions, Review all definitions and formulas
- Wed** Do all Practice Problems, Review all definitions and formulas  
Extra Problems p.583 (opt.)
- Thu** Lab write-up exp. 15.2, review entire module
- Fri** **Module Test 15 in class, Dismissal at 3P.M.**

**Week 28 (Class Date April 27, 2012)**

- Mon** **CD:** Oxidation numbers demonstration, Read p.525 -527 Do OYO 16.1
- Tue** Read p.527-533, Do OYO 16.2-16.4
- Wed** Read p.533-536, Do OYO 16.5
- Thu** Read p.536-542, Do OYO 16.6-16.7
- Fri** **Exp. 16.1** Invisible Writing.  
Review for Quarterly Test #4

**Break April 30 through May 4 (GHEA Conference)**

*USE THIS WEEK TO CATCH UP AND TO REVIEW FOR YOUR TESTS!*

**Week 27 (Class Date May 11, 2012)**

- Mon** **CD:** Example 16.5 demonstration, Read p.542-545,  
Do all Review Questions, Review all definitions and formulas
- Tue** Do all Practice Problems, Review all definitions & formulas
- Wed** Lab write-up exp 16.1
- Thu** Review Entire module, Extra Problems p.584 (**ODD due for a grade**)
- Fri** **Module Test 16 in class, Dismissal at 3P.M. LAB NOTEBOOKS DUE**

**Friday May 18, 2012 Last Day of Class, End of Session**

- Mon** Review Entire module 13
- Tue** Review Entire module 14
- Wed** Review Entire module 15
- Thu** Review Entire module 16
- Fri** **Quarterly Test #4 in class**

Grades will be calculated and issued within 2 weeks.